



QUARMBY | CONSTRUCTION

2 Grove Promenade, Ilkley
West Yorkshire, LS29 AF

Tel: 01943 817817 Fax: 01943 816 115

Registered in England Registered No1553002

Email: team@quarmby.co.uk

THE BUILDING MANUAL

WAKEFIELD WATERFRONT BUILDING 20

FILE NO. 4

**HEBBLE WHARF
APARTMENTS**

**3 WAKEFIELD
WATERFRONT
HEALTH & SAFETY 4**

2.41 Sheet Piling (UK) Ltd

Oakfield House

Rough Hey Road

Grimsargh

Preston

PR2 5AR

Tel 0177 279 4141

Fax 0177 279 5151

Contact Mr D G Hughes

- Temporary Sheet Piling

No information

2.42 S P Smith

- Internal Decorating

139 Laughton Road

Dinnington

Sheffield

S25 2PP

Tel 0190 955 0194

Fax 0190 956 9790

Contact Mr Derek Wardle

**S P SMITH****PAINTING CONTRACTORS****QUARMBY****PROJECT****WATERFRONT
WAKEFIELD**

139 Laughton Road
Dinnington
Sheffield. S25 2PP
Telephone (01909) 550194
Facsimile (01909) 569790
E-mail: steve@spsmiths.co.uk

SCHEDULE OF MATERIALS**BUILDING 20**

LOCATIONS	MATERIALS		MANUFACTURE
<u>ALL APARTMENTS</u>			
PLASTER CEILINGS	VINYL MATT	WHITE	ICI DULUX
PLASTER WALLS	VINYL MATT	WHITE	"
WOODWORK	SATIN FINISH	WHITE	"
ACCESS AREAS			
PLASTER CIELINGS	VINYL MATT	WHITE	"
PLASTER WALLS	VINYL MATT	WHITE	"
WOODWORK	SATIN FINISH	WHITE	"

SUPPLIER DETAILS TEL 01924 369583

CLEANING AS PER MANUFACTURES INSTRUCTIONS

ICI Dulux TRADE
DULUX TRADE
SATINWOOD

Issued January 2003

406

PRODUCT INFORMATION

Typical Use	Dulux Trade Satinwood is a solvent-based satin finish suitable for use on interior wood and metal surfaces. It is tough, hardwearing and dirt resistant, and does not require an undercoat (except in areas where a strong colour change is required), so it can be applied direct to suitably prepared surfaces. Before preparing any surface for painting, read the Safety, Health & Environmental information on page 2 about old lead-based paints.
Pack Size	1, 2.5 and 5 Litre.
Colour Range	See appropriate Dulux Trade colour literature.
Film Properties	Chemical Resistance: Resistant to mild chemical fume attack but where there is heavy attack, e.g. actual contact with chemicals, specialist paint systems may be required. (see ICI High Performance Coating Systems). Heat Resistance: Generally resistant to heat up to 90°C, but some discolouration of light colours may occur at elevated temperatures. Water Resistance: Resistant to the levels of atmospheric humidity present in normal interior environments. Not suitable for use on immersed surfaces or where there is very heavy and prolonged condensation.
Composition (nominal)	Pigment: Lightfast Non Lead Pigments. Binder: Alkyd. Solvent: White Spirit.
Volume Solids	Pure Brilliant White 50% (nominal), other colours will vary.
Thinning	Thinning is not usually necessary but if required add up to 1 part of Dulux Trade Thinner Number 41 or white spirit to 10 parts of paint.
Application Method	Brush or roller. For Health and Safety reasons related to all solvent-based paints, spray application is not recommended.
Film Thickness	<i>Film thickness will be dependent on the coverage achieved.</i> Wet: 50 microns. Dry: 25 microns.
Drying Times	Single coat at standard thickness: Touch Dry: 4-6 hours. Recoat: 16-24 hours.
Practical Coverage	On smooth surfaces of average porosity a litre of paint is sufficient to apply one coat to an area of up to 17m ² .
Cleaning Up	After use, remove as much paint as possible from brushes before cleaning with Dulux Trade Thinner Number 41 or white spirit. Do not use or store in extremes of temperature.

SURFACE PREPARATION

Surfaces must be clean, dry, free from all defective or poorly adhering material, dirt, grease, wax etc.

New or bare surfaces should be primed with an appropriate Dulux Trade primer.

Thoroughly rub down previously painted surfaces, using 'wet flattening' methods where possible, then wipe off with a damp, lint free cloth. Avoid the inhalation of dust. Wear a suitable face mask if dry sanding.

Treat any knots in wood with Dulux Trade Knotting Solution.

Any surface defects should be filled with the appropriate Polycell Polyfilla.

SYSTEM INFORMATION

Stir thoroughly before use.

The normal finishing process is 2 full coats of Dulux Trade Satinwood. However, where a strong colour change is required, then a coat of an appropriate coloured Dulux Trade Undercoat may be necessary.

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

SOLVENT-BASED PAINT

FLAMMABLE

Repeated exposure may cause skin dryness or cracking.

Contains cobalt carboxylate and ethyl methyl ketoxime. May produce an allergic reaction.

Keep away from sources of ignition. No smoking.

Contains white spirit. Inside always keep doors and windows fully open during application and drying. When applying by brush or roller to large interior surface areas or in confined spaces, wear a suitable cartridge respirator or air-fed respiratory protective equipment. Refer to your COSHH Assessment.

Avoid contact with skin and eyes. When applying it is advisable to wear eye protection. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water or a proprietary skin cleanser. Do not use solvent, thinners or white spirit.

Keep out of the reach of children. Do not use or store by hanging on a hook. Do not empty into drains or watercourses. Some local authorities have special facilities for disposing of waste paint.

Avoid the inhalation of dust. Wear a suitable face mask if dry sanding.

Before use refer to the safety data sheet.

This product contains no added lead. However, the wood and metal surfaces of the building, especially if it is pre-1960, may have been decorated in the past with a paint made with lead pigments. Preparation and removal of such paint can be hazardous. For a free leaflet explaining how the surface should be prepared safely contact:

ICI Paints Technical Group, at:
ICI Paints, Wexham Road, Slough
SL2 5DS.

Tel: 0870 242 1100

See www.duluxtrade.co.uk

VOC Content High 25% - 50%. VOCs (Volatile Organic Compounds) contribute to atmospheric pollution.

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Issued January 1999

DULUX TRADE VINYL MATT EMULSION

411

PRODUCT INFORMATION

Typical Use	Dulux Trade Vinyl Matt Emulsion is a top quality, high opacity emulsion which gives excellent coverage and application. It is suitable for all interior wall and ceiling surfaces, but in conditions subject to frequent heavy condensation (eg some kitchens and bathrooms), Dulux Trade Quick Drying Eggshell is more suitable. In interior areas likely to suffer from mould growth use Dulux Trade Mouldshield Fungicidal Eggshell.
Pack Size	1, 2.5, 5 and 10 litres.
Colour Range	See appropriate Dulux Trade Colour Card. This product is available in the Colour Dimensions range.
Film Properties	Heat Resistance: Not suitable for use on heated surfaces eg radiators. Water Resistance: Will tolerate the levels of atmospheric humidity present in normal interior environments and will withstand moderate washing. Where frequent heavy condensation is likely, as in some kitchens and bathrooms, Dulux Trade Quick Drying Eggshell is more suitable.
Composition (nominal)	Pigment: Lightfast Non-Lead Pigments. Binder: Acrylic Copolymer Emulsion. Solvent: Water.
Volume Solids	White 33% (nominal), other colours will vary.
Application Method	Brush roller or spray.
Drying Times	Single coat at standard thickness: Touch Dry: Dependent on temperature and humidity. Recoat: 2-4 hours.
Practical Coverage	A guide to the practical coverage which can be achieved under normal conditions is up to 17 m ² /litre.
Thinning	Sealing new or bare surfaces: Add up to 1 part clean water to 5 parts paint. Normal use (not to be exceeded): Add up to 1 part clean water to 10 parts paint. Conventional spray application: Add up to 1 part clean water to 2.5 parts paint. Airless spray application: Add up to 1 part clean water to 5 parts paint.
Spray Recommendations	Conventional Spray: Satisfactory through most equipment. Airless Spray: A typical set up for airless spray application would be a minimum working pressure on paint of 133 bars (2000lb/sq in) with a spray tip size 0.38mm (15 thou) and a spray tip angle of 65°.
Cleaning Up	After use, remove as much paint as possible from brushes before cleaning with clean water.

SURFACE PREPARATION

Surfaces must be clean and dry before painting.

Remove all loose and defective paint.

Where necessary wash the surface to remove dirt, grease and powdery or dusty residues. Rinse with clean water and allow to dry. Seal surfaces that remain powdery after thorough preparation with an appropriate plaster sealer.

Where necessary, rub down and then wipe off with a damp, lint free cloth, to avoid dust.

Any surface defects must be filled with a suitable filler.

Stir thoroughly before use.

SYSTEM INFORMATION

The normal finishing process is 2 full coats of **Dulux Trade Vinyl Matt**, but on previously painted surfaces in good condition, where similar colours are used, 1 coat may be sufficient.

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION (READ THIS SECTION BEFORE USE)

WATER-BASED PAINT PRODUCT

Ensure good ventilation during application and drying. Do not breathe vapour/spray.

When applying by spray inside, the wearing of air supplied breathing equipment will always be necessary. All respiratory equipment must be suitable for the purpose and meet an appropriate standard approved by the HSE. Refer to your COSHH Assessment.

When applying paint it is advisable to wear suitable eye protection. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove splashes from skin: use soap and water or a recognised skin cleaner.

Keep out of reach of children. Keep container tightly closed. Do not use or store by hanging on a hook. Do not empty into drains or watercourses. Some local authorities have special facilities for disposing of waste paint. Care must be taken when transporting paint; keep container in a secure upright position.

Do not use or store in extremes of temperature and protect from frost.

This product contains no added lead. For full Health and Safety information necessary to carry out a COSHH Assessment see ICI Data Sheet 901.

For further information or if you have any concerns about using this product contact: ICI Paints Technical Group at: ICI Paints, Wexham Road, Slough SL2 5DS.

Tel: 01753 534225

See www.dulux.com

VOC Content Low 0.30% - 7.99%. VOCs. (Volatile Organic Compounds) contribute to atmospheric pollution.

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2.43 Task Contract Services

- Zink Cladding

73 Rowms Lane

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Rotherham

S64 8AA

Tel 0170 957 0720

Fax 0170 957 0730

Contact Mr Simon Rogers



**CONTRACT
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LIMITED**

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SWINTON, ROTHERHAM
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01709 570720
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FAX:
01709 570730

Ref: C273/005/SAR

Date: 1st October 2008

Fax. & Post (01943 816115)

Quarmby Construction Ltd
2 Grove Promenade
Ilkley
West Yorkshire
LS29 8AF

QUARMBY CONSTRUCTION		
06 OCT 2008		ACTION
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CUSTOMER CARE		
H&S / PLANNING		
BLD SERVICES		
SURVEY / BUYING		
D&B / ESTIMATING		
ACCOUNTS		
CONTRACT	FILE	

For the attention of Mr Karen Hooper.

Dear Sirs,

RE: BUILDING 18 & 20, WAKEFIELD WATERFRONT – ZINC RAINSCREEN.

In response to your dated 30th September please find enclosed documentation as requested.

If you have any queries or wish to discuss the matter then please do not hesitate to contact the undersigned.

Yours faithfully
for **Task Contract Services Ltd.**

Danny Fletcher
Assistant Surveyor

CGL WALLPLANK SYSTEM

CGL[®] SYSTEMS
Weather Protection Products

CGL's standard light-gauge modular façade, this system incorporates the Cometec extruded aluminium support system and metal planks in a variety of materials and finishes. The system features are -

- Attractive ribbon cladding effect, in vertical or horizontal configuration
- Excellent panel flatness
- Modular shadow joints and plank width choice
- Full system warranty
- An economically-priced system

PROJECT:

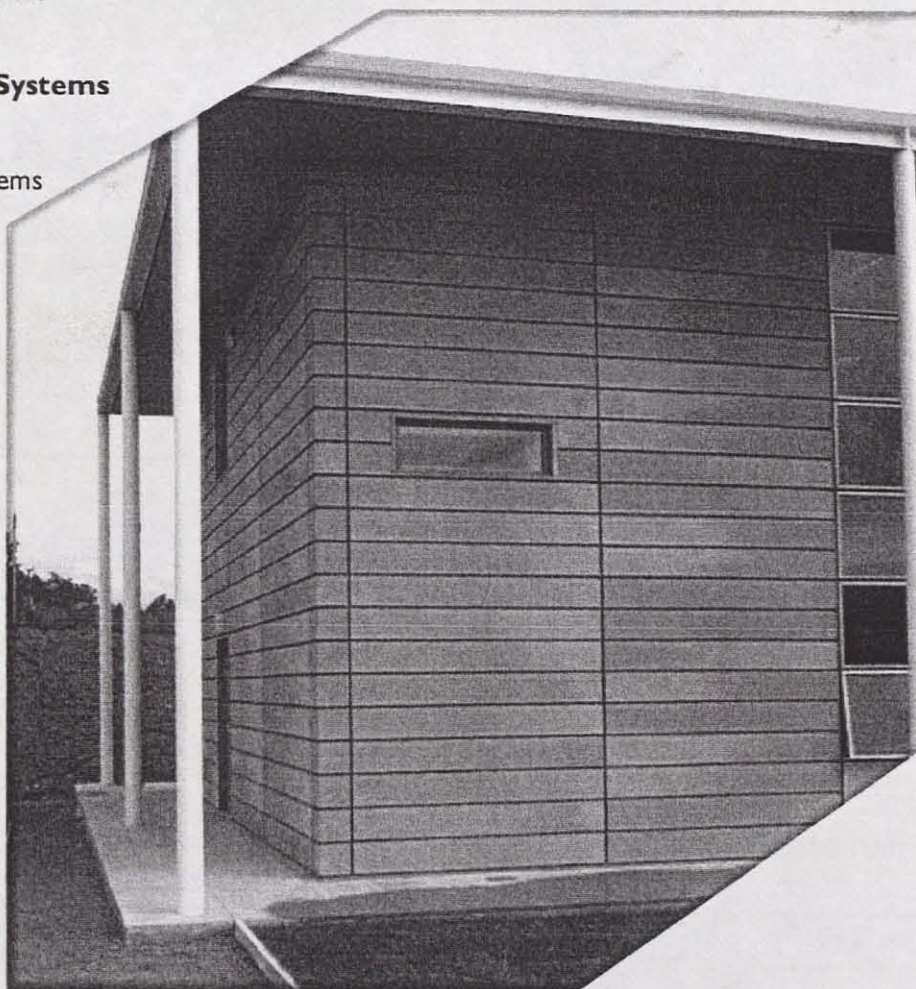
Office Development, Belfast

Installer:

McMullen Architectural Systems

PROJECT DETAILS:

McMullen Architectural Systems chose the CGL Wallplank system (horizontal style) for their new office development and selected the option of prepatinated copper as the material and finish of choice. Plank heights and widths were fabricated to meet project requirements and interface details were taken from the standard details provided by CGL.

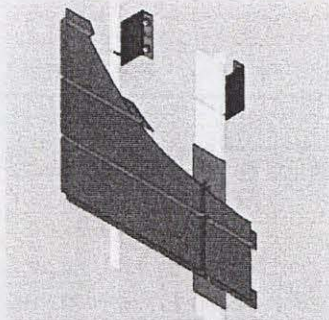


CASESTUDY

CGL WALLPLANK SYSTEM

GENERAL DESCRIPTION

The system comprises prepainted aluminium, copper, zinc, or stainless steel planks which are secret fixed to the Cometec extruded aluminium hanging system. Being a rainscreen system, this façade is ventilated and requires to be hung from a structural internal wall which is air-impermeable, insulated, and acoustically satisfactory. The cavity between the backing wall and rainscreen is pressure equalised and thus inhibits the ingress of driven rain and also allows any penetrating moisture to dry out naturally. All CGL systems are fully tested for air permeability, fire, acoustics, and structural performance and are also compliant with the "Standard for Ventilated Facades" as produced by the Centre for Window and Cladding Technology at Bath University.



WALLPLANK MATERIALS

Available in lengths up to 4000mm and heights from 170 to 330mm, the wallplanks are available in the following materials

- PVdF precoated aluminium
- Prepatinated copper
- Preweathered zinc
- Stainless steel in various finishes

Generally, the metal gauge is 1.0mm but this may increase depending upon wind loading and plank width.

COMETEC

Rainscreen support system technology under the Cometec brand gives the installer total flexibility to produce a flat, modular façade to exceptional tolerances. Essentially a vertical rail system with wall brackets, the design detail built into the extrusions and tension cam connectors is unequalled in this market. All materials are aluminium, stainless steel, and neoprene compression gaskets.

MAINTENANCE

Generally, painted aluminium facades should be washed down annually with clean water, a neutral cleaning agent, and a soft applicator. This regime will assist in achieving the expected longevity in excess of 30 years. Stainless steel will benefit from the same regime. Copper and zinc are maintenance-free and will continue to patinate over many years with an expected life in excess of 60 years.

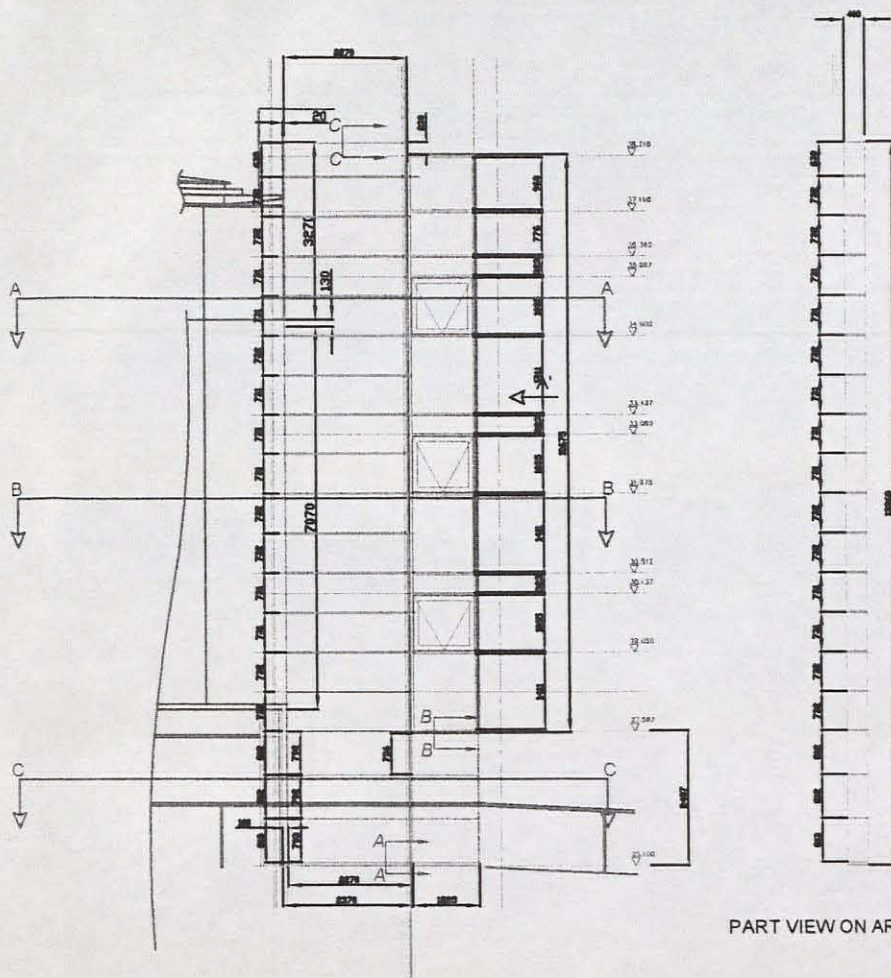
WARRANTY

Different options are available to give client security:

- 10 year company warranty written by CGL Systems Limited to its customer covering replacement of defective product
- An insured commitment to remedy any failings in design, materials, fabrication, or installation, written to CGL's customer and assignable to other parties.

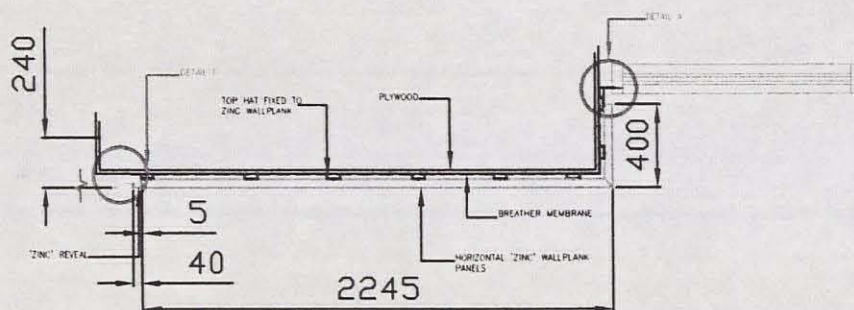
CGL Systems
2 Young Place
Kelvin Industrial Estate
East Kilbride
Glasgow G75 0TD
Tel: 01355 235561
Fax: 01355 247189
Email: sales@cglsystems.co.uk
Web: www.cglsystems.co.uk

CGL[®] SYSTEMS
Weather Protection Products

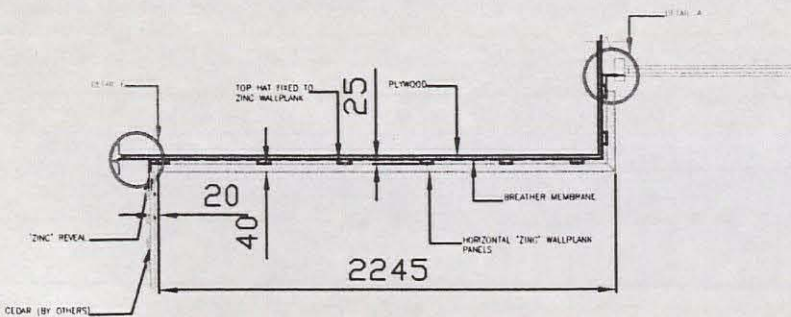


PART VIEW ON ARROW 'A'

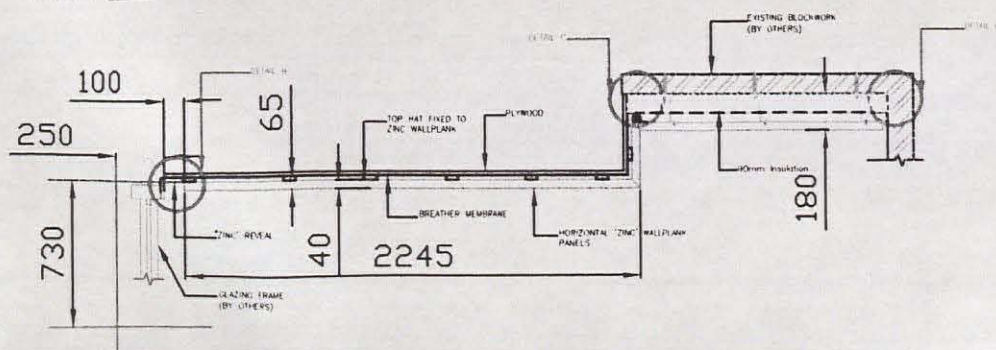
SOUTH ELEVATION
SCALE 1:50



DETAIL A-A
SCALE- NTS



DETAIL B-B
SCALE- NTS



DETAIL C-C
SCALE- NTS

AS BUILT

REVISOR TO SUIT ARCHITECTS COMMENTS
REVISED TO SUIT SITE HEADLINE / ARCHITECTS COMMENTS
UPDATED TO SUIT ARCHITECTS COMMENTS
ELEVATION LAYOUT ALTERED TO SUIT SITE HEADLINE, REVEALED PLAN LAYOUTS
ALTERED IN LINE WITH ARCHITECTS COMMENTS AND SOUTH ELEVATION ALTERED



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FAX 01709 - 570730
WEB SITE : www.taskcontracts.com

JOB TITLE:

WAKEFIELD WATERFRONT

DRAWING TITLE:

PROPOSED ELEVATION/DETAILS

SHEET NO. 1 OF 12

SCALE DRAWN BY DATE CHECKED BY

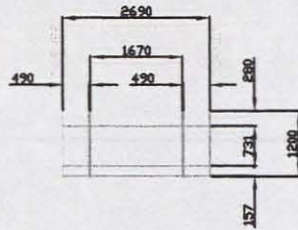
G J B JULY 08

JOB NO. DRAWING NO. REVISION

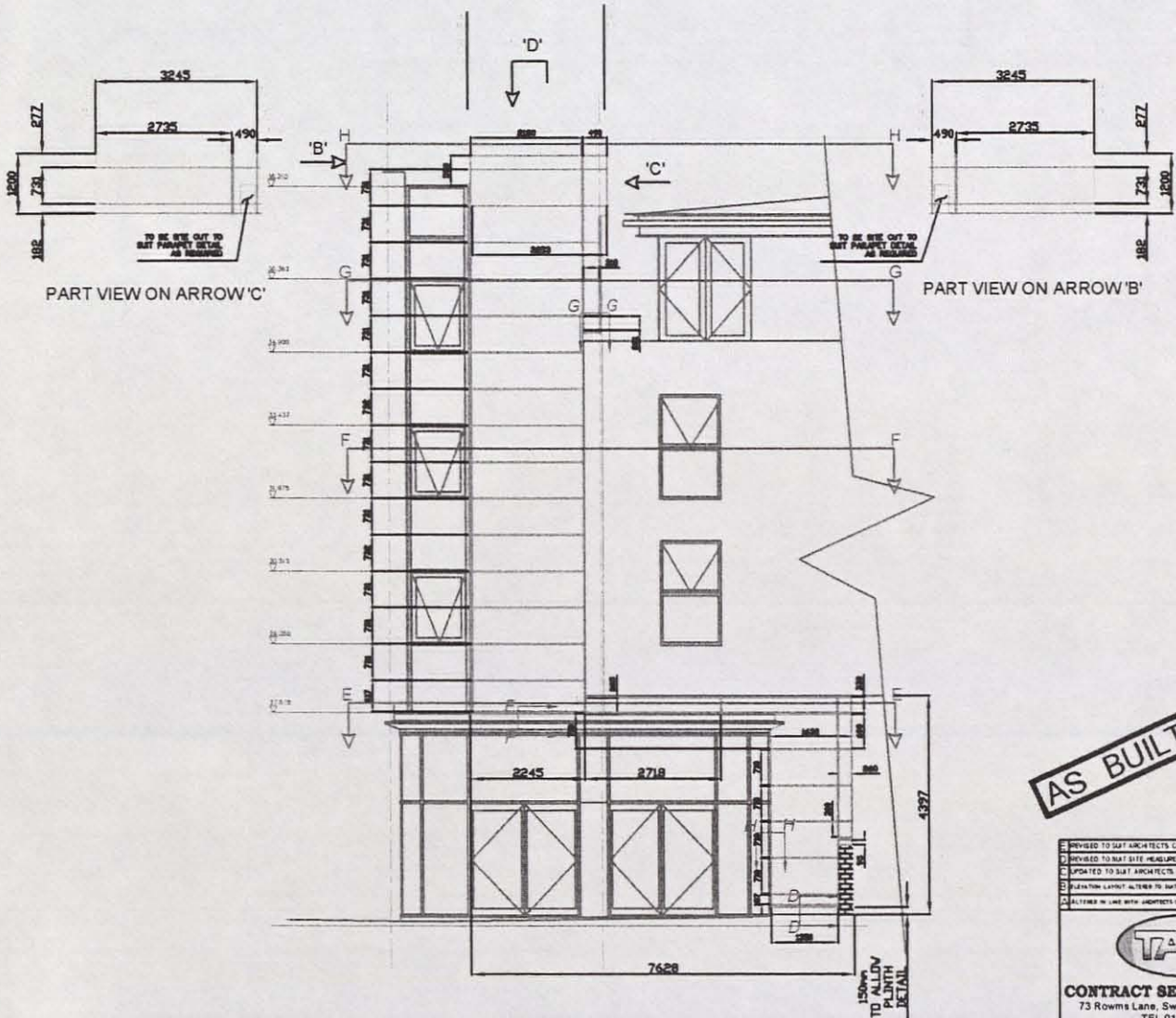
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PART REAR VIEW ON ARROW 'D'



AS BUILT

E. REVISED TO SAT ARCHITECTS COMMENTS
 D. REVISED TO SAT SITE MEASURE / ARCHITECTS COMMENTS
 C. UPDATED TO SAT ARCHITECTS COMMENTS
 B. EXISTING LAYOUT ALTERED TO SAT SITE MEASURE, DETAILLED PLAN LAYOUT
 A. ALTERED TO SAT ARCHITECTS COMMENTS

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PROPOSED ELEVATION/DETAILS

SHEET NO. 2 OF 12

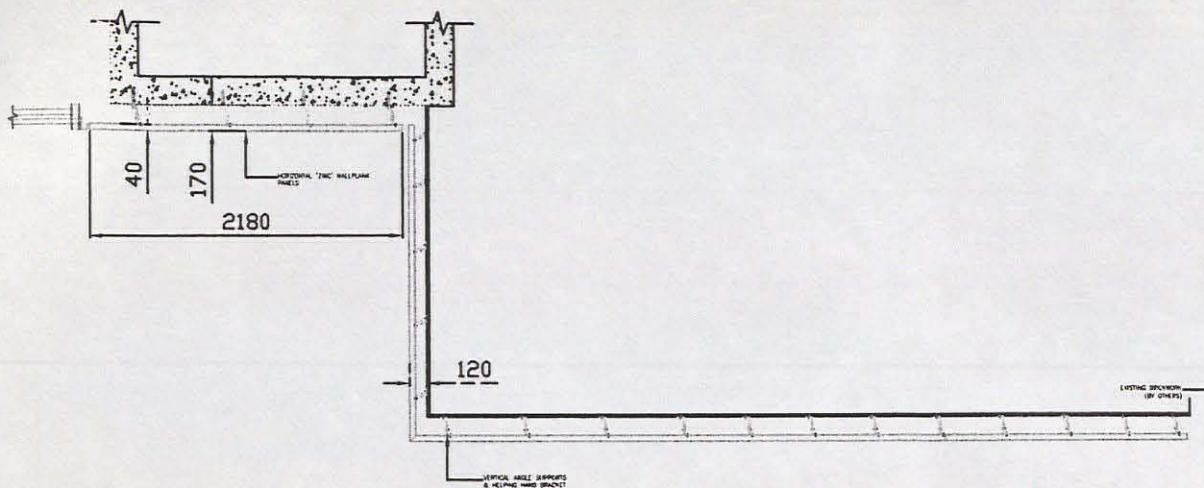
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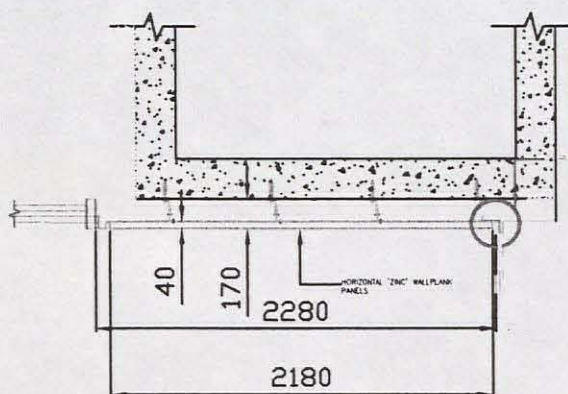
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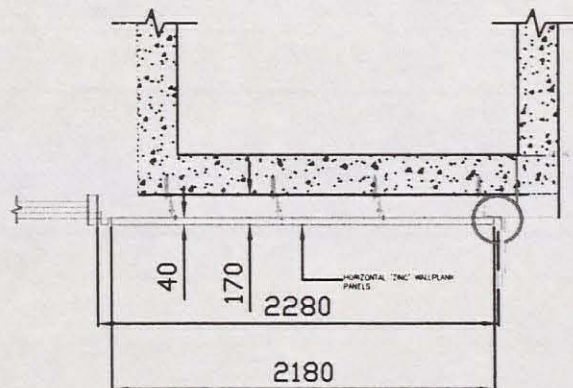
NORTH ELEVATION
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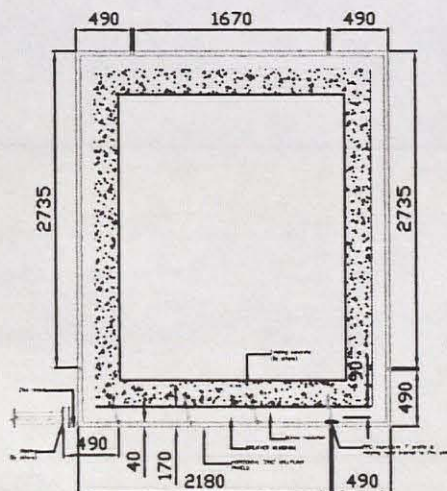
Scale - NTS
Detail E-E



Scale - NTS
Detail F-F



Scale - NTS
Detail G-G



Scale - NTS
Detail H-H

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**PROPOSED NORTH
ELEVATION PLAN DETAILS**

SHEET NO. 3 OF 12

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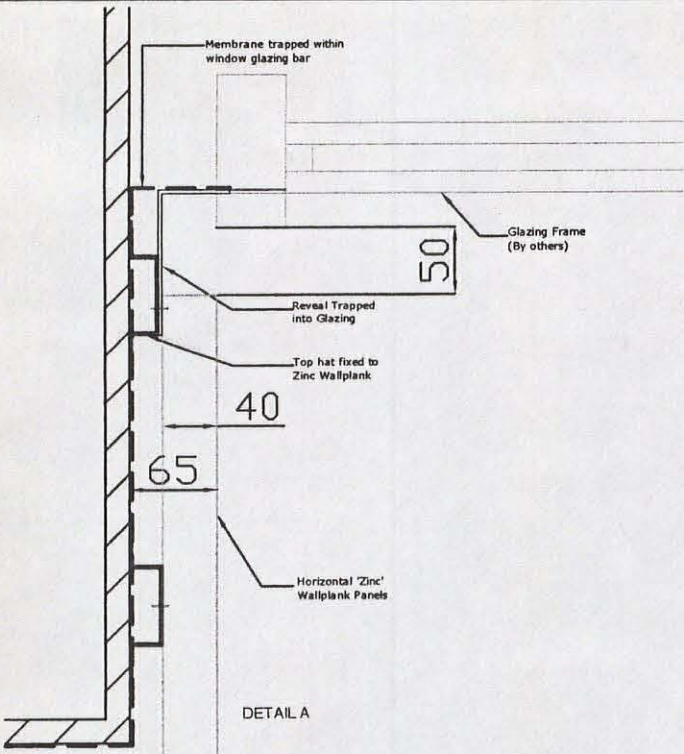
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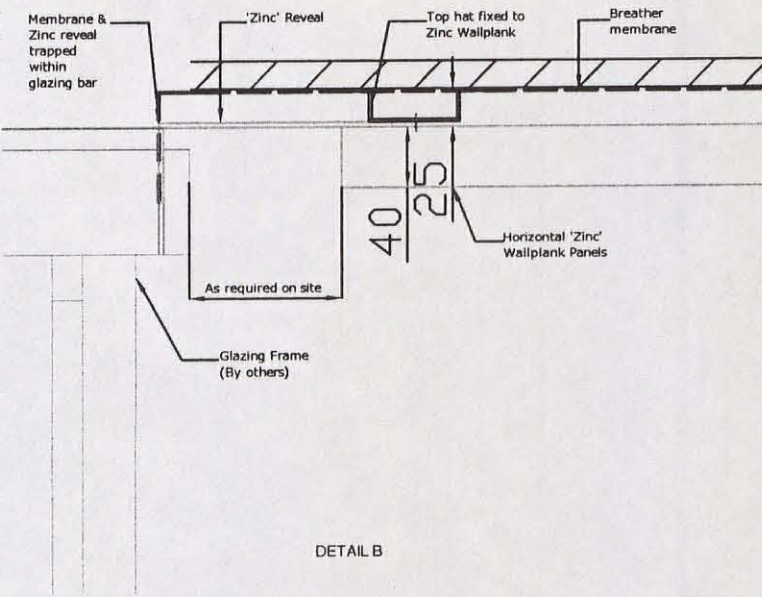
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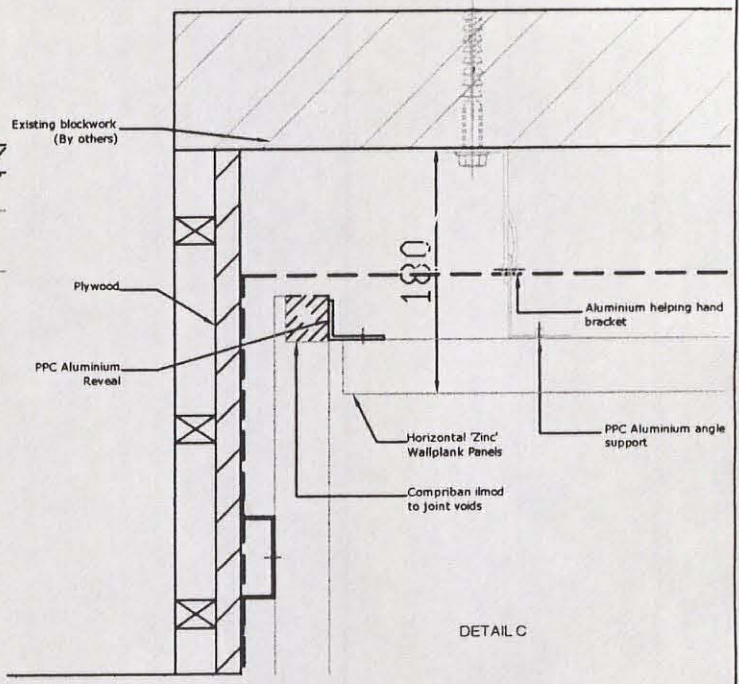
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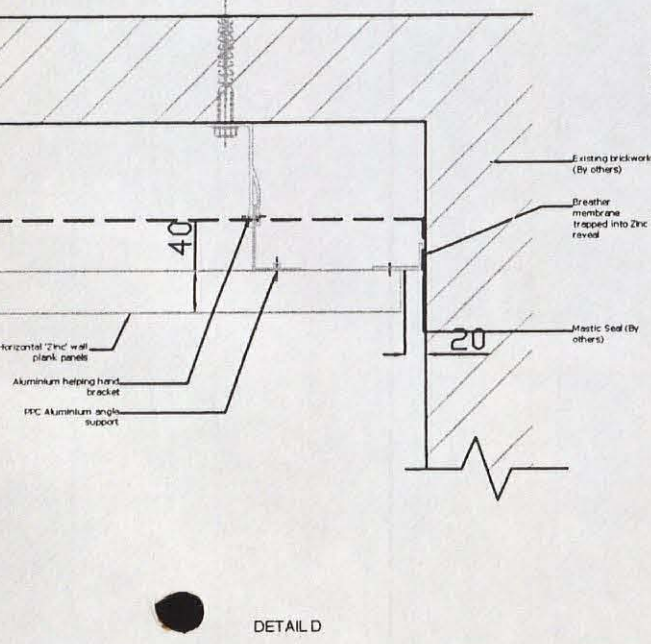
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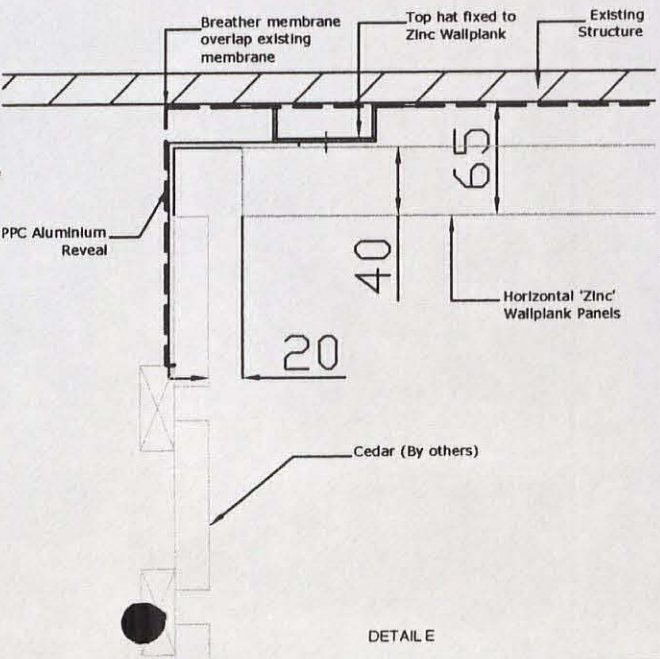
DETAIL B



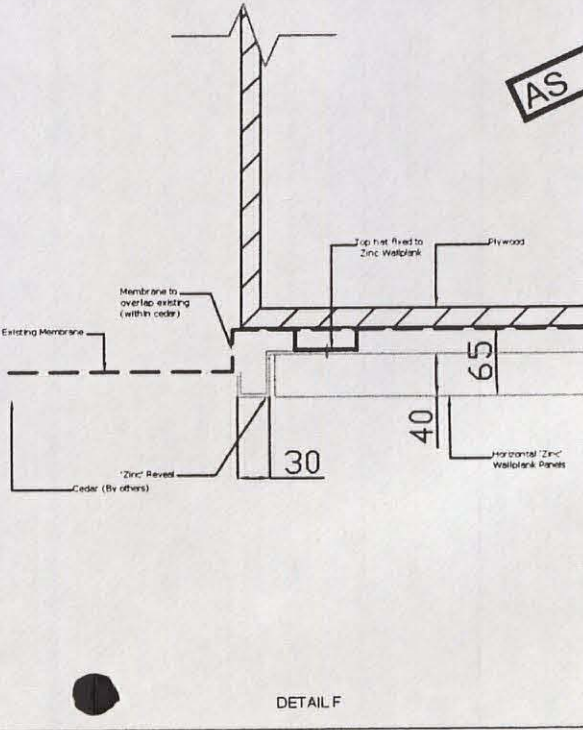
DETAIL C



DETAIL D



DETAIL E



DETAIL F

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A. UPDATED TO SUIT ARCH TEXT COMMENTS			
			
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CGL 'ZINC' RAINSCREEN CLADDING

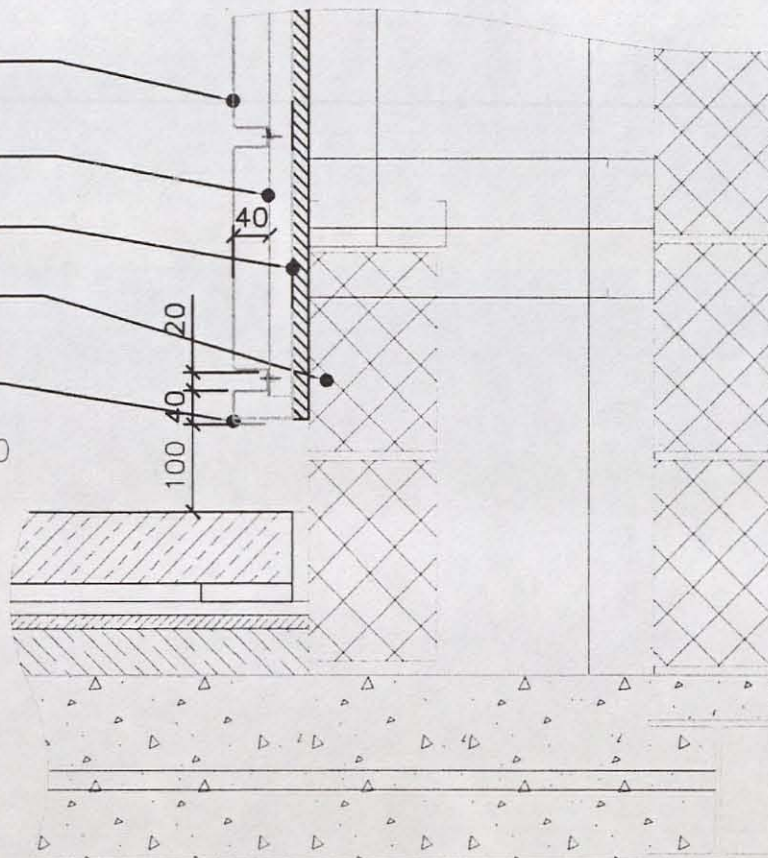
ALUMINIUM TOP HAT

BREATHER MEMBRANE

EXISTING BLOCKWORK (BY OTHERS)

ZINC CILL FLASHING &
VENT PROFILE

EFL 25.000



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DETAIL A-A

SHEET NO. 5 OF 12

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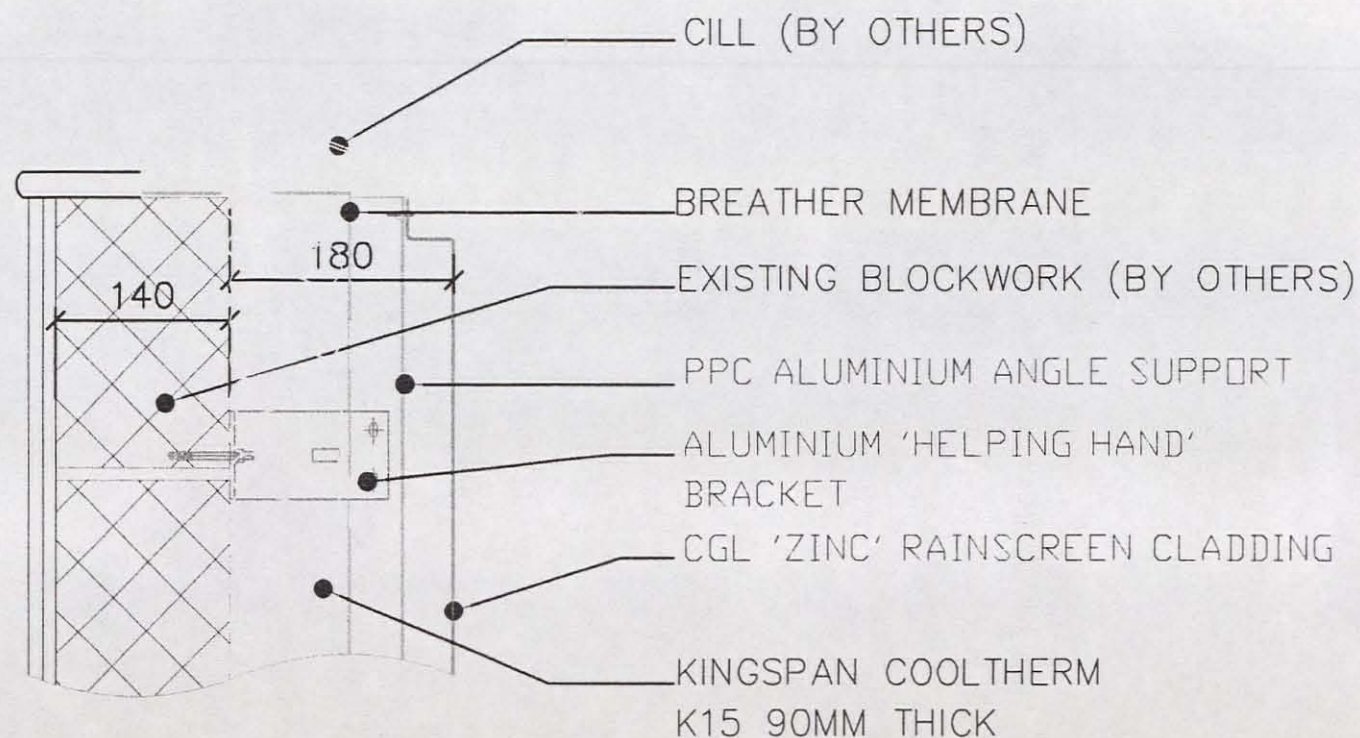
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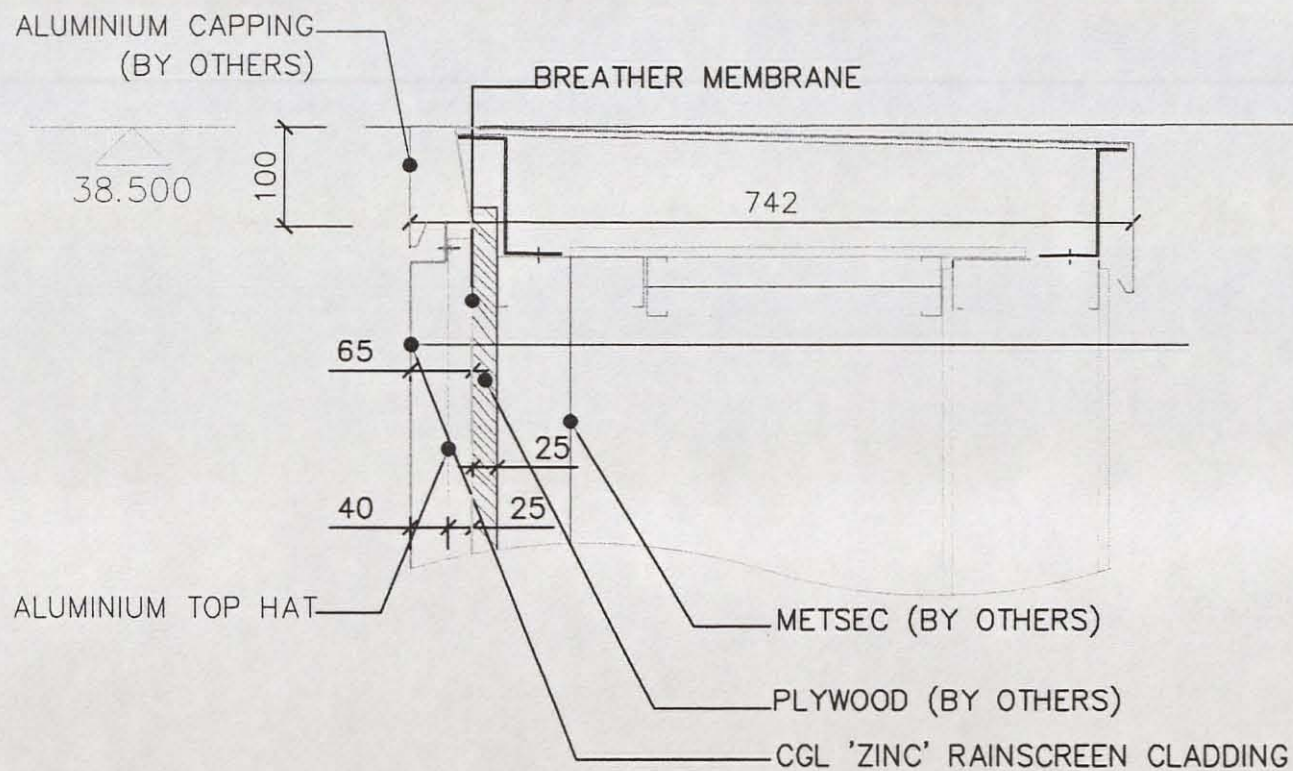
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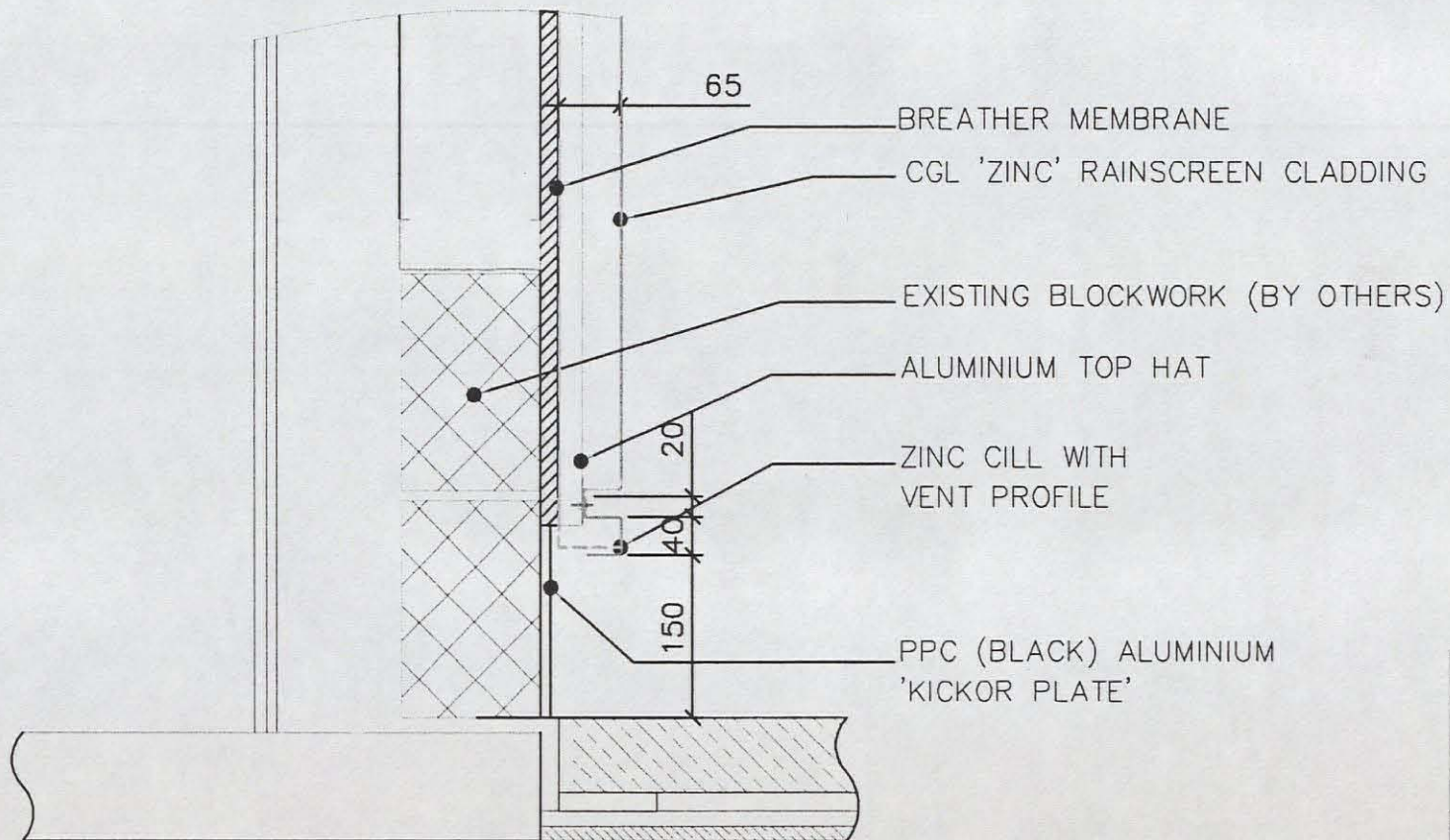
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DETAIL C-C			
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JOB TITLE

WAKEFIELD WATERFRONT

DRAWING TITLE
 DETAIL D-D

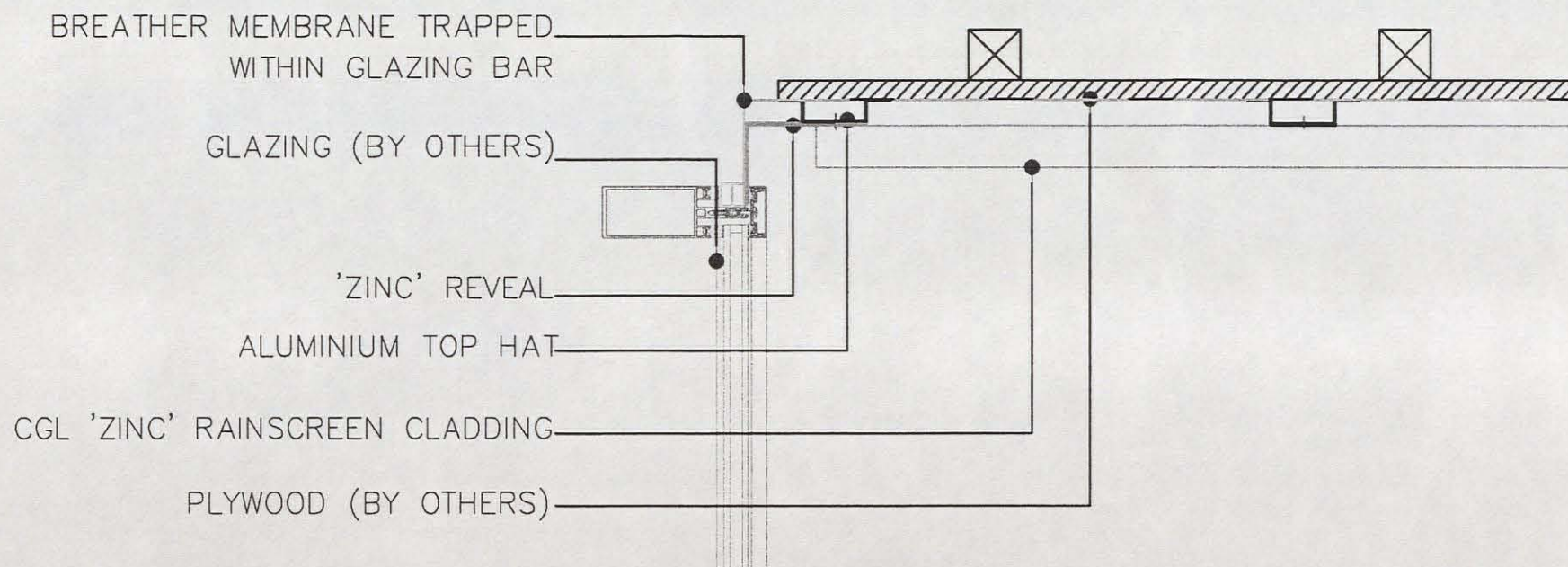
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JOB TITLE:
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DRAWING TITLE:
DETAIL H - H

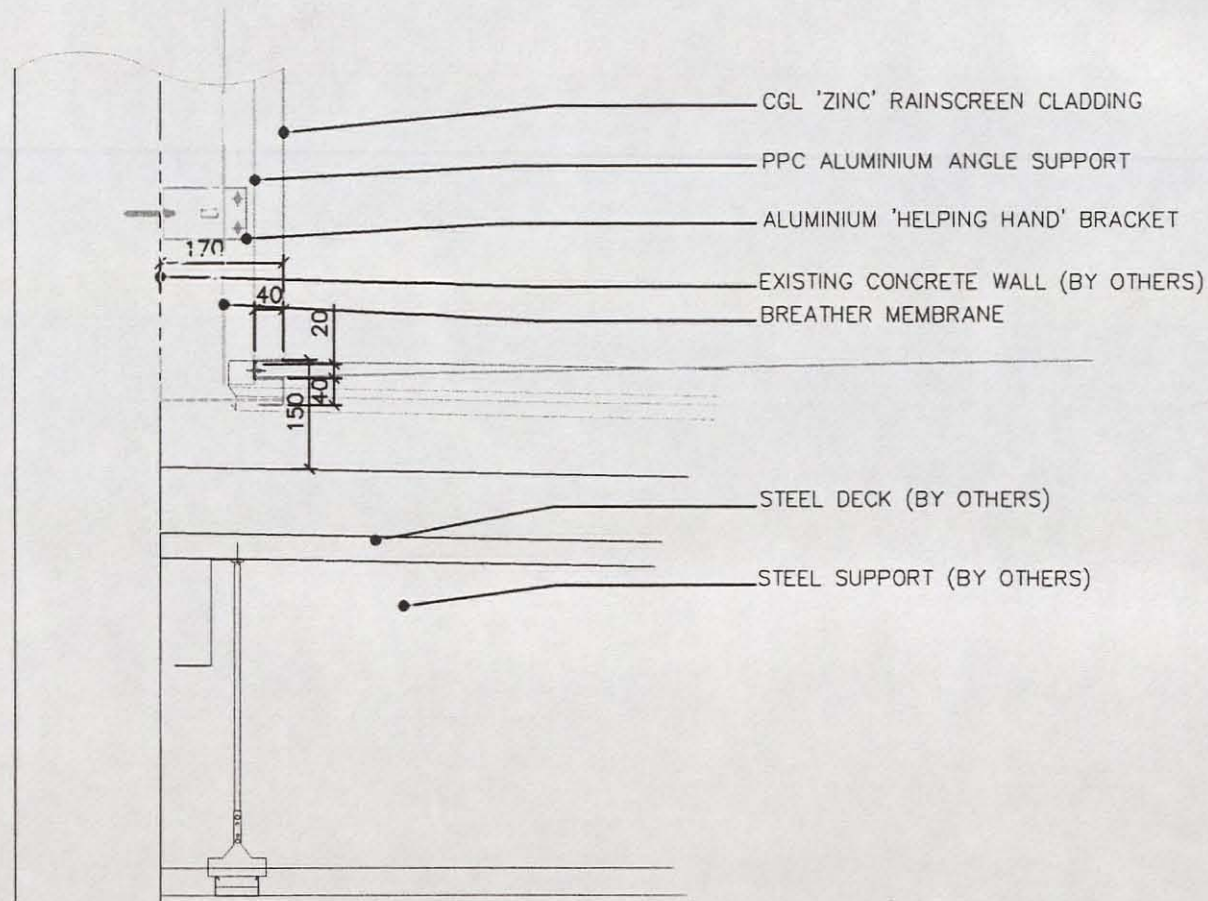
SHEET NO. 9 OF 12

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NTS	GJB	JULY-08	-

JOB NO.	DRAWING NO.	REVISION
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JOB TITLE

WAKEFIELD WATERFRONT

DRAWING TITLE

DETAIL F-F

SHEET NO. 10 OF 12

SCALE DRAWN BY DATE CHECKED BY

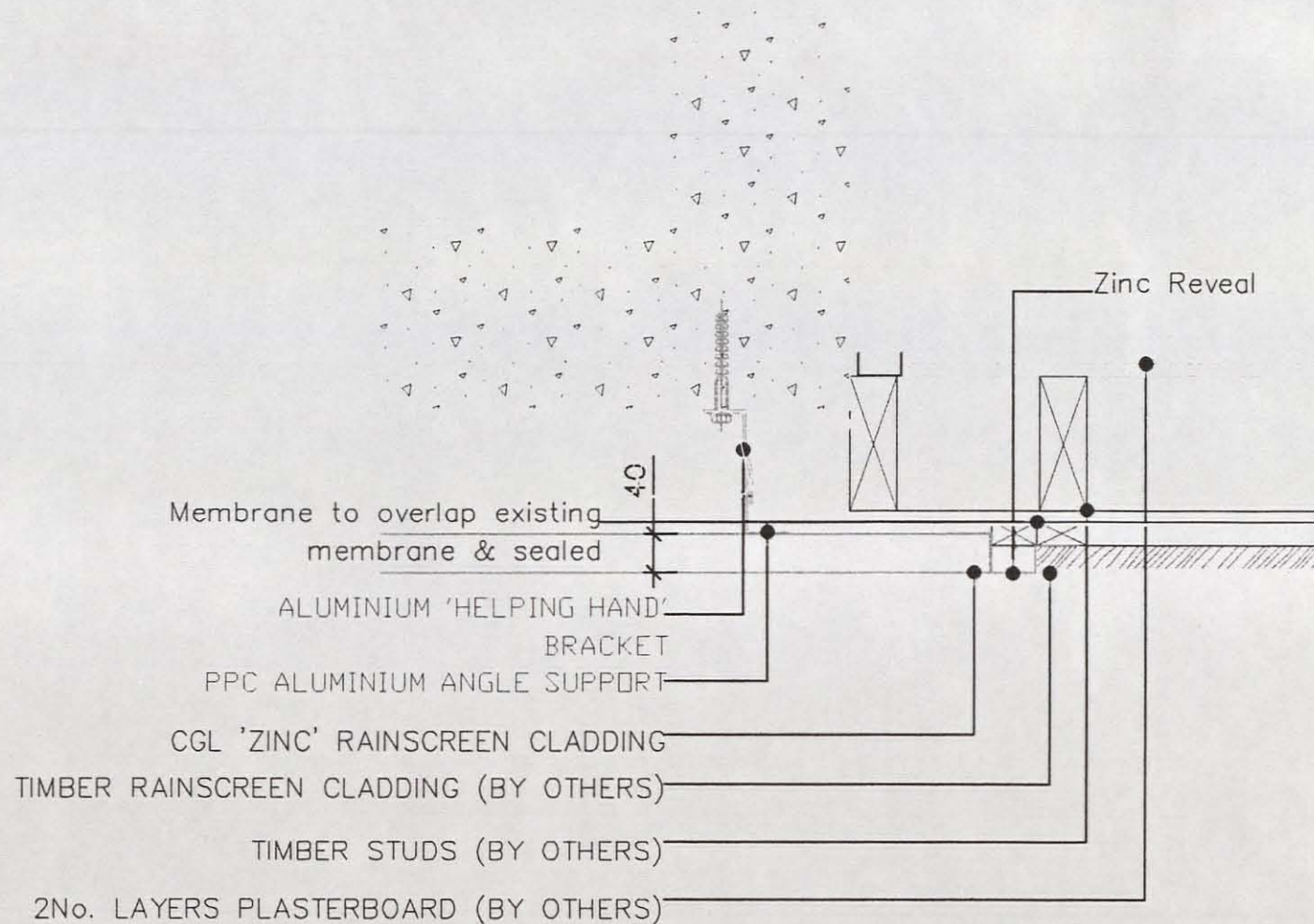
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JOB TITLE:

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DRAWING TITLE:

DETAIL G-G

SHEET NO. 11 OF 12

SCALE DRAWN BY DATE CHECKED BY

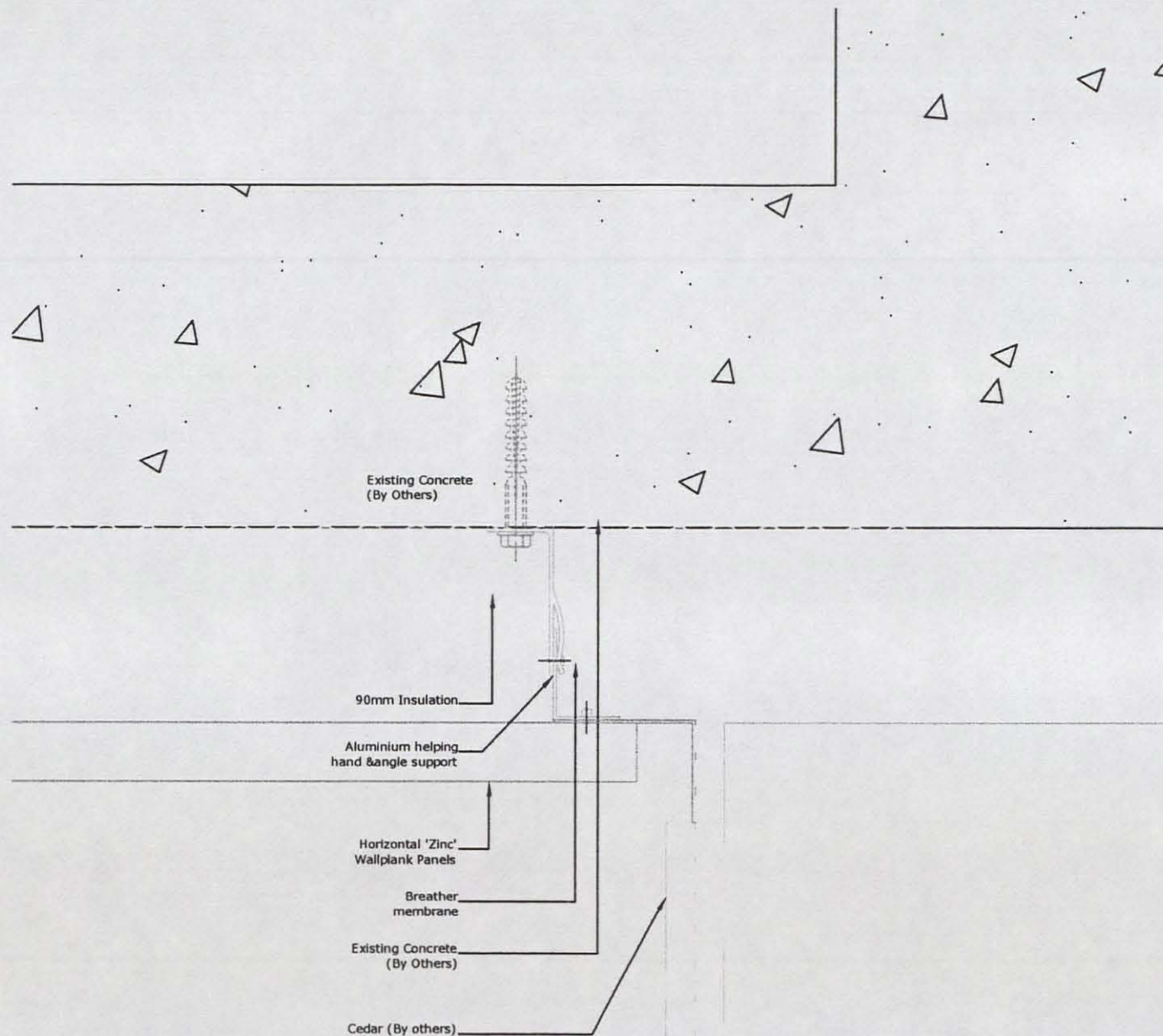
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JOB TITLE:

WAKEFIELD WATERFRONT

DRAWING TITLE:

DETAIL H

SHEET NO. 11 of 12

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2.44 Van Elle Piling

- Piling

Kirby Lane

Pinxton

Nottinghamshire

NG16 6JA

Tel 0177 358 0580

Fax 0177 386 2100

Contact Mr Chris Downs

Our ref: P61034

30 April 2008

For the attention of D Shaw

Quarmby Construction Company Ltd
2 Grove Promenade
Ilkley
West Yorkshire
LS29 8AF

Dear Sirs

Re: Wakefield Waterfront, Hebble Wharf

Further to your letter sent 23 April 2008 regarding the above site, I have enclosed a copy of the following:

- Static Load Testing Report for July 2007 ✓
- Pile logs dated 21 June 2007 to 10 July 2007 ✓ Bldg 18 & 19.
- Pile logs dated 2 April 2007 to 13 April 2007 ✓ - Bldg 20
- Pile Integrity reports for April & May 2007 and August 2007 ✓

If you require any further information please do not hesitate to contact me.

Yours faithfully
VAN ELLE - PILING

Katie Dluzewski

Katie Dluzewski
Contracts Secretary

0114 2463765 - Martin Clewes.
Spoke to re: static test
reports.

QUARMBY CONSTRUCTION	
01 MAY 2008	ACTION
DU / RN / REN	
CONTRACT MAN	
SITE	✓
CUSTOMER CARE	
PLANNING	✓ + D.J.
SUB SERVICES	
INSURANCE	
ACCOUNTS	
CONTRACT	596 FILE 4

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NG16 6JA

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Bldg 20



P61034

PILE INTEGRITY REPORT

Contract : Hebble Wharf, Wakefield

Test Dates : 30 April 2007
3, 5, 15 & 21 May 2007

Job Reference : G70278

Visit Nos. : 1-5

Analysed By:

A. R.

Date:

3/7/7

Issue 01: Rev 00

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PILE INTEGRITY TESTING REPORT

CONTRACT : Hebble Wharf, Wakefield

REF : G70278

1. OBJECT

To integrity test 120 number piles using the low strain sonic echo method and subsequently analyze the data with regard to pile integrity.

2. PILE DETAILS

The piles tested were 400mm diameter CFA Piles, reference numbers to which can be found in Appendix 1:-

3. PILE TESTING

The tests were performed using a highly sensitive accelerometer, a special purpose Pile Integrity Tester with digitizing and graphics capability and a small hand held hammer.

Striking the pile head with a hand held hammer sends a compression wave down the shaft of the pile. Pile discontinuities and the pile toe reflect upward travelling stress waves. Pile head movements caused by the impact stress wave and subsequent reflections are measured by the sensitive accelerometer attached to the pile top. The acceleration signal is converted to velocity and presented as a function of time. For more information refer to Appendix II "Technical Information"

The equipment used for the testing was:

Pile Integrity Tester- Serial No. 2013C

Accelerometer - Serial No.16308

4. RESULTS

For all piles the average of several impact records was analyzed. The averaging technique tends to cancel random signals in any particular blow while amplifying the effects of the relevant repetitive responses.

Where necessary the average record was exponentially amplified affording the possibility to identify relevant low energy reflections.

The records obtained from the piles tested showed no indication of a clear toe signal due to the damping out of the stress wave. This damping effect is caused by a high aspect ratio (length/diameter) and/or soil resistance along the pile shaft.

There was no evidence of any major detrimental impedance changes in any of the records obtained.

In order to determine the depth of any reflection (such as impedance change or pile toe) which is seen in the test records a wave speed must be assumed. It is widely accepted that the speed of the stress wave within the pile can vary resulting in variations in the calculated depth. For the sake of consistency throughout the results a wave speed of 4000m/s has been assumed. Therefore, the calculated depths are expected to be within an accuracy of approximately 10%.

It should be emphasized that full details of the ground conditions, pile and construction method should be considered in confirming the aforementioned interpretation of the test results.

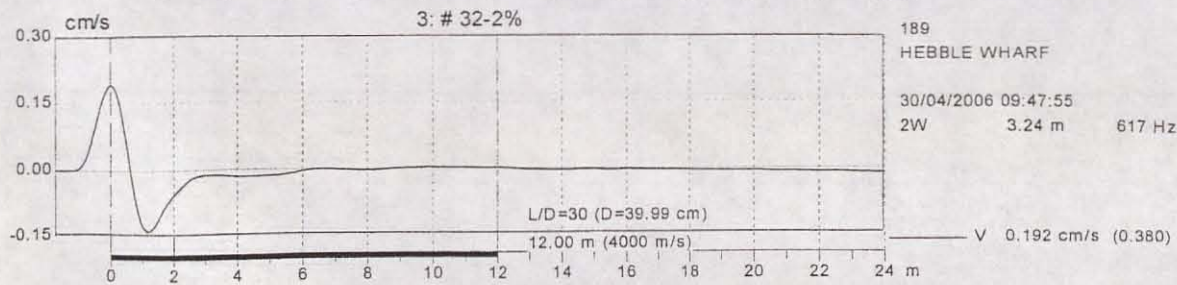
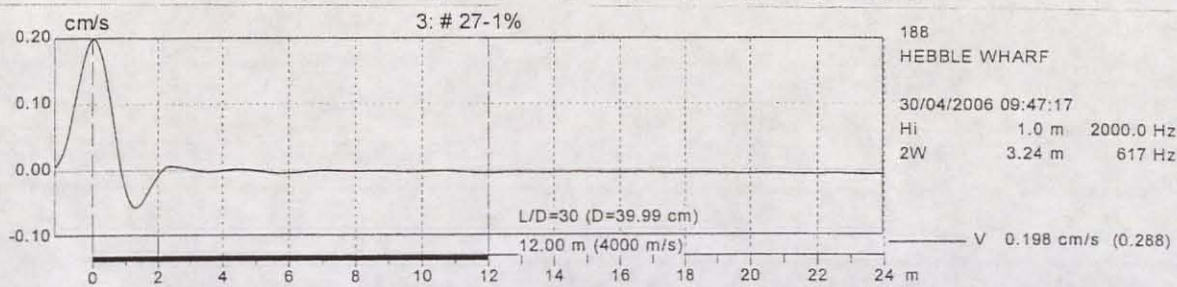
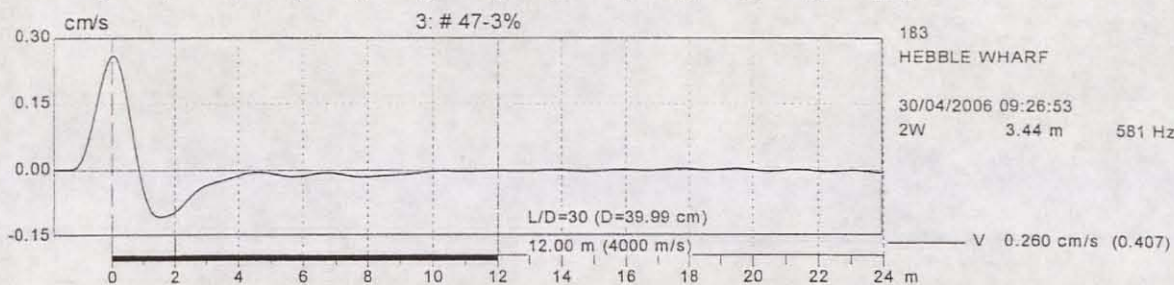
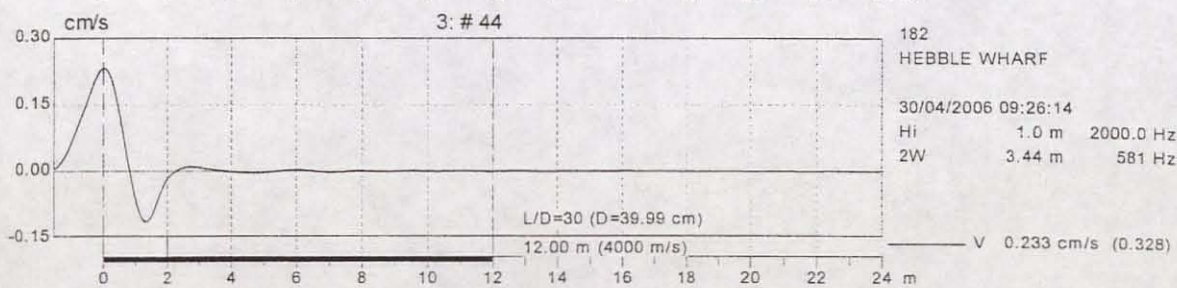
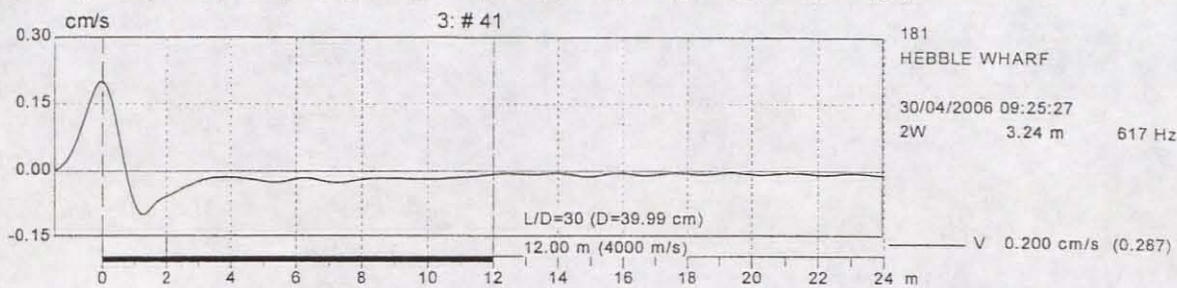
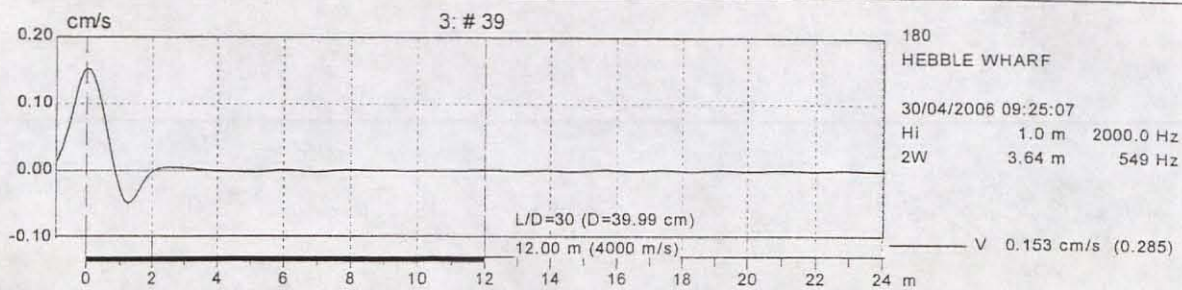
5. CONCLUSION

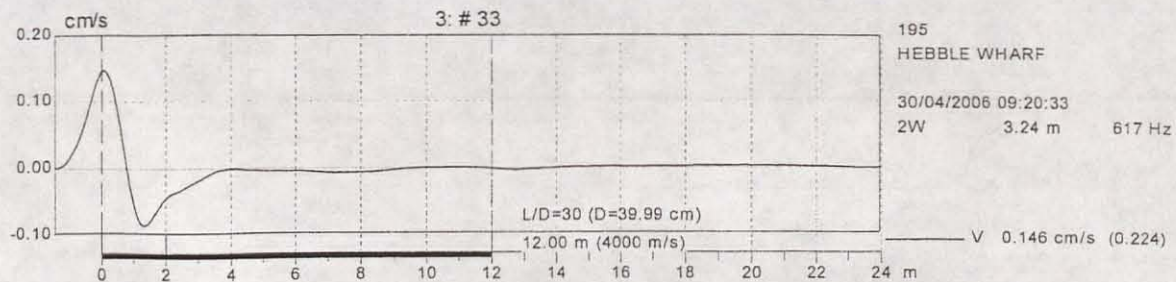
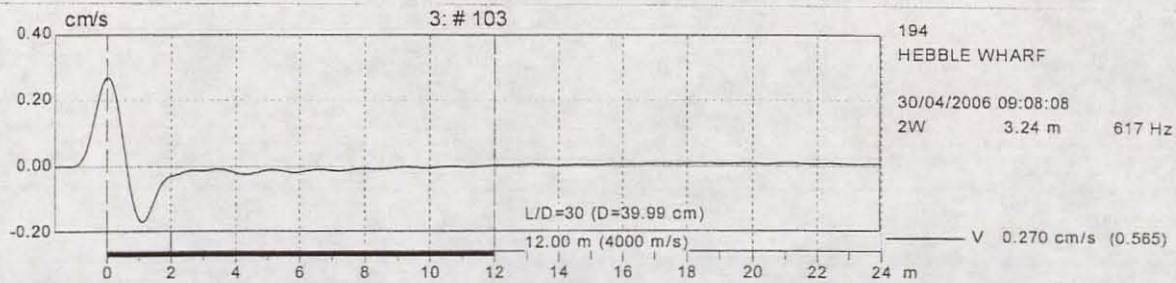
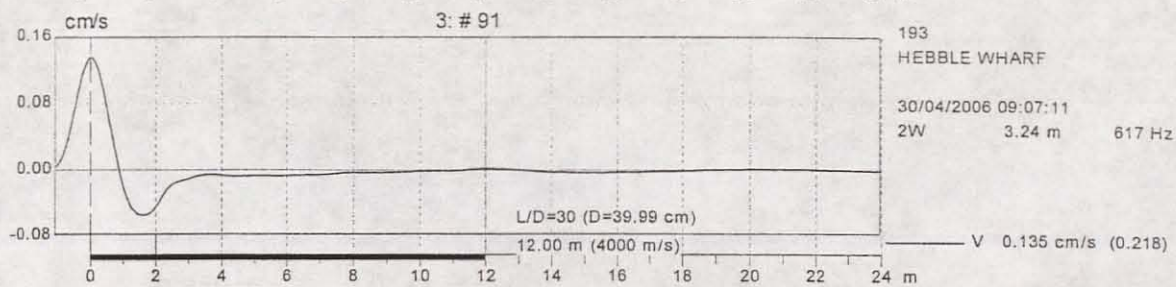
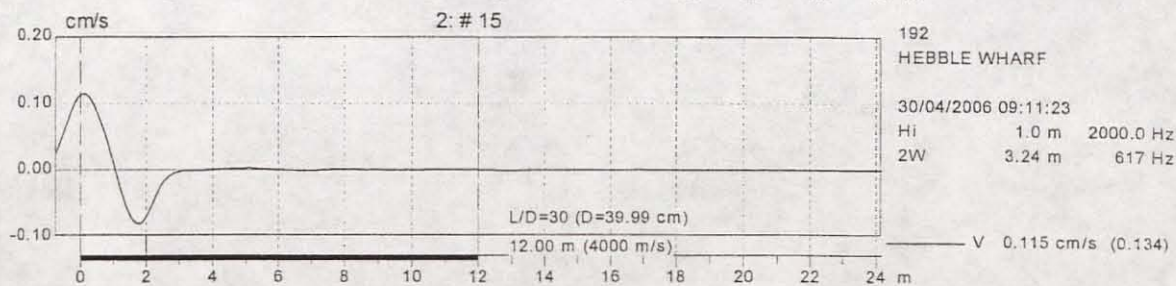
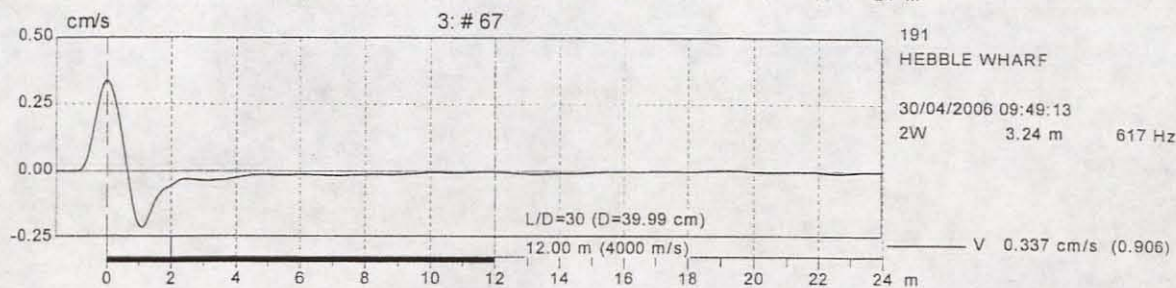
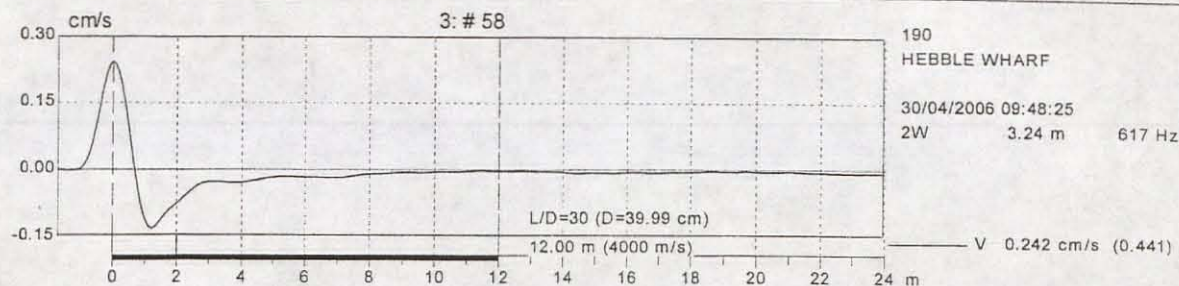
There was no evidence of any major detrimental impedance changes in the records obtained and therefore within the known capabilities of the test they appear satisfactory with no obvious indication of any pile defects.

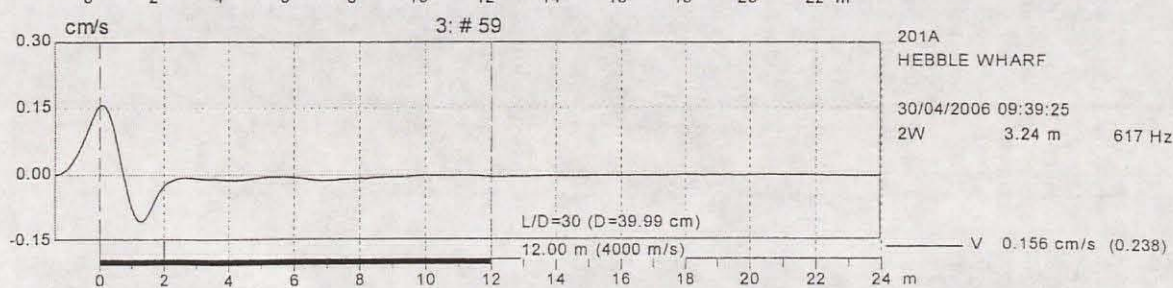
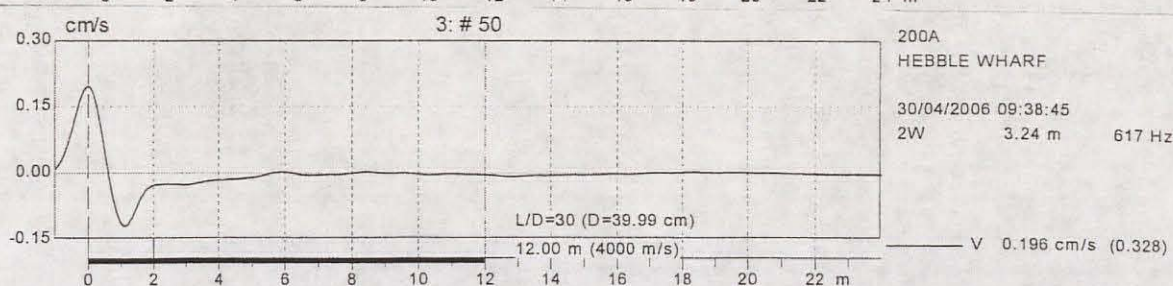
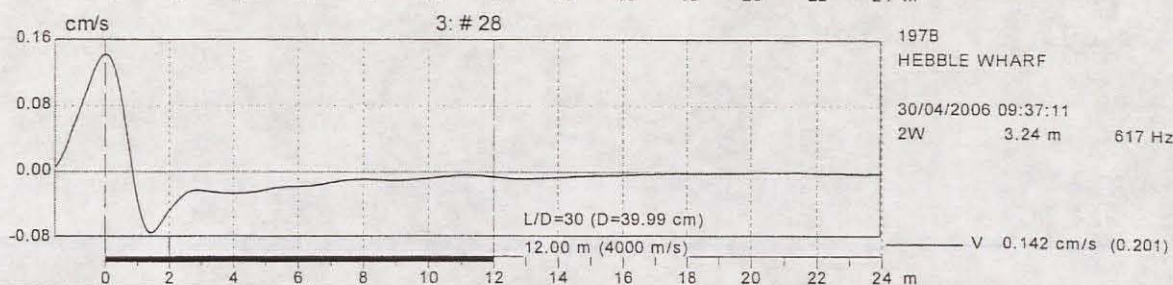
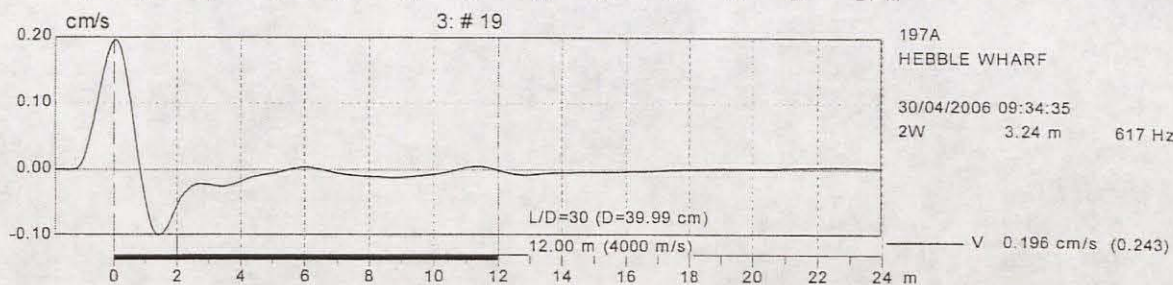
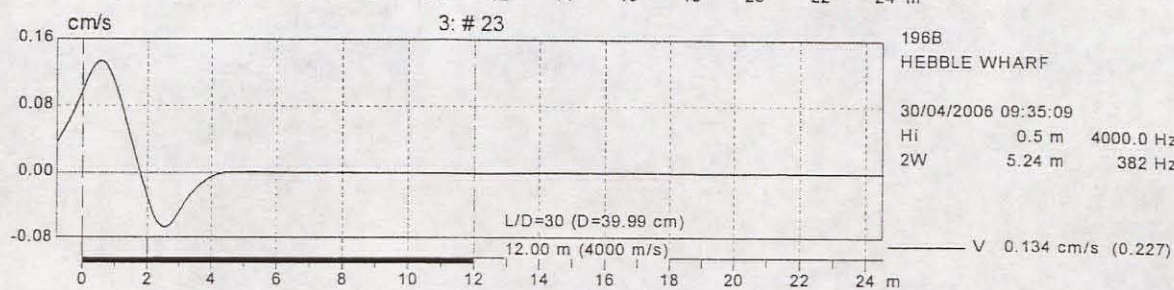
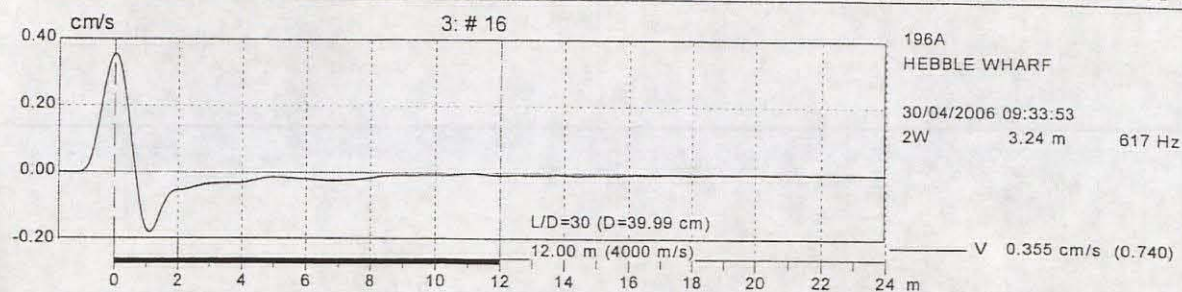
APPENDIX 1- Pile Test Records

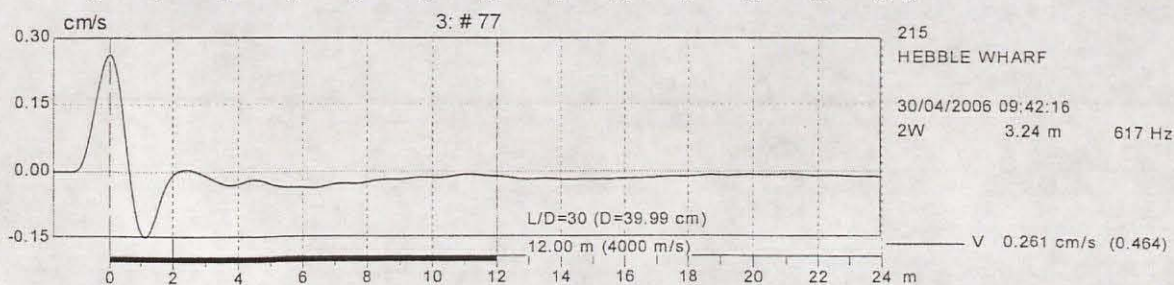
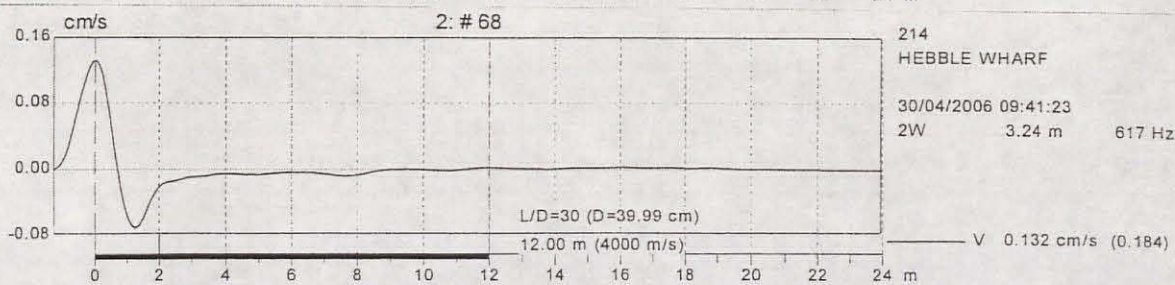
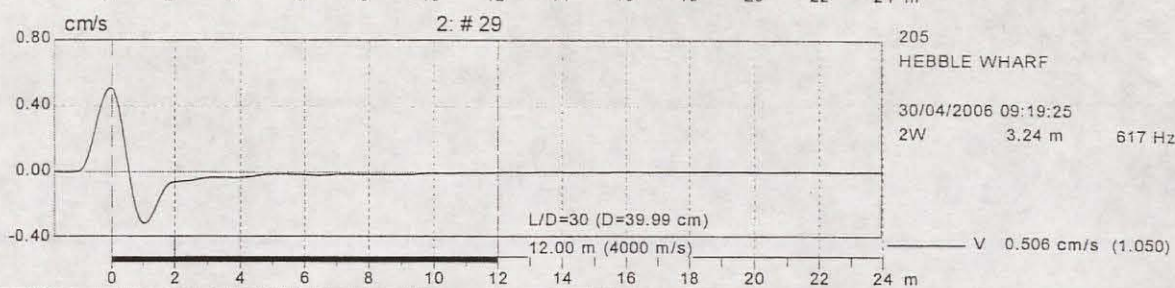
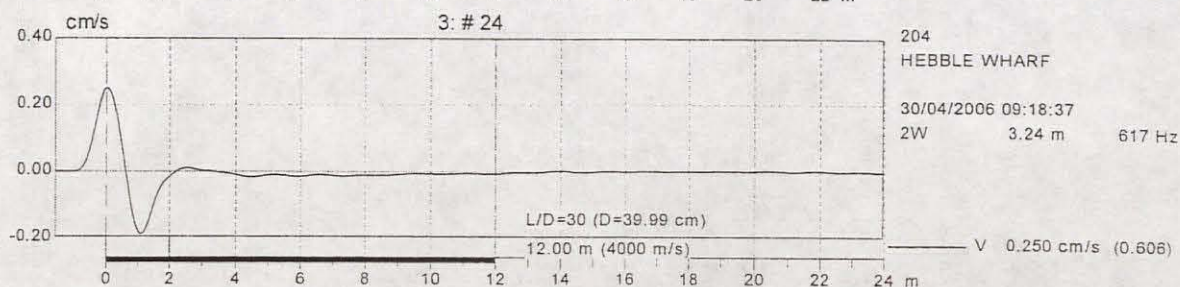
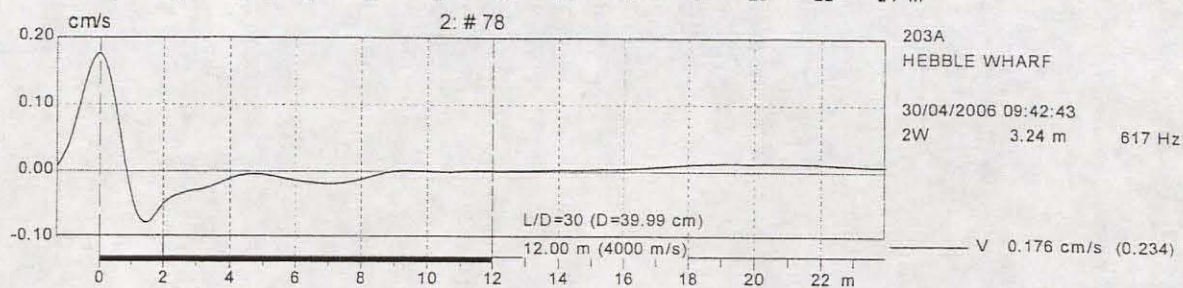
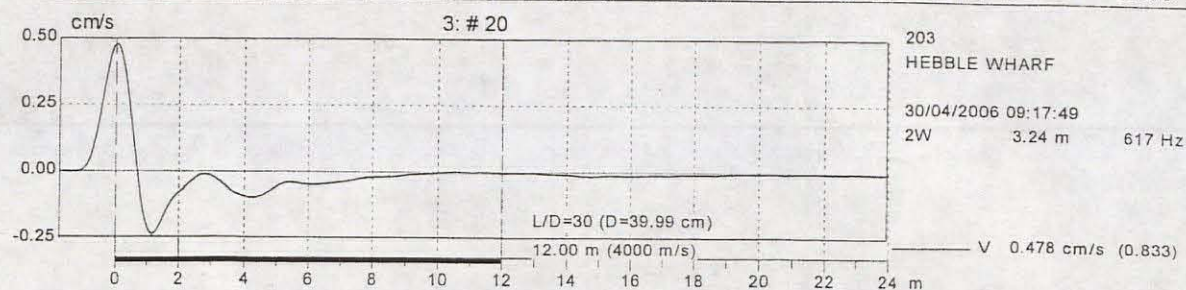
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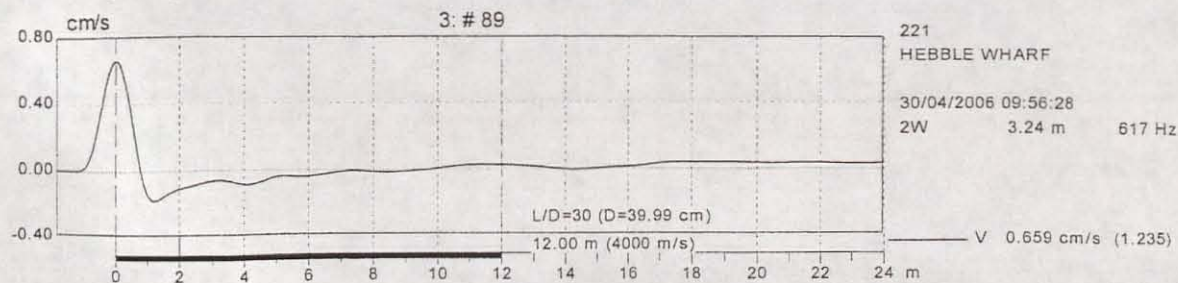
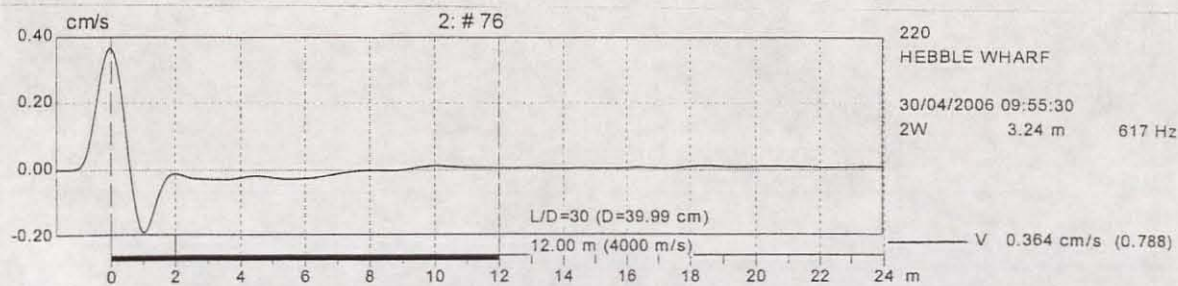
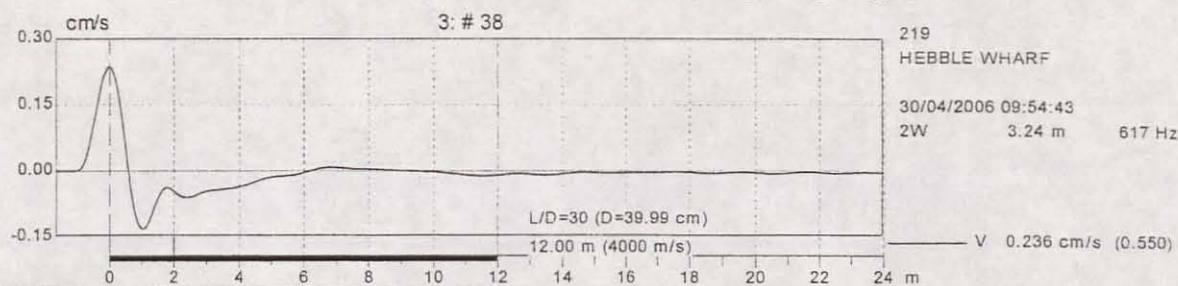
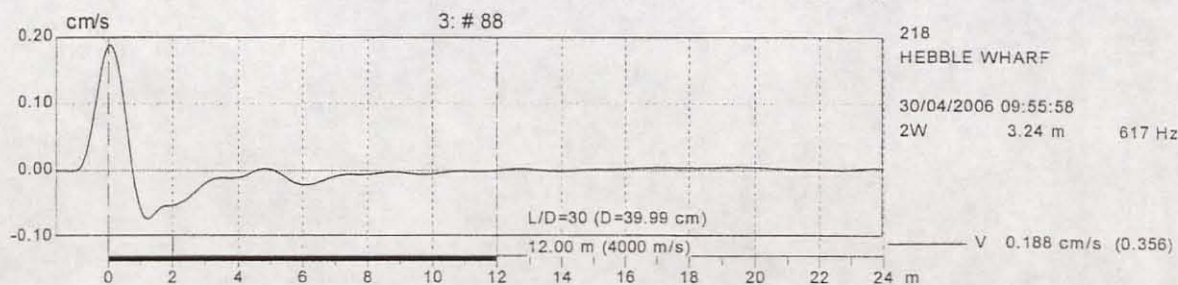
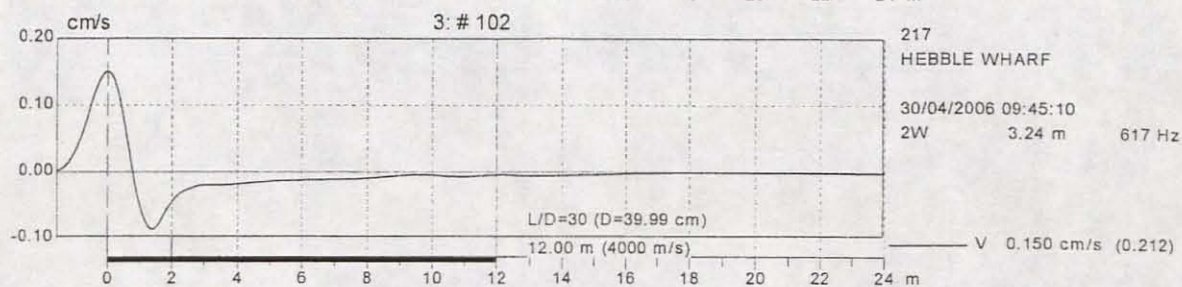
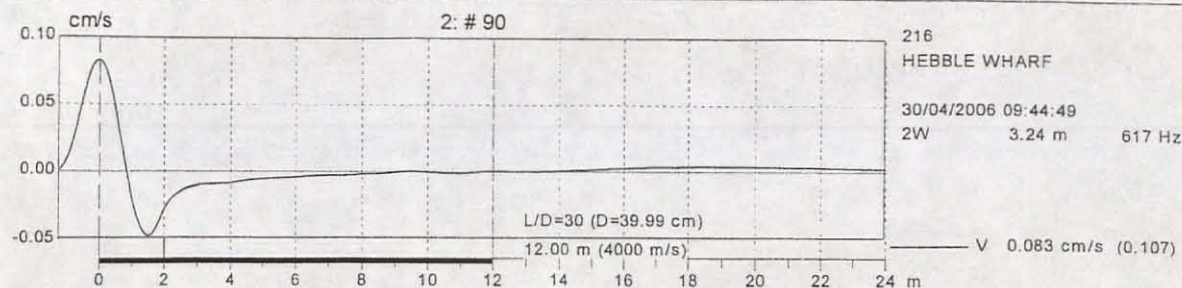
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30/04/2006	HEBBLE WHARF	183	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	188	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	189	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	190	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	191	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	192	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	193	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	194	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	195	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	196A	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	196B	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	197A	SOUND INTEGRITY
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30/04/2006	HEBBLE WHARF	201A	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	203	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	203A	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	204	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	205	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	214	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	215	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	216	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	217	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	218	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	219	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	220	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	221	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	223	SOUND INTEGRITY
30/04/2006	HEBBLE WHARF	224	SOUND INTEGRITY
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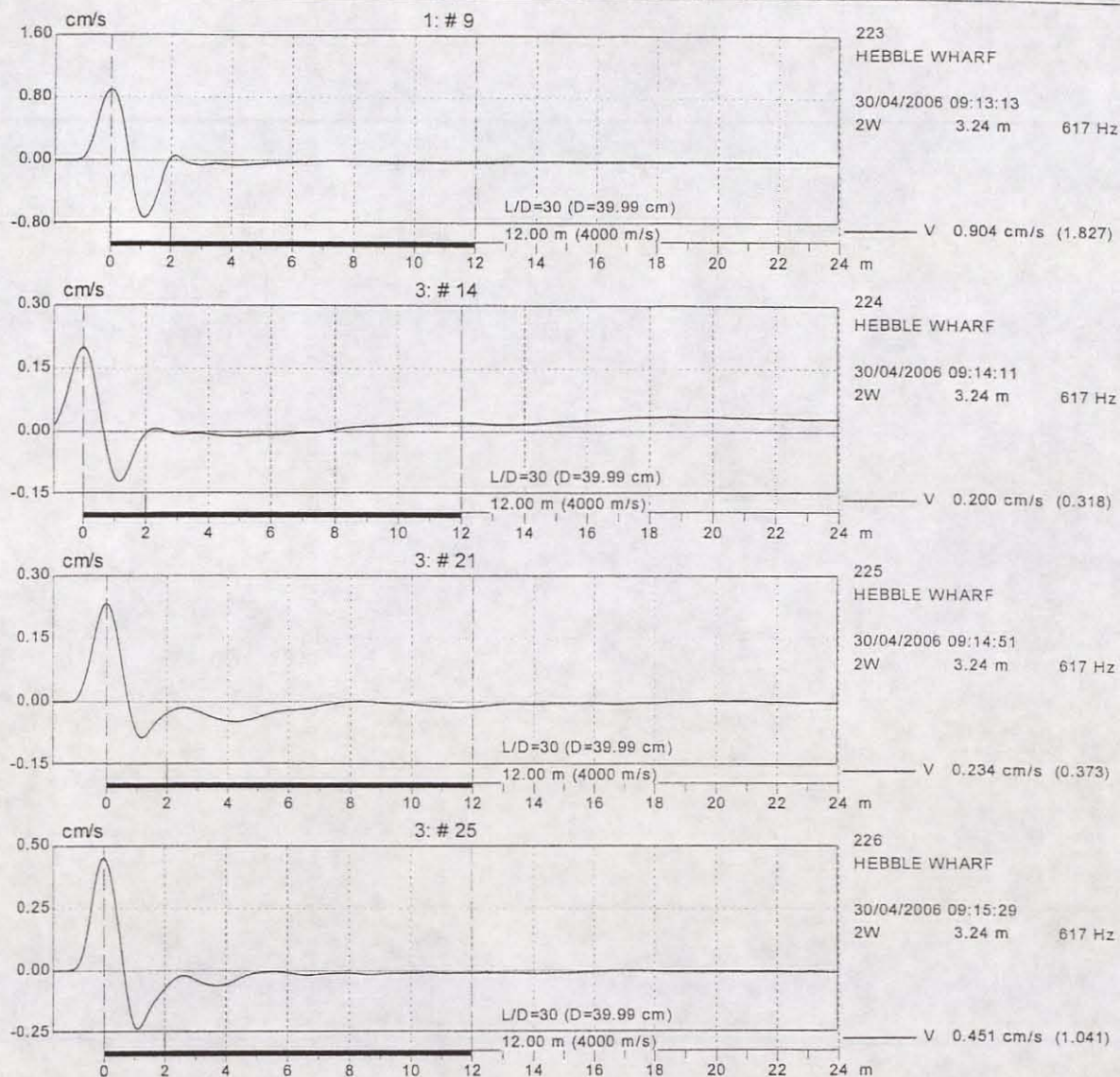












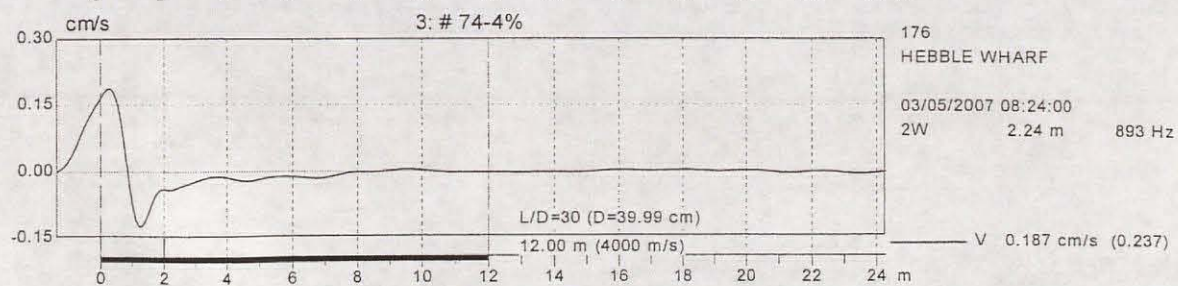
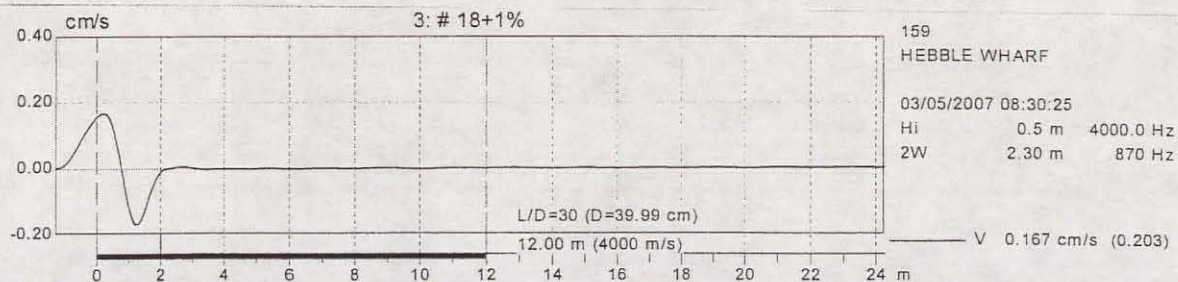
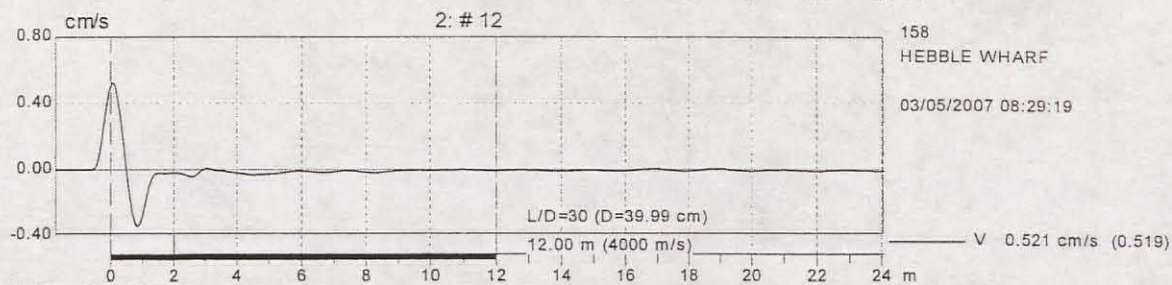
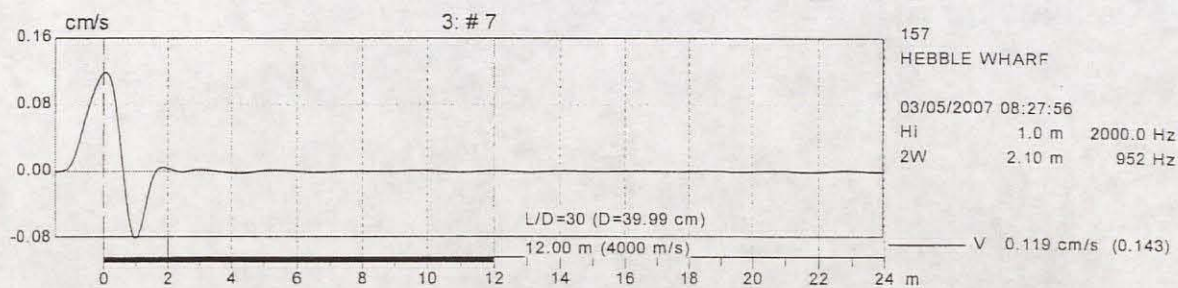
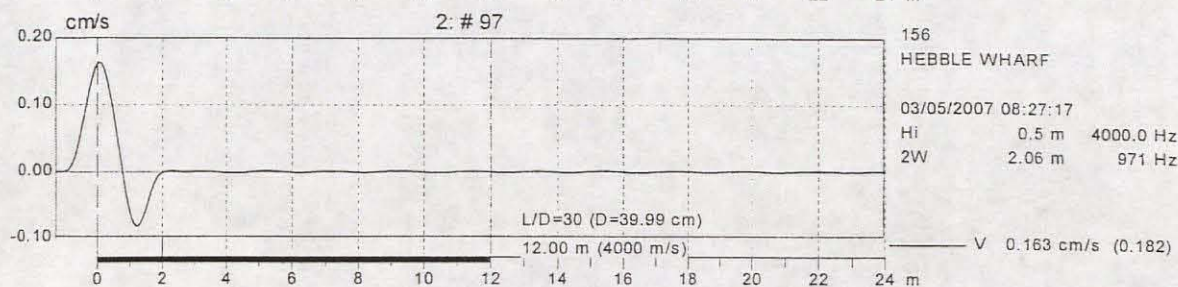
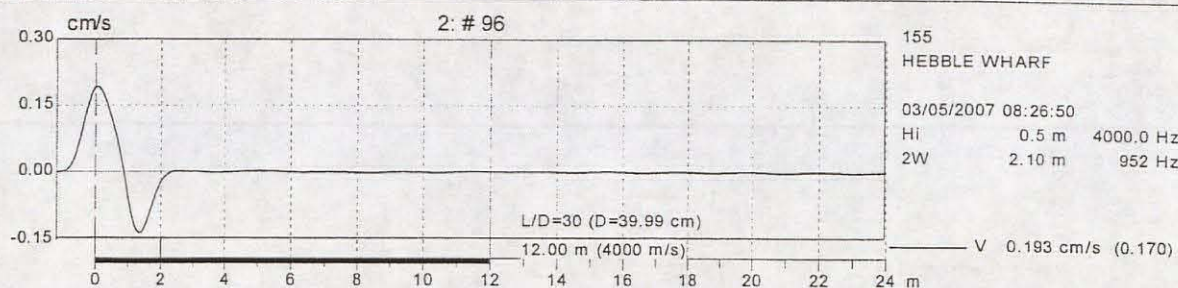
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WAKEFIELD

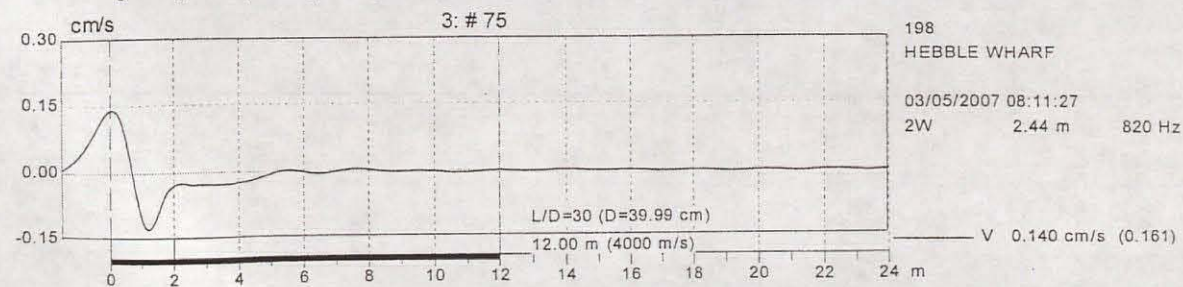
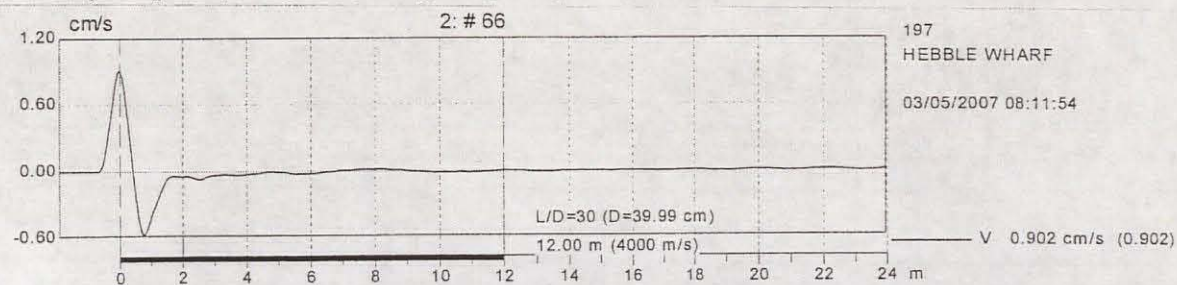
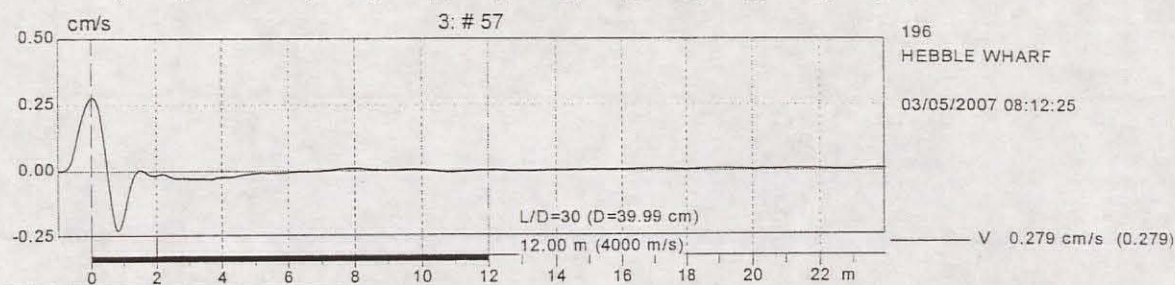
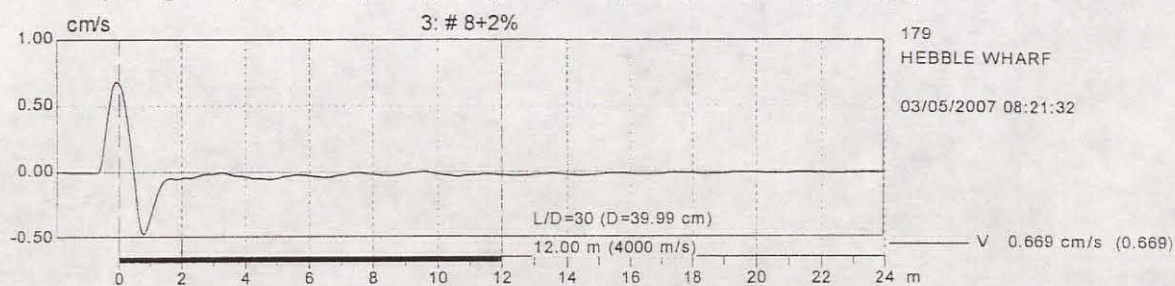
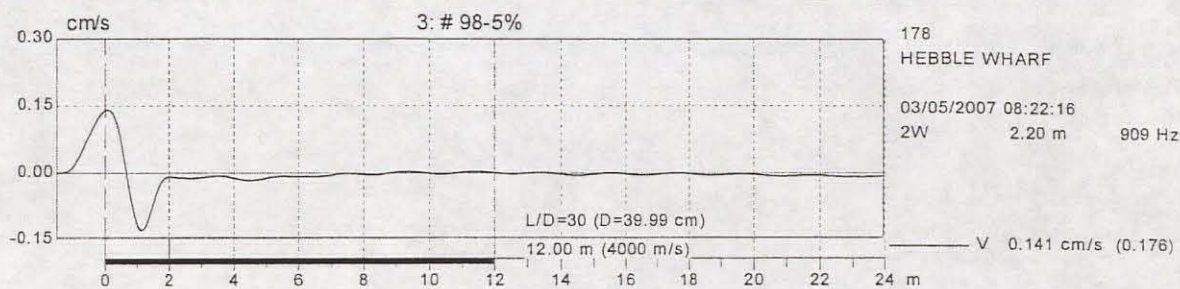
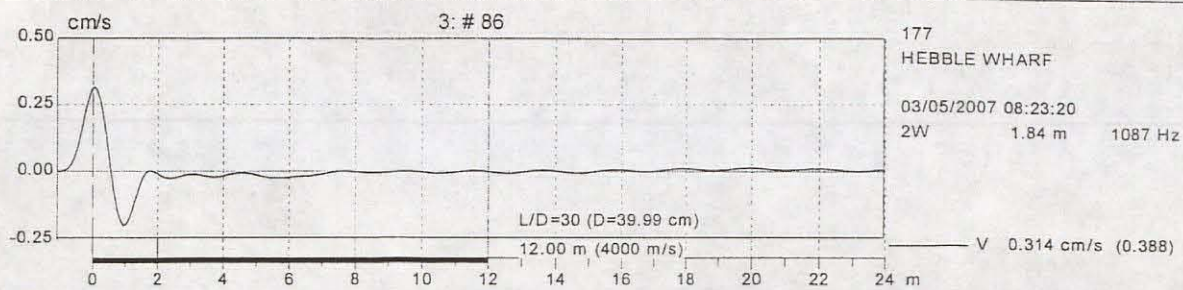
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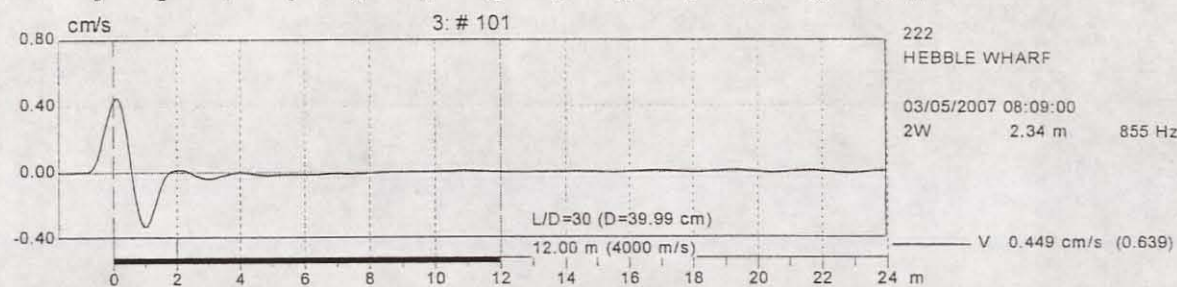
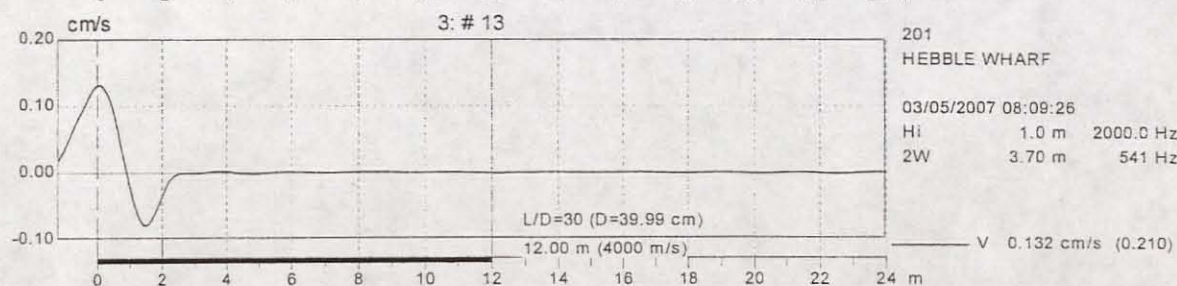
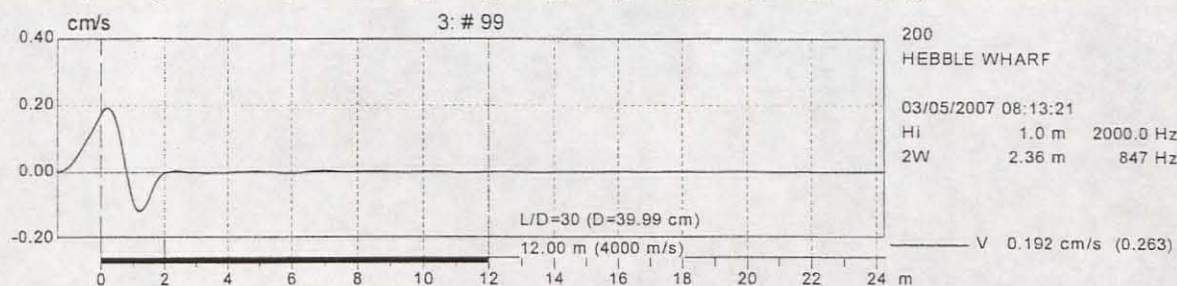
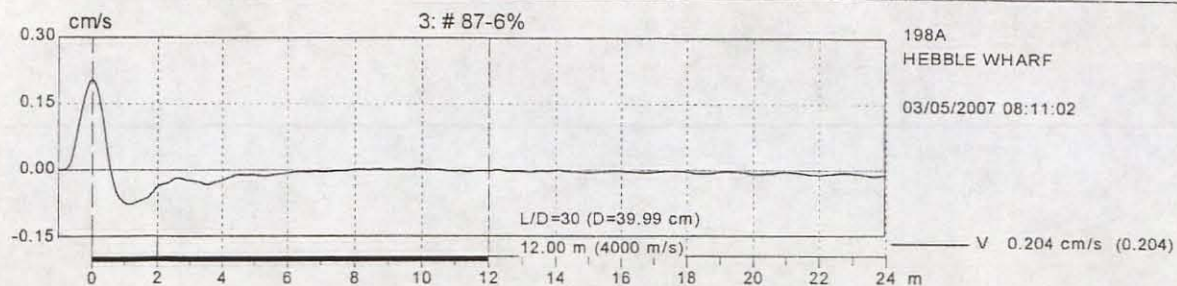
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Summary of Records

Date	Description	Pile	Comments
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03/05/2007	HEBBLE WHARF	156	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	157	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	158	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	159	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	176	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	177	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	178	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	179	SOUND INTEGRITY
03/05/2007	HEBBLE WHARF	196	SOUND INTEGRITY
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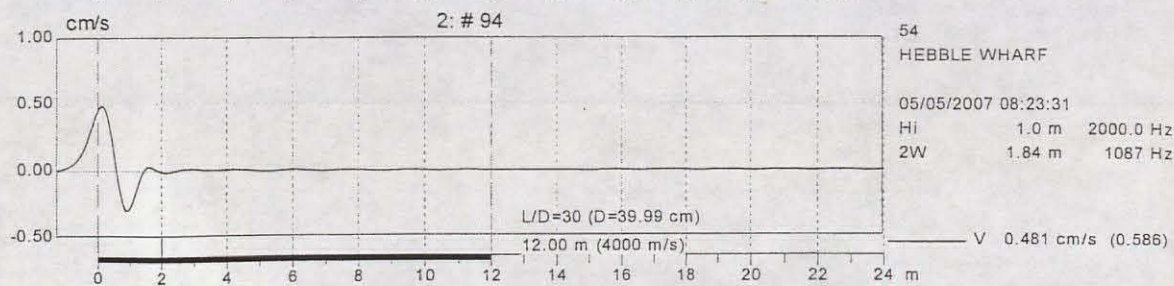
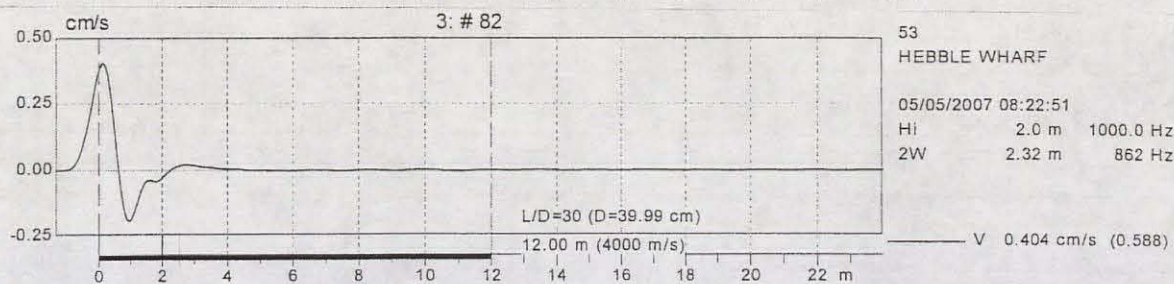
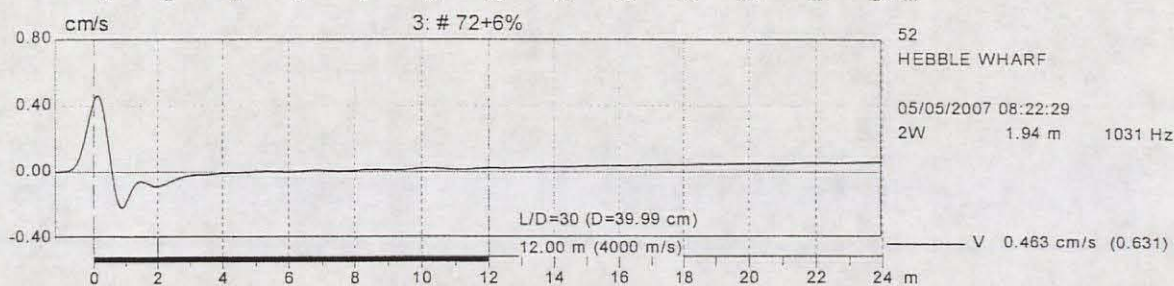
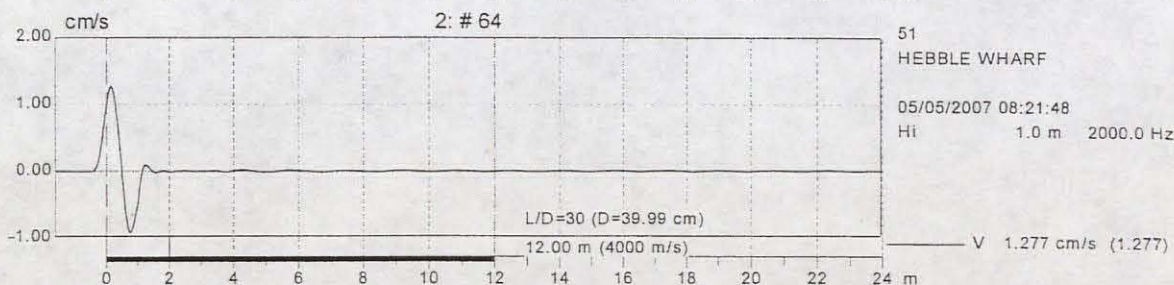
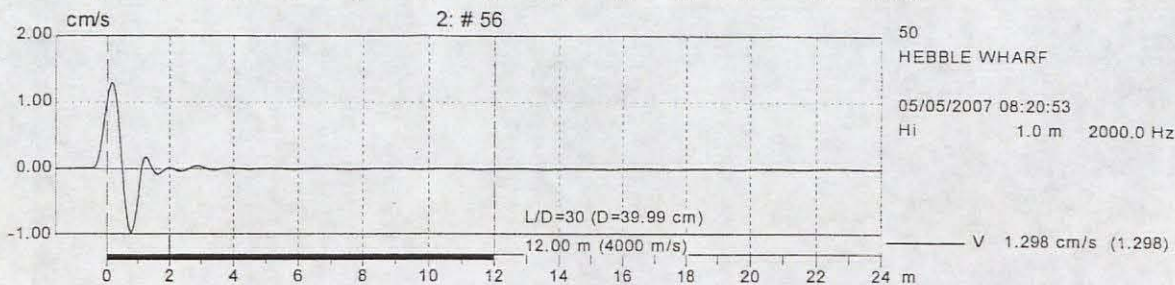
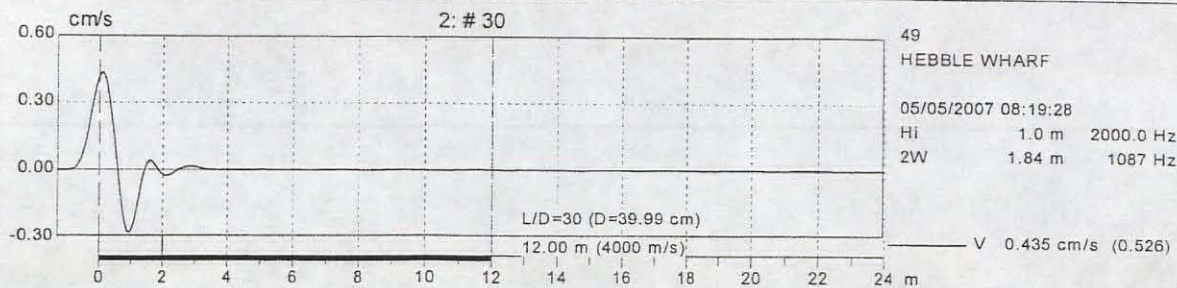


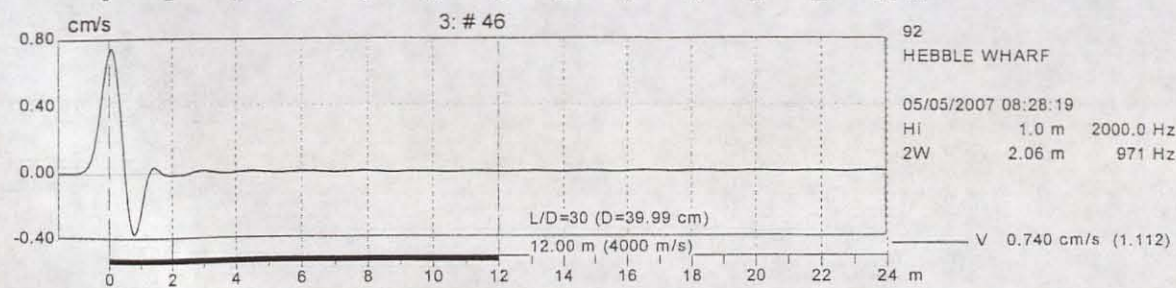
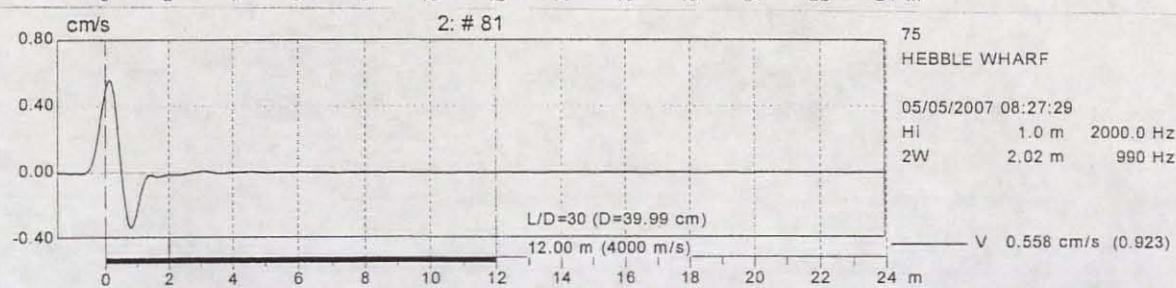
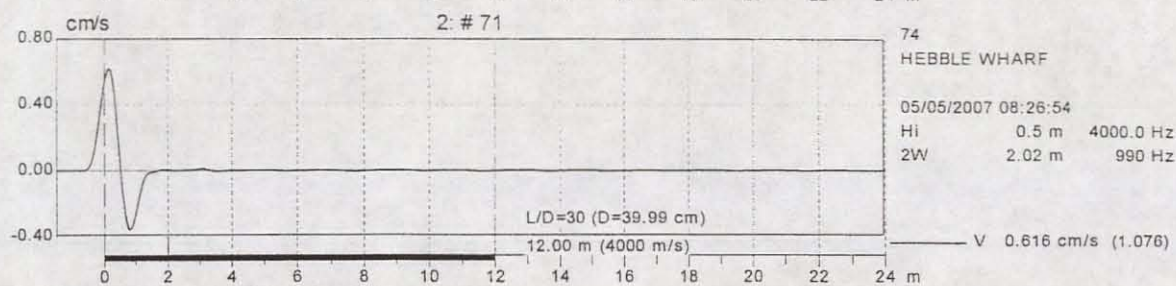
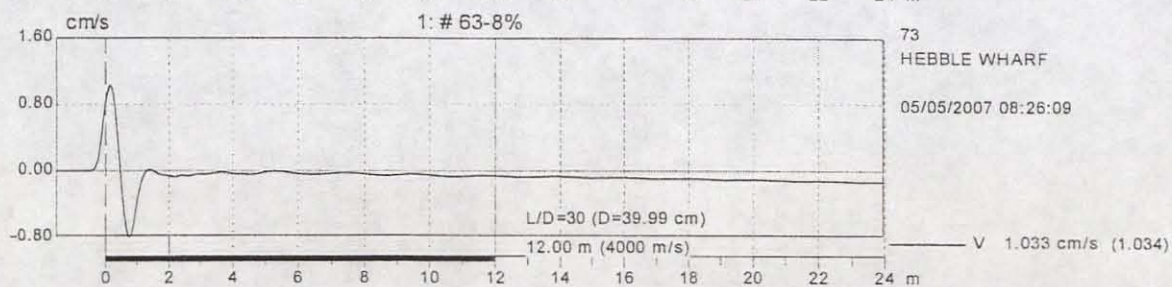
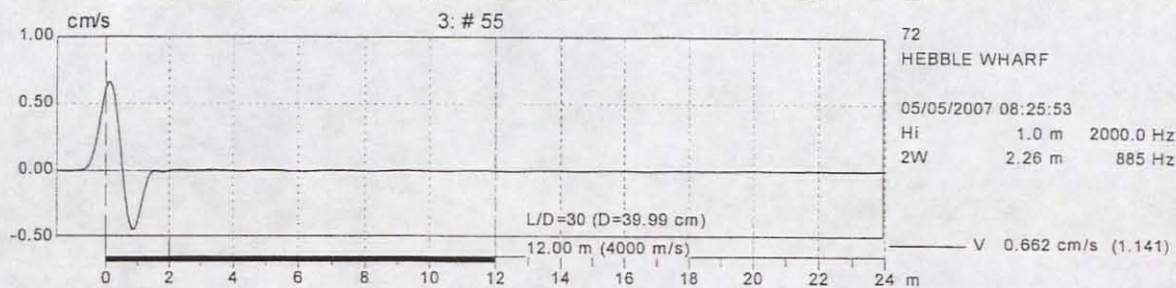
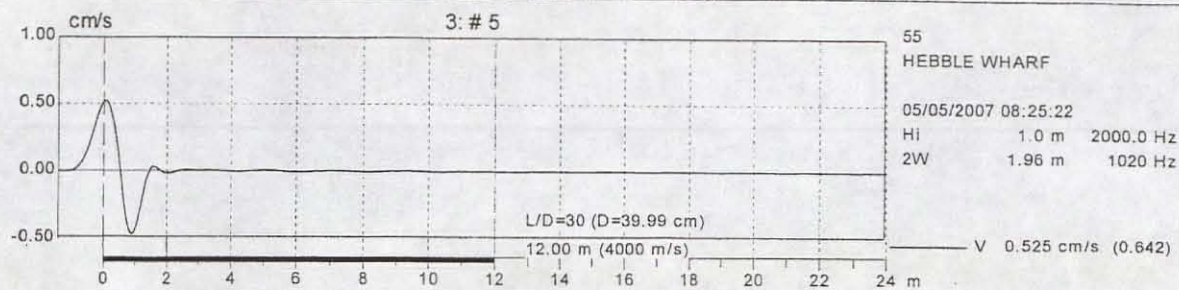


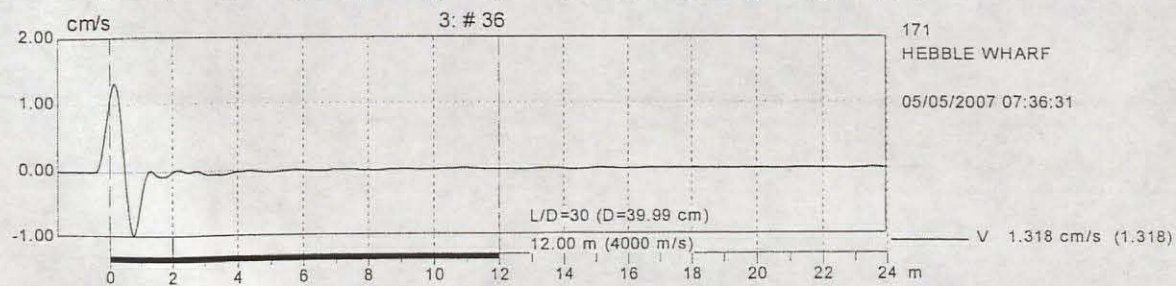
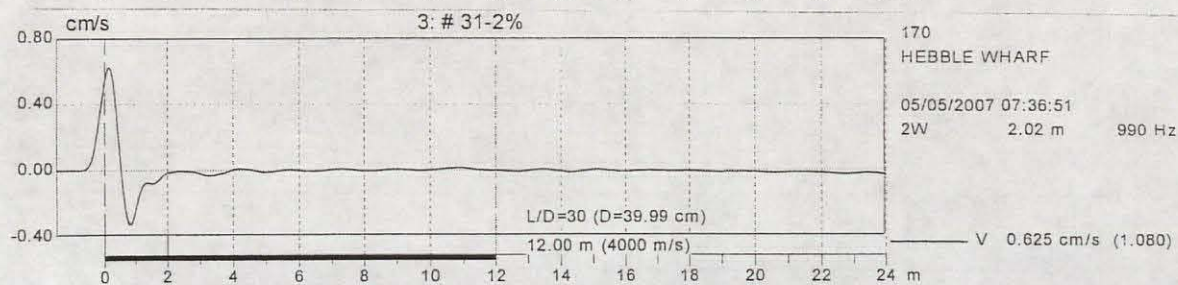
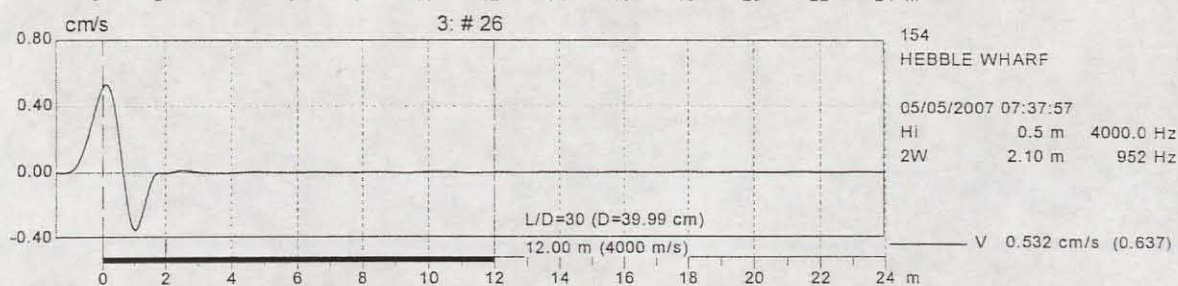
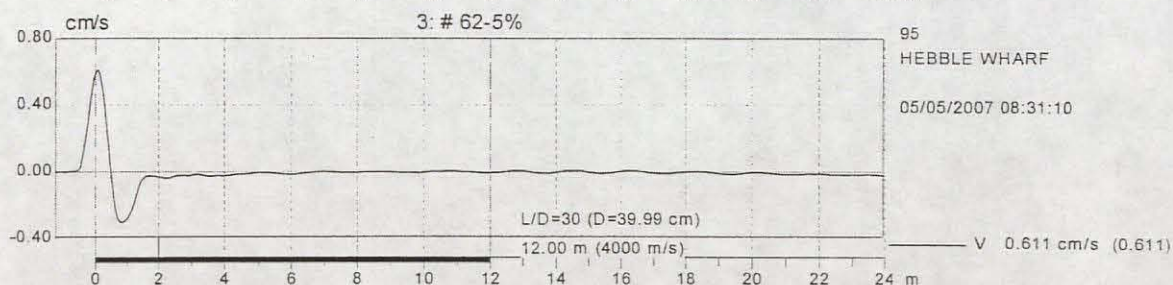
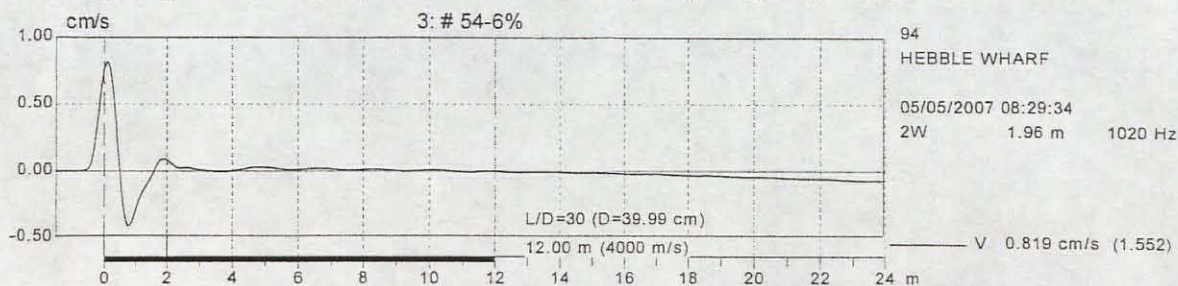
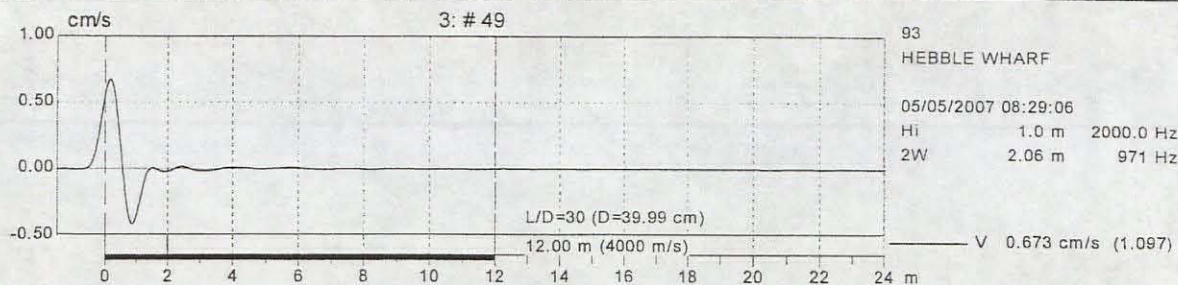


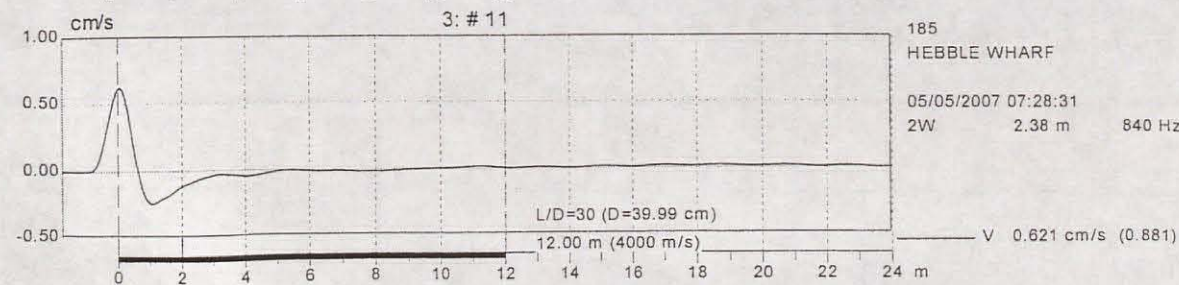
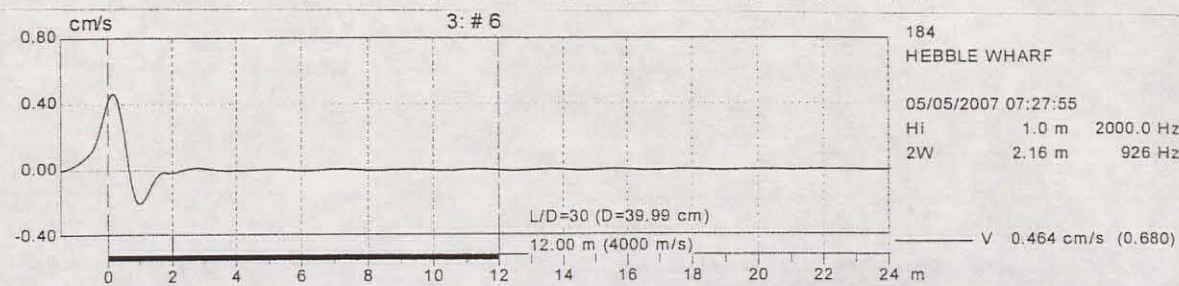
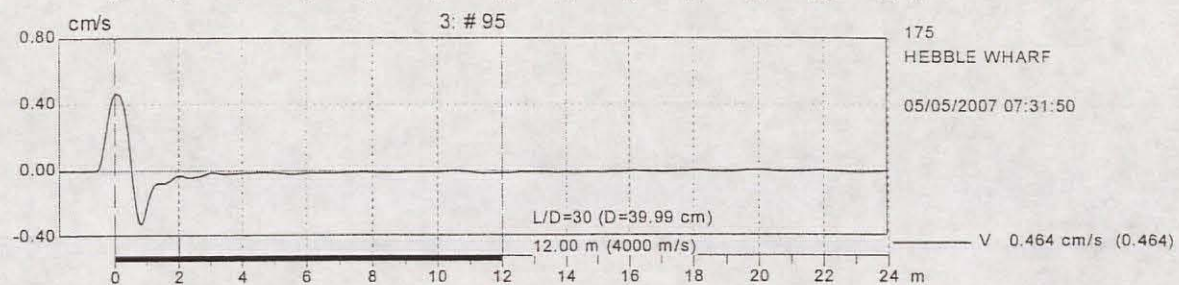
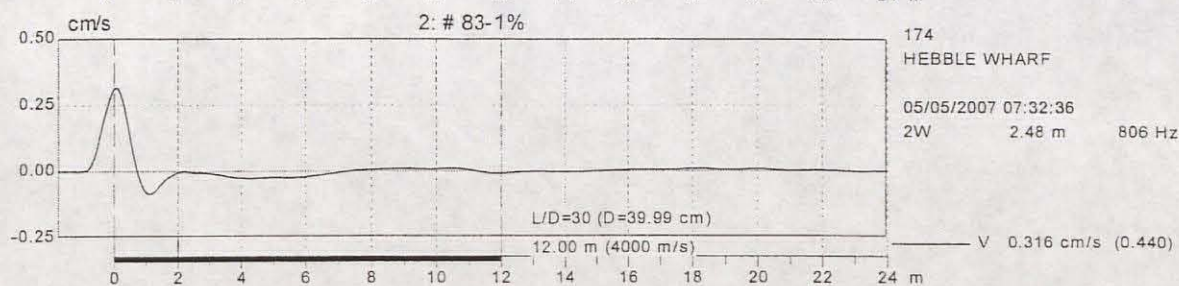
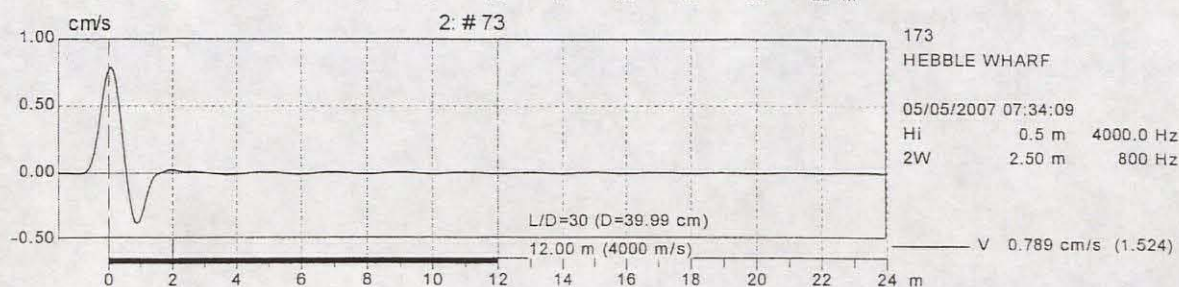
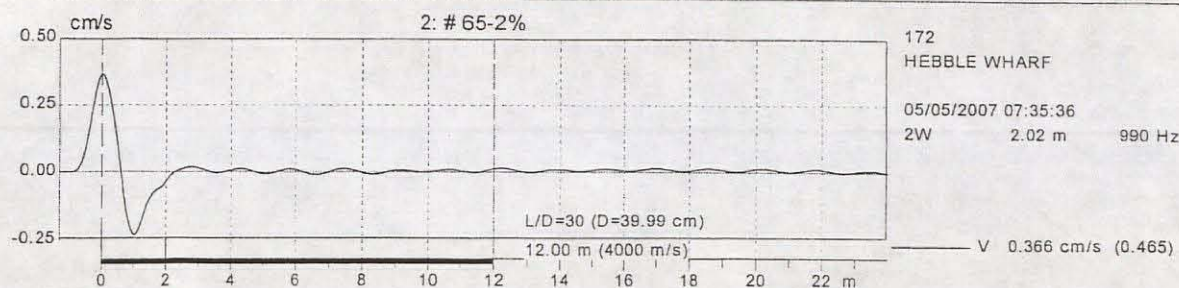
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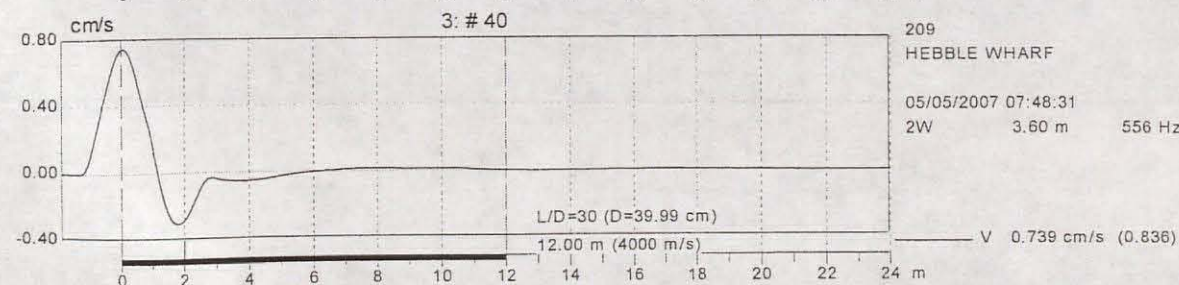
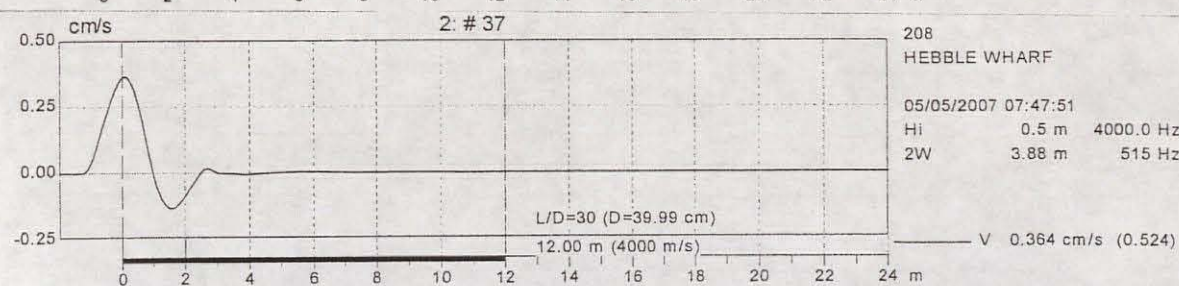
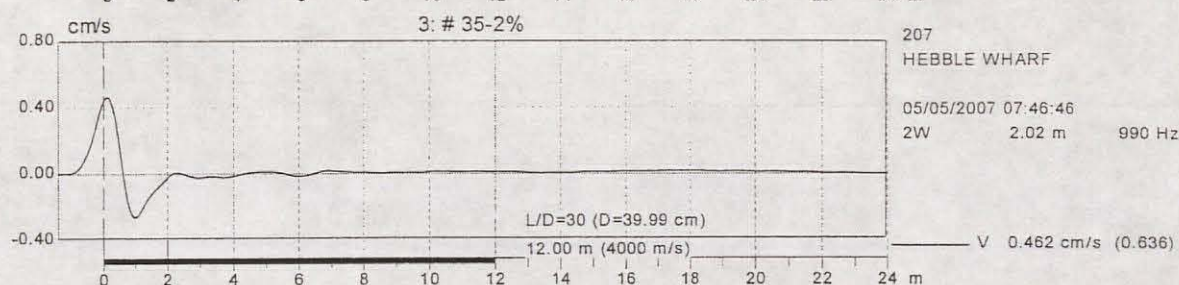
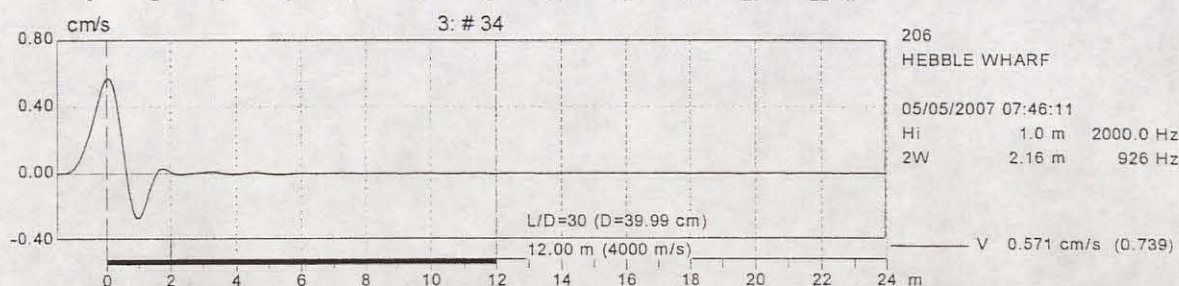
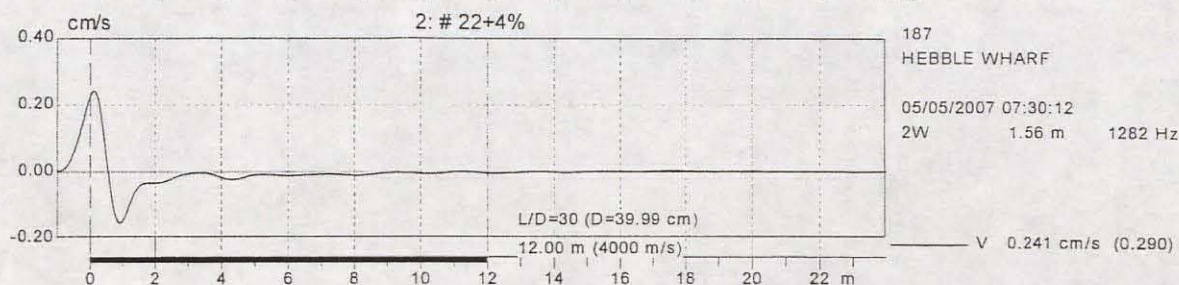
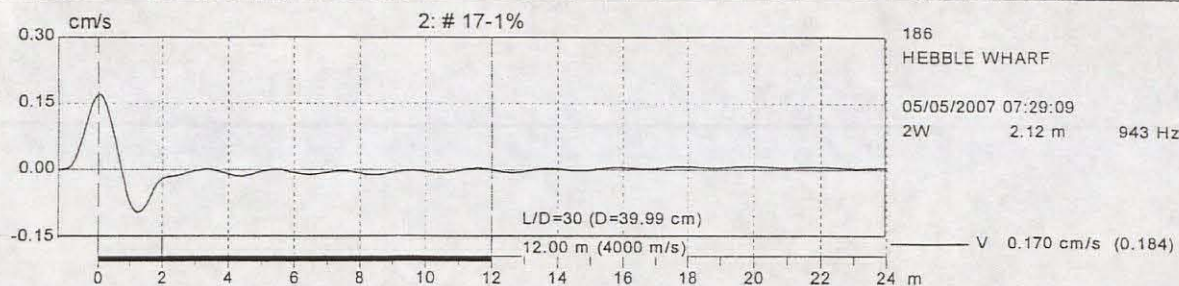
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05/05/2007	HEBBLE WHARF	52	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	53	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	54	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	55	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	72	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	73	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	74	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	75	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	92	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	93	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	94	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	95	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	154	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	170	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	171	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	172	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	173	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	174	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	175	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	184	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	185	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	186	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	187	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	206	SOUND INTEGRITY
05/05/2007	HEBBLE WHARF	207	SOUND INTEGRITY
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05/05/2007	HEBBLE WHARF	209	SOUND INTEGRITY











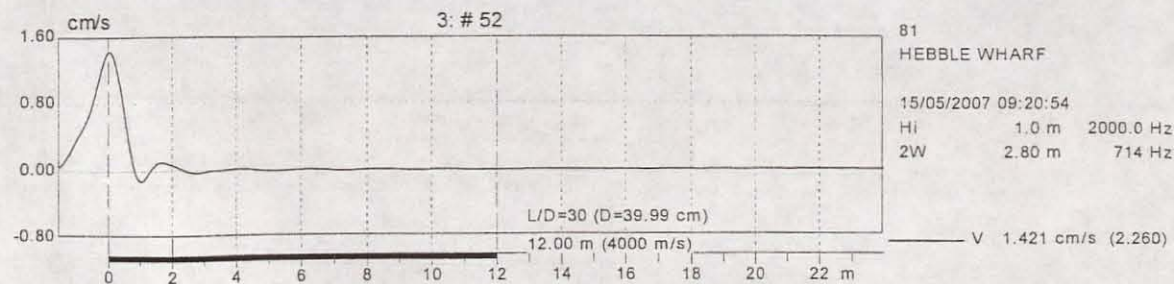
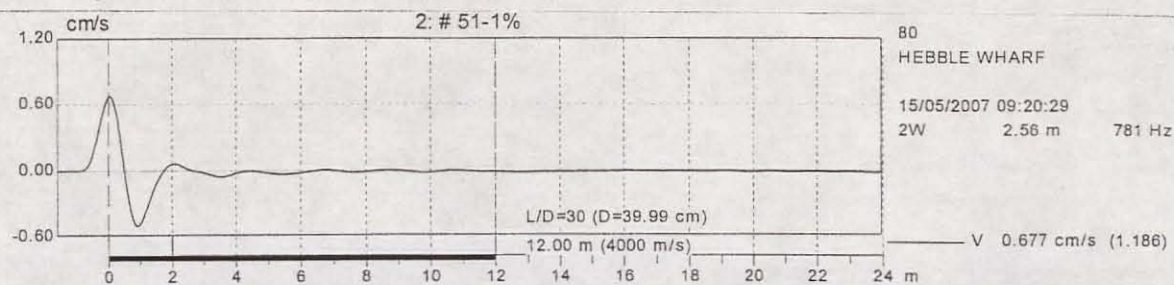
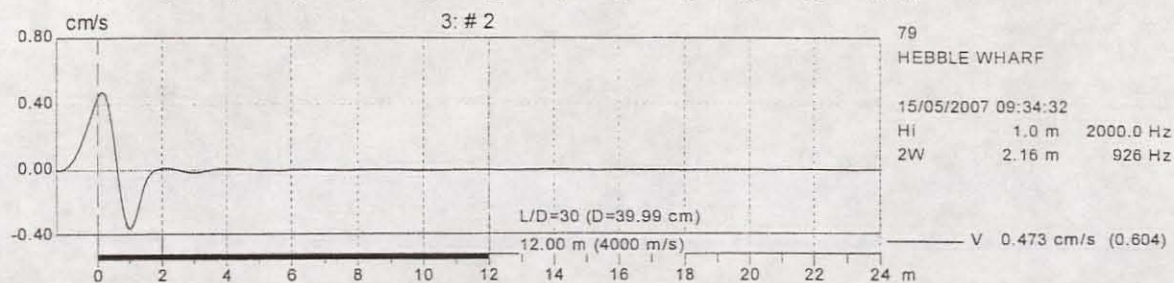
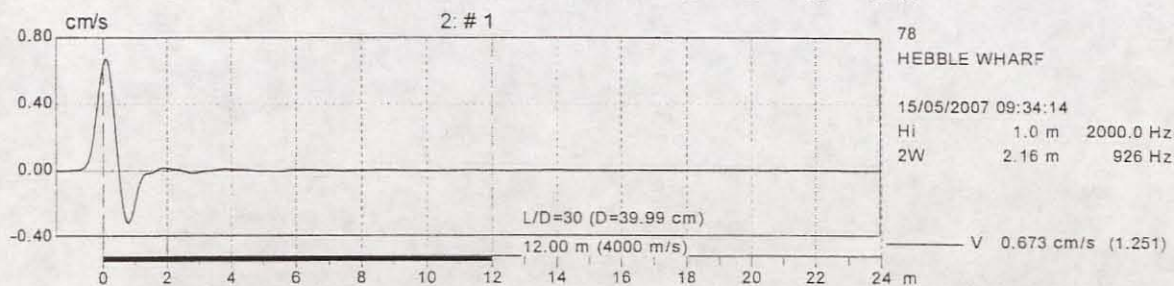
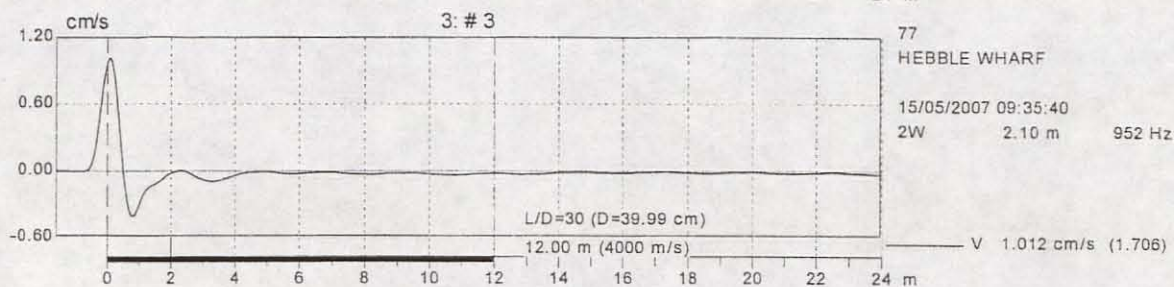
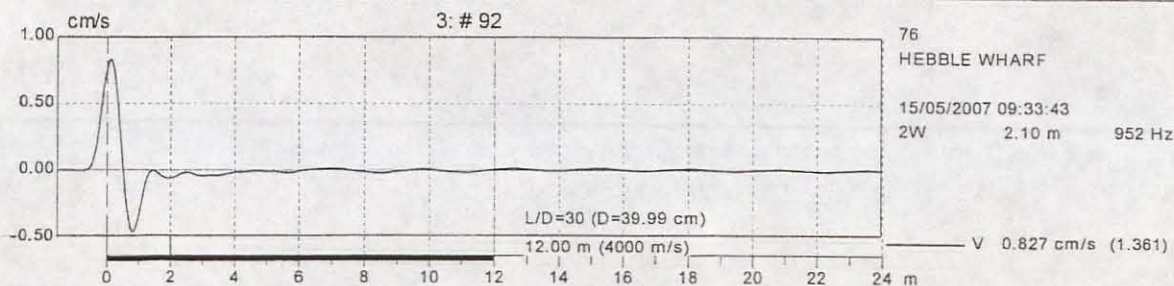
VE GEOTECHNICAL SERVICES
WAKEFIELD

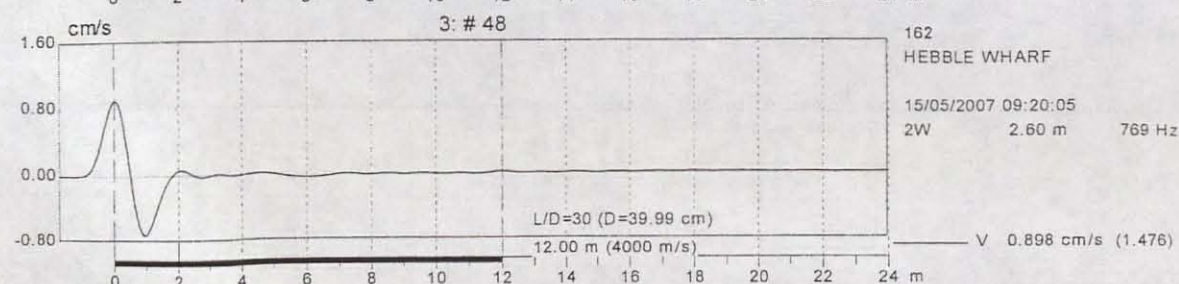
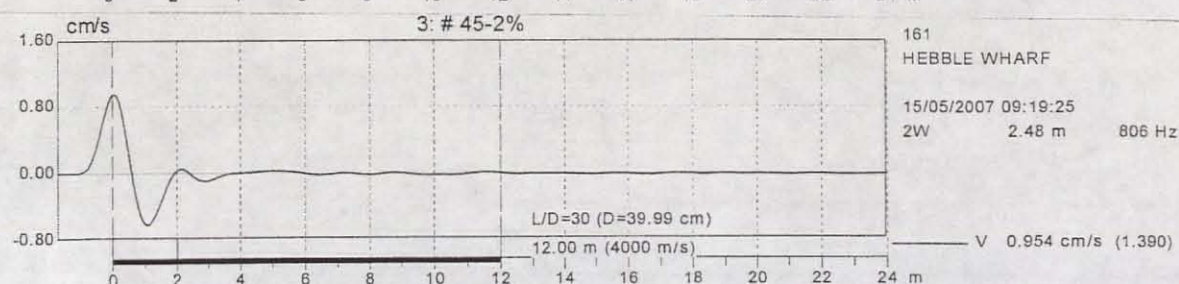
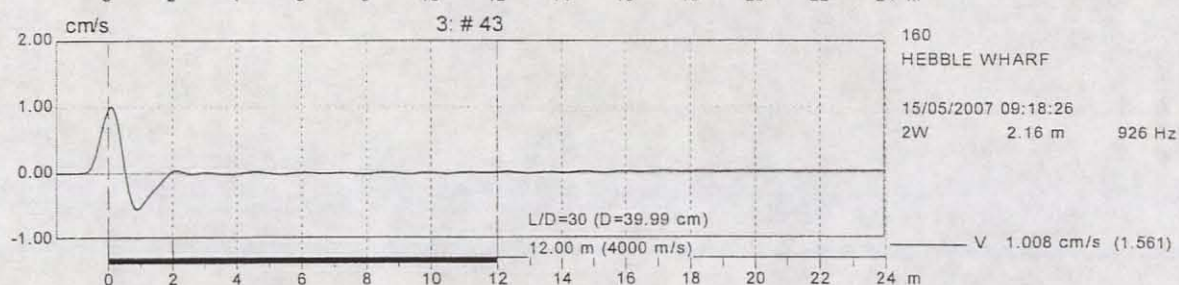
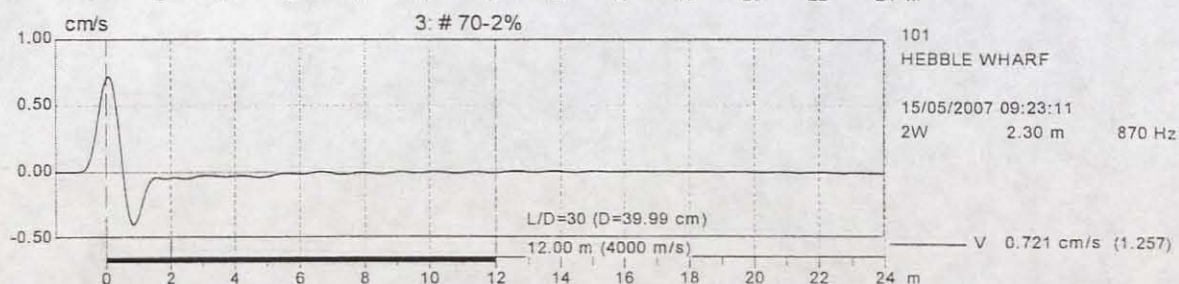
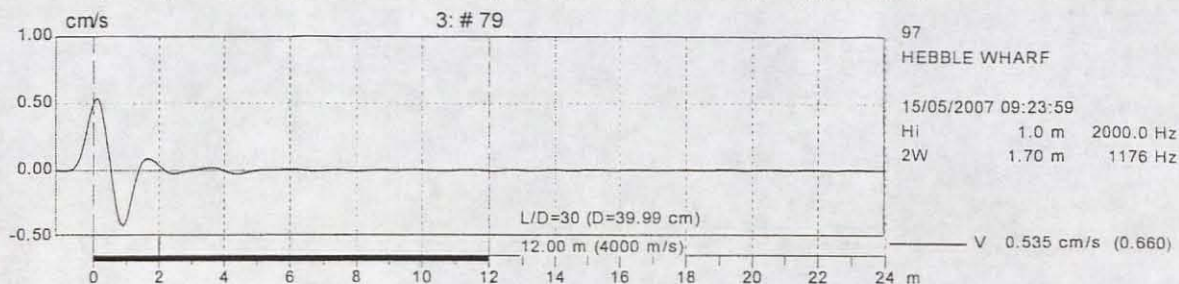
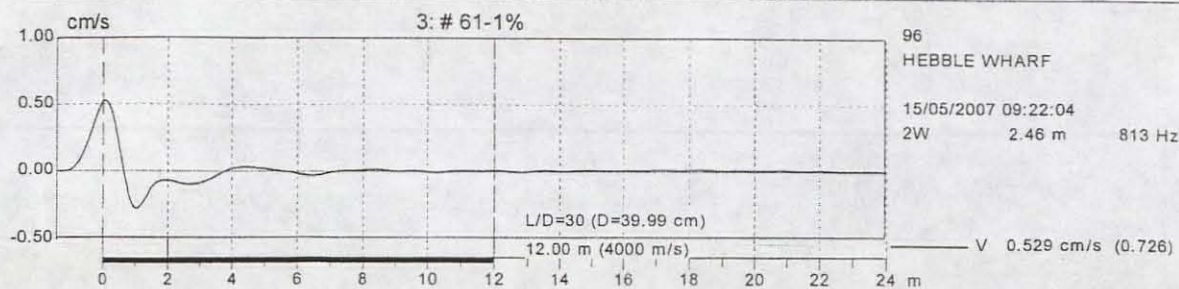
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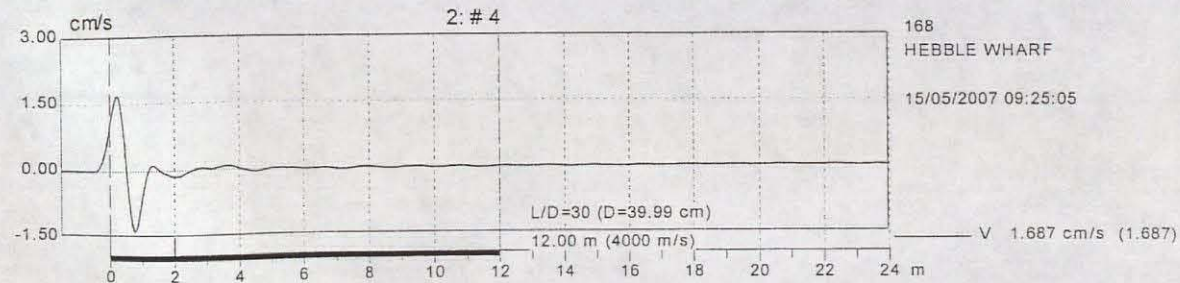
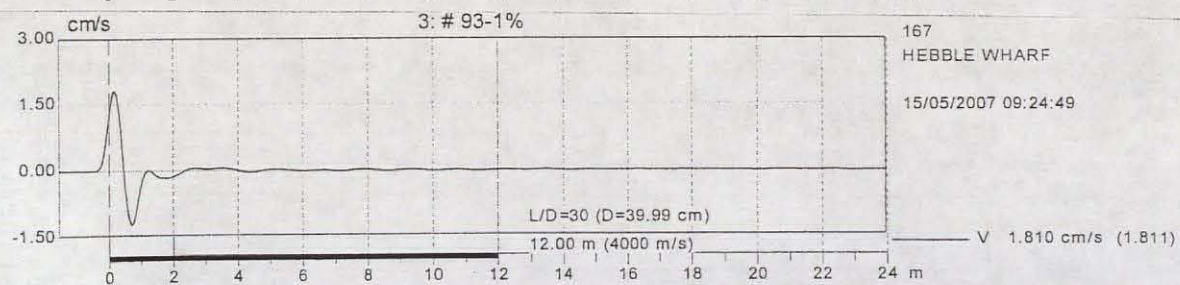
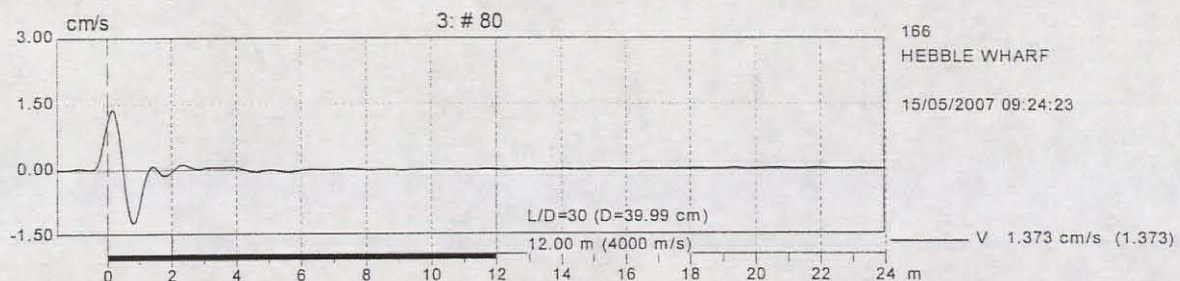
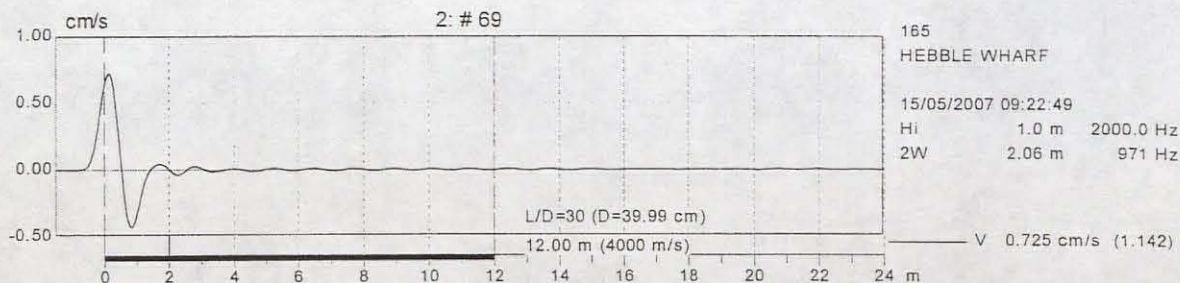
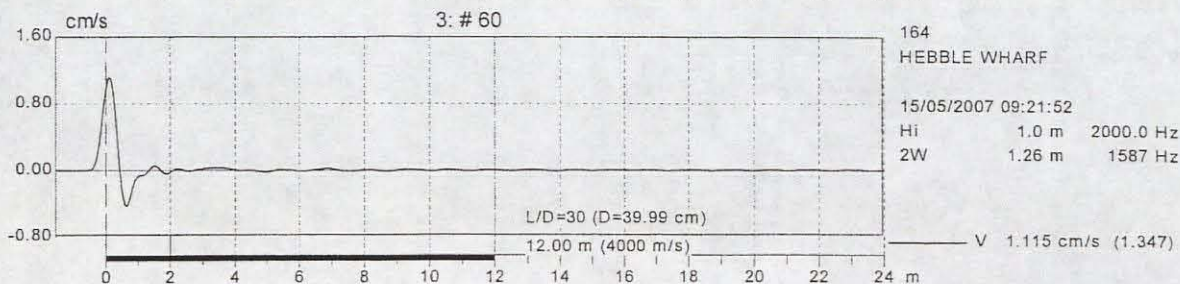
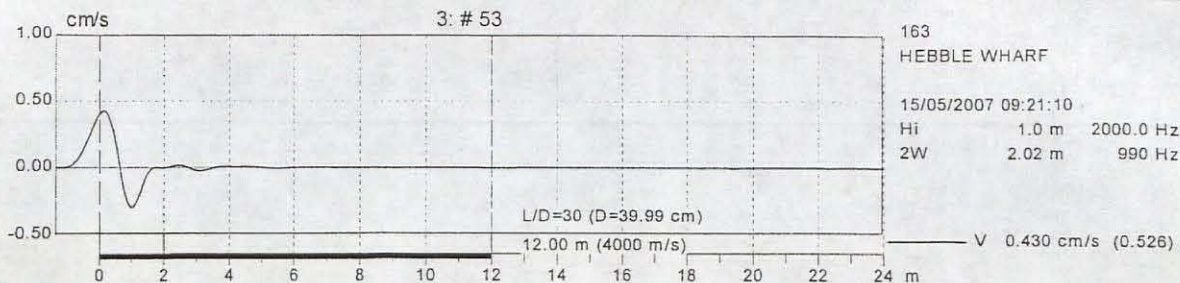
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Summary of Records

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15/05/2007	HEBBLE WHARF	77	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	78	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	79	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	80	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	81	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	96	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	97	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	101	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	160	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	161	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	162	SOUND INTEGRITY
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15/05/2007	HEBBLE WHARF	164	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	165	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	166	SOUND INTEGRITY
15/05/2007	HEBBLE WHARF	167	SOUND INTEGRITY
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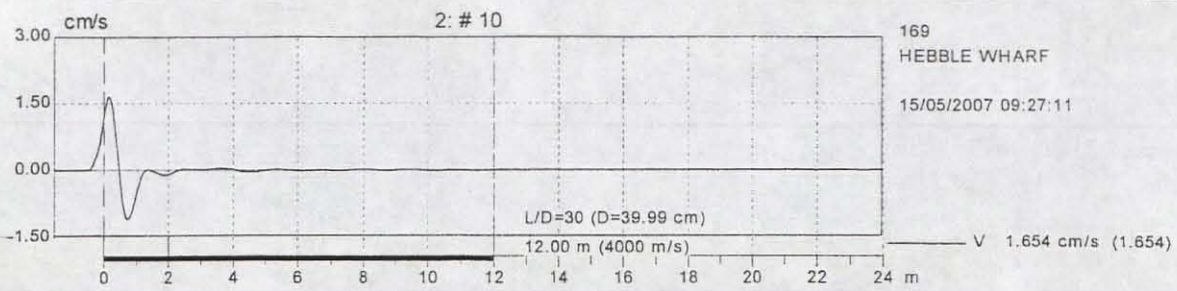
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29/06/2007

WAKEFIELD

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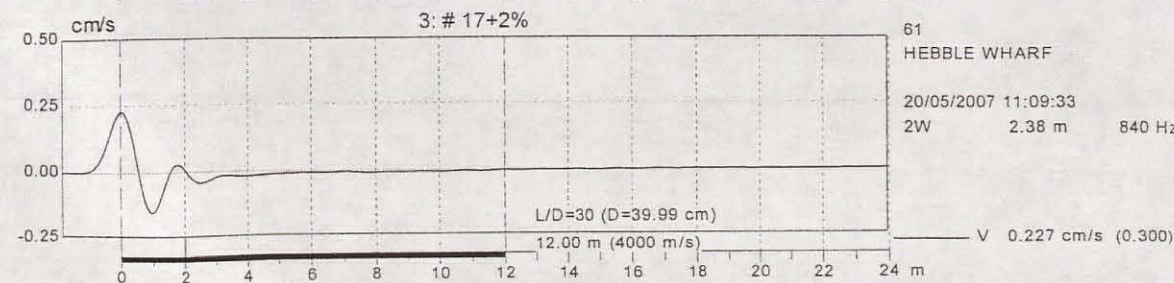
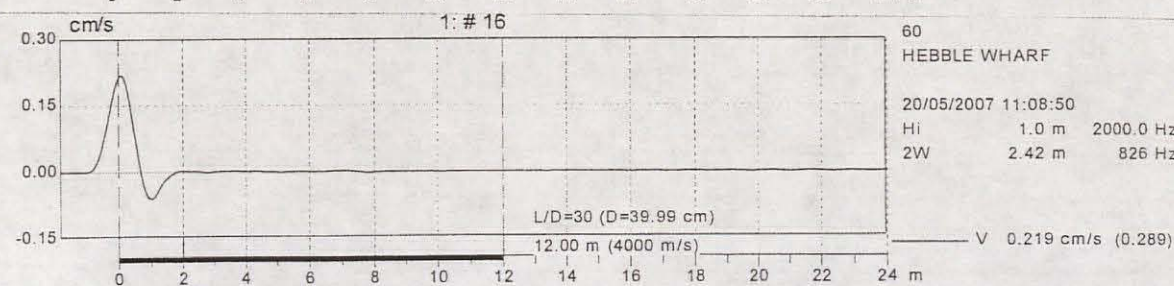
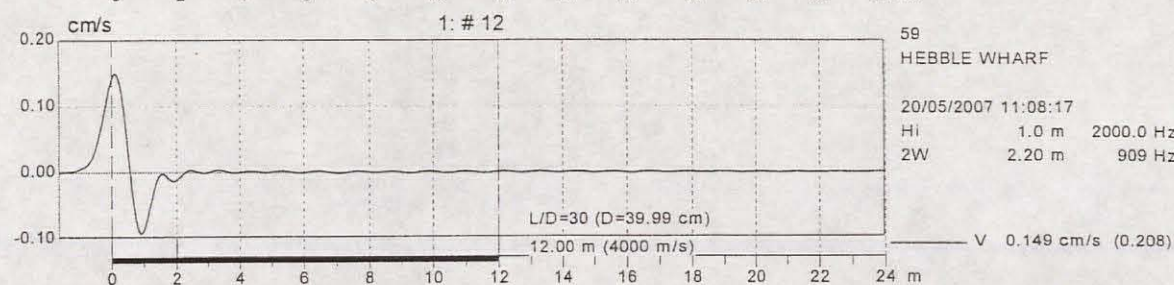
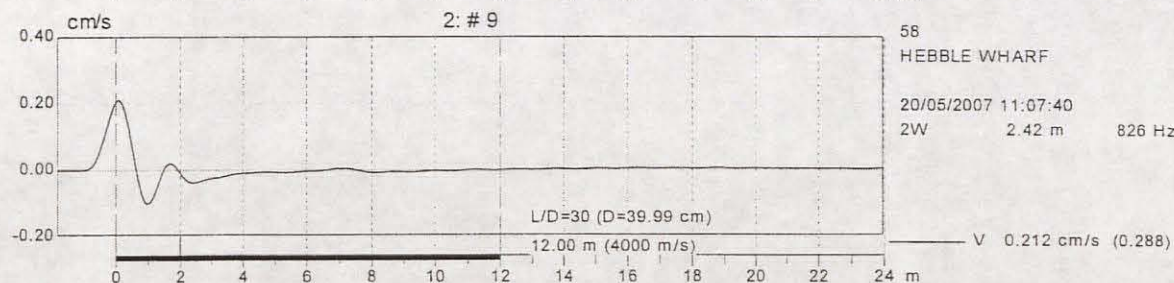
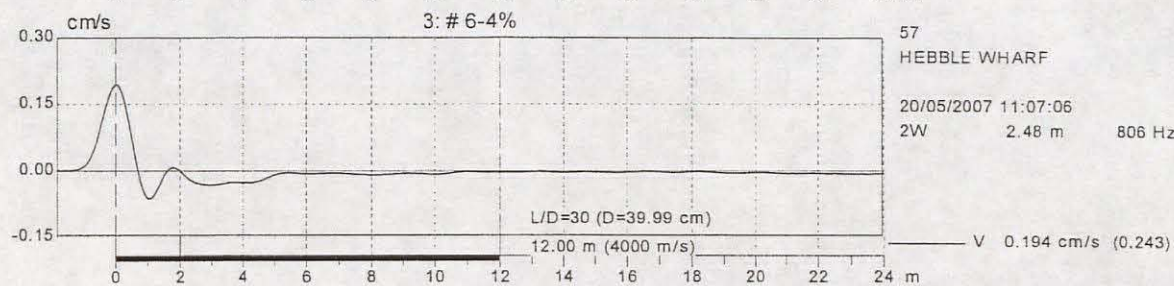
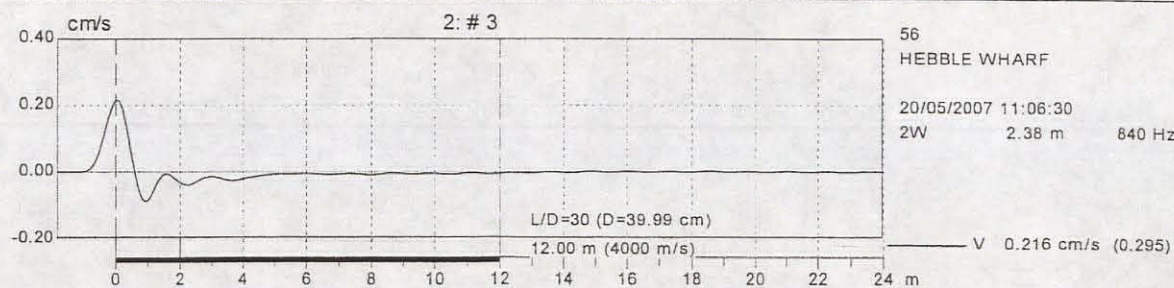
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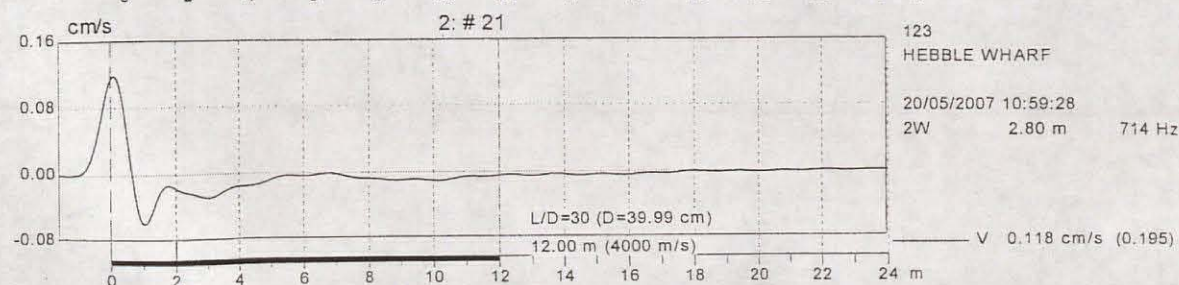
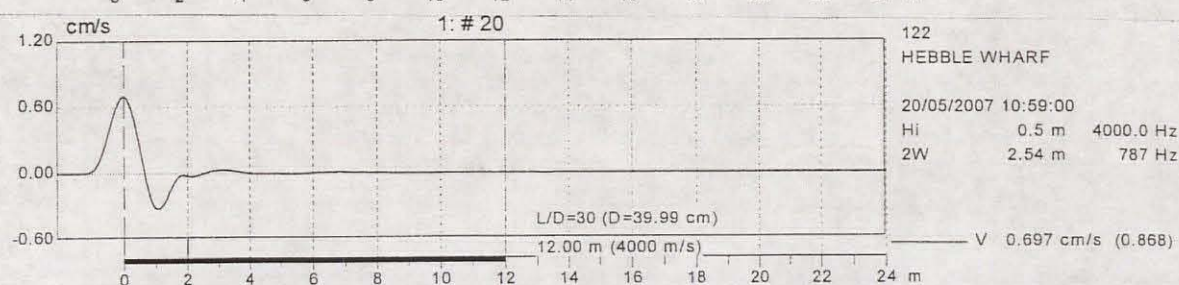
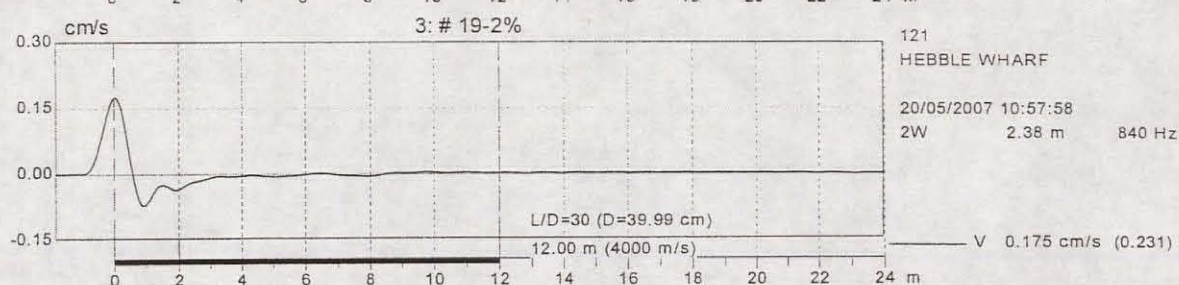
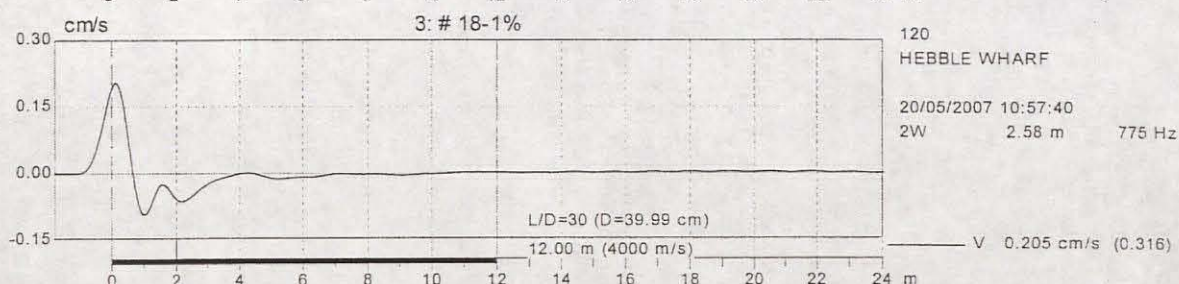
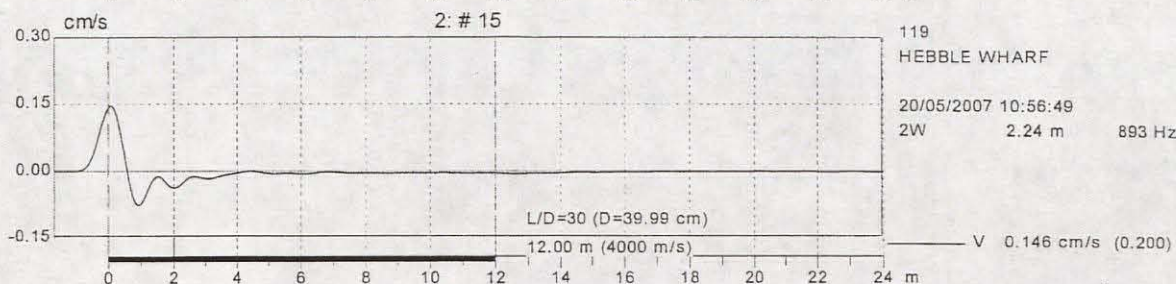
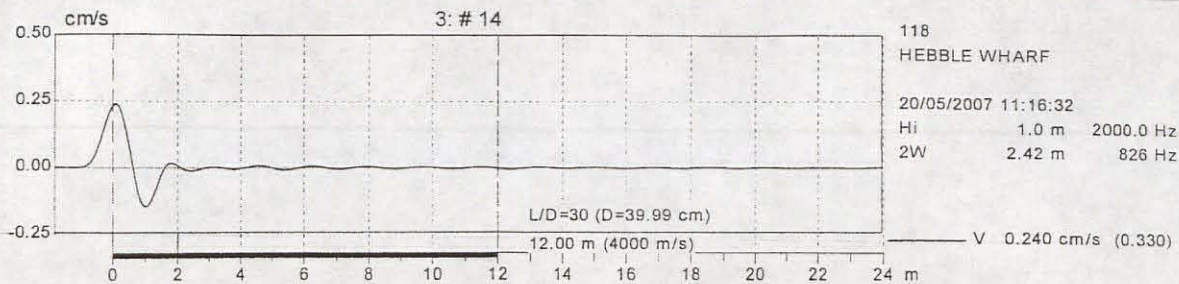
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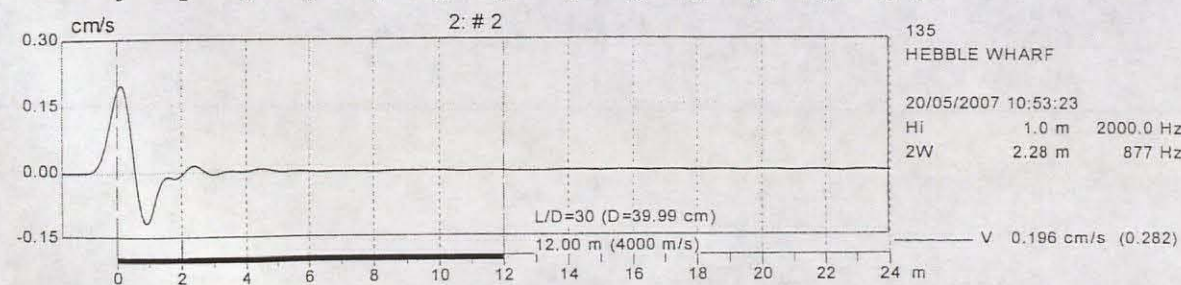
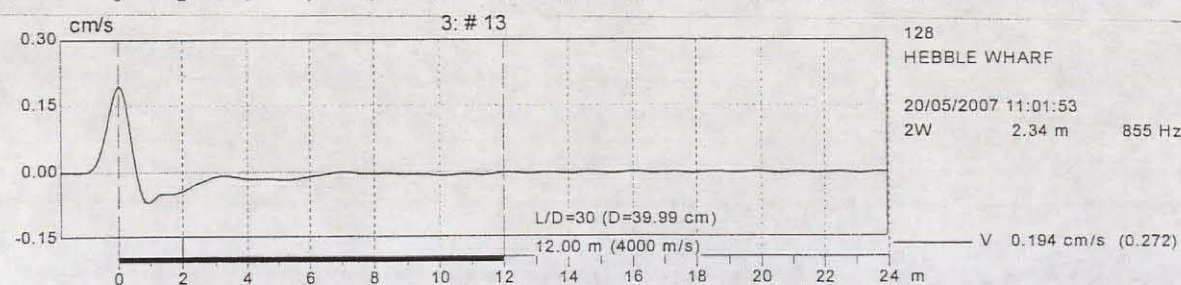
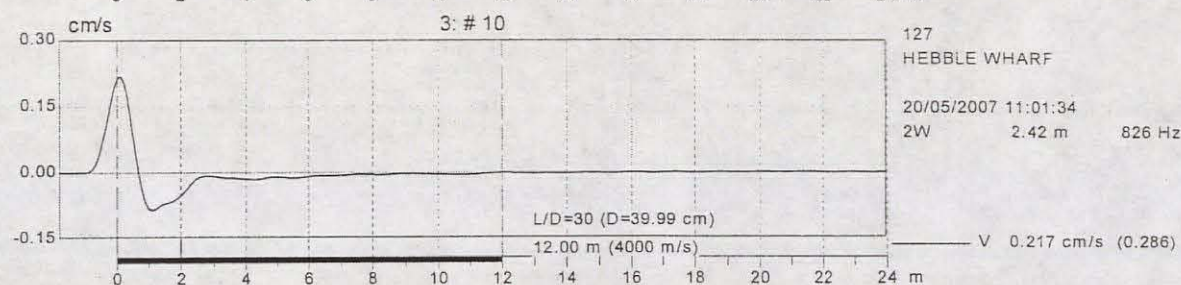
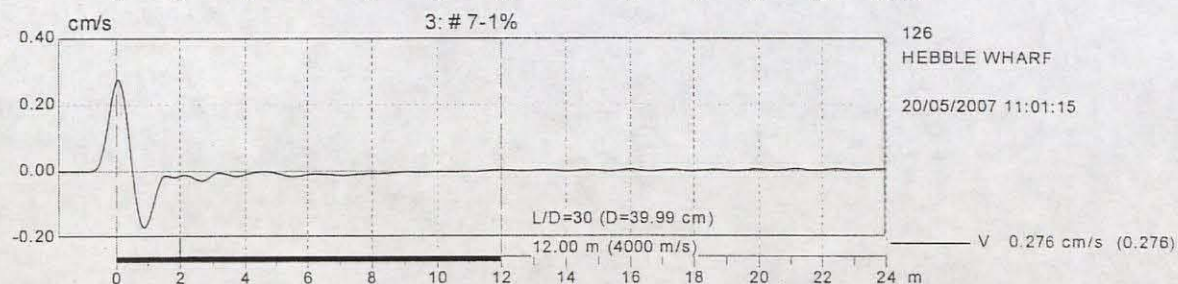
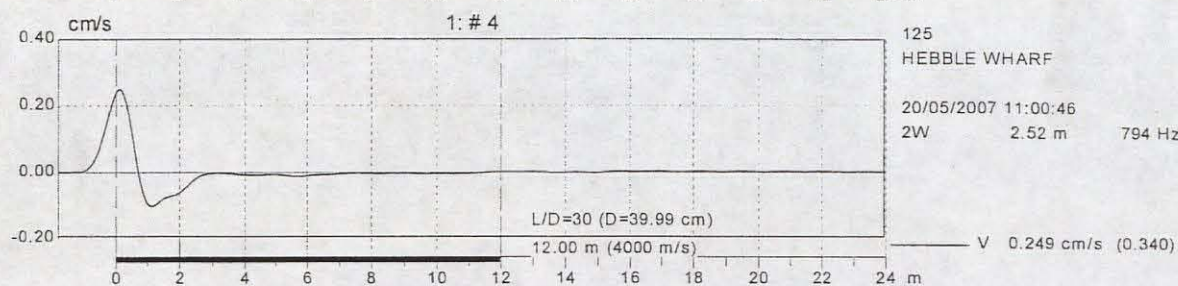
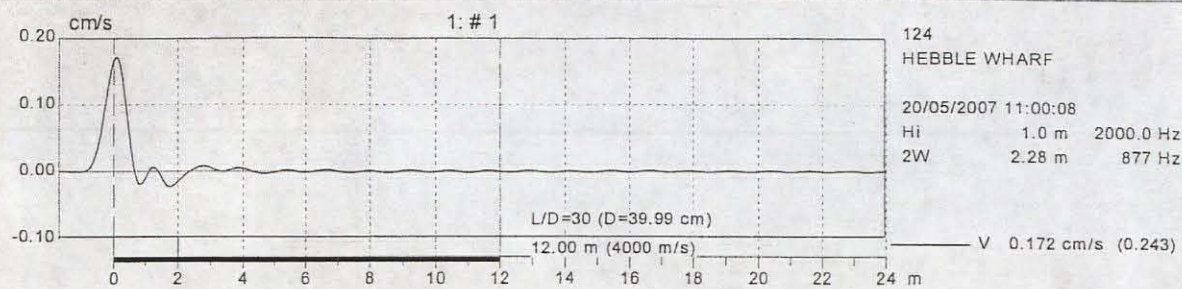
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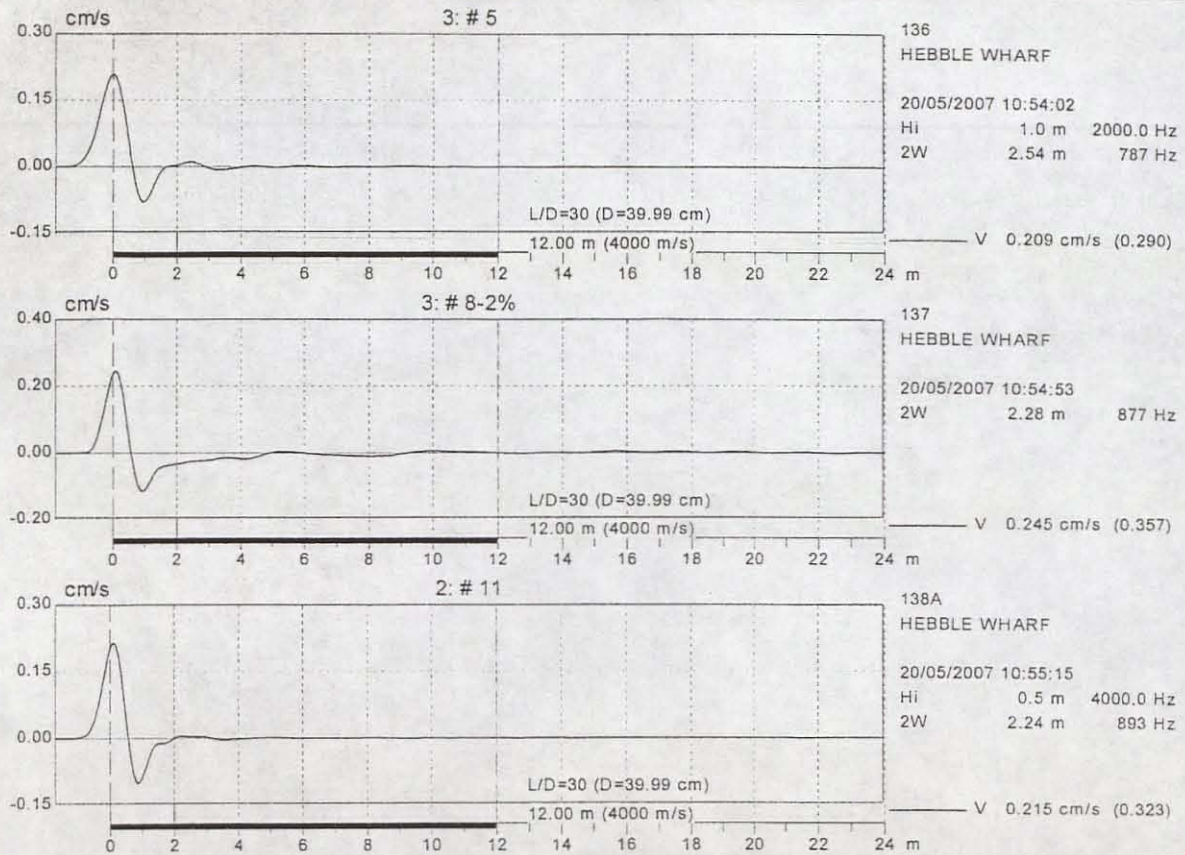
Summary of Records

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20/05/2007	HEBBLE WHARF	57	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	58	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	59	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	60	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	61	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	118	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	119	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	120	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	121	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	122	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	123	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	124	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	125	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	126	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	127	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	128	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	135	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	136	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	137	SOUND INTEGRITY
20/05/2007	HEBBLE WHARF	138A	SOUND INTEGRITY









APPENDIX 2- Technical Information

Pile Integrity Tester™

For today's deep foundation industry, this inexpensive and reliable non-destructive test for pile integrity offers a practical and cost-effective solution.

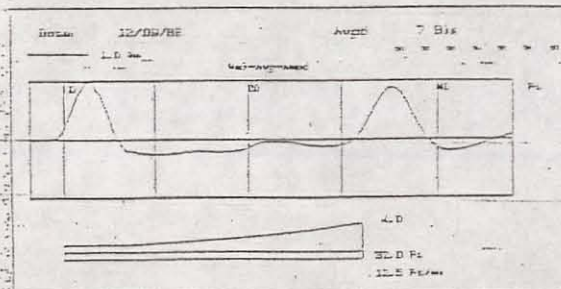
HAND HELD HAMMER

ACCELEROMETER

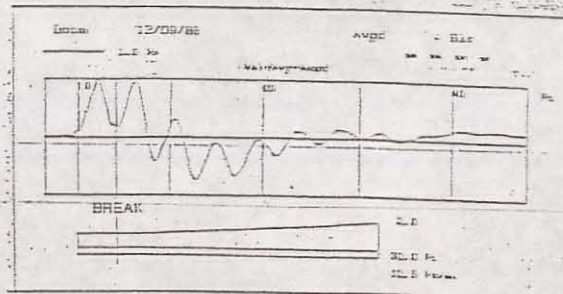
OUTPUT

Low strain tests are performed with a small impact device (hammer), sensitive accelerometer, special purpose P.I.T. Collector, and an output device like a plotter or graphics printer. The accelerometer is easily attached to the pile top using a viscous material. "Low strain" compressive impact waves are then generated by tapping the pile top with the hammer. When the downward traveling compression wave encounters a change in cross section or in concrete quality, it generates an upward traveling tension wave which later is observed at the pile top.

The velocity records, along with subsequent reflections from either the pile toe or from pile discontinuities, are graphically displayed, output directly to a plotter, and/or transferred to a disk. The location of a defect can be estimated from the assumed wavespeed. The size of the defect can be estimated from the magnitude of the early reflection. These tests are quick and very inexpensively performed by a single operator, allowing application to large numbers of installed shafts in a single day.



Good Pile



Bad Pile

The output of the Pile Integrity Tester (P.I.T.) is a graph of signal versus pile length as shown above. Piles with flawless shafts will simply indicate a reflection from the pile toe as shown in the example of an augered pile on the above left; defective piles will show an early reflection from the damage location as in the example on the above right.

Where deep foundations are required, loads must be carried safely by the pile or caisson shaft. During installation, driven piles may be damaged due to high stresses. Bored or augered shafts may suffer from separation of concrete, necking, inclusions, voids, etc. After installation, shafts may be damaged by construction equipment, or slope or retaining wall failures.

It is impractical to statically test each pile. However, integrity testing with low strain impact methods can quickly evaluate the shaft integrity of a large number of piles at a reasonable cost. Suspect piles can then be subjected to further tests and, if necessary, repaired or replaced.

STATIC TEST REPORT

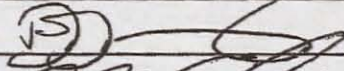
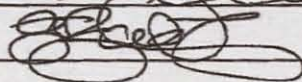
Contract : Hebble Wharf, Wakefield

Client: Van Elle Piling

Test Dates : 23-26 April 2007

Job Reference : G70278

Pile 159 & 201 - BLW20.

	NAME	SIGNATURE	DATE
Prepared by:	Dan Doughton		23/6/07
Checked by:	MACEWES		23/6/07
Authorised by:	G. BAKER		23/06/07

CONTENTS:-

- 1. SUMMARY**
- 2. LOADING SCHEDULE**
- 3. TABULATED RESULTS**
- 4. GRAPHICAL RESULTS**
- 5. CALIBRATION CERTIFICATES**

1. SUMMARY

Client	Van Elle Piling
Location	Hebble Wharf, Wakefield
Contract No.	G70278

Pile Details

Pile Identification	159	201
Working Load	500	500kN
Maximum Test Load	750	750kN
Pile Dimensions	400mm diameter	
Pile Type	CFA	
Pile Inclination	Vertical	
Date Installed	04 April 2007	
Penetration	12.0m	

Pile Test Method

Type of Test	Compression
Reaction	Reaction Beam
Deflection Measurement	4 No. Linear Potentiometers
Loading Method	Hydraulic Jack

Pile Test Results

Pile Identification	159	201
Cycle 1		
Movement at W/L	1.72	1.58mm
Residual	0.41	1.27mm
Cycle 2		
Movement at 1.5 x W/L	4.07	3.65mm
Residual	1.24	2.11mm

Comments

Compiled By

Andrew Johnston

2. LOADING SCHEDULE

Loading Schedule
Hebble Wharf

Pile No:- **159 (cast04/04/07)**

Load %SWL	Load Kn	Minimum Time of Holding Load
25%	125	30mins
50%	250	30mins
75%	375	30mins
100%	500	360mins
75%	375	10mins
50%	250	10mins
25%	125	10mins
0	0	60mins
100%	500	60mins
125%	625	60mins
150%	750	360mins
125%	625	10mins
100%	500	10mins
75%	375	10mins
50%	250	10mins
25%	125	10mins
0	0	60mins

Loading Schedule
Hebble Wharf, Wakefield

Pile No:- **201 (cast 04-04-07)**

Load %SWL	Load Kn	Minimum Time of Holding Load
25%	125	30mins
50%	250	30mins
75%	375	30mins
100%	500	360mins
75%	375	10mins
50%	250	10mins
25%	125	10mins
0	0	60mins
100%	500	60mins
125%	625	60mins
150%	750	360mins
125%	625	10mins
100%	500	10mins
75%	375	10mins
50%	250	10mins
25%	125	10mins
0	0	60mins

3. TABULATED RESULTS

Time (Actual)	Load (kN)	Disp 1 (mm)	Disp 2 (mm)	Disp 3 (mm)	Disp 4 (mm)	Settlement (mm)	Movement (mm)
0	0	0.00	0.00	0.00	0.00	0.00	0.00
700	126	0.19	0.19	0.15	0.24	-0.19	0.00
705	126	0.19	0.21	0.17	0.27	-0.21	0.21
710	126	0.19	0.21	0.17	0.27	-0.21	0.00
715	125	0.19	0.21	0.17	0.27	-0.21	0.00
730	125	0.19	0.21	0.17	0.27	-0.21	0.00
731	252	0.52	0.53	0.50	0.73	-0.57	0.36
735	252	0.54	0.54	0.52	0.76	-0.59	0.02
740	252	0.54	0.53	0.54	0.76	-0.59	0.00
745	250	0.56	0.53	0.54	0.77	-0.60	0.01
800	250	0.58	0.55	0.54	0.76	-0.61	0.01
801	375	0.98	0.90	0.91	1.26	-1.01	0.40
810	375	1.13	0.96	0.99	1.35	-1.10	0.09
815	375	1.13	0.95	0.99	1.35	-1.10	0.00
830	375	1.12	0.95	0.98	1.37	-1.11	0.00
830	502	1.59	1.42	1.41	1.87	-1.57	0.47
835	502	1.67	1.50	1.49	1.94	-1.65	0.08
840	502	1.69	1.52	1.51	1.96	-1.67	0.02
845	502	1.71	1.53	1.51	1.98	-1.68	0.01
900	502	1.71	1.55	1.53	1.97	-1.69	0.01
915	502	1.71	1.55	1.53	1.99	-1.69	0.00
930	502	1.71	1.55	1.55	1.99	-1.70	0.00
945	502	1.71	1.55	1.55	2.01	-1.71	0.01
1000	501	1.73	1.55	1.54	2.02	-1.71	0.00
1030	501	1.73	1.58	1.53	2.04	-1.72	0.01
1100	501	1.73	1.58	1.53	2.04	-1.72	0.00
1130	501	1.73	1.58	1.53	2.04	-1.72	0.00
1200	501	1.73	1.58	1.53	2.04	-1.72	0.00
1230	500	1.74	1.58	1.56	2.04	-1.73	0.01
1300	500	1.74	1.59	1.54	2.04	-1.72	0.00
1330	500	1.74	1.57	1.54	2.04	-1.72	0.00
1400	500	1.74	1.57	1.54	2.04	-1.72	0.00
1430	499	1.74	1.57	1.54	2.04	-1.72	0.00
1431	376	1.65	1.57	1.41	1.96	-1.65	-0.07
1435	375	1.65	1.57	1.39	1.94	-1.64	-0.01
1440	375	1.65	1.57	1.39	1.94	-1.64	0.00
1440	251	1.47	1.36	1.21	1.76	-1.45	-0.19
1445	251	1.47	1.36	1.21	1.76	-1.45	0.00
1450	251	1.47	1.36	1.21	1.74	-1.44	-0.01
1451	126	0.94	0.83	0.76	1.19	-0.93	-0.51
1455	126	0.90	0.83	0.72	1.15	-0.90	-0.03
1500	125	0.92	0.81	0.72	1.13	-0.89	-0.01
1502	0	0.45	0.38	0.46	0.60	-0.47	-0.42
1505	0	0.43	0.38	0.46	0.58	-0.46	-0.01
1510	0	0.41	0.36	0.44	0.58	-0.45	-0.02
1515	0	0.41	0.36	0.44	0.56	-0.44	-0.01
1520	0	0.41	0.34	0.44	0.56	-0.44	-0.01
1525	0	0.41	0.34	0.44	0.54	-0.43	-0.01
1530	0	0.41	0.34	0.44	0.54	-0.43	0.00
1535	0	0.39	0.32	0.44	0.54	-0.42	-0.01
1540	0	0.39	0.32	0.44	0.54	-0.42	0.00
1545	0	0.39	0.33	0.44	0.53	-0.42	0.00
1550	0	0.41	0.33	0.44	0.52	-0.42	0.00
1555	0	0.41	0.31	0.44	0.52	-0.42	0.00
1600	0	0.39	0.31	0.44	0.52	-0.41	0.00
1600	0	0.39	0.31	0.44	0.52	-0.41	0.00
1601	503	1.91	1.64	1.72	2.11	-1.85	1.43

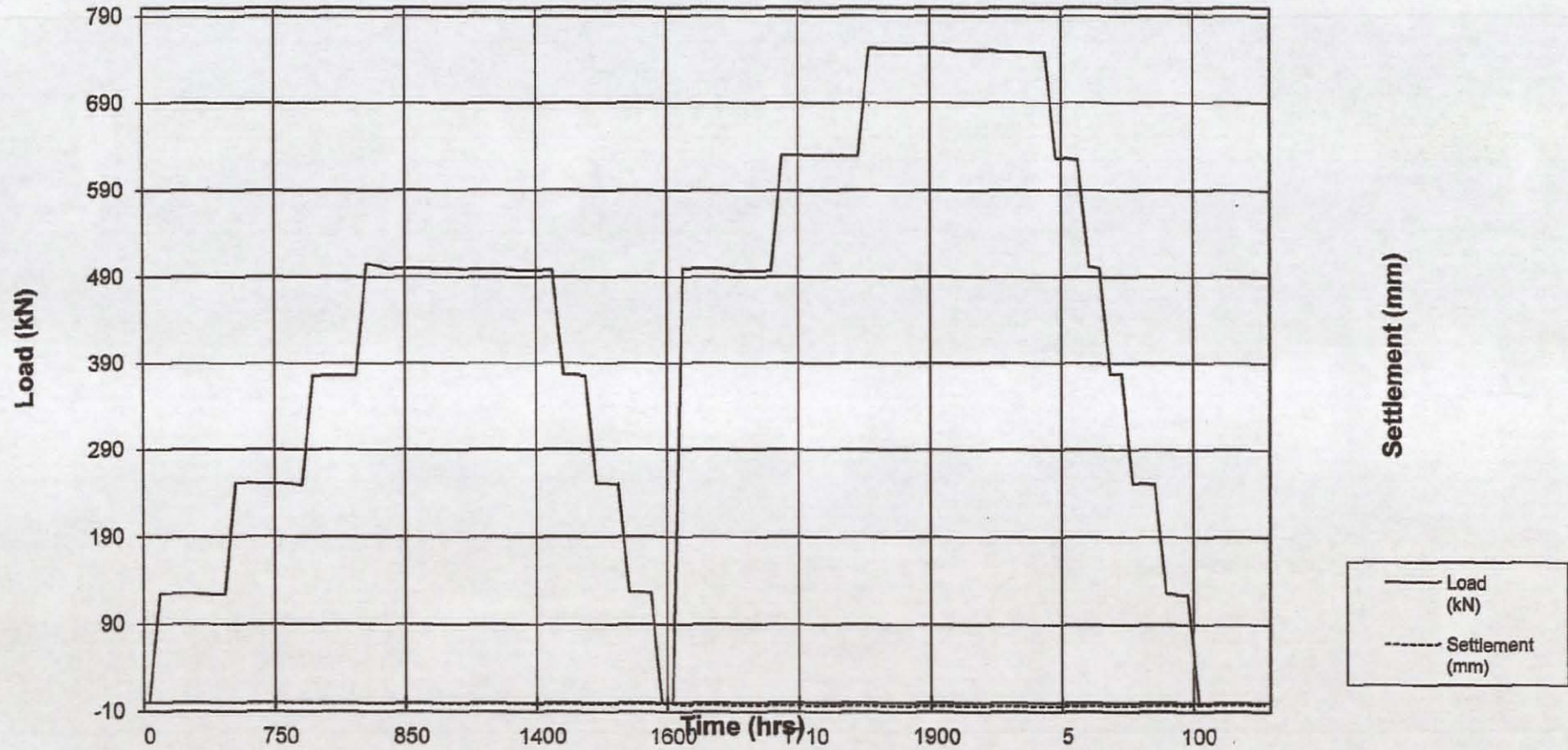
Time (Actual)	Load (kN)	Disp 1 (mm)	Disp 2 (mm)	Disp 3 (mm)	Disp 4 (mm)	Settlement (mm)	Movement (mm)
1605	503	1.93	1.66	1.76	2.16	-1.88	0.03
1610	503	1.97	1.68	1.80	2.18	-1.91	0.03
1615	502	2.01	1.75	1.84	2.24	-1.96	0.05
1630	502	2.03	1.79	1.88	2.28	-1.99	0.04
1645	502	2.05	1.78	1.90	2.30	-2.01	0.01
1700	502	2.05	1.78	1.90	2.30	-2.01	0.00
1701	625	2.44	2.27	2.31	2.70	-2.43	0.42
1705	625	2.52	2.34	2.39	2.78	-2.51	0.08
1710	625	2.56	2.37	2.43	2.80	-2.54	0.03
1715	625	2.57	2.39	2.45	2.82	-2.56	0.02
1730	625	2.60	2.42	2.47	2.82	-2.58	0.02
1745	624	2.60	2.42	2.47	2.82	-2.58	0.00
1800	624	2.60	2.42	2.47	2.82	-2.58	0.00
1800	753	3.17	3.01	3.14	3.37	-3.17	0.60
1805	753	3.28	3.11	3.26	3.47	-3.28	0.11
1810	753	3.37	3.20	3.36	3.57	-3.38	0.09
1815	753	3.43	3.26	3.42	3.61	-3.43	0.06
1830	753	3.49	3.33	3.44	3.63	-3.48	0.04
1845	753	3.49	3.33	3.44	3.63	-3.47	0.00
1900	753	3.49	3.33	3.44	3.63	-3.47	0.00
1915	751	3.49	3.33	3.44	3.63	-3.47	0.00
1930	751	3.49	3.33	3.46	3.65	-3.48	0.01
1945	750	3.49	3.33	3.48	3.67	-3.49	0.01
2000	750	3.49	3.31	3.48	3.67	-3.49	-0.01
2030	750	3.88	3.66	3.91	4.04	-3.87	0.39
2100	749	3.94	3.70	3.99	4.08	-3.93	0.06
2130	749	4.02	3.73	4.07	4.14	-3.99	0.06
2200	749	4.06	3.73	4.15	4.16	-4.03	0.04
2230	749	4.12	3.75	4.21	4.20	-4.07	0.04
2300	749	4.12	3.74	4.23	4.19	-4.07	0.00
2330	749	4.12	3.74	4.23	4.18	-4.07	0.00
0	749	4.12	3.74	4.24	4.18	-4.07	0.00
0	625	4.10	3.74	4.15	4.09	-4.02	-0.05
5	625	4.10	3.74	4.15	4.09	-4.02	0.00
10	625	4.08	3.74	4.11	4.07	-4.00	-0.02
10	501	3.73	3.42	3.80	3.77	-3.68	-0.32
15	500	3.69	3.40	3.76	3.75	-3.65	-0.03
20	500	3.69	3.38	3.76	3.75	-3.64	0.00
20	376	3.41	3.07	3.46	3.44	-3.34	-0.30
25	375	3.39	3.05	3.44	3.42	-3.32	-0.02
30	374	3.35	3.04	3.44	3.42	-3.31	-0.01
30	250	2.96	2.63	2.97	2.99	-2.89	-0.43
35	248	2.90	2.58	2.91	2.94	-2.83	-0.05
40	248	2.90	2.58	2.91	2.93	-2.83	0.00
40	126	2.31	1.99	2.30	2.34	-2.23	-0.60
45	126	2.29	1.97	2.28	2.32	-2.21	-0.02
50	125	2.27	1.96	2.26	2.30	-2.20	-0.02
50	0	1.49	1.20	1.50	1.49	-1.42	-0.78
100	0	1.39	1.08	1.38	1.37	-1.30	-0.12
130	0	1.33	1.01	1.32	1.29	-1.24	-0.07
145	0	1.33	1.00	1.32	1.29	-1.23	0.00
150	0	1.33	1.01	1.32	1.29	-1.24	0.00

Time (Actual)	Load (kN)	Disp 1 (mm)	Disp 2 (mm)	Disp 3 (mm)	Disp 4 (mm)	Settlement (mm)	Movement (mm)	Rate (mm/hr)
0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700	125	0.21	0.00	0.20	0.00	-0.10	0.00	0.00
705	125	0.21	0.00	0.20	0.00	-0.10	0.10	0.60
710	125	0.21	0.00	0.20	0.00	-0.10	0.00	0.00
715	125	0.21	0.00	0.20	0.00	-0.10	0.00	0.00
720	124	0.21	0.00	0.20	0.00	-0.10	0.00	0.00
725	124	0.21	0.00	0.20	0.00	-0.10	0.00	0.00
730	124	0.21	0.00	0.20	0.00	-0.10	0.00	0.01
730	252	0.59	0.03	0.64	0.01	-0.32	0.22	1.30
735	252	0.61	0.03	0.68	0.01	-0.33	0.02	0.09
740	251	0.68	0.04	0.72	0.01	-0.36	0.03	0.17
745	251	0.72	0.04	0.74	0.01	-0.38	0.02	0.09
750	251	0.74	0.04	0.77	0.01	-0.39	0.01	0.06
755	251	0.76	0.04	0.77	0.01	-0.39	0.01	0.03
800	249	0.76	0.04	0.78	0.02	-0.40	0.01	0.04
800	375	1.14	0.08	1.19	0.03	-0.61	0.21	1.27
805	375	1.16	0.08	1.23	0.03	-0.63	0.02	0.09
810	375	1.20	0.08	1.27	0.03	-0.65	0.02	0.12
815	375	1.20	0.08	1.27	0.03	-0.65	0.00	0.00
830	375	1.20	0.08	1.27	0.03	-0.65	0.00	0.00
830	505	1.55	0.25	1.66	0.03	-0.87	0.23	1.35
835	503	1.69	0.25	1.84	0.03	-0.95	0.08	0.49
840	500	1.75	0.25	1.91	0.03	-0.99	0.03	0.18
845	500	1.77	0.25	1.93	0.03	-1.00	0.01	0.06
850	500	1.82	0.25	1.95	0.03	-1.01	0.02	0.09
900	500	1.92	0.27	2.03	0.03	-1.06	0.05	0.31
915	500	1.92	0.27	2.03	0.03	-1.06	0.00	0.00
930	500	1.92	0.27	2.03	0.03	-1.06	0.00	0.00
1000	500	2.12	0.27	2.19	0.03	-1.15	0.09	0.55
1030	499	2.28	0.27	2.31	0.03	-1.22	0.07	0.43
1100	499	2.35	0.27	2.39	0.03	-1.26	0.04	0.23
1130	499	2.48	0.29	2.50	0.03	-1.32	0.06	0.37
1200	499	2.59	0.30	2.58	0.03	-1.37	0.05	0.30
1230	499	2.59	0.30	2.58	0.03	-1.37	0.00	0.00
1300	498	2.59	0.30	2.58	0.03	-1.37	0.00	0.00
1330	498	2.57	0.30	2.58	0.03	-1.37	-0.01	-0.03
1400	498	2.71	0.30	2.72	0.60	-1.58	0.21	1.28
1430	498	2.71	0.30	2.72	0.60	-1.58	0.00	0.00
1431	376	2.71	0.22	2.76	0.62	-1.58	0.00	-0.03
1435	376	2.71	0.22	2.72	0.60	-1.56	-0.02	-0.09
1440	375	2.71	0.22	2.72	0.60	-1.56	0.00	0.00
1440	251	2.71	0.17	2.68	0.60	-1.54	-0.02	-0.14
1445	251	2.69	0.17	2.66	0.60	-1.53	-0.01	-0.06
1450	250	2.69	0.16	2.66	0.60	-1.53	0.00	-0.01
1450	127	2.67	0.07	2.58	0.60	-1.47	-0.05	-0.32
1455	127	2.61	0.07	2.52	0.60	-1.45	-0.03	-0.15
1500	126	2.60	0.07	2.50	0.60	-1.44	-0.01	-0.03
1530	0	2.28	0.00	2.16	0.60	-1.26	-0.18	-1.10
1600	0	2.30	0.00	2.16	0.62	-1.27	0.01	0.05
1601	500	3.30	2.44	3.14	1.42	-2.57	1.30	7.83
1605	500	3.30	2.44	3.14	1.40	-2.57	-0.01	-0.03
1610	500	3.31	2.44	3.14	1.40	-2.57	0.00	0.01
1615	500	3.32	2.48	3.17	1.42	-2.60	0.02	0.15

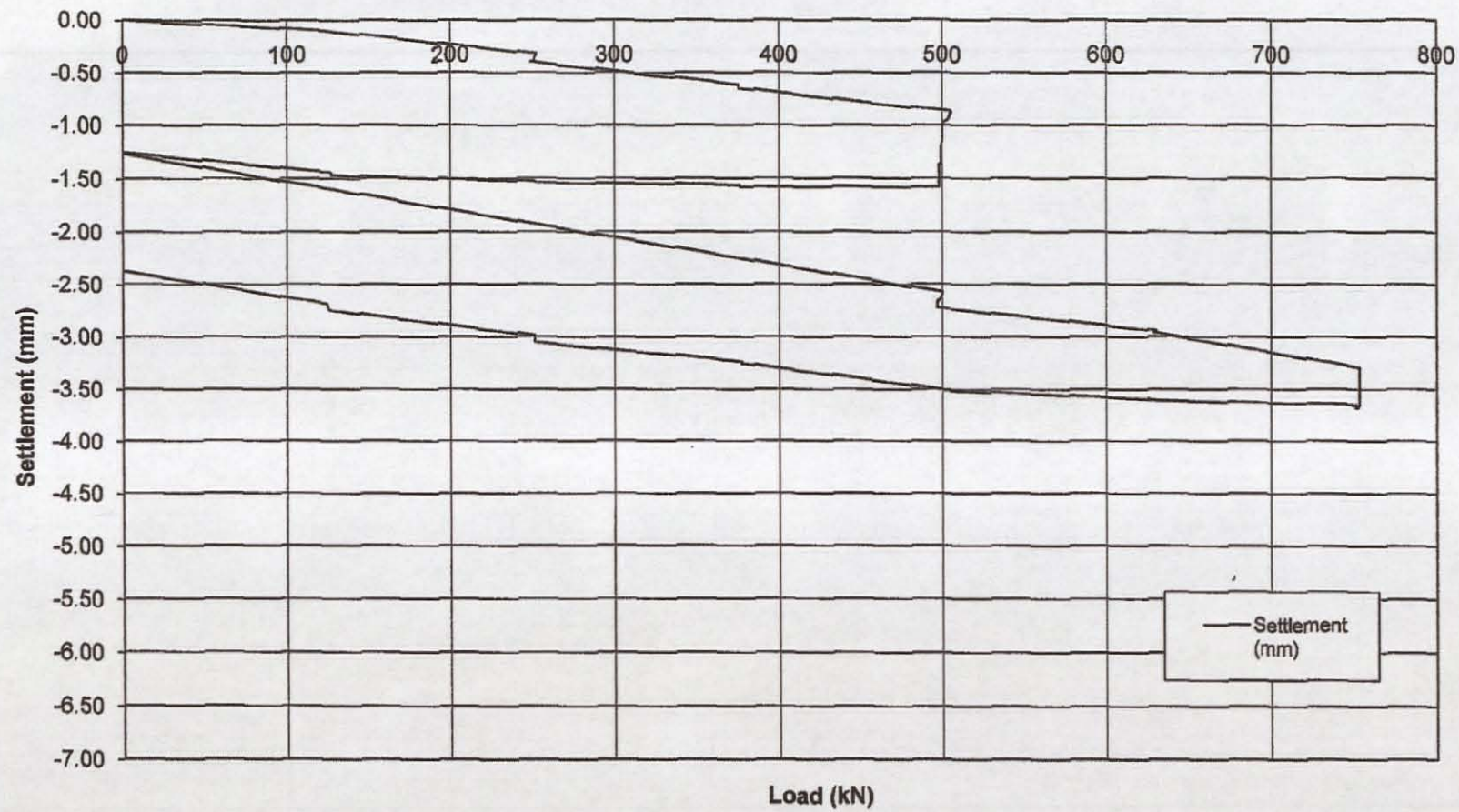
Time (Actual)	Load (kN)	Disp 1 (mm)	Disp 2 (mm)	Disp 3 (mm)	Disp 4 (mm)	Settlement (mm)	Movement (mm)	Rate (mm/hr)
1620	499	3.36	2.60	3.20	1.44	-2.65	0.05	0.32
1625	497	3.36	2.66	3.20	1.44	-2.66	0.01	0.09
1630	497	3.36	2.76	3.20	1.44	-2.69	0.03	0.15
1645	497	3.36	2.86	3.20	1.44	-2.71	0.03	0.15
1700	497	3.35	2.88	3.20	1.46	-2.72	0.01	0.06
1701	630	3.75	3.01	3.45	1.56	-2.94	0.22	1.31
1705	630	3.76	3.01	3.45	1.56	-2.95	0.00	0.01
1710	630	3.76	3.01	3.45	1.56	-2.95	1.38	8.29
1715	630	3.76	3.01	3.45	1.56	-2.95	0.00	0.00
1720	630	3.76	3.01	3.46	1.57	-2.95	0.01	0.03
1730	630	3.76	3.01	3.47	1.57	-2.95	0.00	0.01
1745	629	3.77	3.02	3.47	1.58	-2.96	0.01	0.04
1800	629	3.77	3.02	3.47	1.59	-2.96	0.00	0.01
1800	753	3.87	3.87	3.78	1.65	-3.29	0.33	1.98
1805	753	4.06	4.23	3.96	1.65	-3.48	0.18	1.10
1810	753	4.15	4.38	4.04	1.65	-3.55	0.08	0.47
1815	753	4.18	4.40	4.08	1.65	-3.58	0.02	0.14
1830	753	4.20	4.40	4.10	1.65	-3.59	0.01	0.06
1845	753	4.20	4.48	4.11	1.65	-3.61	0.02	0.14
1900	753	4.22	4.56	4.16	1.65	-3.65	0.04	0.23
1930	752	4.25	4.60	4.24	1.63	-3.68	0.03	0.20
2000	751	4.24	4.66	4.26	1.55	-3.68	0.00	-0.02
2030	751	4.25	4.63	4.29	1.50	-3.66	-0.01	-0.09
2100	751	4.25	4.57	4.29	1.48	-3.65	-0.02	-0.11
2130	751	4.25	4.59	4.31	1.46	-3.65	0.01	0.03
2200	749	4.25	4.61	4.31	1.46	-3.66	0.00	0.03
2230	749	4.25	4.61	4.31	1.44	-3.65	-0.01	-0.03
2300	749	4.25	4.63	4.31	1.44	-3.66	0.01	0.03
2330	749	4.25	4.63	4.31	1.44	-3.66	0.00	0.00
0	749	4.25	4.63	4.33	1.38	-3.65	-0.01	-0.06
0	626	4.25	4.57	4.29	1.31	-3.61	-0.04	-0.24
5	626	4.25	4.53	4.29	1.31	-3.60	-0.01	-0.06
10	625	4.25	4.53	4.29	1.31	-3.60	0.00	0.00
10	502	4.13	4.43	4.17	1.31	-3.51	-0.09	-0.52
20	500	4.13	4.39	4.17	1.31	-3.50	-0.01	-0.06
20	377	3.64	4.31	3.76	1.31	-3.25	-0.24	-1.47
30	377	3.64	4.22	3.76	1.31	-3.23	-0.02	-0.12
30	251	3.37	4.12	3.43	1.29	-3.06	-0.18	-1.07
35	251	3.31	4.00	3.37	1.27	-2.99	-0.07	-0.40
40	250	3.31	4.00	3.37	1.26	-2.99	0.00	-0.02
40	125	3.07	3.78	3.12	1.03	-2.75	-0.24	-1.44
45	124	3.07	3.55	3.11	1.01	-2.68	-0.06	-0.38
50	124	3.05	3.57	3.11	1.01	-2.68	0.00	0.00
100	0	2.80	3.19	2.88	0.62	-2.37	-0.31	-1.86
130	0	2.58	2.72	2.68	0.58	-2.14	-0.23	-1.40
135	0	2.58	2.62	2.68	0.56	-2.11	-0.03	-0.18
140	0	2.58	2.58	2.68	0.56	-2.10	-0.01	-0.06
145	0	2.58	2.58	2.68	0.56	-2.10	0.00	0.00
150	0	2.58	2.58	2.68	0.56	-2.10	0.00	0.00
150	0	2.60	2.58	2.68	0.58	-2.11	0.01	0.06

4. GRAPHICAL RESULTS

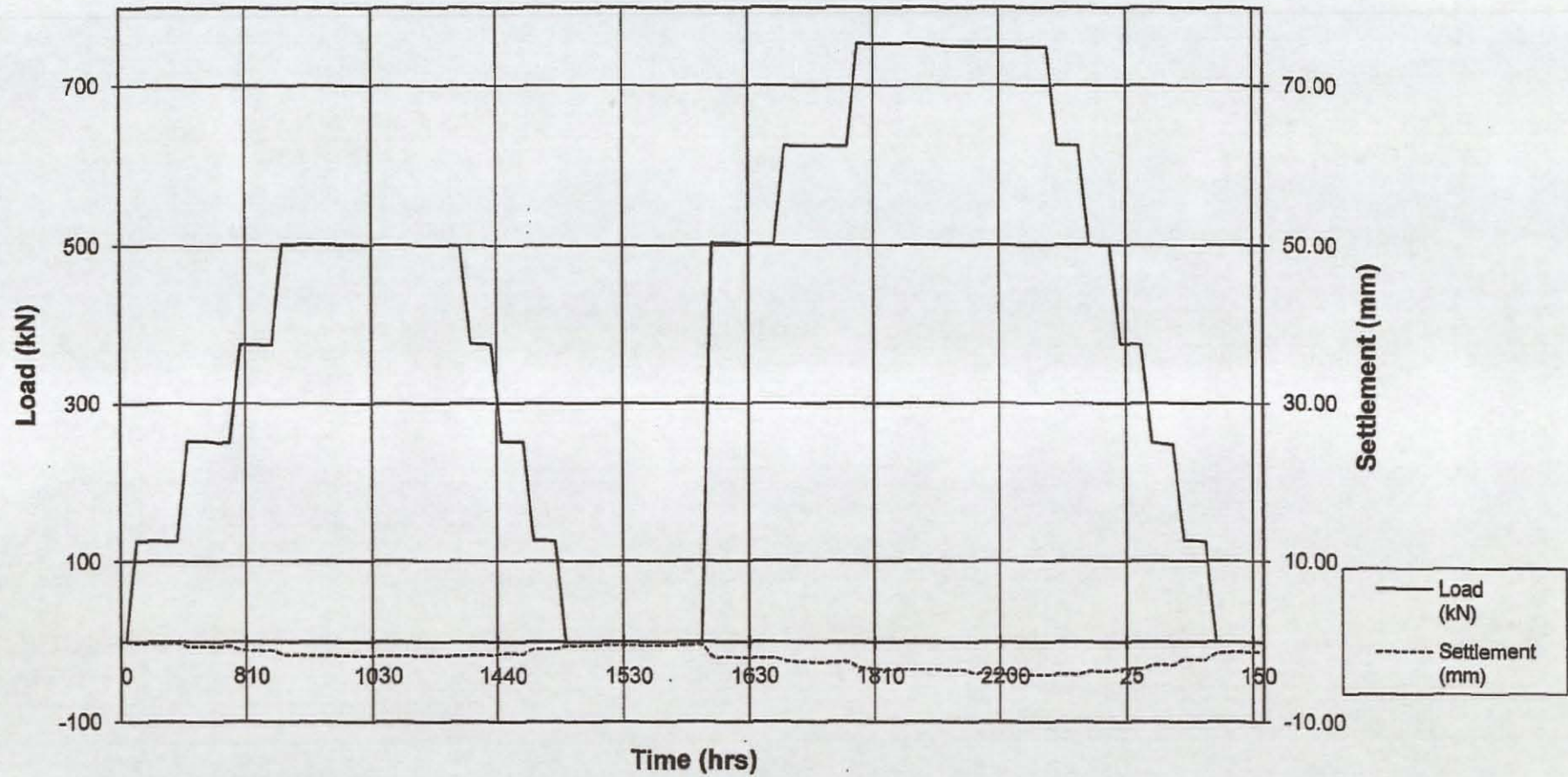
Load and Settlement v. Time
Heeble Wharf, Pile No 201
25/04/07-26/04/07



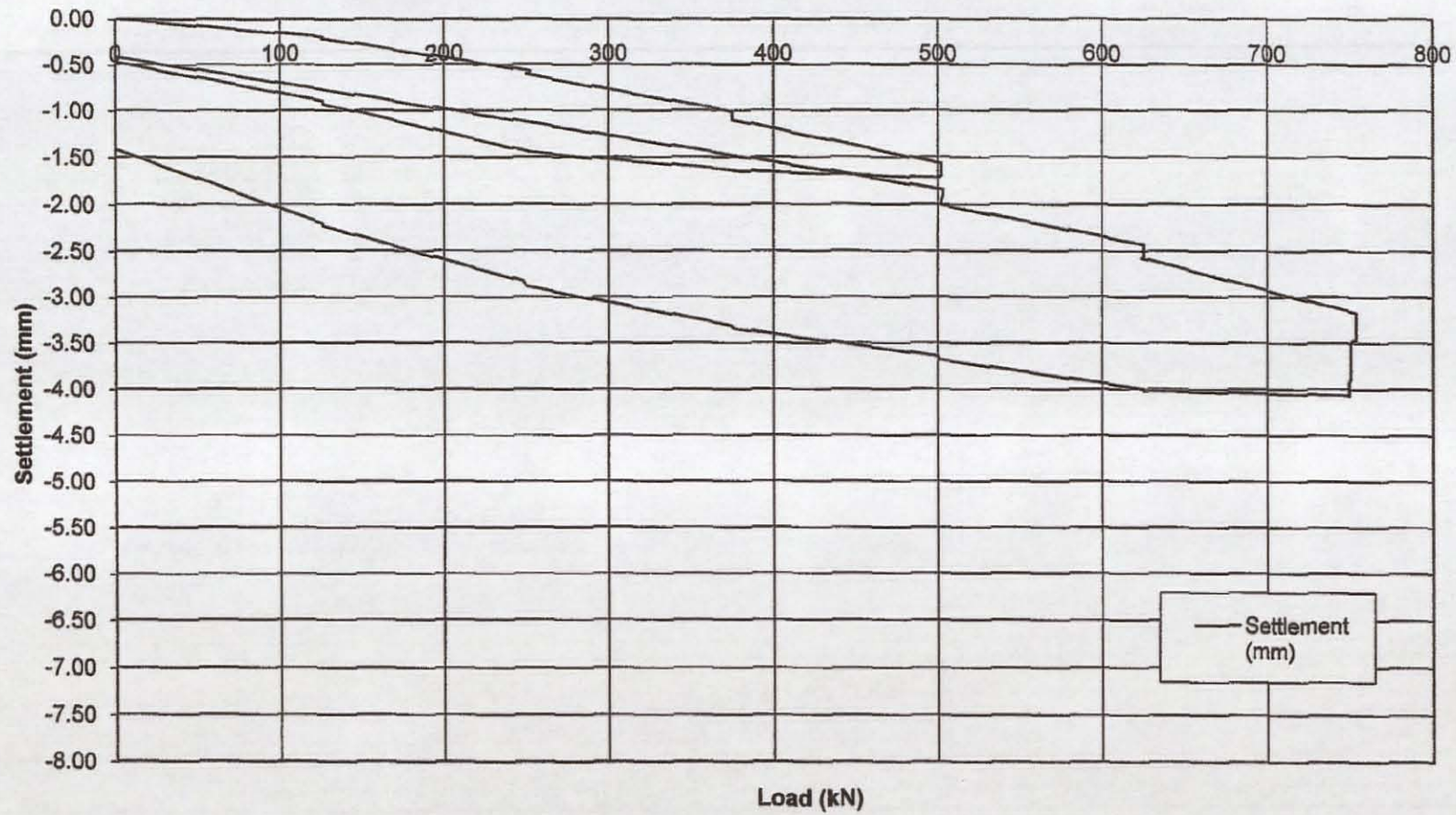
Load vs Settlement
Hebble Wharf Pile No: 201
25/04/07 - 26/04/07



Load and Settlement v. Time
Hebble Wharf Pile No 159
23/04/07-24/04/07



Load vs Settlement
Hebble Wharf Pile No 159
23/04/07-24/04/07



5. CALIBRATION CERTIFICATES

Lifting Equipment Supplies Limited

18 James Road
Tyseley
Birmingham B11 2BA

Tel: 0121 694 0094 Fax: 0121 694 0096

CERTIFICATE OF CALIBRATION

For:-

Description: Load Cell

Van Elle Ltd
Kirkby Road
Pinxton
Notts

Order No: Dan

Date: 1st November 2007

Works Ref: W08139

Up In Tonnes

Down In Tonnes

<u>Actual Load</u>	<u>Van Elle Meter</u>	<u>Actual Load</u>	<u>Van Elle Meter</u>
15.00	9.50	15.00	7.00
30.00	24.00	30.00	21.00
46.50	43.00	45.00	30.00
51.80	51.00	61.00	41.00
63.06	61.00	75.00	70.00
75.07	70.00	94.50	90.00
82.60	80.00	105.90	100.00
91.00	90.00	120.10	120.10
104.00	100.00	135.12	135.12
112.60	110.00	142.60	140.00
120.10	120.00		
134.40	130.00		
142.60	140.00		
150.14	150.00		

The above readings were taken using press No LES500T and gauge reference G4039L.

Dated: 1st November 2007

Test Temperature 20.00 Deg C

Signed on behalf of Lifting Equipment Supplies Ltd..... Liam Bullough



CFA DAILY RECORD SHEET

Record No: 0 Contract: QUARMBY Job No: PG7034
Date: 2/4/07 Start Time: 7.30 Finish Time: 6.00

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
Total Piles in Contract							Supplier	TAILMAC		
Piles Bored Today				17			Mix details	C35		
Total Bored to Date				17			Qty Received Today	31.00 m ³		
Piles Remaining							Qty Rejected Today			
Pile Type:	SOILMEC CM48					TEST PILES	B/Fwd	On Test	To Date	

PILE	LOAD	LENGTH	MAIN STEEL	CONC m ³	WORKING	REMARKS
o/Ref	kN	m	No/Type/Dia/Length		LEVEL	Obstructions, Cubes 'C', etc
	400	11.2	4T16X6m		OK	
161						
163						
184						
185						
186						
187						
188						
189						
202						
203						
204						
205						
223						
224						
225						
243						
244						

ES 4 B/Fwd Today To Date DRAWING No. REV

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

SET UP DAY LOST 1/2 DAY DUE TO
CONCRETE BREAKDOWN

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐
Pile Depth checked Yes ☒ No ☐

SIGNED

DATE

2/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☒
Pile Depth checked Yes ☐ No ☒

SIGNATURE

DATE

C. Beave
Evance
4/04/07



CFA DAILY RECORD SHEET

SDI

Record No: 1

Contract: QUATMBY

Job No: P67034

Date: 3/4/07

Start Time: 7.30

Finish Time: 7.15

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
Total Piles in Contract							Supplier	TARMAC		
Piles Bored Today				48			Mix details	C35		
Total Bored to Date				65			Qty Received Today	89.00 m³		
Piles Remaining							Qty Rejected Today	m³		
Pig Type:	Soilmec 48						TEST PILES	B/Fwd	On Test	To Date

PILE No/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length	CONC m³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc
160	400		11.12m	4T16X6m		OK	
162							
164							
165							
166							
167							
168							
169							
206							
207							
208							
209							
210							
211							
212							
213							
214							
215							
216							
217							

IS 4	B/Fwd	Today	To Date	DRAWING No.	REV
------	-------	-------	---------	-------------	-----

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐Pile Depth checked Yes ☒ No ☐

SIGNED

DATE

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☒Pile Depth checked Yes ☐ No ☒

SIGNATURE

DATE

DTAYLOR
3/4/07C. Beaver
Engineer
4/04/07



CFA DAILY RECORD SHEET

SD6

Record No: 1 Contract: QUAMBY Job No: P67034
Date: 3/4/07 Start Time: 7.30 Finish Time: 7.15

PROGRESS	DIA	300	350	400	450	600	CONCRETE	
Total Piles in Contract							Supplier	TALMAC
Piles Bored Today				48			Mix details	C35
Total Bored to Date				65			Qty Received Today	89.00 m ³
Piles Remaining							Qty Rejected Today	m ³

ig Type: Soilmec cm48 TEST PILES B/Fwd On Test To Date

PILE No/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length	CONC m ³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc
226	400		11.2m	4T16X6m		OK	
227							
228							
229							
230							
231							
232							
233							
234							
235							
236							
237							
238							
239							
240							
241							
242							
243							
246							
247							

BES B/Fwd Today To Date DRAWING No. REV

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

20

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

D. TAMILIOT

Pile Nos. checked Yes ☒ No ☐

Pile Depth checked Yes ☒ No ☐

SIGNED

DATE 3/4/07

CLIENTS NAME C. BEEVER

CLIENTS POSITION Engineer

Pile Nos. checked Yes ☐ No ☒

Pile Depth checked Yes ☐ No ☒

SIGNATURE

DATE 4/04/07

DATE 04/04/07



CFA DAILY RECORD SHEET

SDc

Record No: 2 Contract: QUARMBY Job No: PG7034
Date: 4/4/07 Start Time: 7.30 Finish Time: 6.30

PROGRESS	DIA	300	350	400	450	600	CONCRETE	
Total Piles in Contract							Supplier	TARMAC
Piles Bored Today				42			Mix details	C35
Total Bored to Date				107			Qty Received Today	77.00 m ³
Piles Remaining							Qty Rejected Today	— m ³
ig Type:	SOILMEC CM48						TEST PILES	B/Fwd On Test To Date

PILE	LOAD	LENGTH	MAIN STEEL	CONC m ³	WORKING	REMARKS
o/Ref	Dia	kN	m	No/Type/Dia/Length	LEVEL	Obstructions, Cubes 'C', etc
146	400		All 12m 4T16X6m		OK	
173						
174						
175						
176						
177						
178						
179						
159			TEST PILE			
148						
149						
150						
151						
152						
153						
154						
155						
156						
157						
158						
147						

BES 4	B/Fwd	Today	To Date	DRAWING No.	REV
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GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

21

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐Pile Depth checked Yes ☒ No ☐

SIGNED

DATE

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SD6

Record No: 2 Contract: QUARMBY Job No: PG1030
Date: 4/4/07 Start Time: 7.30 Finish Time: 6.30

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
Total Piles in Contract							Supplier	TARMAC		
Piles Bored Today				42			Mix details	C35		
Total Bored to Date				107			Qty Received Today	77.00 m³		
Piles Remaining							Qty Rejected Today	m³		
Pig Type:	SOILMEC CM48						TEST PILES	B/Fwd	On Test	To Date
PILE No/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length		CONC m³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc		
145	400		11.12m	4T16 X 6m			OK			
218										
219										
220										
221										
201				TEST PILE						
190										
191										
192										
193										
194										
195										
196										
197										
198										
199										
200										
222										
170										
171										
172										
BES 4	B/Fwd	Today	To Date	DRAWING No.		REV				

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

21

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐Pile Depth checked Yes ☒ No ☐

SIGNED

DATE 4/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SD66

Record No: ~~3~~ 3 Contract: QUARMBY Job No: P67034
Date: ~~5/4/07~~ 5/4/07 Start Time: 7.00 Finish Time: 4.00

PROGRESS	DIA	300	350	400	450	500	CONCRETE
Total Piles in Contract							Supplier
Piles Bored Today				19			Mix details
Total Bored to Date				126			Qty Received Today
Piles Remaining							Qty Rejected Today

g Type: SOILMEC CM48 TEST PILES B/Fwd On Test To Date

PILE No/Ref	DIA	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length	CONC m ³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc
139	400		11.12m	4T16x6m		OK	
140							
141							
142							
143							
144							
125							
126							
127							
128							
129							
130							
131							
133							
134							
135							
136							
137							
138							

UBES 4 B/Fwd Today To Date DRAWING No. REV

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

19

I CONFIRM THIS IS A TRUE RECORD		CLIENTS NAME	
VAN ELLE OPERATIVE NAME		CLIENTS POSITION	
Pile Nos. checked	Yes ☒ No ☐	Pile Nos. checked	Yes ☐ No ☒
Pile Depth checked	Yes ☒ No ☐	Pile Depth checked	Yes ☐ No ☐
SIGNED	DATE	SIGNATURE	DATE
	5/4/07		



CFA DAILY RECORD SHEET

SD6

Record No: 4

Contract: QUAILM34

Job No: PG1034

Date: 10/4/07

Start Time: 7.30

Finish Time: 6.00

PROGRESS	DIA	300	350	400	450	600	CONCRETE	
Total Piles in Contract							Supplier	TAILMAC
Piles Bored Today				40			Mix details	C35
Total Bored to Date				166			Qty Received Today	70.5 m³
Piles Remaining							Qty Rejected Today	m³
Piling Type:	SOILMEC CM48						TEST PILES	B/Fwd
							On Test	To Date

PILE No/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length	CONC m³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc
62	400		11.12m	4T16X6m		OK	
63							
64							
65							
66							
67							
82							
83							
84							
85							
86							
87							
88							
89							
90							
91							
110							
111							
112							
113							
BES 4	B/Fwd	Today	To Date	DRAWING No.	REV		

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐Pile Depth checked Yes ☒ No ☐

SIGNED

DATE 10/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SD66

Record No: 4 Contract: QUARMBY Job No: PG7034
Date: 10/4/07 Start Time: 7.00 Finish Time: 6.00

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
Total Piles in Contract							Supplier	TARMAC		
Piles Bored Today				40			Mix details	C35		
Total Bored to Date				166			Qty Received Today	70.5 m³		
Piles Remaining							Qty Rejected Today	m³		
Pile Type:	Soilmec CM48						TEST PILES	B/Fwd	On Test	To Date
PILE No/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length		CONC m³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc		
180	400		11.2m	4T16X6m			OK			
181										
182										
183										
119										
120										
121										
122										
123										
124										
132										
114										
115										
116										
117										
118										
68										
69										
70										
71										
BES <u>4</u>	B/Fwd	Today	To Date	DRAWING No.			REV			

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

20

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐Pile Depth checked Yes ☒ No ☐

SIGNED

DATE 10/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SD66

Record No: <u>5</u>	Contract: <u>QUAIRMBY</u>	Job No: <u>P61034</u>
Date: <u>11/4/07</u>	Start Time: <u>7:30</u>	Finish Time: <u>6:30</u>

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
al Piles in Contract							Supplier	TAILMAC		
es Bored Today				39			Mix details	C35		
al Bored to Date				205			Qty Received Today	71.00 m³		
es Remaining							Qty Rejected Today	m³		
Type:	Soilmec CM48						TEST PILES	B/Fwd	On Test	To Date
E		LOAD	LENGTH	MAIN STEEL		CONC m³	WORKING	REMARKS		
/Ref	Dia	kN	m	No/Type/Dia/Length			LEVEL	Obstructions, Cubes 'C', etc		
	400		11.2m	4T16x6m			OK			
104										
105										
106										
107										
108										
109										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
25										
26										
27										
28										
BES <u>4</u>	B/Fwd	Today	To Date	DRAWING No.		REV				

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

20

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

DTA-107

Pile Nos. checked Yes ☒ No ☒Pile Depth checked Yes ☒ No ☒

SIGNED

DATE 11/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SD6

Record No: 5 Contract: QUAILM34 Job No: PG1034
Date: 11/4/07 Start Time: 7.30 Finish Time: 6.30

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
Total Piles in Contract							Supplier	TATMAC		
Piles Bored Today				39			Mix details	C35		
Total Bored to Date				205			Qty Received Today	71.00 m ³		
Piles Remaining							Qty Rejected Today	m ³		
Piling Type:	SOILMEC CM48						TEST PILES	B/Fwd	On Test	To Date
PILE	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length		CONC m ³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc		
1	400		11.2 m	4T16X6m			OK			
19										
20										
21										
22										
23										
24										
2										
17										
15										
16										
18										
13										
14										
4										
11										
12										
5										
9										
BES 4	B/Fwd	Today	To Date	DRAWING No.		REV				

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

PILE 1 MOVED AWAY FROM SHEET PILES
2 MOVED AWAY FROM SHEET PILES
3 OBSTRUCTION NOT COMPLETED
4 MOVED AWAY FROM SHEET PILES

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐Pile Depth checked Yes ☒ No ☐

SIGNED

DATE 11/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SDe

Record No: 6 Contract: QUAILMISY Job No: P61034
Date: 12/4/07 Start Time: 7.30 Finish Time: 6.00

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
Total Piles in Contract							Supplier	TAILMAC		
Piles Bored Today				38			Mix details	C35		
Total Bored to Date				263			Qty Received Today	75.00 m ³		
Piles Remaining							Qty Rejected Today	— m ³		
Piling Type:	Soilmec cm48						TEST PILES	B/Fwd	On Test	To Date

PILE No/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length	CONC m ³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc
6	400			4T16X6m		OK	
7							
10							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
52							
53							
54							
55							
56							
57							
58							

PILES 4 B/Fwd Today To Date DRAWING No. REV

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

20

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐
Pile Depth checked Yes ☒ No ☐

SIGNED

DATE 12/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐
Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SD66

Record No: 6 Contract: QUAILBY Job No: PG1034
Date: 12/4/07 Start Time: 7.30 Finish Time: 6.00

PROGRESS	DIA	300	350	400	450	600	CONCRETE			
Total Piles in Contract							Supplier	TARMAC		
Piles Bored Today				38			Mix details	C35		
Total Bored to Date				243			Qty Received Today	75.00 m³		
Piles Remaining							Qty Rejected Today			
Type: Soilmec cm48				TEST PILES		B/Fwd		On Test		To Date
E/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length		CONC m³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc		
	400		11.12m	4T16X6m			OK			
59										
60										
61										
8										
49										
50										
72										
73										
74										
75										
76										
77										
78										
79										
80										
81										
96										
101										

BES 4 B/Fwd Today To Date DRAWING No. REV

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

5 ANCHOR PILES 11m

18

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐

Pile Depth checked Yes ☒ No ☐

SIGNED

DATE

12/4/07

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐

Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE



CFA DAILY RECORD SHEET

SD66

Record No: 7 Contract: QUARMBY Job No: P61034
Date: 13/4/07 Start Time: 7.30 Finish Time: 2.30

PROGRESS	DIA	300	350	400	450	600	CONCRETE
Total Piles in Contract							Supplier
Piles Bored Today			16				Mix details
Total Bored to Date			259				Qty Received Today
Piles Remaining							Qty Rejected Today

Soil Type: Soilmec cm 48 TEST PILES B/Fwd On Test To Date

PILE No/Ref	Dia	LOAD kN	LENGTH m	MAIN STEEL No/Type/Dia/Length	CONC m³	WORKING LEVEL	REMARKS Obstructions, Cubes 'C', etc
	400		11.2	M4T16x6m		OK	
1	51						
1	97		5				
2	93		7				
2	94		5				
2	95		7				
2	97		5				
3	98		4				
3	99						
3	100						
4	102						
4	103						
4	3						
RANE BASE				6T16x9m			
1							
2							
3							
4							

PILES 4 B/Fwd Today To Date DRAWING No. REV

GENERAL REMARKS (INCLUDING INSTRUCTIONS RECEIVED)

3 ANCHOR PILES 11m

x close base

I CONFIRM THIS IS A TRUE RECORD

VAN ELLE OPERATIVE NAME

Pile Nos. checked Yes ☒ No ☐
Pile Depth checked Yes ☒ No ☐

SIGNED

DATE

CLIENTS NAME

CLIENTS POSITION

Pile Nos. checked Yes ☐ No ☐
Pile Depth checked Yes ☐ No ☐

SIGNATURE

DATE

2.45 Velfac Ltd

- Windows

M.I.O.C. Suite 11A

Styal Road

Manchester

M22 5WB

Tel 01223 897100

Fax 01223 897101

OPERATION & MAINTENANCE

ADDITIONAL INFORMATION

Maintenance	1
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Test information	24
12 Year Warranty	29

VELFAC window systems are easy to use and maintain but in order to ensure maximum lifespan it is important to maintain individual parts regularly.

If in doubt, the VELFAC customer service department is available on 01223 897100, to give advice.

The following cleaning and maintenance instructions should be carried out at least once per year. Your windows will need more regular maintenance if they are exposed to strong sunlight on south facing facades, if they are installed in a marine or industrial environment, or if you have high levels of internal humidity.

ITEM	MAINTENANCE	REPLACEMENT (Yrs)
Wood	The wood frame should be dusted and wiped clean regularly. Some brushing with a stiff brush may be needed on external frames in order to remove any ingrained dirt. If any algae growth exists, a fungicidal wash is recommended as a pre-treatment for external wood. Wood is a natural product containing resin. Occasionally beads of crystallised resin may form on the surface of the frame. These beads can be removed by gently rubbing with a cloth dampened with meths or other alcohol based substance. The mainframe should be checked for breaches in surface treatment at least once per year. If the surface has been damaged it should be repaired immediately using a water-based diffusion open paint or lacquer, to prevent the wood from absorbing moisture. When over-painting, a balance should be maintained between increasing the paint thickness and allowing the wood to breathe. Surface preparation should be limited to localised repair, and very light sanding and thorough cleaning is usually all that is required. Ensure that none of the gaskets are painted. All paint should be dried and cured as thoroughly as possible prior to fully closing the sash against the frame. Fixed sashes should be removed to enable all exposed timber surfaces are painted.	40+ Surface treatment may need to be re-applied or wood over-painted 15+
Glazing Bead	Glazing beads should be cleaned using luke warm water with a few drops of mild detergent.	40+

ITEM	MAINTENANCE	REPLACEMENT (Yrs)
Gaskets	Gaskets should be cleaned using luke warm water with a few drops of mild detergent. They must not come into contact with paint or wood preservative, or be over-painted.	20-25+
Glass	Windows should be cleaned with a soft cloth or soft bristle brush and luke warm water with a few drops of mild detergent - detergents must not contain solvent or abrasive. Hard brushing, scrubbing or the use of steelwool will produce scratches and must therefore be avoided. To dry the window, use a window scraper, or wipe with a slightly damp Chamois leather or fine cloth. Traces left on the glass after removing stickers can be removed with meths or other alcohol based substances - care must be taken to avoid contact with other parts.	25+
Polyester powder coated or anodised aluminium	The aluminium sash should be cleaned using the instructions above. A scratch will not affect the durability of the sash as the aluminium will form a natural layer of oxide, however, scratches should be repaired immediately to ensure that your warranty remains valid. If atmospheric pollution has resulted in heavy soiling of the coating, then nothing stronger than white spirit should be used. Abrasive cleaners or chemical cleaners containing ketone, esters or alkalis should not be used.	40+ although some discolouration from weathering may occur after 20-30+
Hardware	Once a year all moving parts should be cleaned and lubricated with acid-free oil. Friction stays should be adjusted (where necessary) and hardware inspected. In coastal areas or other similarly aggressive environments, hardware should be lubricated more often - at least 2 times per year.	30-40+
Expanding foam	No maintenance necessary	25+

VELFAC is a multi-million pound subsidiary of the VELUX Group who employ in excess of 10,000 people worldwide. We specialise in design, development and construction of leading edge window systems for commercial projects. Our innovative products, distinctive in appearance, use advanced technology to recreate natural ventilation and improve working environments.

VELFAC glazing is used in a growing number of projects throughout the UK, from major office complexes to large housing developments. VELFAC only uses environmentally friendly raw materials, manufacturing processes and surface finishes as part of its company-wide commitment to good environmental practice.

Full name of company:
VELFAC LTD
The Old Livery
Hildersham
Cambridge CB1 6DR

Company registration no:
2332292

VAT registration no.
GB 493 3468 16

Parent Company:
VELFAC A/S
Ribovej 5
DK-6950 Ringkøbing
Denmark

Bankers:
Nordea Bank
8th Floor City Place House
55 Basinghall Street
London
EC2V 5NB

Number of CIS 5 certificate:
1133006454102

Values of contract undertaken:
£40,000 to £3,000,000

Product Liability Insurance
£2,000,000 Exp. 30.12.03
Insurers: Royal Sun Alliance
Policy No. GANTR 00090

Professional indemnity insurance:
£2,000,000 Exp. 18.04.04
Insurers: CGU Insurance PLC
Policy No. 23120745LAL

Employers liability insurance:
£10,000,000 Exp. 30.12.03
Insurers: Royal Sun Alliance
Policy No. GANTR 00090

Contractors all risk insurance:
£250,000 Exp. 30.12.03
Insurers: Zurich Insurance
Policy No. 067/710/42556474/6

Item / Description**Supplier**

VIMO' galvanised
steel lugs

Construction Components
250 Westbrook Road, Bromham, Nr Chippenham, Wiltshire SN15 2EB
Tel: 01380 859 651 Fax: 01380 850 157

'VIMO' type lugs,
bespoke bracketry,
frame reinforcing
bars & architectural
metal fabrication
etc.

Finish Architectural Ltd
Units 9 & 10, Westwood Ind. Estate, Dulverton Road, Birmingham B6 7EQ
Tel: 0121 327 0523 Fax: 0121 327 0023
or
Newbrel Limited
Amber Way, Gainsford Drive, Halesowen, West Midlands B62 8BQ
Tel: 0121 585 2745 Fax: 0121 585 9362

Compriband 600
joint sealing tape

Illbruck Sealant Systems UK Ltd, Scotlands Industrial Estate, London Road,
Coalville, LE67 3JJ
Tel: 0191 419 6860 Fax: 0191 419 2200

ARBOSIL 1090
External Silicone
Sealant

Adshead Ratcliffe & Company Limited
Derby Road, Belper, Derbyshire, DE56 1WJ
Tel: 01773 826 661 Fax: 01773 821 215

Cover caps for direct
fixed frames

VELFAC LTD, The Old Livery, Hildersham, Cambridge, CB1 6DR
Tel: 01223 897 100 Fax: 01223 897 101

The following outlines a typical Health & Safety plan for your information. Our Approved Installers can usually generate project specific plans.

1. The Main Contractor will undertake safety inductions on site. No person will be allowed on site until an induction has been carried out and the appropriate pass or induction record issued.
2. Site Health, Safety and Welfare Facilities will be provided by the Main Contractor in accordance with current legislation and the terms of the contract.
3. All installation site personnel are aware of the Companies Safety Policy. All site operatives must have attended Main Contractor Safety Induction Course and be in receipt of a valid security pass (where applicable).
4. All Employees will wear a safety hat, safety boots and suitable clothing at all times while on site.
5. All employees will wear & use safety harnesses where necessary while working in open steelwork etc.
6. Where appropriate, employees will be issued with further PPE relative to the particular task to be undertaken and in accordance with any COSHH data or risk assessments issued. Employees will ensure that all PPE issued to them is maintained, cleaned and cared for and is in an efficient state and working order.
7. Every operative will be issued with a Method Statement together with the company Safety Policy and any relevant COSHH information. Regular toolbox talks will be held to ensure that all operatives are aware of their obligations, conduct and responsibilities in relation to Health & Safety.
8. A Risk Assessment Sheet will identify any processes involved in the installation of the supplied product that may pose potential risk(s).
9. Where operations vary from the original proposed method of installation on site, additional Risk Assessment Sheets may be issued if potential hazards are identified.
10. All materials used which are deemed to have a potential health hazard will be covered by a relevant COSHH assessment sheet together with the supplier data sheet
11. Both the COSHH and Risk Assessment sheets will be issued to the Main Contractor and Site Foreman prior to any work commencing on site. These will be issued along with the Method Statement / Quality Plan.
12. Care must be taken to ensure that the Health and Safety of employees or others is not put at risk by carrying excessive weights. Always use trolleys, pallet trucks or other forms of mechanical distribution where possible.
13. Operatives will be responsible for ensuring all working areas are kept safe, clean and free from obstructions and will observe all current Health and Safety regulations.

14. All materials such as compressible perimeter tapes, silicone sealant, and expanding pu-foam must be used in accordance with the manufacturers safety recommendations.
15. Ensure all power and hand tools are properly maintained and are in proper working order. All plant and equipment will only be used for its intended purpose.
16. Care must be taken to limit the possibility of breaking glass at all times. Any glass broken must be carefully removed taking all necessary safety precautions (i.e. wearing suitable protective clothing/equipment such as gloves, safety glasses, suitable footwear etc, to protect against injury) and cleared away to an appropriate receptacle immediately.
17. Broken glass should be transported in a suitable strong container to minimise any personal injury during removal and subsequent disposal.
18. It is the responsibility of all personnel to report anything that contravenes the safety regulations immediately to the Main Contractor.
19. The Main Contractor is to check all working areas and scaffolding prior to work commencing and should any unsafe areas become apparent, immediate action will be taken to rectify.
20. Whilst installation is being carried out, personnel should be constantly aware of safety to themselves and be aware of the safety of others.
21. All personnel will carry out any instruction from the site management regarding Health and Safety.
22. The safe system of working will be a condition of every operatives employment on the site. The operatives will be made aware that any breach of the Health & Safety Regulations will result in suspension from the works and may lead to instant dismissal.
23. It is assumed that the Main Contractor will hold periodic Site Safety Meetings that can be attended by all operatives if required, to discuss general site activities, safety issues and site conditions.
24. All accidents, however minor, will be reported and entered into the Site Accident Book in addition to the Installation Companies Accident Record Book.

We have included in this section some typical Risk Assessments that apply to most projects. Where special works are required or where additional assessments come into force, either VELFAC or an Approved Installer would be happy to provide you with these.

The following assessments are included here:

- Glazing of Glass Units
- Manual Handling – Off Loading & Distribution
- Working at Height on Scaffold / Mobile Towers
- Window Conversion
- Hanging Frames and Closer Mechanisms
- Small Electrical Tools
- Fire Rated Foam Sealer
- Window Glazing – Glass Replacement
- Head, Body, Feet, Eyes and Ears

Risk Assessments Glazing of glass units

RECORD OF RISK ASSESSMENT**Contract:****Contract No.****Client:****Issue Date:**

Subject of Assessment	Persons at Risk
Glazing of Opening Windows	Installation Team

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Lifting glass units, back injury, unit breakage or damage	4	x	4	=	16
2	Glass breakage	2	x	4	=	8
3	Laceration of hands etc	2	x	4	=	8
4	Units falling out of opening	2	x	4	=	8

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Use lifting equipment, i.e. slings, suckers: Reduce unit size	2	x	2	=	4
2	Clear access, use lifting equipment	1	x	1	=	1
3	Wear protective gloves, clothing	1	x	3	=	3
4	Restrain window unit during fixing	1	x	2	=	2

Other Relevant Factors / Measures Taken

Ensure that materials are stored safely and uninstalled units are protected. Wherever possible identify glazed units with "X" on glass once installed or keep VELFAC labels in place prior to cleaning.

Conclusions

IF THE ABOVE MEASURES TAKE PLACE, DAMAGE TO UNITS SHOULD BE MINIMISED AND INSTALLERS MINIMISE RISK OF INJURY.

Assessment by:**Position:****Signed by:****Date:**

Risk Assessments Manual handling

RECORD OF RISK ASSESSMENT

Contract:

Contract No.

Client:

Issue Date:

Subject of Assessment	Persons at Risk
Off Loading & Distribution	Installation Team / Persons in Area

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Back Injury	3	x	3	=	9
2	Hand Injury	3	x	2	=	6
3	Foot Injury	3	x	2	=	6
4	Head Injury	3	x	2	=	6

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Correct method of lifting / Use lifting equipment	1	x	2	=	2
2	Wear safety gloves	2	x	1	=	2
3	Wear safety shoes	2	x	1	=	2
4	Wear safety hats	2	x	1	=	2

Other Relevant Factors / Measures Taken

Laid out in the method statement are the correct procedures for all operatives to adhere to. If this is read & actioned, it will substantially decrease the risk of injuries. Those offloading & distributing materials should first access the route to be taken and the working area to make sure it is clear and safe.

Conclusions

USE OF MECHANICAL & SAFETY EQUIPMENT WITH THE CORRECT METHOD OF LIFTING AND SUPERVISION WILL REDUCE THE RISK OF INJURY.

Assessment by:

Position:

Signed by:

Date:

Risk Assessments

Working at height on scaffold

RECORD OF RISK ASSESSMENT**Contract:****Contract No.****Client:****Issue Date:**

Subject of Assessment	Persons at Risk
Working At Height on Scaffold / Tower	Installation Team / Others

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Falling from scaffold	4	x	4	=	16
2	Knocks to head	3	x	4	=	12
3	Falling tools / materials	4	x	4	=	16
4	Tripping	2	x	3	=	6

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Ensure guard rails are fitted and are at correct heights	1	x	4	=	4
2	PPE hard hats to be worn	2	x	1	=	2
3	Ensure toe boards are fitted	1	x	4	=	4
4	Ensure that boards are securely tied down	1	x	3	=	3

Other Relevant Factors / Measures Taken

Ensure that suitably trained personnel erect scaffold / mobile towers. Ensure that regular checks are made by authorised personnel and operatives inspect scaffold before use.

Conclusions

IF THE ABOVE MEASURES TAKE PLACE, ACCIDENTS SHOULD NOT OCCUR ON SCAFFOLD / TOWER

Assessment by:**Position:****Signed by:****Date:**

Risk Assessments

Window conversion

RECORD OF RISK ASSESSMENT

Contract:

Contract No.

Client:

Issue Date:

Subject of Assessment	Persons at Risk
Window Conversion	Installation Team / Persons in Area

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Personal injury / lifting glass / back injury / hand cuts	3	x	2	=	6
2	Sash / Timber material damage	2	x	2	=	4
3	Tools/debris dropping outside opening in area below works	2	x	4	=	8
4	Glass breakage on installation / Personal injury	2	x	2	=	4

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Use lifting equipment, suitable access equipment, use PPE	1	x	2	=	2
2	Protect materials and use correct tools	1	x	1	=	1
3	If possible, rope off area and use netting/plastic to protect	1	x	2	=	2
4	Fit glass with correct equipment and wear gloves	1	x	1	=	1

Other Relevant Factors / Measures Taken

Ensure that materials are stored safely and uninstalled units are protected from damage. Where units are being glazed above 2m from floor level, use access equipment to assist installation.

Conclusions

IF THE ABOVE MEASURES ARE TAKEN, DAMAGE TO GLASS UNITS AND PERSONAL INJURY SHOULD BE MINIMISED.

Assessment by:

Position:

Signed by:

Date:

Risk Assessments

Hanging frames & closer mechanisms

RECORD OF RISK ASSESSMENT

Contract:

Contract No.

Client:

Issue Date:

Subject of Assessment	Persons at Risk
Hanging Frames & Closer Equipment	Installation Team

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Back Injury	2	x	3	=	6
2	Eye Injury	1	x	2	=	2
3	Foot Injury	2	x	2	=	4
4	Head Injury	2	x	2	=	4
5	Hand Injury	3	x	2	=	6

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Use correct method of lifting / use lifting equipment	1	x	2	=	2
2	Wear safety glasses	1	x	1	=	1
3	Wear safety shoes	1	x	1	=	1
4	Wear safety hats	1	x	1	=	1
5	Wear protective gloves: Keep hands out of closer mech.	2	x	1	=	2

Other Relevant Factors / Measures Taken

Correct methods / equipment should be used with heavy materials and motor housing mechanisms. Ensure hands & fingers are kept clear of frames and mechanisms when testing operation of the windows and/or motor mechanisms.

Conclusions

THE USE OF MECHANICAL EQUIPMENT, SAFETY EQUIPMENT AND CORRECT METHOD OF LIFTING WILL REDUCE RISK OF INJURY.

Assessment by:

Position:

Signed by:

Date:

Risk Assessments

Small electrical tools

RECORD OF RISK ASSESSMENT**Contract:****Contract No.****Client:****Issue Date:**

Subject of Assessment	Persons at Risk
Electricity & Use of Small Portable Tools	Installation Team

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Electrocution / Electric Shock	2	x	4	=	8
2	Hand injuries due to tool slippage	2	x	2	=	4
3	Eye damage from drill / grinder/ hammer activities	2	x	4	=	8

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Use 110V equipment	1	x	2	=	2
2	Wear PPE, gloves etc	2	x	1	=	2
3	Wear eye protection	2	x	1	=	2

Other Relevant Factors / Measures Taken

Electrical equipment must be tested to ensure safe working conditions. Operatives must visually inspect all tools prior to using. Main Contractor to provide 110V supply local to working area.

Conclusions

SERVICEABLE TOOLS AND USE OF PROTECTIVE EQUIPMENT SHOULD MINIMISE RISK OF INJURY

Assessment by:**Position:****Signed by:****Date:**

Risk Assessments

Fire rated foam sealer

RECORD OF RISK ASSESSMENT**Contract:****Contract No.****Client:****Issue Date:**

Subject of Assessment	Persons at Risk
Applying Fire Rated Expanding Foam	Installation Team

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Eye irritation	3	x	4	=	12
2	Skin irritation	2	x	3	=	6
3	Breathing difficulties	2	x	3	=	6

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Wear eye protection	2	x	1	=	2
2	Wear protective gloves	1	x	1	=	1
3	Use in fully ventilated area or use respiratory equipment	1	x	2	=	2

Other Relevant Factors / Measures Taken

Keep product in a well ventilated, cool environment and keep in locked container when not in use. Harmful product if not used correctly. Always read manufacturers label on canister(s) and COSHH data sheets. If clothing is contaminated, remove and dispose of. If skin contact, wash in soapy water and rinse thoroughly. In event of eye contact, rinse eyes with running water and seek medical advice. If ingested, seek medical advice immediately.

Conclusions

MATERIAL IS SAFE IF USED CORRECTLY. SUPPLIED IN PRESSURISED CANNISTER CONTAINING NO CFC'S

Assessment by:**Position:****Signed by:****Date:**

RECORD OF RISK ASSESSMENT

Contract:

Contract No.

Client:

Issue Date:

Subject of Assessment	Persons at Risk
Window Glazing / Glass Replacement	Installation Team

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Delivery - lifting glass units / back injury / glass breakage	3	x	2	=	6
2	Replace glass units - back injury / hand cuts	2	x	2	=	4
3	Trip hazards / access to area / risk to public adjacent/ below	3	x	2	=	6
4	Glass breakage on installation – laceration to hands etc	2	x	2	=	4

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Use lifting equipment, i.e. slings, suckers: reduce unit size	1	x	2	=	2
2	Wear PPE, use lifting equipment	1	x	2	=	2
3	Clear area, access routes and rope off area adj. & below	1	x	2	=	2
4	Wear PPE / use correct lifting equipment i.e. slings, suckers	1	x	1	=	1

Other Relevant Factors / Measures Taken

Ensure that materials are stored safely and uninstalled units are protected. Wherever possible identify glazed units with "X" on glass once installed or keep VELFAC labels in place prior to cleaning.

Conclusions

IF THE ABOVE MEASURES TAKE PLACE, DAMAGE TO GLASS UNITS & PERSONAL INJURY SHOULD BE MINIMISED.

Assessment by:

Position:

Signed by:

Date:

Risk Assessments

Head, body, feet, eyes & ears

RECORD OF RISK ASSESSMENT**Contract:****Contract No.****Client:****Issue Date:**

Subject of Assessment	Persons at Risk
Head, Body, Feet, Eyes & Ears	Installation Team

Probability factor: 1-unlikely to occur, 5-likely to occur. Risk factor: 1-low, 25 high risk of accident or injury occurring.
Severity factor: 1-minor injury, 5-medical attention required.

Action	Potential Risk	Probable	x	Severe	=	RISK
1	Head injury	2	x	4	=	8
2	Body injury	2	x	2	=	4
3	Foot injury	2	x	4	=	8
4	Eye and/or Ear injury – drilling / grinding etc	2	x	4	=	8

Action	Measures / Factors To Reduce Risk	Probable	x	Severe	=	RISK
1	Wear safety hat	1	x	2	=	2
2	Wear protective clothing: use appropriate lifting equipment	2	x	1	=	2
3	Wear safety footwear	2	x	1	=	2
4	Wear safety goggles (glasses) and/or ear protection	2	x	1	=	2

Other Relevant Factors / Measures Taken

Make sure work is properly supervised

Conclusions

USE OF APPROPRIATE PPE AND CORRECT SUPERVISION SHOULD MINIMISE RISK OF INJURY TO OPERATIVES

Assessment by:**Position:****Signed by:****Date:**

We have included in this section some typical COSHH Assessments that apply to most projects. Where special works are required or where additional assessments/precautions come into force, either VELFAC or an Approved Installer would be happy to provide you with these.

The following assessments are included here:

- Silicone Sealant
- Silicone Primer
- Silicone Cleaner
- Fire Rated Expanding Foam
- EPDM Window Gaskets

C.O.S.H.H. ASSESSMENT REPORT**Contract:****Contract No.****Client:****Issue Date:**

Substance Name:	ARBOSIL 1090 / ARBOSIL LM Silicone Sealant		
Hazardous Substance / Substance Process:			
Classification:	Toxic		Corrosive
	Irritant	4	Harmful
Physical State (Dust, liquid etc.):	Paste with faint odour. Cures to rubber like solid		
Type of use:	Sealing to perimeter of glazing frame / structure.		
Possible contamination (Inhalation, skin etc.):	Skin, ingestion		
Maximum exposure limit (If any):	8 hours		
Transport & transfer of substance:	Plastic tubes or shrink wrapped foil		
Storage of substance on site:	Store in cool, dry conditions.		
Treatment of spillage:	Wipe off excess material with cloth.		
Disposal of waste:	Allow to cure, land fill burial (none hazardous waste skip).		
Control Measures			
Engineering measures to eliminate or reduce hazard:			
Personal Protective Equipment:	Gloves for extended use.		
Other measures:			
Training for safe handling and use of substance:	Follow instructions on packaging.		
Any relevant notes:			
On skin contact, wash well with soap and water. Oral toxicity is low, if ingested, obtain medical advice. On eye contact, irrigate with water until contamination is removed and obtain medical advice if discomfort persists.			
IN THE OPINION OF THE ASSESSOR, THE MEASURES OUTLINED IN THIS ASSESSMENT ARE ALL THAT ARE NECESSARY TO SAFEGUARD THE EMPLOYEES AND ANY OTHER PERSON WHO MAY COME INTO CONTACT WITH THE SUBSTANCE DESCRIBED.			

Assessment by:**Position:****Signed by:****Date:**

C.O.S.H.H. ASSESSMENT REPORT**Contract:****Contract No.****Client:****Issue Date:**

Substance Name:	ARBOSIL ARBO Primer 2402			
Hazardous Substance / Substance Process:				
Classification:	Toxic	4	Corrosive	
	Irritant	4	Harmful	4
Physical State (Dust, liquid etc.):	Liquid			
Type of use:	Preparation for silicone pointing			
Possible contamination (Inhalation, skin etc.):	Inhalation, Skin, Ingestion			
Maximum exposure limit (If any):				
Transport & transfer of substance:	Sealed labelled container			
Storage of substance on site:	Store in cool, dry well ventilated areas.			
Treatment of spillage:	Absorbent materials, i.e. sand, sawdust			
Disposal of waste:	Controlled incineration, land fill burial where statutes permit			
Control Measures				
Engineering measures to eliminate or reduce hazard:	Absorbent material in area when using			
Personal protective equipment:	Impervious gloves. Respiratory equipment for extended use in confined spaces.			
Other measures:	Eliminate sources of ignition: Do not smoke			
Training for safe handling and use of substance:	Follow instructions on packaging.			
Any relevant notes:				
Petroleum regulations apply, do not smoke in the area of application or immediately after use. Read all data on container and implement all recommendations.				
IN THE OPINION OF THE ASSESSOR, THE MEASURES OUTLINED IN THIS ASSESSMENT ARE ALL THAT ARE NECESSARY TO SAFEGUARD THE EMPLOYEES AND ANY OTHER PERSON WHO MAY COME INTO CONTACT WITH THE SUBSTANCE DESCRIBED.				

Assessment by:**Position:****Signed by:****Date:**

C.O.S.H.H. ASSESSMENT REPORT**Contract:****Contract No.****Client:****Issue Date:**

Substance Name:	ARBOSIL ARBO Cleaner Type 13			
Hazardous Substance / Substance Process:				
Classification:	Toxic	4	Corrosive	
	Irritant	4	Harmful	4
Physical State (Dust, liquid etc.):	Liquid			
Type of use:	Preparation/cleaning For silicone pointing			
Possible contamination (Inhalation, skin etc.):	Inhalation, Skin, Ingestion, Eyes.			
Maximum exposure limit (If any):				
Transport & transfer of substance:	Sealed labelled container.			
Storage of substance on site:	Store in cool, dry well ventilated areas.			
Treatment of spillage:	Absorbent materials, i.e. sand, sawdust			
Disposal of waste:	Controlled incineration, land fill burial where statutes permit. Consult expert waste disposal contractor			
Control Measures				
Engineering measures to eliminate or reduce hazard:	Absorbent material in area when using			
Personal protective equipment:	Impervious gloves. Respiratory equipment for extended use in confined spaces. Goggles			
Other measures:	Eliminate sources of ignition: Do not smoke			
Training for safe handling and use of substance:	Follow instructions on packaging. Understand/ implement			
Any relevant notes:				
Petroleum regulations apply, do not smoke in the area of application or immediately after use. Read all data on container and implement all recommendations.				
IN THE OPINION OF THE ASSESSOR, THE MEASURES OUTLINED IN THIS ASSESSMENT ARE ALL THAT ARE NECESSARY TO SAFEGUARD THE EMPLOYEES AND ANY OTHER PERSON WHO MAY COME INTO CONTACT WITH THE SUBSTANCE DESCRIBED.				

Assessment by:**Position:****Signed by:****Date:**

COSHH Details

Fire rated expanding foam

C.O.S.H.H. ASSESSMENT REPORT**Contract:****Contract No.****Client:****Issue Date:**

Substance Name:	HILTI – CF 125 Fire Rated Foam		
Hazardous Substance / Substance Process:			
Classification:	Toxic		Corrosive
	Irritant	4	Harmful 4
Physical State (Dust, liquid etc.):	Liquid urethane prepolymer under pressure.		
Type of use:	Sealing to perimeter of glazing frame / structure.		
Possible contamination (Inhalation, skin etc.):	Eye, skin, ingestion, respiratory.		
Maximum exposure limit (If any):			
Transport & transfer of substance:	Metal pressure containers.		
Storage of substance on site:	Store in cool, dry conditions.		
Treatment of spillage:	Wipe off excess material with cloth.		
Disposal of waste:	Allow to cure, land fill burial (none hazardous waste skip).		
Control Measures			
Engineering measures to eliminate or reduce hazard:			
Personal protective equipment:	Gloves for extended use. Respiratory equipment for extended use in confined spaces.		
Other measures:			
Training for safe handling and use of substance:	Follow instructions on packaging.		
Any relevant notes:			
On skin contact, wash well with soap and water. If ingested, obtain immediate medical advice. On eye contact, irrigate with water and obtain immediate medical advice.			
IN THE OPINION OF THE ASSESSOR, THE MEASURES OUTLINED IN THIS ASSESSMENT ARE ALL THAT ARE NECESSARY TO SAFEGUARD THE EMPLOYEES AND ANY OTHER PERSON WHO MAY COME INTO CONTACT WITH THE SUBSTANCE DESCRIBED.			

Assessment by:**Position:****Signed by:****Date:**

COSHH Details

EPDM window gaskets

C.O.S.H.H. ASSESSMENT REPORT

Contract:

Contract No.

Client:

Issue Date:

Substance Name:	EPDM Window Gasket		
Hazardous Substance / Substance Process:			
Classification:	Toxic		Corrosive
	Irritant	4	Harmful
Physical State (Dust, liquid etc.):	Rubber extrusions - Ethylene Propylene Diene Monomer		
Type of use:	Glazing seals.		
Possible contamination (Inhalation, skin etc.):	Skin (normally none; a very small number of people are sensitive to rubbers).		
Maximum exposure limit (If any):			
Transport & transfer of substance:	Coiled / Loose / Woven polypropylene sacks		
Storage of substance on site:	Store in cool, dry conditions. Avoid contact with heat.		
Treatment of spillage:	N/A		
Disposal of waste:	Recycle. Only incinerate in closely controlled conditions in a smokeless furnace.		
Control Measures			
Engineering measures to eliminate or reduce hazard:			
Personal protective equipment:	Gloves.		
Other measures:	Wash hands frequently.		
Training for safe handling and use of substance:	Follow manufacturers/supplier instructions for use		
Any relevant notes:			
Wash hands frequently with soap and water. As with all polymers, if burnt, EPDM produces large volumes of smoke which can be toxic. Use breathing apparatus in event of fire.			
IN THE OPINION OF THE ASSESSOR, THE MEASURES OUTLINED IN THIS ASSESSMENT ARE ALL THAT ARE NECESSARY TO SAFEGUARD THE EMPLOYEES AND ANY OTHER PERSON WHO MAY COME INTO CONTACT WITH THE SUBSTANCE DESCRIBED.			

Assessment by:

Position:

Signed by:

Date:

Consideration has been given to the effects of decommissioning and disposing our products in accordance with our environmental policy. There is little point investing in environmental concerns during the manufacturing processes if there is an environmental price to pay at the end of the product life.

One of the key advantages of the VELFAC window system is that once removed from the building fabric, it can be quickly and easily broken down into separate materials for recycling. Land filling of the components should be avoided, as all the materials can be recycled.

Aluminium Sash

Can be easily removed from the timber frame by releasing the ironmongery fixings. The aluminium can then be recycled which then requires only 5% of the energy used in primary aluminium production.

Glass units

Although the raw components of glass are sand, lime & soda which are plentiful, the glass panes can be removed from the double glazed unit and then recycled. The gases used within the cavity of the unit are non-toxic and inert.

EPDM Gaskets

These are simply pulled out from the aluminium sash and the internal PVC glazing bead. The tyre industry is able to recycle these products in varying quantities. Other innovations include new road surfaces containing recycled EPDM and rubber products.

PVC Glazing Bead

This is simply unclipped from the aluminium sash. PVC is recyclable and many products utilise different grades, including some forms of PVC-U windows.

Ironmongery

The majority of the fittings are manufactured from ferrous metals. These are readily recyclable. Some fittings may be aluminium or stainless steel and again processes exist to enable re-use.

Timber Frame

The timber frame may be used as a fossil fuel. Wood is a CO₂ neutral product. It absorbs CO₂ from the atmosphere and converts it into carbon, releasing the same amount of CO₂ during disposal.

Material disposal requirements should always be confirmed with the local authority in which the waste is to be transported. Wherever possible damaged materials and/or broken glass should be contained within a strong container to prevent and minimise lacerations during disposal and during transit.

Passed and approved

Hundreds and thousands of customers test VELFAC windows every day. Throughout Europe, over 1.5 million windows have stood the test of time, but despite this track record, we still maintain a demanding testing programme to ensure our system continues to meet - and exceed - all necessary regulatory standards.

The test institutions are looking over our shoulder

VELFAC windows have been tested by Europe's most rigorous standards agencies, which have analysed all aspects of window design and performance. The VELFAC system has received approval from:

- BSI, United Kingdom
- Statens Provningsanstalt, Boraas, Sweden
- Institut fuer Fenstertechnik, Rosenheim, Germany
- NBI, Trondheim, Norway
- Teknologisk Institut, Aarhus, Taastrup, Denmark
- The State Building Research Institute, Denmark
- Teknologisk Institut, Iceland

In many cases we test special requirements for the qualities of our windows - child safety, fire safety and noise reduction are some of the areas we have tested.

Note: Individual test results refer to specific types and size of window - please contact VELFAC if you need copies of individual test reports.

General test

The Swedish State Test Institute has performed a comprehensive test on the VELFAC window, in order to analyse overall performance and indicate how well the window can cope with everyday usage.

- The test measured:
- Air and water tightness
- Wind resistance
- The strength and the stability of the construction

Test Institute	Testing Method	Test Result	Classification
SP, Boraas	prEN 947-1 prEN 948-1	Vertical Load 400N Twist 250N	BS EN 13115 (2)
	prEN 12046-1	Mobility 1.5/2.5Nm opening / closing	BS EN 13115 (1)
	BS EN 1191	Repeated open / close 10000 cycles Mobility 2.5 / 5.5Nm opening / closing	BS EN 12400 (2)
	BS EN 1026	Air +900 Pa, +/-600Pa	BS EN 12207 (4)
	BS EN 12211	Wind +/-1200 Pa static +/-600 Pa X50 dynamic +/-1800 Pa Impact max turn 1/300H	BS EN 12210 (C3)
	BS EN 1027	Water 1500 Pa	BS EN 12208 (E1500)

Meets the EN requirements

The test methods and results can be seen above but points to note are:

"Vertical load" and "twist" indicates the amount of impact the window construction can tolerate before it is twisted or deformed. 400 N is the equivalent of 40kg.

"Mobility" indicates the force necessary to open and close the handle before and after the window has been opened 10,000 times.

"Air" indicates the air tightness of the window.

"Wind" tests the construction under wind pressure.

"Water" indicates the water-tightness of the window. First the window is splashed with water without pressure and then with pressure up to 1500 Pa - twice the strength of a hurricane.

Thermal properties

The insulating properties of a window are measured in two ways:

- The 'Hotbox test', a physical test of window performance. The 'Hotbox' is a boxed unit divided into two compartments: the window is inserted into the dividing wall and the unit sealed. The internal temperature of one compartment is then maintained at 20°, with normal levels of humidity; in the other compartment, the temperature is reduced to -5°, and humidity levels changed. Temperature measurements taken from the window panes indicate how well the window maintains the inner temperature of the warmer compartment
- A FEM calculation - a computer-generated analysis which simulates a variety of test conditions and predicts window performance within a range of thermal parameters.

Test Institute	Testing Method	Test Result	Classification
DTL, Lyngby	Hotbox using BS EN ISO 12567 FEM Calculation using Therm 2.0 prEN ISO 10077-2	U = 1.62 W/m²K (U _f sash/frame = 2.8 [W/m²K] U = 1.50 [W/m²K] Ψ = 0.05 [W/mK]) ¹	BS EN 12567

1. VELFAC 200 - there may be limitations regarding function, type and size

Insulation is indicated by a U-value - a low U-value shows good insulation performance.

VELFAC windows are fitted with super-low-energy glazing as standard, providing a U-value of 1.62 W/m²K.

Noise reduction

This test measures a windows capacity to reduce the levels of unwanted noise eg. from heavy traffic. The noise level within most rooms of a family house should not exceed 30dB. Loud traffic noise amounts to 70-75dB - which means the window would have to reduce the noise level by 40-45dB.

Test Institute	Testing Method	Test Result	Classification
SP, Boraas	BS EN ISO 140-3	R _w = 32-49dB ¹	BS EN 717-1 (test result)

1. VELFAC 200 - there may be limitations regarding function, type and size

VELFAC offers a variety of noise reduction solutions. Double glazed units can be fitted with different types and thicknesses of glass.

A further option is available for extreme circumstances - this incorporates a separate internal sash.

Child safety

This test consists of two parts:

In Stage 1, a group of at least 30 children are asked, individually, to attempt to open a window locked with a child lock, and are given five minutes to complete the task. If a child fails, they are then shown how the lock operates and asked to try again. 43 children took part in the VELFAC test, and only four managed to open the window. Stage 2 tests durability under stress: the lock and safety mechanism is required to maintain performance despite receiving repeated blows from a hammer.

Test Institute	Testing Method	Test Result	Classification
SP, Boraas	NT CONS 018 SS 3587	Passed	NT CONS 018 SS 3587 Passed

Fire windows

As with fire doors, fire windows must be able to contain a fire so that exits remain accessible for as long as possible.

The fire test examines the window's resistance to fire. The test is stopped once the fire has breached the window for more than ten seconds.

VELFAC fire windows are made using the same construction as the 200 system ensuring the sightlines remain identical.

Test Institute	Testing Method	Test Result	Classification
SP, Boraas	BS EN ISO 1363-1 BS EN ISO 1363-2 BS EN ISO 1364-1 BS EN ISO 1634-1	63-68 minutes ¹	prEN 13501-2 (E60, EI60)
	BS EN ISO 1363-1 BS EN ISO 1363-2 BS EN ISO 1634-1	35 minutes ¹	prEN 13501-2 (E30)

1. VELFAC 200 - there may be limitations regarding function, type and size

The following VELFAC Fire Windows resist fire for 35-68 minutes meeting EU requirements:

V250 Fixed Fire Window	E60
V251 Sidehung Fire Window	E60
V272 Tophung Projecting Fire Window	E60
V279 Reversible Fire Window	E60
V261 Patio Fire Door	E30
Ventilated Fire Panel	EI60

Resistance to forced entry

The CWCT test and BS 7950 test comprise of methods listed below:

- To replicate forced entry using a tool such as a screwdriver, a lever is used to try and prise open the window both at the locks and fittings
- A 'burglar's tool kit' is used by a professional expert to try and force entry in under three minutes
- An attempt is made to remove the glass pane externally - as VELFAC windows are internally glazed, with an internal glazing bead, external removal is impossible
- A mechanical loading test was made using parallel and perpendicular loads to gain entry

Test Institute	Testing Method	Test Result	Classification
Chiltern Dynamics	BS 7950 Secured by Design	Passed ¹	BS 7950
Centre for Window & Cladding Technology, Uni. of Bath	CWCT	Passed ¹	CWCT

1. VELFAC 200 - there may be limitations regarding function, type and size

The CWCT test was performed on the following window types, each fitted with security-glass and fittings:

- side-hung projecting
- top-hung projecting
- fixed light

The following window types have passed the BS 7950 test:

- side hung window
- patio door
- fixed light
- top-hung projecting

The VELFAC 500 aluminium entrance door has also passed BS 7950.

Breaking the window is not part of the CWCT test as evidence shows that this is the last method a burglar chooses.

WARRANTY OF QUALITY

THIS VELFAC WARRANTY OF QUALITY IS GRANTED TO:

.....
of.....

.....
("the Beneficiary");

BY VELFAC Ltd whose office is at The Old Livery, Rectory Farm, Hildersham, Cambridgeshire
("VELFAC")

WARRANTY OF QUALITY

VELFAC windows and sealed double glazed units products are produced in accordance with the most advanced design and manufacturing technology and based upon creative yet practical glazing solutions.

Every step of the design and manufacturing process is subjected to rigorous quality control from procurement of raw materials through flow line assembly to the final stages of the process leading up to installation. Accordingly and because of our confidence in our window products and in other products which we supply, VELFAC is happy to provide this Warranty in the terms set out overleaf.

This Warranty is given in consideration of the payment of one pound (£1) by the Beneficiary to VELFAC (receipt of which VELFAC acknowledges) and is DATED

..... 2001

IN WITNESS whereof this Warranty has been executed as a deed by the parties hereto the day and year first before written

Executed as a deed by)
)
acting by two Directors or by)
a Director and the Company)
Secretary:

Director

Director/Secretary

Executed as a deed by)
VELFAC LTD)
acting by two Directors or by)
a Director and the Company)
Secretary:

Director

Director/Secretary

The VELFAC Warranty Terms

1. VELFAC warrants that if, within a period of:

(i) **Twelve Years** in the case of VELFAC supplied windows; or

(ii) **Five Years** in the case of VELFAC supplied external doors; or

(iii) **One Year** in the case of VELFAC supplied electrical components;

starting from the date of delivery (being defined as the date on which VELFAC delivered the relevant product to VELFAC's customer) the Beneficiary notifies VELFAC in writing with reasonable details of a fault arising from the original design or manufacture of the product (including in the case of VELFAC double glazed units that they should remain free of particles of dust or of humidity in the unit cavity for 12 years in the case of windows and five years in the case of doors) then subject to having been given an opportunity to inspect the product and having been provided by the Beneficiary with such further information relating to the fault as is required, VELFAC will at its total discretion, but without charge to the Beneficiary, either:

(i) repair the fault or;

(ii) supply a replacement spare part or a total replacement product.

Limitations

2. VELFAC will not be responsible under this Warranty for the costs of installation or workmanship relating to any replacement product or spare part or, in any event, for any loss of profit, loss of business or indirect or consequential work, losses or damage arising in relation to a product or a fault.

3. VELFAC will not be responsible for any fault in any product arising from any specification or design of any third party.

4. No claim may be made under this Warranty after the expiry of the time periods identified in clause 1. The rights set out in this Warranty are the sole remedies offered in relation to the products covered by the Warranty and all other warranties, conditions and terms implied by statute and common law (save for any that may be implied by law) are excluded to the fullest extent permitted by law.

5. Any claim under this Warranty must be made in writing to VELFAC within 14 days after the fault has been discovered, or ought reasonably to have been discovered and in any event a claim must be made within the time periods identified in clause 1.

6. This Warranty will not apply to any fault that is due to incorrect or negligent storage, transportation, fitting, installation, lack of or inadequate maintenance or incorrect or negligent operation whether by the

Beneficiary or any third party. This Warranty is conditional upon compliance with VELFAC product maintenance and operation guidance. If the Beneficiary is not in possession of such maintenance and operation guidance then this can be ordered from VELFAC.

7. **The following further special conditions apply in regard to a claim under this Warranty in regard to VELFAC double glazed units:**

(i) The glass panes must have been fitted in a VELFAC factory or by a VELFAC approved installer or service engineer.

(ii) The glass panes in the spacer track must have been stamped with the date of production (year/month).

(iii) A fault in a glass pane will not be covered where the glass pane has been damaged by external conditions, e.g. knocks or blows, or by movements in adjoining buildings, damage by, frost, thermal effect or any chemical damage to the glass.

(iv) The glass pane will not be covered where it has been exposed to any processing after delivery, e.g. grinding, sand blasting, etching, painting, sticking on, or any other surface treatment.

(v) The drain path on the window system must not have been blocked.

(vi) Panes with "added/built-in features", i.e. lead glass windows, alarm systems, blinds etc., are only subject to a 5-year guarantee.

8. This Warranty only covers products which are situated in England, Scotland, Wales, Channel Islands, Northern Ireland or the Republic of Ireland at the time of a claim under this Warranty. The law which applies to any matter relate to this Warranty shall be the law of England and Wales.

Assignment

9. The Beneficiary shall be entitled to assign or transfer this Warranty or its respective rights under this Warranty provided that the Beneficiary shall not be entitled to assign or transfer on more than two occasions.

Third Party Rights

10. The parties agree that this Warranty shall not confer, and shall not purport to confer, on any third party any right to enforce any term of this Warranty for the purposes of the Contracts (Rights of Third Parties) Act 1999.

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WN 054780 45 532
02 06/04

OPERATING INSTRUCTIONS

To commission the operator, unlatch the emergency off pushbutton located next to the door. Then switch on the main switch (located at the side of the operator).

1. Programme switch

The following programme switch settings are possible:

Programme switch integrated in operator:

Automatic - OFF - Permanent open

External programme switch:

OFF - Exit only - Permanent open - Automatic

"OFF" setting

The operator is switched off and the door can only be manually operated.

"AUTOMATIC" mode

The door opens on receipt of a signal from an activator (e.g. internal or external radar detector), and closes automatically on expiry of the preset hold-open time.

"EXIT ONLY" mode

The door can only be activated from one side (one-way function e.g. at the end of business hours). The door closes again automatically on expiry of the preset hold-open time.

"PERMANENT OPEN" mode

The door opens and remains in this position until another mode is selected.

2. Starting up following a power failure

The operator starts up automatically following a power failure, and resumes operation in the preset programme switch mode.

3. Emergency opening in the event of a power failure

Door can be manually operated.

4. Safety functions

4.1 Integrated safety device

The operator must be set by the service engineer in accordance with German guidelines for power-operated windows, doors and gates (ZH 1/494) or equivalent local regulations; i.e. the force at the main closing edge of the door must be limited to max. 150 N.

4.2 Operating with IRS Sensors (Optional extra)

4.2.1 Hinge-side

If there is an obstruction in the detection range of the IRS sensor

- the door stops during the opening cycle, or
- the door remains closed if it is already in the door-closed position.

Once the detection range is clear, the operator resumes normal operation.

4.2.2 Opposite hinge-side

If there is an obstruction in the detection range of the IRS sensor

- the door in its closing cycle reverses, or
- if already opened, the door remains at that position.

Once the detection range is clear, the operator resumes normal operation.

5. Care and maintenance

The system must be inspected by a properly qualified service engineer prior to initially coming into service and thereafter at least once a year, or more frequently according to requirements (in compliance with German guidelines for power-operated doors, windows and gates, ZH 1/494, April 1989 edition and or local regulations).

Further information and regulations governing the employment of the ED 200 in relation to fire and smoke rated doors:

 **Instruction sheet relating to the use and application for hold open device systems.¹⁾ Guidelines for hold open systems published by the Institute for Building Technology Berlin.¹⁾ Relevant local regulations.**

Customers are recommended to take out a service contract with DORMA covering maintenance of the operator.

When cleaning the door, ensure that the operator has been switched off. The door and operator can be cleaned with a damp cloth and standard commercial cleaning agents.

6. Troubleshooting

If the door fails to close or open, first check the following points:

- Mains power available?
- Emergency off pushbutton unlatched?
- Main switch ON?
- Programme switch set to correct mode?
- IRS sensor detection range free?
- Door obstructed?
- Door manually locked?

If, having checked the above points, the fault remains, inform your local service engineer

¹⁾ These documents are only printed in German as they refer exclusively to the German market.

VELFAC®

WINDOW SYSTEMS

A full-page photograph showing two men in Velfac uniforms installing a large, white-framed window unit into a brick wall. The man on the left is holding the bottom left corner of the unit, while the man on the right is holding the bottom right corner. The unit is being lowered into a pre-cut opening in the wall. The background is a red brick wall, and the ground is grass. The Velfac logo is visible on the man on the right's sleeve and leg.

Montagevejledning
Installation guide
Montagevägledning

09.2006

- Modtagelse og opbevaring:** Sådan behandles VELFAC elementer, så finish på trækarmen ikke ødelægges.
- Indbygning:** Trin-for-trin indbygning af VELFAC elementer – fra opklodsning til slut-fugen er lagt. Hvor på VELFAC komponenterne må der fastgøres, og hvor langt ude skal fugen ligge.
- Sammenstillinger:** Sådan bygges de forskellige komponenter sammen.
- Afmontering og justering:** Afmonter rammen og mere end halvér elementets vægt. Er især en fordel på svært tilgængelige monteringssteder samt ved montering af store, tunge elementer. Giver også bedre plads til at fuge VELFAC 200 elementerne.
- Glasudskiftning:** Sådan får du fat i nyt glas, og sådan skiftes det, hvis uheldet er ude.
- Efter veludført montage:**
- hvert vindue/dør skal tjekkes i åbnefunktionen og om nødvendigt justeres
 - alle paskvilssystemer samt hængsler på sidehængte elementer skal smøres (se side 55)
 - glideskinner rengøres med en blød kost eller en klud
 - eventuelle montageskader repareres

In this guide you will find:

Follow the guide to ensure warranty

- Receipt and storage:** How to handle VELFAC elements so the frame is not be damaged.
- Installation:** How to install VELFAC elements. The fixing areas for VELFAC elements and sealant application.
- Couplings:** How to couple different VELFAC components together.
- Dismounting and adjusting:** For difficult installation areas or for large VELFAC elements, dismount the sash before installing - this will half the weight of the element.
 Be aware of the size and weight of the sash! Check Health and Safety regulations for correct handling.
- Glass replacement:** How to get new glazing and how to replace the glazing unit.
- Operation Checks:**
- the opening function of every window / door must be checked and adjusted if necessary
 - all espagnolette systems and hinges on sidehung elements can be oiled (see p. 55)
 - gliding rails must be cleaned with a smooth broom or cloth
 - damages from installation must be repaired

Mottagning och förvaring:	Så behandlas VELFAC element för att förhindra att finishen på träkarmen förstörs.
Inbyggnad:	Steg-för-steg inbyggnad av VELFAC element – från klotsning till slutfogning. Var på VELFAC komponenterna får infästning ske, och hur långt ut ska fogen ligga?
Sammanställningar:	Så byggs de olika komponenterna ihop.
Avmontering och justering:	Montera av bågarna och mer än halvera elementets vikt. En fördel särskilt på svårtillgängliga monteringsställena och vid montering av stora, tunga element. Ger bättre plats för fogning av VELFAC 200 element.
Glasbyte:	Så får du tag i nytt glas, och så byts det, om olyckan är framme.
Efter utförd montage:	• varje fönster/dörr ska kontrolleras betr. öppningsfunktion och justeras vid behov • alla spanjoletter samt gångjärn på sidohängda element ska smörjas (se sid. 55) • glidskenor rengörs med en mjuk borste eller trasa • eventuella monteringskador repareras

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Modtagelse og opbevaring

Receipt and storage

Mottagning och förvaring

DK Modtagelse. Ved aflæsning og videre håndtering af VELFAC elementer skal der benyttes hjælpemidler og metoder, som ikke medfører skader. Evt. beskyttende emballage må først fjernes i forbindelse med elementernes montering.

Opbevaring. Bemærk at overfladebehandlingen på VELFAC trækomponenter fra fabrikken har finish som møbelkomponenter. Forkert opbevaring i byggeperioden, som medfører længerevarende fugtpåvirkning, kan beskadige trækomponenternes overflader. Alle vindues- og dørelementer skal derfor beskyttes på betryggende måde mod fugt (regn og sne), direkte sollys, tilsmudsning og anden overlast. Sker dette ikke, **bortfalder produktgarantien.**

For opretholdelse af produktgarantien, skal nedenstående retningslinier for opbevaring følges: På byggepladsen beskyttes elementerne bedst ved opbevaring indendørs på et plant underlag. Er det nødvendigt at opbevare elementerne udendørs, skal dette foregå på et plant underlag, pallerens

OBS: Se mere i vores Håndteringsvejledning, som er fremsendt sammen med følgesedlen. Kan fås hos VELFAC Forsendelsen, tlf. 9675 5200.

Eng Receipt. Equipment and methods applied during unloading and handling of VELFAC elements must not inflict damage. Protective wrapping, if any, must not be removed until installation of the elements.

Storage. Improper storage during building that results in elements being exposed to moisture for any period, may damage the surface of the wood components. Therefore, window and door elements must be protected properly against moisture (rain and snow), direct sunlight, dust, and other molestation. **Otherwise the product warranty will become void.**

To preserve product warranty rights, the following storage instructions must be observed: Indoor storage on a level standing is recommended. If stored outside, the window and door elements must be placed on a firm and level standing and the top and sides of the pallets must be covered by non-transparent, waterproof material properly secured against bad weather conditions. There must be sufficient clearance under the pallet

N.B. More detailed information is specified in the Handling Instruction which accompanies the order confirmation or can be requested from VELFAC LTD, tel. 01223 897100 or VELFAC Ireland Ltd, tel. 01 2697406.

top og sider skal overdækkes med vandtætte presenninger, der er fastgjort forsvarligt af hensyn til blæsevej, og luft skal kunne cirkulere under pallen. Bemærk venligst, at elementernes emballering fra fabrik **kun** er beregnet til at beskytte dem under transport fra fabrik til byggeplads.

Uanset ovenstående foranstaltninger er det ikke tilrådeligt at opbevare elementerne udendørs i længere tid.

Montage. Elementerne må først monteres, når bygningen er lukket med vand- og snetæt tag og udvendige vægge. Der skal umiddelbart efter monteringen udføres fuger omkring elementerne eller på anden måde sikres, at elementernes trædele ikke opfuges utilsigtet, heller ikke af indefrakommende byggefugt (kondens). Ved evt. tildækning af vinduerne skal der drages omsorg for, at tildækningen ved vindpåvirkning ikke kan baske mod vinduerne, så rammerne rides. Monteres elementerne ikke efter disse retningslinier, **bortfalder produktgarantien.**

to provide free air circulation. Please note that the factory packaging is intended to protect the elements during transportation from the factory to the building site only.

Notwithstanding the above precautions, VELFAC elements should be stored outside for a short period only.

Installation. Windows, patio doors and sliding door must not be installed until the building has been fitted with watertight roof and external walls. Immediately after installation of the windows, unintended moisture absorption by the wooden parts, (including moisture from the building itself - condensation), must be prevented by application of sealant around the windows, or otherwise. If window, patio doors and sliding doors are not installed observing the above instructions, **the product warranty will become void.**

s Mottagning. Vid lossning och vidare hantering av VELFAC element ska sådana hjälpmedel och metoder användas som inte medför skador. Ev. skyddsemballage ska inte tas bort förrän i samband med montering av elementen.

Förvaring. Ytbehandlingen på VELFAC träkomponenter har en finish som motsvarar möbelkomponenter. Felaktig förvaring under byggperioden, som medför långvarig fuktpåverkan, kan skada ytorna på träkomponenterna. Alla fönster- och dörrelement måste därför skyddas på ett betryggande sätt mot fukt (regn och snö), direkt solljus, nedsmutsning och annan påverkan. **I annat fall bortfaller produktgarantien.**

För att upprätthålla produktgarantien måste nedanstående riktlinjer för förvaring följas. På byggeplatsen skyddas elementen bäst genom att förvaras inomhus på plant underlag. Om elementen måste förvaras utomhus placeras

de på plant underlag och pallarna täcks upptill och på sidorna med vattentät presenning som fästs väl för att motstå hård vind. Under pallen måste luft kunna cirkulera fritt. Observera att emballaget från fabrik **endast** är avsett att skydda elementen under transport från fabrik till byggeplats.

Även om ovanstående åtgärder vidtas är det inte lämpligt att förvara elementen utomhus under längre tid.

Montage. Elementen får monteras först när vatten- och snötäta tak och ytterväggar finns på plats. Omedelbart efter monteringen måste man foga kring elementen, eller på annat sätt säkra att elementens trädelar inte utsätts för fukt, inte heller för inifrån kommande byggefukt (kondens).

Om elementen inte monteras enligt dessa anvisningar **bortfaller produktgarantien.**

OBS: Se vidare vår Hanteringsvägledning som skickas tillsammans med följesedeln. Kan fås hos VELFAC AB, tel. 036-344690.

Indbygning Installation Montage

OBS: Vinduer/døre må ikke optage laster fra den øvrige bygning. Vi henviser i øvrigt til Monteringsanvisning i VinduesIndustriens Tekniske Bestemmelser.

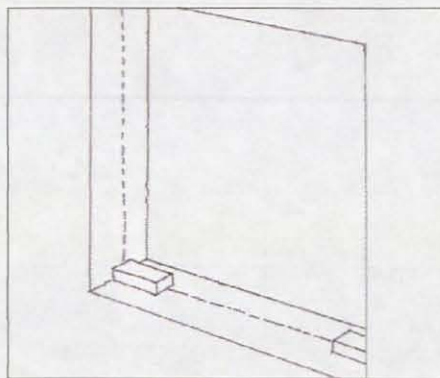
N.B. Please refer to VELFAC construction issue drawings. Windows / doors may not be used to support the building structure.

OBS: Fönster/dörrar får inte ta upp last från byggkonstruktionen i övrigt. Vid annan montagelösning hänvisar vi till VELFAC AB, tel: 036-344690.

OBS: Følg leverandørens monteringsanvisninger for fugebåndet!

N.B. Follow the supplier's installation instructions for joint sealant!

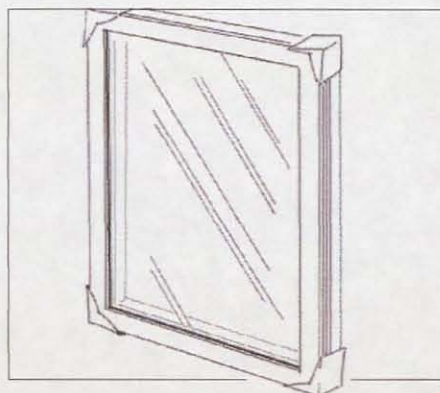
OBS: Följ leverantörens montageanvisningar för fogbandet!



DK Til understøtning af vindue/dør i ønsket højde: Læg 2 klotser i vater. De skal ligge i sidekarmenes forlængelse.

Eng To support the window / door at the requested position: Place two packers in level position with the ends against the jambs.

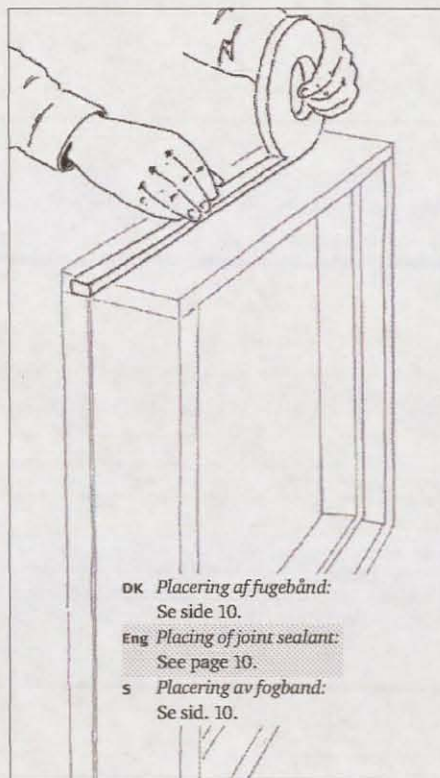
S Som stöd för fönster/dörr i önskad höjd läggs 2 klotisar i jämnhöjd och med ändarna mot sidokarmarna.



DK Fjern emballagehjørner i klart plast.

Eng Remove the clear plastic protection corners.

S Avlägsna emballagehörnen av klarplast.



DK Enten fastgør selvklæbende, forkomprimeret fugebånd (fx ISO-BLOCO 600) langs karmens udvendige kant. Eller indlæg fugemasse efter montage af vinduet - se side 10-11. Afmonter evt. først rammen - se under åbnefunktion side 14-42.

Eng Either attach self-adhesive, pre-compressed joint sealant (e.g. Compriband 600) along the external edge of the frame. Or apply sealing compound after installation of the window - see page 10-11. It may be necessary to dismount the sash - see opening functions page 14-42.

S Antingen fäst självhäftande, förkomprimerat fogband längs karmens utsida. Eller applicera fogmassa efter montage av fönstret - se sid. 10-11. Avmontera ev. först bågen - se under öppningsfunktion sid. 14-42.

DK Placering af fugebånd:
Se side 10.

Eng Placing of joint sealant:
See page 10.

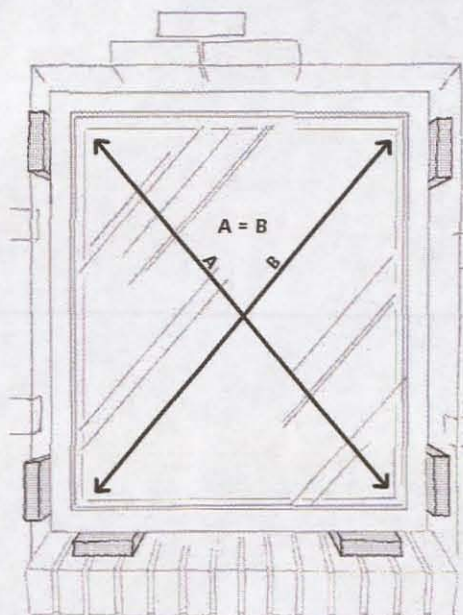
S Placering av fogband:
Se sid. 10.



DK Forkant vindue må aldrig placeres længere fremme end forkant mur. Typisk trækkes vinduet 25-40 mm tilbage.

Eng The front edge of the window must never exceed the front edge of the facade. Typically the window is set back 25-40mm.

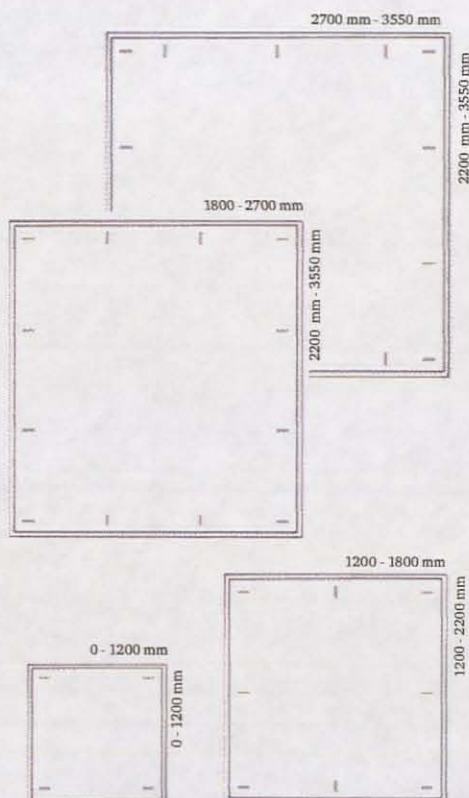
5 Fönstrets yttersta del får aldrig placeras utanför fasadliv. Fönstret bör placeras 25-40 mm indraget.



DK Placer vindue/dør i murhullet og fastgør det med lange kiler i alle hjørner, i lod og vater. Afstand mellem karm og mur skal være ensartet. Sidehængte VELFAC 200 elementer kræver min. 10 mm fugeafstand mellem karm og murværk.

Eng Place the window / door in the structural opening and fix it with packers at all four corners plumb and level. The distance between the frame and the wall must be the same on all sides. The sidehung VELFAC 200 elements require a minimum distance of 10 mm for the sealant between frame and wall.

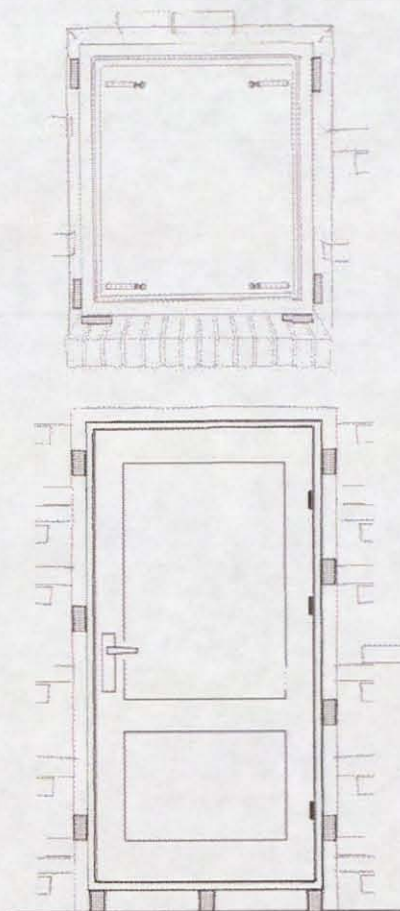
5 Placera fönstret/dörren i öppningen och fixera den lodrätt och vågrätt med långa kilar i alla hörn. Avståndet mellan karm och fasad ska vara detsamma runt hela elementet. De sidohängda VELFAC 200 elementen kräver min 10 mm avstånd mellan karm och färdig smyg.



DK Antallet af fastgørelsespunkter retter sig efter elementets størrelse. Afstanden mellem befæstigelse må ikke overstige 900 mm.

Eng The number of fixing points depends on the size of the element. The distance between the fixing points must not exceed 900mm.

5 Antalet fästpunkter avgörs av elementets storlek. Avståndet mellan fästpunkterna får inte överstiga 900 mm.



DK Opklods elementet ud for alle hængsler og slutblik samt fastgørelsespunkter. OBS: Befæstigelse af VELFAC komponenter skal ske indenfor bestemte områder - se side 10. Ved opklodsning af døre anbefaler VELFAC, at der pladses en fast klods mellem karm og murværk. Forbor derefter til dyvler eller anden fastgørelse og skru elementet fast.

Eng Place packers around the element level with hinges and lock, and at fixing points. N.B. VELFAC components must be fixed within certain limits - see the following page. Thereafter pre-drill holes for fixing and tighten the screws.

S Klotsa elementet vid alla gångjärn och slutbleck samt fästpunkter. OBS: Infästning av VELFAC komponenter måste ske inom bestämda områden - se nästa sida. Vid uppklotsning av dörrar rekommendera VELFAC att man placerar en fast klots mellan karm och vägg. Förborra därefter för karmskruv eller liknande och skruva fast.



Tip: Ved sammenkobling kan over/bundkarm med fordel gives en pilhøjde.

Tip: When coupling elements, a camber on heads and cills may be advantageous.

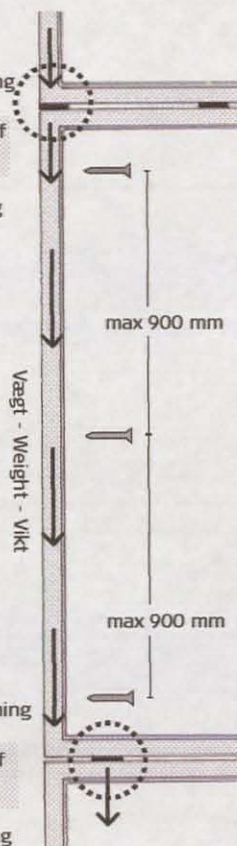
Tips: Vid sammankoppling kan över/bottenkarm med fördel böjas lätt uppåt.



Rigtig opklodsning

Correct placing of support packers

Korrekt klotsning



DK Når elementer monteres ovenpå hinanden, skal opklodsningen mellem dem ligge direkte over sidekarmene. Sammenkobling af over- og bundkarm skal ske med skruer. Afstanden mellem befæstigelse må ikke overstige 900 mm. Vandnæse kræves for min. hver tredje meter.

Eng When installing curtain walling please ensure that the support packers used between the elements are placed directly on top of the jambs. Heads and cills must be coupled with screws. The distance between the fixing points must not exceed 900mm. A drip flashing is required for at least every third meter.

S När fönster monteras ovanpå varandra ska klotsningen mellan fönstren ligga direkt över sidokarmarna. Överkarm och bottenkarm kopplas ihop med skruvar. Avståndet mellan fästpunkterna får inte överstiga 900 mm. Droppnäsä krävs för minst var tredje meter.

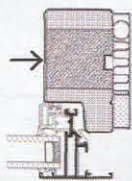


Forkert opklodsning

Wrong placing of support packers

Felaktig klotsning

VELFAC®



DK Områder for befæstelse.

Eng Areas for fixing.

S Områden för infästning.

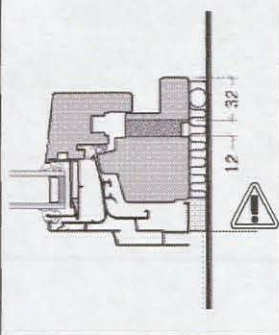


DK Kun fugemateriale til den stiplede streg.

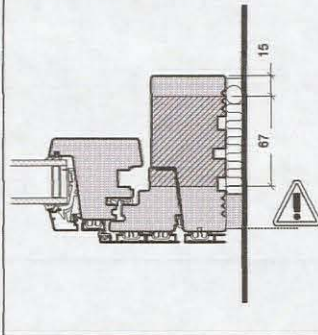
Eng No sealant material beyond the dotted line.

S Inget fogmaterial framför den streckade linjen.

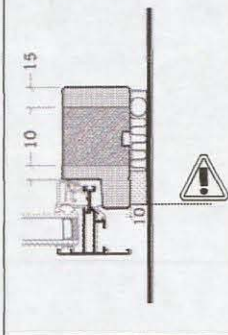
VELFAC 100 (old)



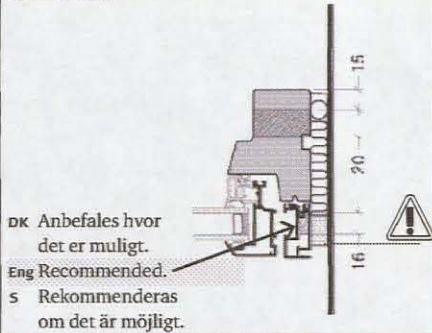
VELFAC 100 (new)



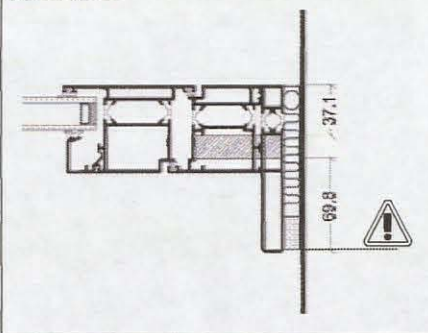
VELFAC 200



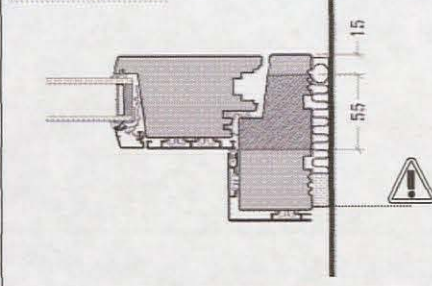
VELFAC 400



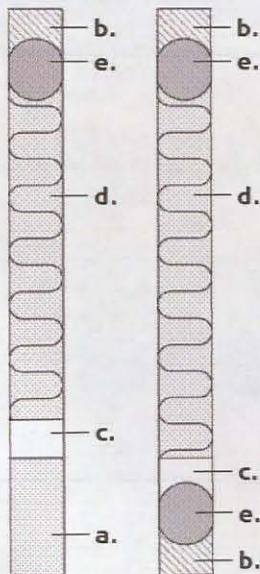
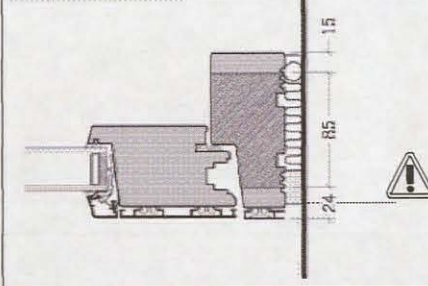
VELFAC 500



VELFAC 600 (VELFAC 700)
Indadgående
Inward opening



VELFAC 600 (VELFAC 700)
Udadgående
Outward opening



Fugeløsninger · Perimeter sealing · Foglösningar

DK VELFAC A/S anbefaler en to-trins fuge:

- Ekspanderende fugebånd (fx ISO-BLOCO 600)
- Fugemasse
- Luft
- Isolering
- Polyethylen rundprofil

S VELFAC A/S rekommenderar en tvåstegsfog:

- Expanderande fogband
- Fogmassa
- Luft
- Isolering
- Polyetylen rundprofil

Eng In visible areas, VELFAC recommends the following solution:

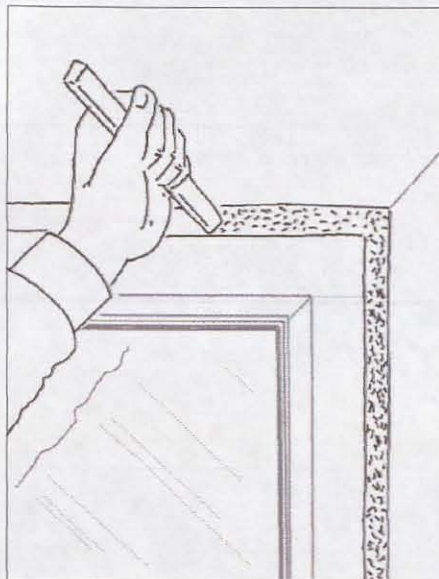
- Expanding joint sealant (e.g. Compriband 600)
- Silicone sealant (e.g. Arbosil 1090)
- Air
- Pu foam or insulation
- Backer rod



OBS: Følg altid materialeleverandørens anvisninger.

N.B. Always follow the instructions of the supplier.

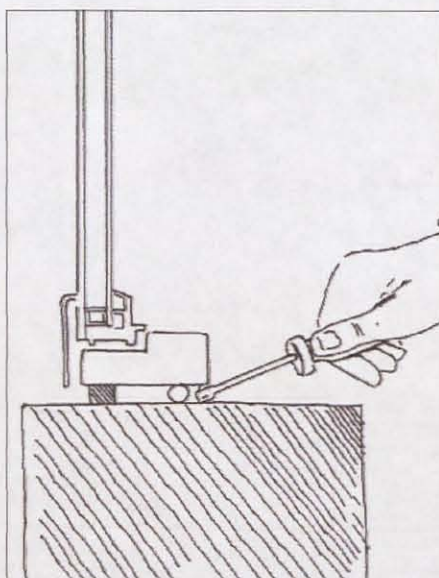
OBS: Följ alltid leverantörens anvisningar.



DK Stop med mineraluldfilt fra indvendige side. Til brand- og lydisolering stoppes 3 gange så hårdt som normalt.

Eng Apply pu foam or mineral wool blanket from the inside. For fire protection and sound reduction, apply three times as much pu foam or mineral wool blanket as usual.

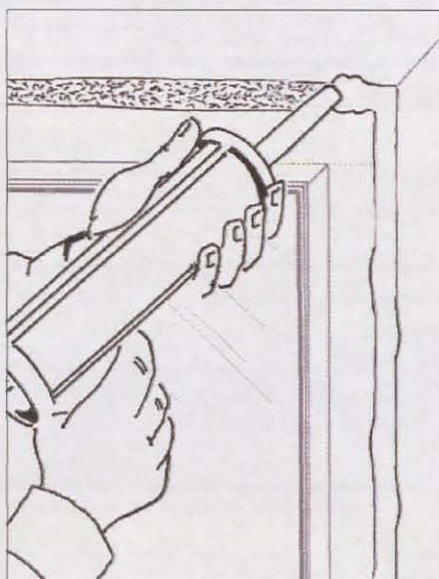
S Isolera med mineralullfilt från insidan. För brand- och ljudisolering fylls tre gånger så mycket som normalt.



DK Lav bagstopning for fugen fx med passende stort polyethylen rundprofil. Anbring profilet i den dybde, fugemasseleverandøren angiver.

Eng In visible areas, make a joint packing with backer rod of appropriate size. Place the backer rod at the depth recommended by the sealing compound supplier.

S Placera ett stopp för fogen i form av bottningslist av polyetylen. Placera bottningslistan på det djup som leverantören av fogmassan anger.



DK Vinduet fuges indvendigt og evt. udvendigt med elastisk fugemasse i henhold til leverandørens anvisninger.

Eng In visible areas the window is sealed on the internal side, and all areas on the external side where appropriate (depending on solution), using expanding sealing compound. Please follow the instructions of the supplier.

S Fönstret fogas invändigt och ev. utvändigt med elastisk fogmassa enligt leverantörens anvisningar.

Sammenbygning af elementer Couplings Sammanställningar



Tip: find flere sammenbygninger på www.VELFAC.dk

Tip: find more examples of couplings on www.VELFAC.co.uk or www.VELFAC.ie

Tips: Fler sammanställningar finns på www.VELFAC.se



Tip: Vedrørende fugeløsning se side 10

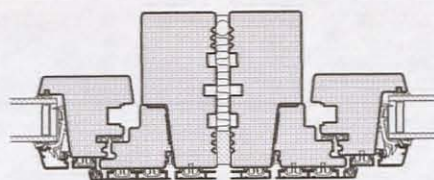
Tip: For information about perimeter sealing please refer to page 10

Tips: Beträffande foglösning se sid 10

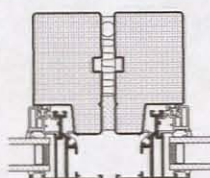
*Vandnæse kræves for min. hver tredje meter ved sammenstilling af flere elementer.

*When coupling elements the drip flashing must be used for every third meter.

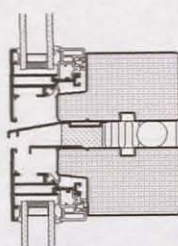
*Droppnåsa krävs för minst var tredje meter vid sammanställning av flera element.



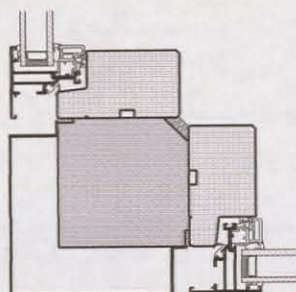
VELFAC 100 - VELFAC 100
Snit i lodret samling (husk fugeprofil)
Horizontal coupling
Vertikal sammanställning



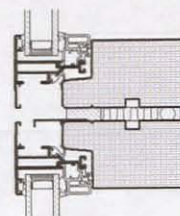
VELFAC 200 - VELFAC 200
Snit i lodret samling
Horizontal coupling
Vertikal sammanställning



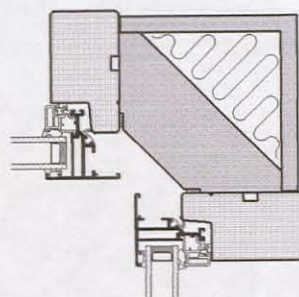
VELFAC 200 - VELFAC 200
Snit i vandret samling med vandnæse*
Vertical coupling with drip flashing*
Horisontell sammanställning med droppnåsa*



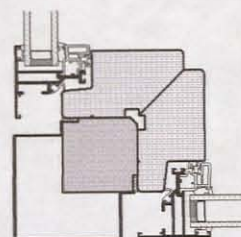
VELFAC 200 - VELFAC 200
90° udvendig hjørnesamling
90° external cornerpost detail
90° utåtgående hörnsammanställning



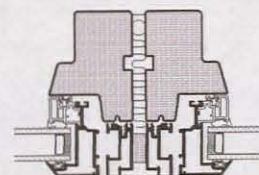
VELFAC 200 - VELFAC 200
Snit i vandret samling
Vertical coupling
Horisontell sammanställning



VELFAC 200 - VELFAC 200
90° indvendig hjørnesamling
90° internal cornerpost detail
90° inåtgående hörnsammanställning



VELFAC 200 - VELFAC 200
90° udvendig hjørnesamling, smigskåret karm
90° external cornerpost detail with 45° cut frame
90° utåtgående hörnsammanställning med snedfasad karm



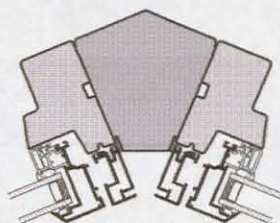
VELFAC 400 - VELFAC 400
Snit i lodret samling
Horizontal coupling
Vertikal sammanställning



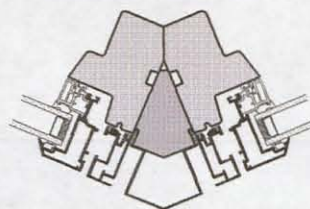
Tip: Den pæneste indbygning opnås med ensartet afstand mellem rammerne, 8-15 mm. Terrassedøre, sidehængte vinduer og vendevinduer i kombination med sidehængte kræver dog 12-15 mm - hvis de er hængslet mod hinanden.

Tip: Couplings should be made with a gap of 8-15mm. If the elements are hinged next to each other, a gap of 12-15mm is required when coupling patio doors, sidehung opening lights, and reversible lights with sidehung opening lights.

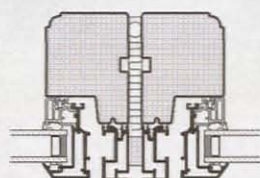
Tips: Det bästa resultatet får man genom att montera fönstren med samma avstånd mellan bågarna, 8-15 mm. Terrassdörrar, sidohängda fönster och vändbara fönster i kombination med sidohängda kräver dock 12-15 mm avstånd om de hänger gångjärn mot gångjärn.



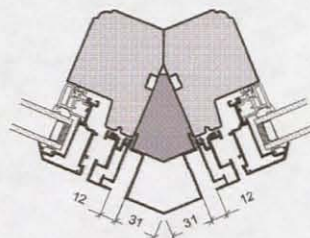
VELFAC 400 - VELFAC 400
135° indvendig hjørnesamling
135° internal cornerpost detail
135° inåtgående hörnsammanställning



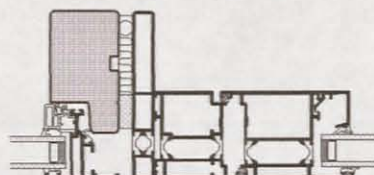
VELFAC 400 - VELFAC 400
135° udvendig hjørnesamling, smigskåret karm
135° external cornerpost detail
135° utåtgående hörnsammanställning med snedfasad karm



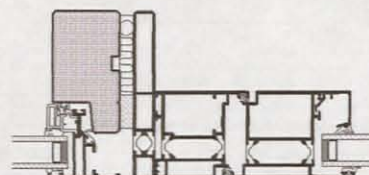
VELFAC 400 classic - VELFAC 400 classic
Snit i lodret samling
Horizontal coupling
Vertikal sammanställning



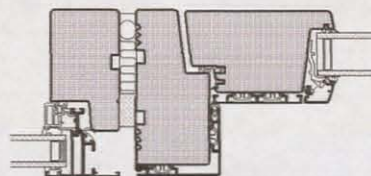
VELFAC 400 classic - VELFAC 400 classic
135° udvendig hjørnesamling, smigskåret karm
135° external cornerpost detail
135° utåtgående hörnsammanställning med snedfasad karm



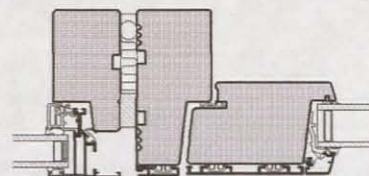
VELFAC 200 - VELFAC 500
Indadgående dør
Inward opening door
Inåtgående dörr



VELFAC 200 - VELFAC 500
Uddadgående dør
Outward opening door
Utåtgående dörr



VELFAC 200 - VELFAC 600 (VELFAC 700)
Indadgående dør (husk fugeprofil)
Inward opening door
Inåtgående dörr



VELFAC 200 - VELFAC 600 (VELFAC 700)
Uddadgående dør (husk fugeprofil)
Outward opening door
Utåtgående dörr

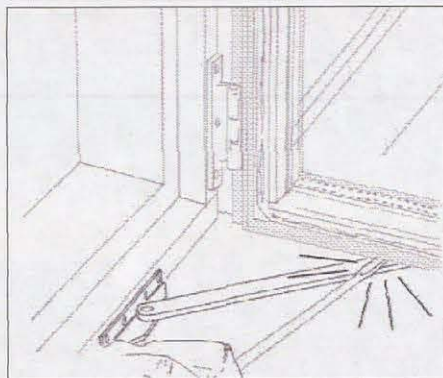
VELFAC 201 Sidehængt vindue VELFAC 201 Sidehung opening light VELFAC 201 Sidohängt fönster



DK Rekvirer VELFAC stabelaftrækker varenr. 51.413.

Eng VELFAC pin remover is available on request, order code 51.413.

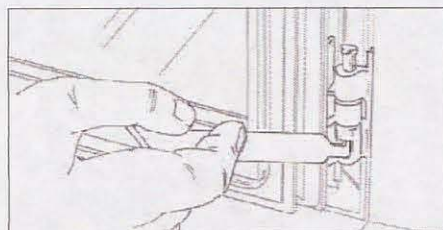
S Rekvirera VELFAC avdragare, artikel nr 51.413.



DK Afmontering: Pres friktionsbremsen af med en skruetrækker.

Eng Demounting: Disengage the friction arm using a screwdriver.

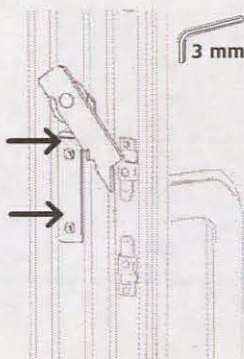
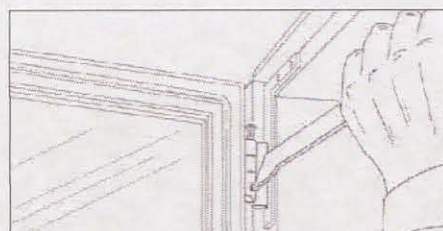
S Avmontering: Tryk loss friktionsbromsen med en skruvmejsel.



DK Vip naglerne i hængslerne op med en VELFAC stabelaftrækker. Hold rammen fast, fjern naglerne og løft rammen af.

Eng Lift the hinge pins using a VELFAC pin remover. Be careful to hold the sash, and remove both pins. Lift off the sash.

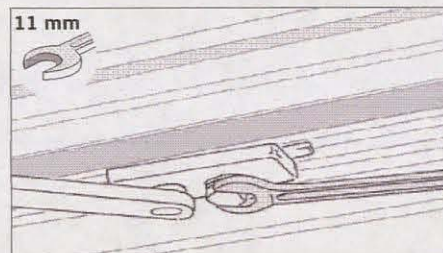
S Lyft upp sprintarna i gångjärnen med en VELFAC avdragare. Håll i bågen, ta bort sprintarna och lyft av bågen.



DK Højdejustering af evt. opløfter: Løsn skruer og flyt beslag.

Eng Height adjustment of sash lifting arm, if any: Disengage Allen key screws and adjust the height.

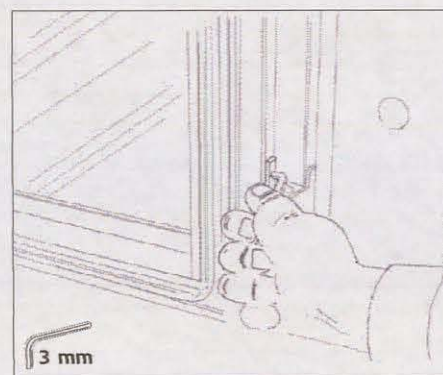
S Höjdjustering av ev. upplyftare: Lossa skruvarna och flytta beslaget.



DK Justering af friktionsbremse: Løsn eller stram skruen.

Eng Adjusting the friction arm: Loosen or tighten the screw.

S Justering av friktionsbroms: Lossa eller dra åt skruven.



DK Justering i højden: Løsn hængselsskruer og flyt beslag.

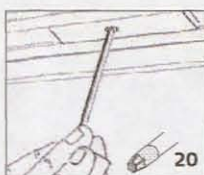
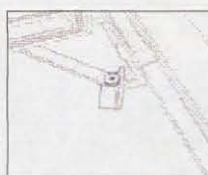
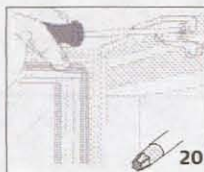
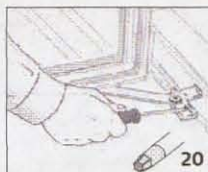
Eng Height adjustment: Unscrew the hinge and move the sash up or down as required.

S Höjdjustering: Lossa gångjärnsskruvarna och flytta beslaget.

VELFAC 207 Sidestyret vindue

VELFAC 207 Sidehung projecting light

VELFAC 207 Sidostyrt fönster



DK Åbn vinduet til 90°. Løsn beslagene foroven og forneden og drej dem væk. Afmonter eventuelle stopklodser i glideskinnerne.

Eng Open the window (90°). Loosen the ironmongery at the top and bottom part of the frame and turn it away. Dismount the stop blocks in the guide rails.

S Lossa beslagen upptill och nedtill och vrid undan dem. Montera bort eventuella stoppklossar i glidskenorna.



DK Kør rammen hen til udsparring i glide-skinne og træk den ud.

Eng Move the sash to the guide rail opening and pull it out.

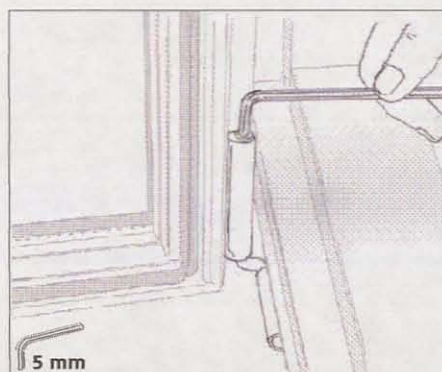
S För bågen till öppet läge i glidskenan och dra loss den.



DK Justering af friktionsbremse: Løsn eller stram skruen for oven og for neden på vinduesrammen.

Eng Adjusting the friction arm: Loosen or tighten the screw at the top and bottom of the window sash.

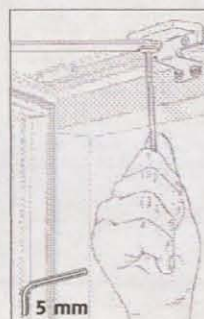
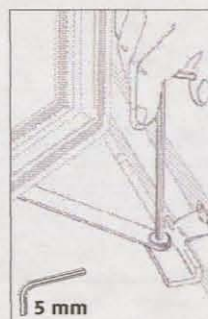
S Justering av friktionsbroms: Lossa eller dra åt skruen upptill och nedtill på fönsterbågen.



DK Højdejustering: Flyt rammen op/ned ved at dreje skruen i nederste hængsel.

Eng Height adjustment: Turn the screw in the bottom hinge to move the sash up or down as required.

S Höjdjustering: Lossa gångjärnsskruvarna och flytta beslagen.



DK Justering sideværts: Flyt rammebeslaget sideværts ved at dreje skruen.

Eng Adjusting sideways: Open the sash. Loosen the screws of the sash fittings and remove the fittings as required.

S Justering i sidled: Öppna bågen. Lossa skruvarna i bågbeslaget och flytta beslaget så långt som det behövs.

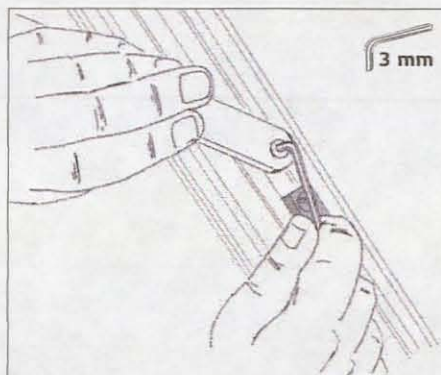
VELFAC 208 Tophængt vindue VELFAC 208 Tophung window VELFAC 208 Topphängt fönster



OBS: Når bæreamene løsnes, kan rammen falde ned!

N.B. Once the friction arms have been released, the sash may fall out!

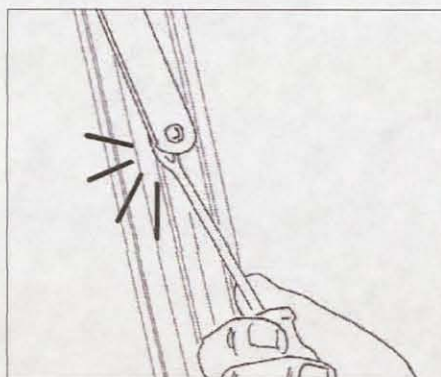
OBS: När bäarmarna har lossats kan bågen falla ner!



DK Afmontering: Åbn vinduet. Skru bæreamene løs.

Eng Dismounting: Open the window. Unscrew the friction arms.

S Avmontering: Öppna fönstret. Skruva loss bäarmarna.



DK Pres bæreamene fri af rammen med en skruetrækker.

Eng Release the friction arms from the sash using a screwdriver.

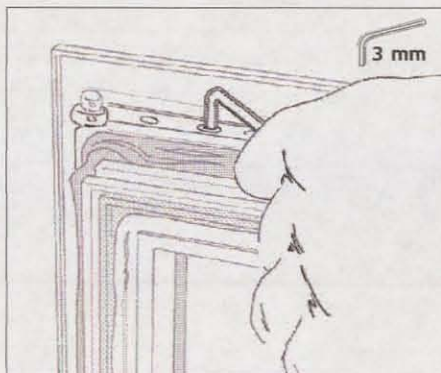
S Tryck loss bäarmarna från bågen med en skruvmejsel.



DK Åbn vinduet til vandret og løft det af.

Eng Open the window to a horizontal position and lift it off.

S Öppna fönstret till vågrätt läge och lyft av det.



DK Justering i højden: Løsn skruer og flyt beslagene i begge sider.

Eng Height adjustment by moving the sash fittings up or down on both sides.

S Höjjustering kan göras genom att flytta beslagen i sidorna.

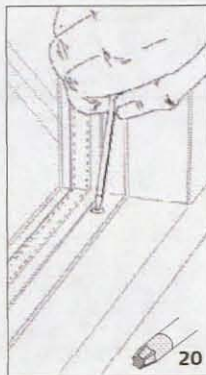
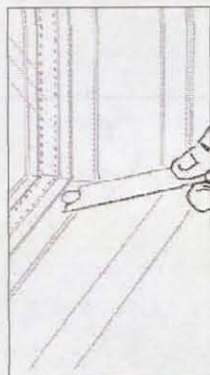
VELFAC 210 Fast vindue VELFAC 210 Fixed light VELFAC 210 Fast fönster



OBS: Rammen er løs, når den løftes fri forneden.

N.B. The sash is detached when released at the bottom.

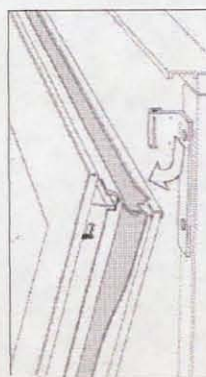
OBS: Bågen är lös när den lyfts ur nertill.



DK Afmontering: Fjern dækpropper indvendig og skru skruer ud.

Eng Dismounting: Remove the cover caps on the inside and take out the screws.

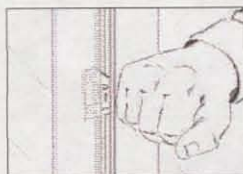
S Avmontering: Ta bort täckbrickorna på insidan och skruva ur skruvarna.



DK Løft rammen 5-6 mm, træk den 2-3 cm udad og sænk den ned. Brug evt. løfte-stang med forsigtighed.

Eng Lift the sash slightly (5 or 6mm), pull it outwards (2 or 3cm) and lower it. You may use sucker pads for this operation.

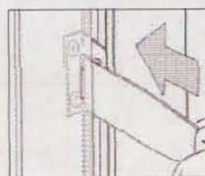
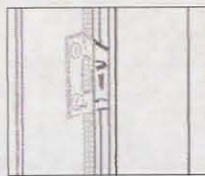
S Lyft bågen 5-6 mm, dra den utåt 2-3 cm och sänk ner den. Använd ev. hävstång med försiktighet.



DK OBS genmontering: Klem rammen fast på tilholder-beslagene.

Eng N.B. reinstallation: Make sure the fittings grip the sash.

S OBS återmontering: Kläm fast bågen på tillhållarbeslagen.



DK Ved skydedør / sideparti til dør anvendes sugekop.

Eng Sliding doors / side elements of doors are dismounted using a sucker.

S För skjutdörr / sidoparti till dörr används sugkopp.

DK Elementer >1500 mm har tilholder-beslag midt på. Tryk på beslag med en spartel, så slipper de rammen.

Eng Elements >1500mm have fittings on the middle. Push the fitting with a putty knife and it will release from the jamb.

S Element >1500 mm har tillhållarbeslag på mitten. Tryck på beslaget med en spackel så lossnar det från bågen.

VELFAC 212 Topstyret vindue VELFAC 212 Tophung projecting light VELFAC 212 Toppstyrt fönster



OBS: Når balance-armene frigøres, kan rammen falde ned!

N.B. Once the friction arms have been released, the sash may fall out!

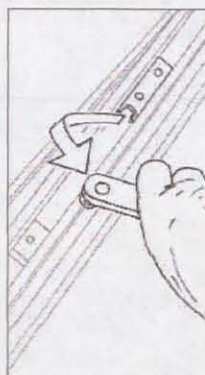
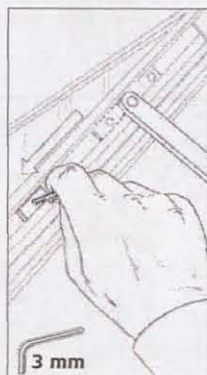
NB: När balans-armarna lossats kan bågen falla ner!



TIP: Hvis rammerne ikke flugter, kan de justeres ved at løsne beslaget i en af siderne og flytte det op eller ned.

TIP: Sashes can be levelled by loosening the fitting in either side and moving it up or down.

TIPS: Om bågens kanter inte linjerar kan du justera bågen genom att lossa beslaget i ena sidan och flytta det upp eller ner.



DK Afmontering. Åbn vinduet helt. Løs stopklodser under balancearmene, flyt dem ned og skru dem fast. Træk balancearmene fri af rammeophæng.

Eng Dismounting. Open the window completely. Loosen the stops beneath the friction arms, move them downwards and tighten the screws. Release the friction arms from the sash.

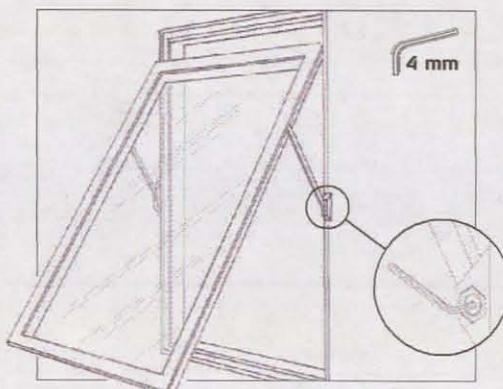
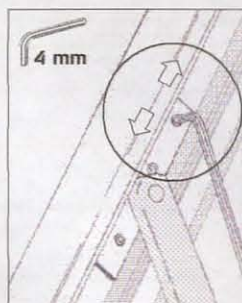
S Avmontering. Öppna fönstret helt. Lossa stoppklotsarna under balansarmarna, flytta ner dem och skruva fast dem. Dra loss balansarmarna från bågupp-hängningen.



DK Åbn vinduet ca. 45°. Nu kæntres rammen ud af styreskinnen.

Eng Open the window to approximately 45°. Tilt the sash out of the guide rail.

S Öppna fönstret ca 45°. Fäll ut bågen från styrskenan.



DK Justering af friktionsbremsen så vinduet går lige let i begge sider.

Eng Adjusting the friction brake to ensure smooth operation on both sides.

S Justering av friktionsbromsen så att fönstret går lika lätt i båda sidor.

VELFAC 219 Vendevindue VELFAC 219 Reversible opening light VELFAC 219 Vändbart fönster



Vi anbefaler at være to om at afmontere rammen.

We recommend two people to demount this sash.

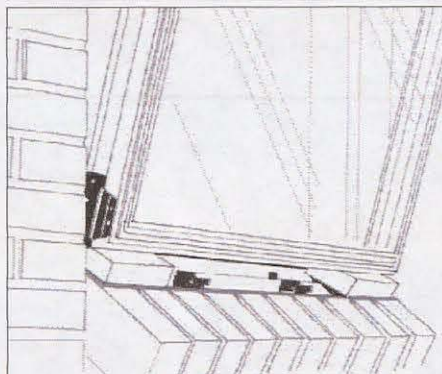
Vi rekommenderar att två personer avmonterar bågen.



OBS: Når rammeophængt frigøres, kan rammen falde ned!

N.B. When you free the sash mounting, the sash may fall out.

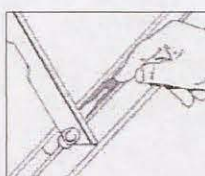
OBS: När bågupphängningen frigörs kan bågen falla ner!



DK **Afmontering:** Vend rammen rundt til pudsestilling og klods den op før start.

Eng **Demounting:** Turn the sash around to the reverse position and insert blocks at the bottom of the sash.

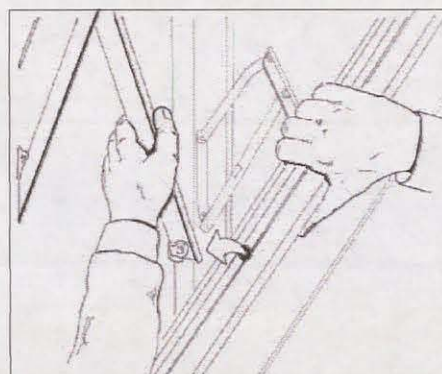
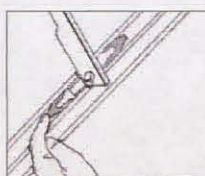
S **Avmontering:** Vänd runt bågen till putsläge och kila fast den.



DK Tag afmonteringsgafflen ud og pres den ind bag rammeophængt fra to sider.

Eng Take out the demounting fork on the side of the sash and press it under the supporting arms from both sides.

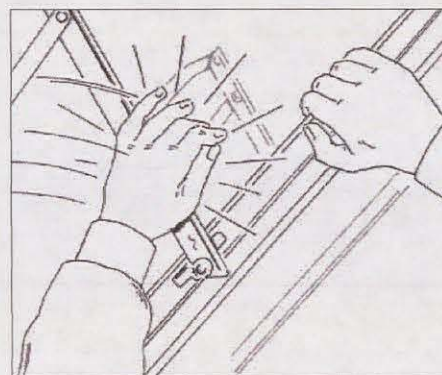
S Ta ut avmonteringsgaffeln och tryck in den bakom bågupphängningen från två sidor.



DK Træk rammeophængt fri af rammen i begge sider. Vinduet kan nu kæntres af.

Eng Free the supporting arms on both sides. The window can now be tilted out.

S Dra loss bågupphängningen från bågen i båda sidor. Fönstret kan nu tippas ut.



DK **Genmontering:** Klik rammeophæng på plads. Kontroller at det sidder fast.

Eng **Remounting:** Click the supporting arms back in place. Make sure the fitting sits tight.

S **Återmontering:** Tryck bågupphängningen på plats. Kontrollera att den sitter fast.

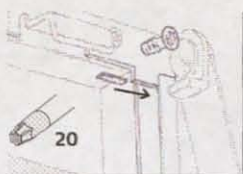
VELFAC 229 Vendevindue VELFAC 229 Reversible opening light VELFAC 229 Vändbart fönster



DK Justering af friktionsbremse: drej skruen ved trykstangen i begge sider. Drej mod uret for at stramme bremsen.

Eng To adjust the friction brake: Turn the screw in the push rod anti-clockwise to tighten the brake.

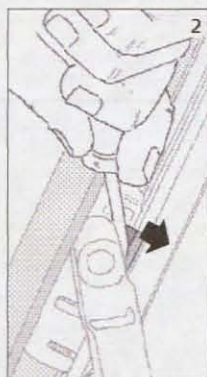
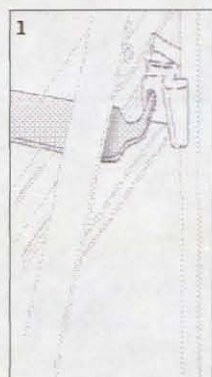
Justering av friktionsbroms:
Vrid skruen vid tryckstången i båda sidor. Dra moturs för att spänna bromsen.



DK Højdejustering: Løsn skruerne, løft beslag opad og placer stålbrick el. lign.

Eng Height adjustment: Loosen the screws, lift the fitting upwards and place a steel spacer or similar.

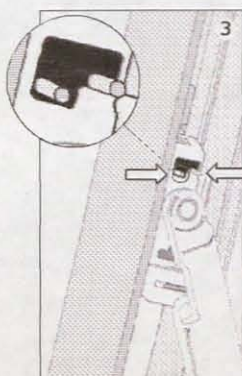
Höjdjustering: Lossa skruvarna, lyft beslaget uppåt och placera stålbricka e. d.



DK Afmontering: Åbn vinduet og udløs børnesikringen. Træk låsepal tilbage foroven i begge sider (1).

Eng Dismounting: Open the window and release the childproof safety stay. Release the cross tongue casement fastener at the top on both sides (1).

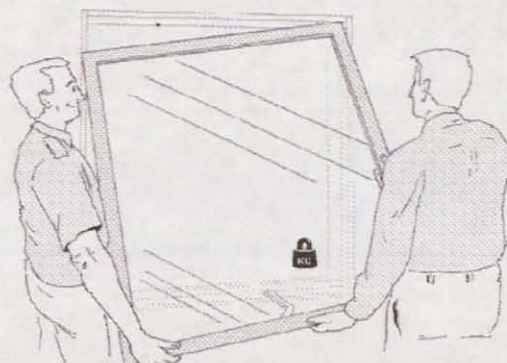
S Avmontering: Öppna fönstret och utlös barnsäkringen. Frigör spärren upptill i båda sidor (1).



DK I rammeophæng i begge sider: skub låseskive ud (2), tryk fjederlås sammen (3), træk vendebeslag fri (4).

Eng Sash mounting, both sides: push the lock washer out (2), press the snap lock together (3), and pull the swing fitting out (4).

S I bågupphängningen i båda sidor: skjut ut låsskivan (2), tryck ihop fjäderlåset (3), vrid loss vändbeslaget (4).



DK Rammen kan nu kæntres af.

Eng The sash can now be tilted free.

S Bågen kan nu fällas av.



DK Genmontering: Åbn vinduet ca. 45°. Placer beslag foroven korrekt (5) og kænter vinduet på plads. Tryk vendebeslag på plads (6). Tryk låseskive på plads (7).

Eng Remounting: Open the window to 45°. Place the fitting correctly at the top (5) and tilt the window in place. Press the swing fitting (6), then the lock washer into position (7).

S Återmontering: Öppna fönstret ca 45°. Placera beslaget korrekt upptill (5) och tippa fönstret på plats. Tryck vändbeslaget på plats (6). Tryck låsskivan på plats (7).

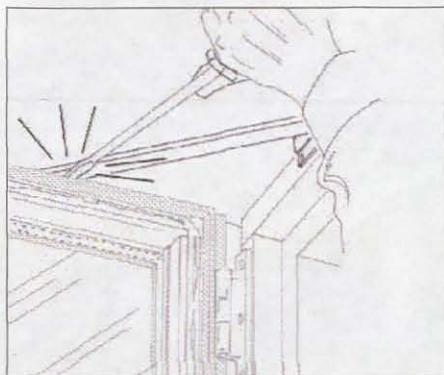
VELFAC 231 Terrassedør VELFAC 231 Patio / escape door VELFAC 231 Terrassdörr



DK Rekvirer VELFAC stabelaftrækker varenr. 51.413.

Eng VELFAC pin remover is available on request, order code 51.413.

S Rekvirera VELFAC avdragare artikel nr 51.413.



DK Afmontering: Pres friktionsbremsen af rammen med en skruetrækker.

Eng Demounting: Press off the friction arm using a screwdriver.

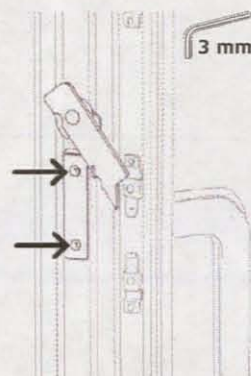
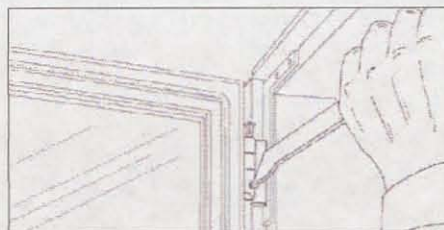
S Avmontering: Böj undan friktionsbromsen från bågen med en skruvmejsel.



DK Vip naglerne i hængslerne op med en VELFAC stabelaftrækker. Hold rammen fast, fjern naglerne og løft rammen af.

Eng Lift the hinge pins using a VELFAC pin remover. Be careful to hold the sash, and remove both pins. Lift off the sash.

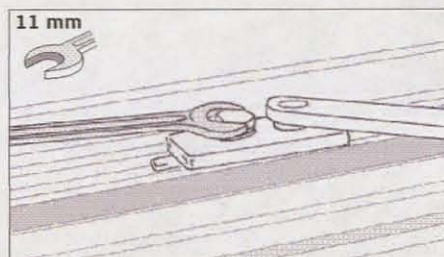
S Lyft upp sprintarna i gångjärnen med en VELFAC avdragare. Håll i bågen, ta bort sprintarna och lyft av bågen.



DK Højdejustering af evt. opløfter: Løsn skruer og flyt beslag.

Eng Height adjustment of sash lifting arm, if any: Disengage Allen key screws and adjust the height.

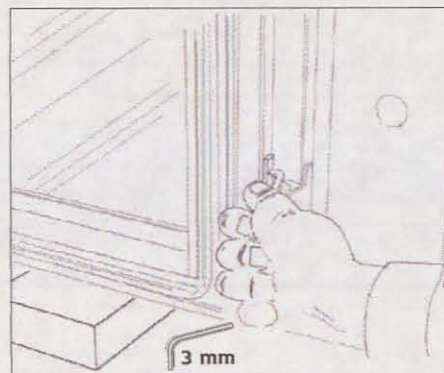
S Höjdjustering av ev. upplyftare: Lossa skruvarna och flytta beslaget.



DK Justering af friktionsbremse: Løsn eller stram skruen.

Eng Adjusting the friction arm: Loosen or tighten the screw.

S Justering av friktionsbroms: Lossa eller dra åt skruven.



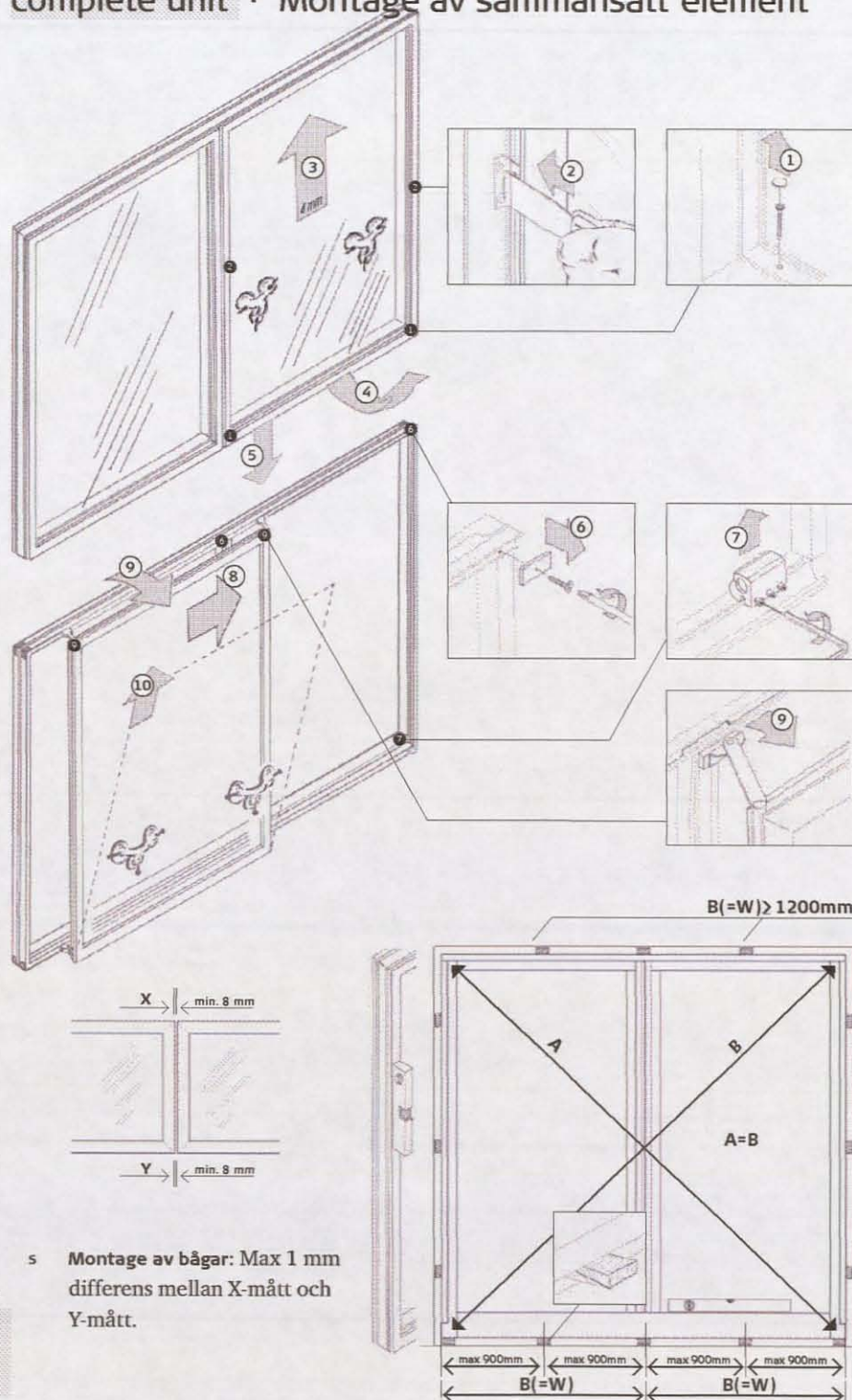
DK Justering i højden: Løsn hængselsskruer og flyt beslag.

Eng Height adjusting: Unscrew the hinge and move the sash up or down as required.

S Höjdjustering: Lossa gångjärnsskruvarna och flytta beslaget.

VELFAC 237 Skydedør VELFAC 237 Sliding door VELFAC 237 Skjutdörr

Montage af samlet element · Installation of a complete unit · Montage av sammansatt element

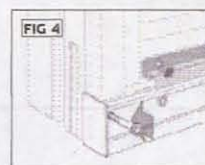
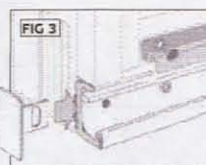
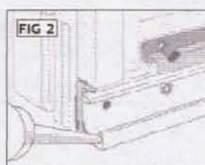
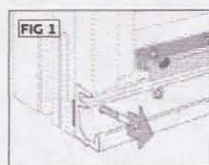




DK Afmonter rammen på begge elementer, før indbygning påbegyndes.

Eng Dismount both sashes before installing the sliding door.

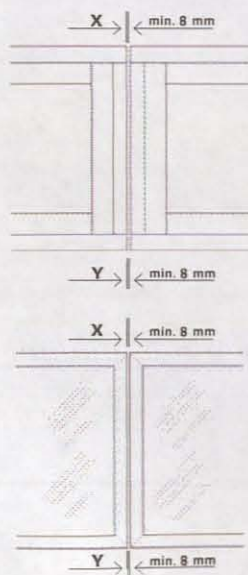
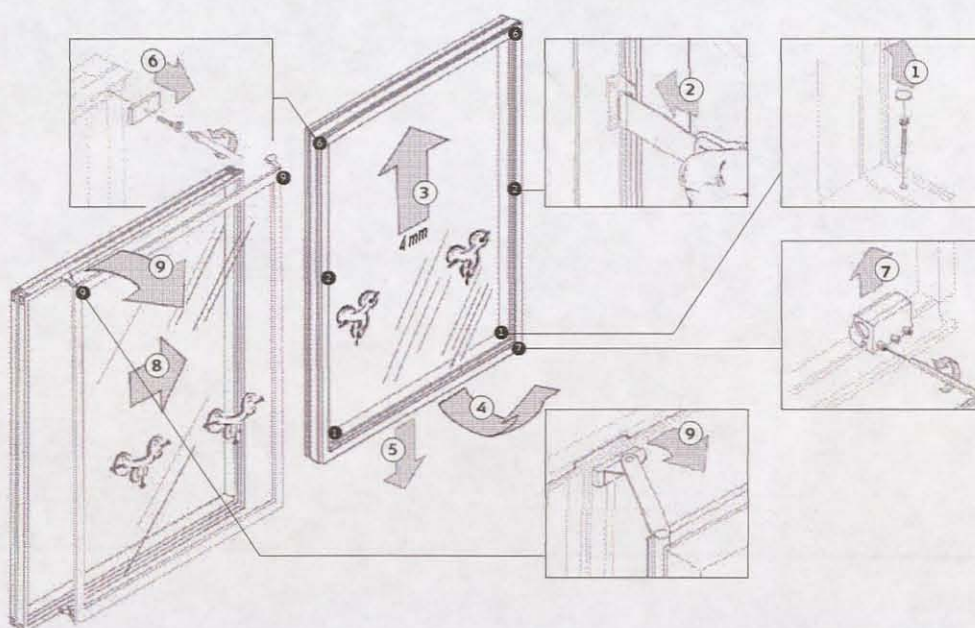
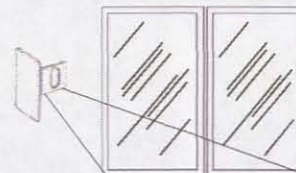
s Montera av bågen på bägge elementen innan monteringen påbörjas.



DK Monter en fugeplade.

Eng Install a joint plate.

s Montera en fogplatta.



DK Montage af karme og rammer: Max. 1 mm forskel på X-mål og Y-mål. Husk tilbagetrukket fuge ved skinne pga. drænhuller.

Eng Installation of frames and sashes: Max. 1 mm difference between X and Y measurements. Avoid blocking drainage holes in sliding track.

s Montage av karmar och bågar: Max 1 mm differens mellan X-mått och Y-mått. Se till att fogen hamnar längre in vid skenan, p g a dräneringshålen.

$B1(=W1) \geq 1200\text{mm}$ $B2(=W2) \geq 1200\text{mm}$

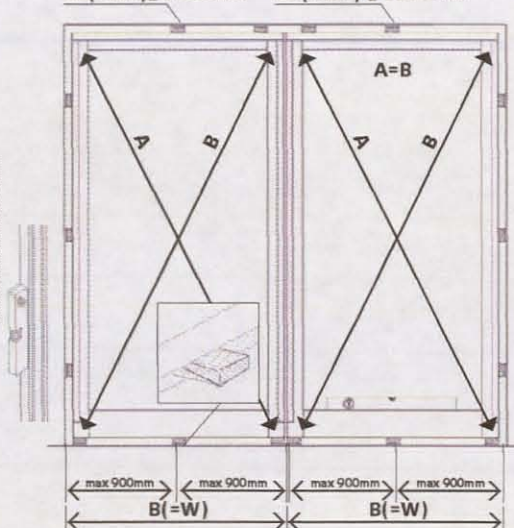
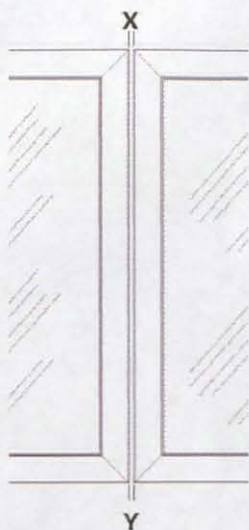
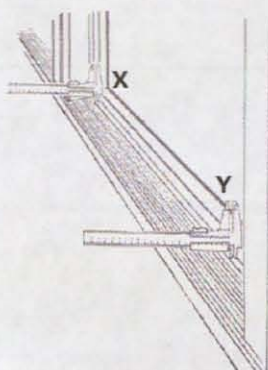


FIG 1


DK FIG 1: Luk skydedøren og mål afstanden mellem rammerne i punkt X og punkt Y. Målene skal være: $X \geq 8\text{mm}$ og $Y \geq 8\text{mm}$. Der må max. være 1mm forskel på X-mål og Y-mål. Hvis resultatet af opmålingen ikke er inden for tolerancen: Tilret karmopsætningen som vist på de foregående sider.

Eng FIG 1: Close the sliding door and measure the distance between the sashes at the points X and Y. The distance between the sashes must be: $X \geq 8\text{mm}$ and $Y \geq 8\text{mm}$. Max 1mm difference between X and Y measurements is allowed. If the result is not within the tolerance limit, adjust the installation of the frame according to instructions on the previous pages.

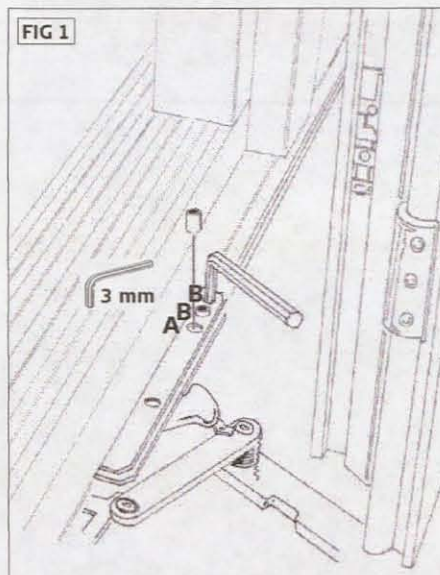
s FIG 1: Stäng skjutdörren och mät avståndet mellan bågarna i punkt X och punkt Y. Måtten ska vara: $X \geq 8\text{mm}$ och $Y \geq 8\text{mm}$. Det får vara max 1 mm differens mellan X-måttet och Y-måttet. Om mätresultatet inte ligger inom toleransen: Justera karmmonteringen enligt instruktion på föregående sidor.

FIG 2


DK FIG 2: Luk rammen til - uden at lukke paskvilgrebet - og mål afstanden mellem glasliste og underkarm ved punkt X og punkt Y. Der må max. være 2 mm forskel på X-mål og Y-mål. Hvis resultatet af opmålingen ikke er inden for tolerancen: Juster skydedøren som vist i FIG 1 og FIG 2 på næste side.

Eng FIG 2: Close the sash without turning the espagnolette handle, and measure the distance between the glazing bead and the cill at the points X and Y. Max. 2mm difference between X and Y measurements is allowed. If the result is not within the tolerance limit, adjust again the sliding door according to FIG 1 and FIG 2 on the next page.

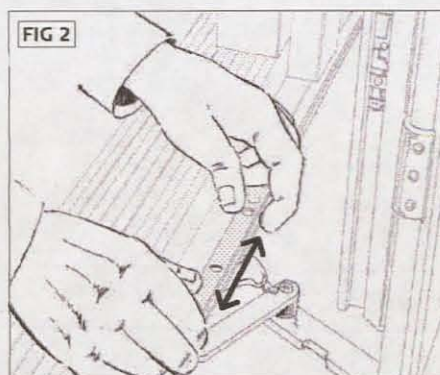
s FIG 2: Stäng till bågen igen - utan att stänga spanjolett-handtaget - och mät avståndet mellan glaslist och underkarm vid punkt X och punkt Y. Det får vara max 2 mm differens mellan X-måttet och Y-måttet. Om mätresultatet inte ligger inom toleransen: Justera skjutdörren enligt FIG 1 och FIG 2 på nästa sida.



DK Eventuel justering: Fjern vognstangens forreste skrue (A) og løs de to justeringsskruer (B).

Eng Adjustment: Remove the front screw (A) and loosen the two adjustment screws (B).

s Eventuell justering: Avlägsna den främre skruven (A) och lossa de två justerskruvarna (B).

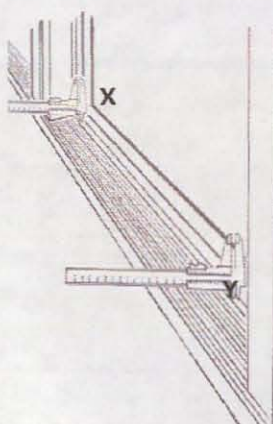


DK Flyt vognen efter behov og skru justeringsskruerne fast igen.

Eng Move the carriage as required and re-tighten the adjustment screws.

s Flytta vagnen efter behov och dra åt justerskruvarna igen.

FIG 3



DK Luk rammen til - uden at lukke paskvil-grebet - og mål afstanden mellem glasliste og underkarm ved punkt X og punkt Y. Der må max. være 2 mm forskel på X-mål og Y-mål. Hvis resultatet af opmålingen ikke er indenfor tolerancen: Justér skydedøren som vist i FIG 1 og FIG 2 igen.

Eng Close the sash without turning the espagnolette handle, and measure the distance between the glazing bead and the cill at the points X and Y. Max. 2mm difference between X and Y measurements is allowed. If the result is not within the tolerance limit, adjust again according to FIG 1 and FIG 2.

s Stäng till bågen igen - utan att stänga spanjolett-handtaget - och mät avståndet mellan glaslist och underkarm vid punkt X och punkt Y. Det får vara max 2 mm differens mellan X-måttet och Y-måttet. Om mätresultatet inte ligger inom toleransen: Justera skjutdörren igen enligt FIG 1 och FIG 2.

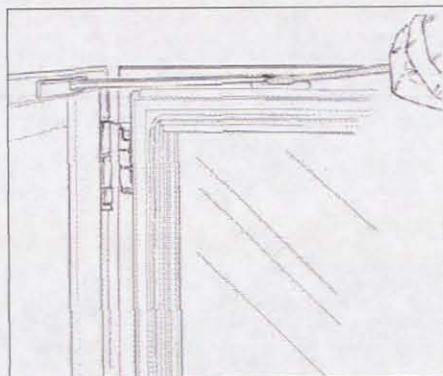
VELFAC 241 Let facadedør VELFAC 241 Light facade door VELFAC 241 Lätt fasaddörr



DK **Rekvirer VELFAC stabelaftrækker** varenr. 51.413.

Eng **VELFAC pin remover is available on request, order code 51.413.**

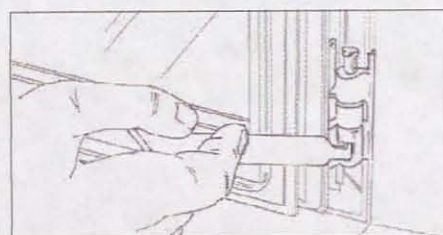
S **Rekvirera VELFAC avdragare artikel nr 51.413.**



DK **Afmontering:** Pres friktionsbremsen af rammen med en skruetrækker.

Eng **Dismounting:** Release the friction arm from the sash using a screwdriver.

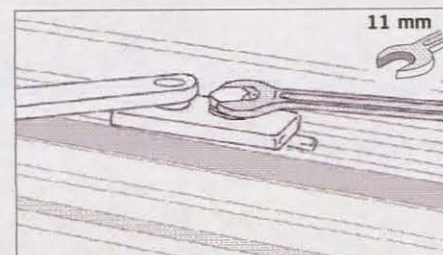
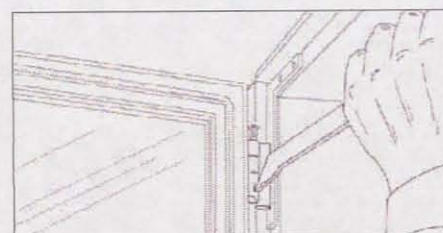
S **Avmontering:** Bøj undan friktionsbromsen från bågen med en skruvmejsel.



DK **Vip naglerne i hængslerne op med en VELFAC stabelaftrækker.** Hold rammen fast, fjern naglerne og løft rammen af.

Eng **Lift the hinge pins using a VELFAC pin remover.** Be careful to hold the sash, and remove both pins. Lift off the sash.

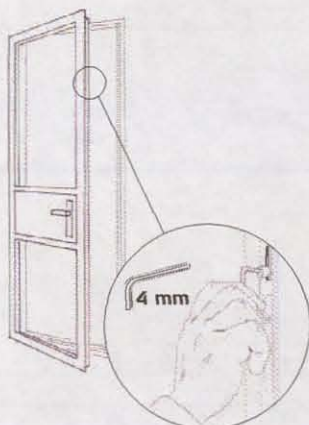
S **Lyft upp sprintarna i gångjärnen med en VELFAC avdragare.** Håll i bågen, ta bort sprintarna och lyft av bågen.



DK **Justering af friktionsbremse:** Løsn eller stram skruen.

Eng **Adjusting the friction arm:** Loosen or tighten the screw.

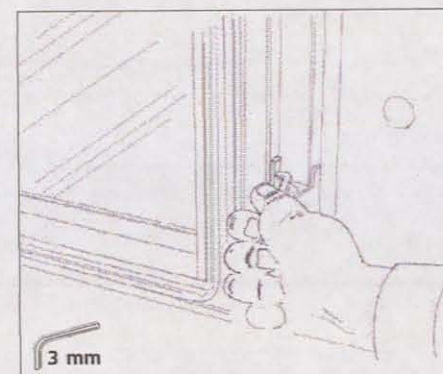
S **Justering av friktionsbroms:** Lossa eller dra åt skruen.



DK **Justering af lukketryk:** Drej på kolve.

Eng **Adjusting the dosing pressure:** Turn the bolt.

S **Justering av stängningstryck:** Vrid kolven.



DK **Justering i højden:** Løsn hængselsskruer og flyt beslag.

Eng **Height adjusting:** Unscrew the hinge and move the sash up or down as required.

S **Höjjustering:** Lossa gångjärnsskruvarna och flytta beslagen.

VELFAC 280 Kassetter

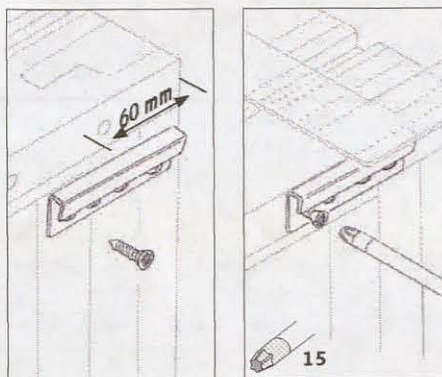
VELFAC 280 Rainscreen panels

VELFAC 280 Kassetter

Kassetter på karm:
Monteres som et
almindelig vindue.

**Panels on a VELFAC
frame:** Must be
installed as an
ordinary window.

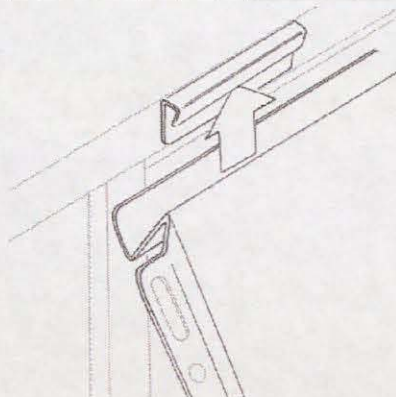
Kassetter på karm:
Monteras som ett
vanligt fönster.



DK Montering af løse kassetter: Montér top-
beslag på egnet flade, så de kommer til
at flugte med overkanten af kassetten.

Eng Installation of separate panels: Screw in
the fitting at the top, ensuring that it
will flush with the edge of the head.

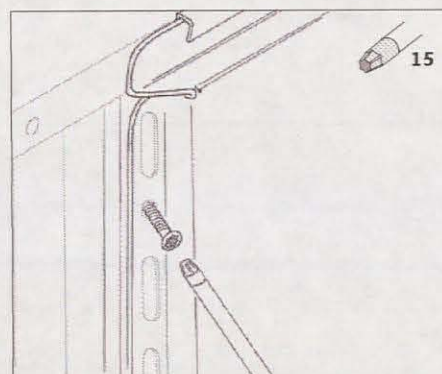
s Montering av lösa kassetter: Skruva fast
beslaget så att det upptill sitter i linje
med kassetten överkant.



**DK Skub kassette op under beslag. Tilret
sideværts.**

**Eng Push the panel up beneath the fitting.
Adjust sideways.**

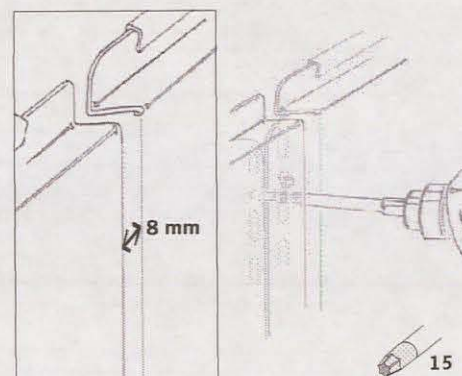
**s Skjut upp kassetten under beslaget.
Justera i sidled.**



**DK Klem kassetten ind til muren og skru
skrueerne skråt i.**

**Eng Press the panel against the frame and
tighten the screws at a sloping angle.**

**s Kläm in kassetten mot karmen och
skruva i skruvarna snett.**



**DK Montér næste kassette på samme måde
med 8 mm afstand til første kassette.**

**Eng Install the next panel in the same way
with 8mm space from the first panel.**

**s Montera nästa kassett på samma sätt
med 8 mm avstånd till den första
kassetten.**

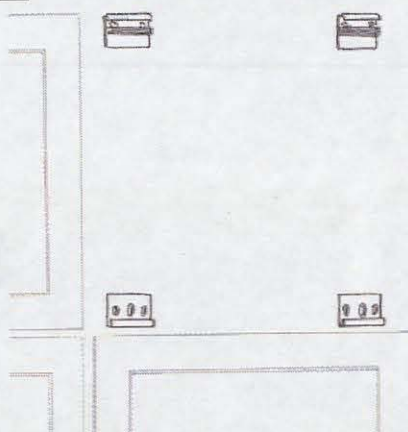
VELFAC 290 Facaderammer VELFAC 290 Facade panel VELFAC 290 Blindbågar

DK Eksempel på indbygning.

Eng Fixing screws and supporting structure are not supplied by VELFAC.

s Exempel på inbyggnad.

FIG 1



DK **Montering:** Niveller rammens underkant ud og monter beslag som vist i FIG 3 - beslagene skal sidde ud for fjedrene på rammen. Se antal beslag i FIG 2. Beslagene monteres med undersænked skruer - forboring er nødvendig. Sørg for konstruktionsmæssigt korrekt valg af skruer og underlag!

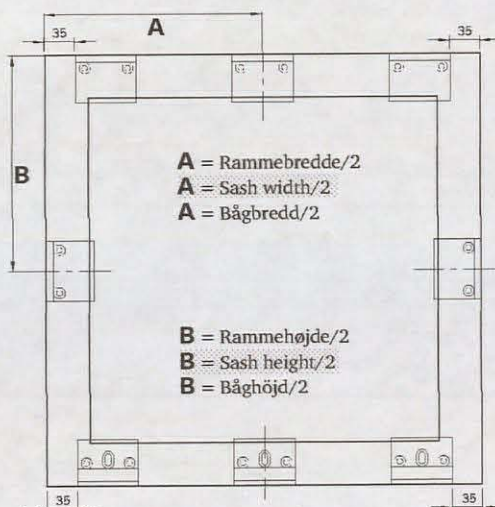
Eng **Installation:** Set mounting brackets to the wall as shown in FIG 3. See number of brackets necessary in FIG 2. Fit brackets with suitable countersunk screws where predrilled holes have been prepared. **Attention:** Fixing screws and supporting structure are not supplied by VELFAC.

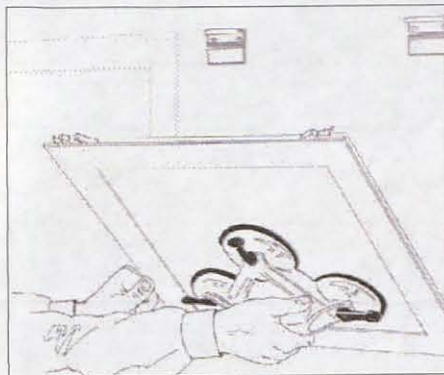
FIG 2

B(=W) H	≥ 320 ≤ 1200 mm	> 1200 mm
≥ 240 ≤ 1200 mm		
> 1200 mm		

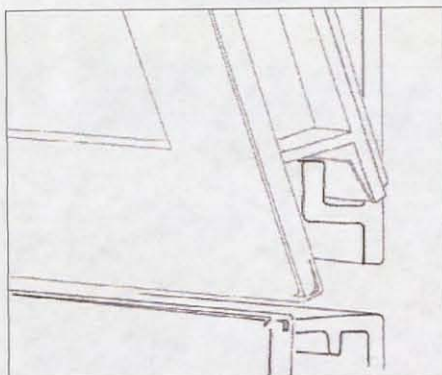
s **Montering:** Montera beslag på väggen enligt FIG 3. Antal beslag framgår av FIG 2. Beslagen monteras med skruvar med försänkt huvud - förborring krävs. Säkerställ att dimensioneringen

FIG 3

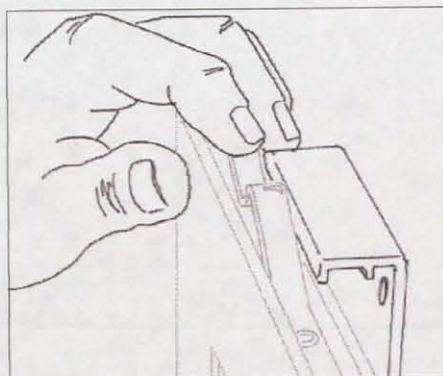




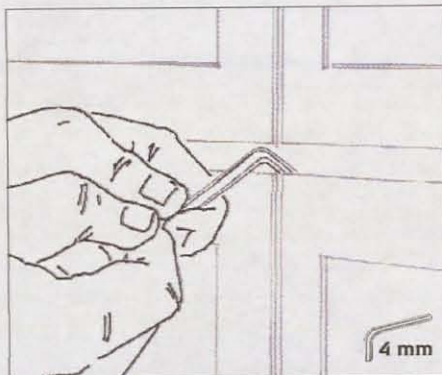
- DK Sæt facaderammen i bærebeselementene...
- Eng Place the facade panel into the support brackets ...
- S Placera blindbågen i bärbeslagen ...



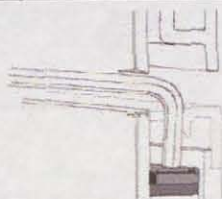
- DK ... og ret den til sidevæts.
- Eng ... and adjust sideways.
- S ... och justera den i sidled.



- DK Hold hver fjeder nede, mens rammen klikkes på plads i tilholderbeselementene.
- Eng Press down each of springs while clicking the panel into the retaining brackets.
- S Håll ner fjädrarna medan bågen klickas på plats i tillhållarbeslagen.



- DK Afmontering: Hold hver fjeder nede med en 4 mm unbraconøgle...
- Eng Dismounting: Press down each of the springs using a 4mm Allen key...
- S Avmontering: Håll ner fjädrarna med en 4 mm insexnyckel ...



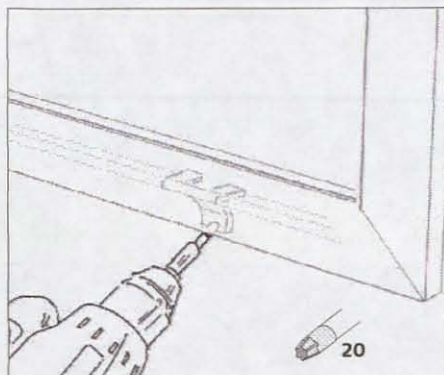
- DK ... mens rammen vippes fri af beselementet.
- Eng ... while tilting the panel out of the bracket.
- S ... medan bågen fälls undan från beselementet.

VELFAC 200 Ventileret fylding VELFAC 200 Ventilated panel VELFAC 200 Ventilerad fyllning



OBS: Rammen er løs, når den løftes fri for ned. **N.B.** The sash is detached when released at the bottom.

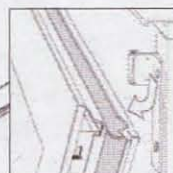
OBS: Bågen är lös, när den lyfts ur nertill.



DK Afmontering: Skru beslagene af nedenunder bunden af rammen.

Eng Dismounting: Unscrew the fittings underneath the bottom of the sash.

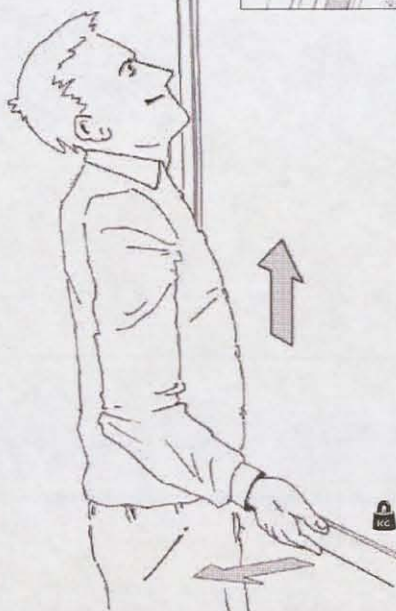
s Avmontering: Skruva av beslagen som sitter under botten på bågen.



DK Løft rammen opad, træk den udad og sænk den ned.

Eng Lift the sash upwards, tilt outwards and lower it.

s Lyft bågen uppåt, dra den utåt och sänk ner den.



DK Brandfylding: Se monteringsvejledning påklæbet elementet.

Eng Fire panel: See the installation instructions attached to the element.

s Brandfyllning: Se montagevägledning som är fäst på elementet.

VELFAC 200 Forsatsramme

VELFAC 200 2+1 inner sash

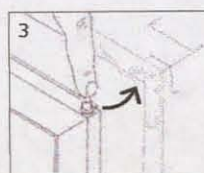
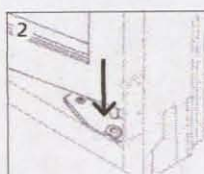
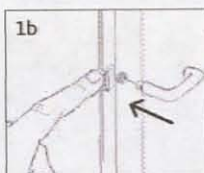
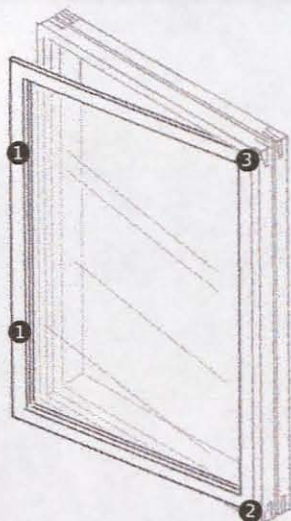
VELFAC 200 Tilläggsbåge



OBS: Her er vist sidehængt forsatsramme. Forsatsrammer hængslet i toppen betjenes tilsvarende, blot drejet 90°.

N.B. The side hung 2+1 inner sash is shown here. Operation of the top hung inner sash is the same but rotated by 90°. The top hung inner sash must be removed for cleaning.

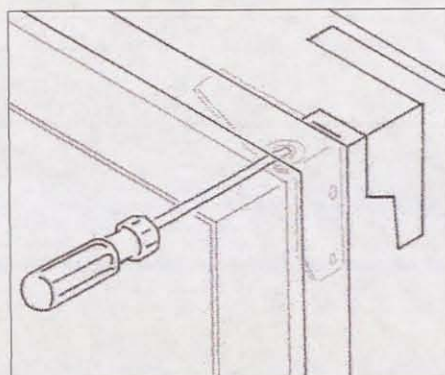
OBS: Här visas sidohängd tilläggsbåge. Tilläggsbåge med gångjärn i överkant betjänas på samma sätt, men vridet 90°.



DK Montering: Hold låsepalen inde, mens skrue eller greb trykkes på plads (1). Sæt hængseltap i beslag forned (2), hold hængseltap foroven inde (3) og klik rammen på plads. Luk rammen vha. skruer eller greb.

Eng Installation: Hold down the latch, then insert either a screw (1a), or a handle (1b). Place the bottom hinge pin in fitting (2), hold down the top hinge pin (3) and click the sash into position. Close the sash by using the handles or the screws.

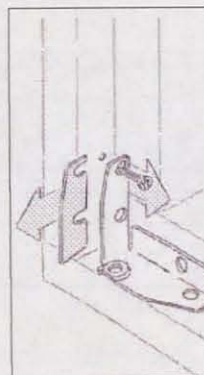
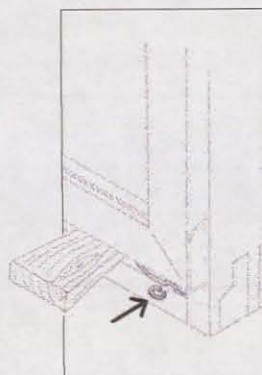
S Montering: Håll in låsspärren medan skruvar eller grepp trycks på plats (1). Sätt i gångjärnstappen i beslaget nertill (2), håll in gångjärnstappen upptill (3) och klicka bågen på plats. Stäng bågen med hjälp av skruvar eller grepp.



DK Afmontering: Tryk øverste hængseltap ind, mens rammen vipres ud.

Eng Dismounting: Hold down top hinge pin, and tip out the sash.

S Avmontering: Den översta gångjärnstappen trycks in medan bågen fälls ut.



DK Højde-/sidejustering: Indskyd skive eller fjern plade under hængselsbeslag.

Eng Height / side adjustment: Insert a washer or dismount the plate under the hinge fittings.

S Höjd-/sidjustering: Skjut in en skiva eller ta bort en platta under gångjärnsbeslaget.

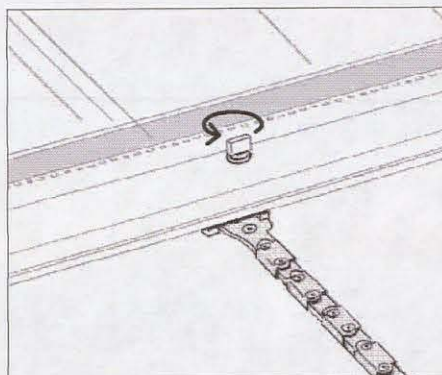


DK Hvis du har problemer med motoren, så kontakt VELFAC Serviceafdeling, tlf. 7628 8500.

Eng If you have a problem with the motor, please call the VELFAC Customer Service Dept. tel. 01223 897100 (GB) or tel. 01 2697406 (IRE).

s Om du får problem med motorn, kontakta VELFAC AB, 036-344690.

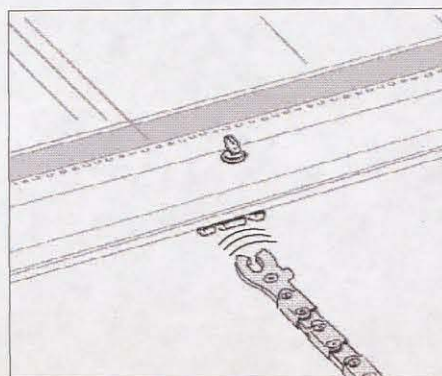
VELFAC 200 med motor VELFAC 200 with motor VELFAC 200 med motor



DK Afmontering: Drej skruen 90°.

Eng Dismounting: Turn the pin 90°.

s Avmontering: Vrid skruen 90°.



DK Træk rammen fri af kæden.

Eng Pull the sash free of the chain.

s Dra loss bågen från kedjan.

DK Før indbygning af vinduet forbindes motor(er) med de ledning(er), der følger med vinduet. Følg den vejledning, der ligger i posen.

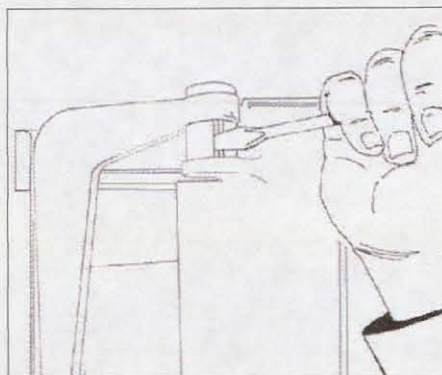
Eng During installation, please connect motor(s) and cable(s) which have been delivered with the window, ensuring you follow the enclosed instructions.

s Innan fönstret monteras ska motorn/motorerna anslutas till ledningen/ledningarna som följer med fönstret. Följ anvisningen som ligger i förpackningen.

VELFAC 200 med 180° hængsel

VELFAC 200 with 180° hinge

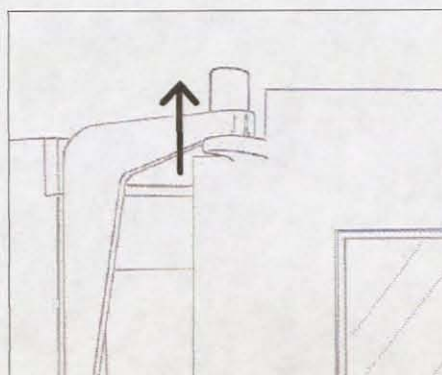
VELFAC 200 med 180° gångjärn



DK **Afmontering:** Fjern låsering foroven med en skruetrækker.

Eng **Dismounting:** Remove the retaining ring at the top of the sash with a screwdriver.

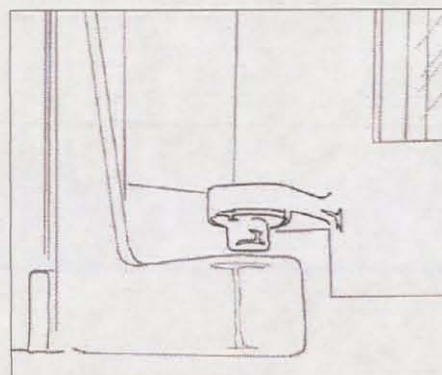
S **Avmontering:** Lossa låsringen upptill med en skruvmejsel.



DK Herefter kan rammen løftes så højt, at...

Eng Now it is possible to lift the sash to a point where...

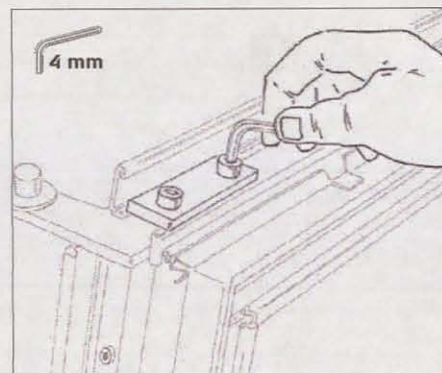
S Därefter kan bågen lyftas så högt att...



DK ... den slipper fornedet og kan løftes ud.

Eng ... it is released at the bottom and can be removed.

S ... den kan lossas nertill och lyftas ur.



DK **Justering sideværts:** Løsn skruer og flyt rammen efter behov.

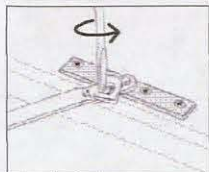
Eng **Adjusting sideways:** Loosen the screws and move the sash as required.

S **Justering i sidled:** Lossa skruvarna och flytta bågen efter behov.



DK Gammel version.
Eng Old version.
s Gammal version.

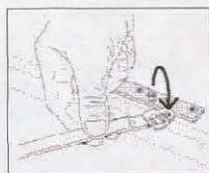
VELFAC 100 Indadgående vindue/dør VELFAC 100 Inward opening element VELFAC 100 Inåtgående element



DK **Afmontering:** Åbn vinduet/døren sidehængt, drej friktionsbremsens låseplade løs. Løft friktionsbremsen af.

Eng **Dismounting:** Open the window / door in sidehung position. Disengage the lockplate of the friction arm and lift it off.

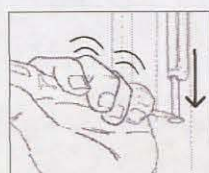
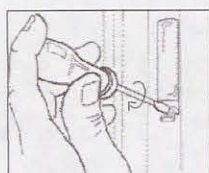
s **Avmontering:** Öppna fönstret/dörren sidohängt. Vrid loss friktionsbromsens låsplatta och lyft av friktionsbromsen.



DK **Pres fjedren lige over naglens krave ind. Drej og træk naglen nadenud.**

Eng **Press in the spring located just above the collar of the pin; turn and push the pin out at the bottom.**

s **Tryck in fjädern över sprintskallen. Vrid och skjut sprinten nedåt.**



DK **Vip øverste hjørne udad og løft rammen af.**

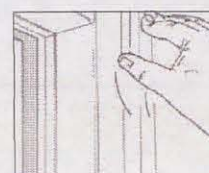
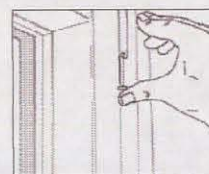
Eng **Tip the upper corner outwards and lift the sash out.**

s **Fäll översta hörnet utåt och lyft av bågen.**

DK **Genmontering:** Løft rammen på igen.

Eng **Remounting:** Replace the sash.

s **Återmontering:** Lyft på bågen igen.



DK **Skub naglen på plads og genmonter friktionsbremsen.**

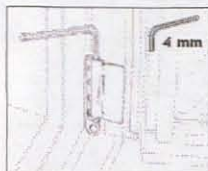
Eng **Push the pin back into position and remount the friction arm.**

s **Skjut sprinten på plats och montera tillbaka friktionsbromsen.**





DK Gammel version.
Eng Old version.
s Gammal version.



DK Højdejustering: Oven i nederste hængsel.
Eng Adjusting the height: At the top of the bottom hinge.
s Höjdjustering: Upptill i nedersta gångjärnet.



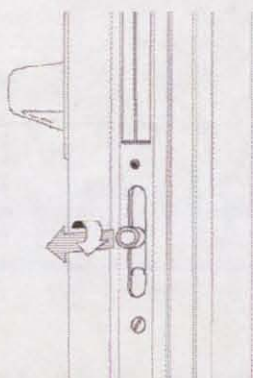
DK Sideværts justering 1: Forneden i nederste hængsel.
Eng Adjusting sideways 1: At the foot of the bottom hinge.
s Justering i sidled 1: Nertill i nedersta gångjärnet.



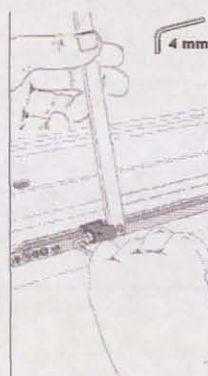
DK Sideværts justering 2: I enden af saksebeslaget.
Eng Adjusting sideways 2: At the top of the scissors fitting.
s Justering i sidled 2: I änden av saxbeslaget.



DK Justering af lukketryk ved saksebeslag: På undersiden af beslaget.
Eng Adjusting the closing pressure of the scissors fitting: At the bottom of the fitting.
s Justering av stängningstryck med saxbeslag: På undersidan av beslaget.



DK Justering af lukketryk generelt: Ved at trække ud i rullen og dreje den.
Eng Adjusting the closing pressure generally: Pull the roller out and turn it.
s Justering av stängningstryck generellt: Dra ut rullen och vrid den.



DK Justering af friktionsbremse: Løsn eller stram skruen på undersiden af vinduet/døren.
Eng Adjusting the friction arm: Loosen or tighten the Allen screw underneath the window / door.
s Justering av friktionsbroms: På undersidan av fönstret/dörren.

VELFAC 100 - Indadgående vindue/dør VELFAC 100 - Inward opening element VELFAC 100 - Inåtgående element



DK Ny version.
Eng New version.
S Ny version.



OBS: Når ramme-
ophænget frigøres, kan
rammen falde ned!

N.B. When you free the
sash mounting, the
sash may fall out.

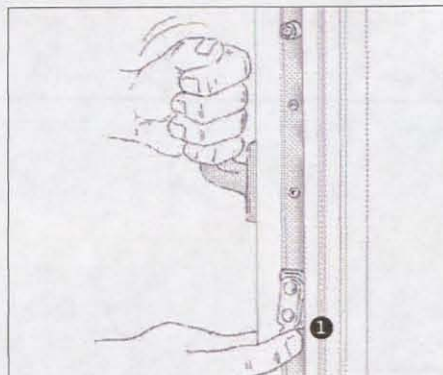
OBS: När bågupp-
hängningen frigörs
kan bågen falla ner!



Genmontering: Når
ramme og beslag er
på plads igen, hold da
kipspærren inde mens
grebet drejes til vand-
ret (sidehængt stil-
ling). Vinduet/døren
kan nu lukkes.

Re-mounting: When the
sash and fittings are
replaced, draw the tilt
blocker (1) towards
you while turning the
handle to a horizontal
position to close.

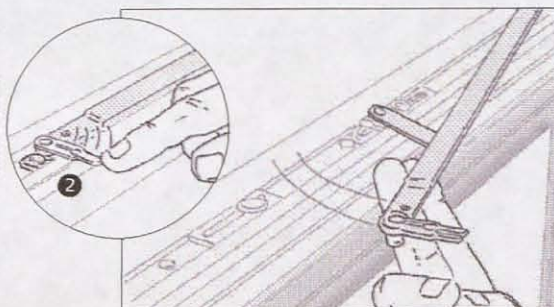
Återmontering: När
båge och beslag sitter
på plats igen, håll in
kipspärren och vrid
tillbaka handtaget till
vågrätt (sidohängt/
öppet) läge innan fön-
stret stängs.



DK Afmontering: Åbn vinduet/døren side-
hængt. Hold kipspærren (1) inde og
drej grebet til lodret (kipstilling).

Eng Dismounting: Open the window/door
to the sidehung position. Draw the tilt
blocker (1) - if any - towards you and
turn the handle to the vertical position.

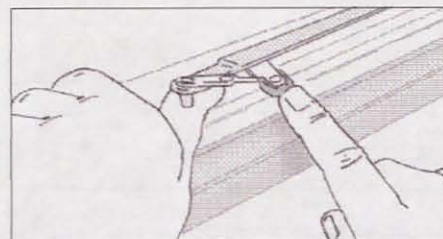
S Avmontering: Öppna fönstret/dörren
sidohängt. Håll in kipspärren (1)
och vrid handtaget till lodrätt läge
(kipläge).



**DK Skub vinduet/døren i og vip den ud i
kip foroven. Drej låsepalen (2) på sak-
sebeslaget og løft beslaget fri.**

**Eng Open the window/door to the tilt
position. Turn the catch (2) on the
scissor fitting at the top of the sash,
and lift away.**

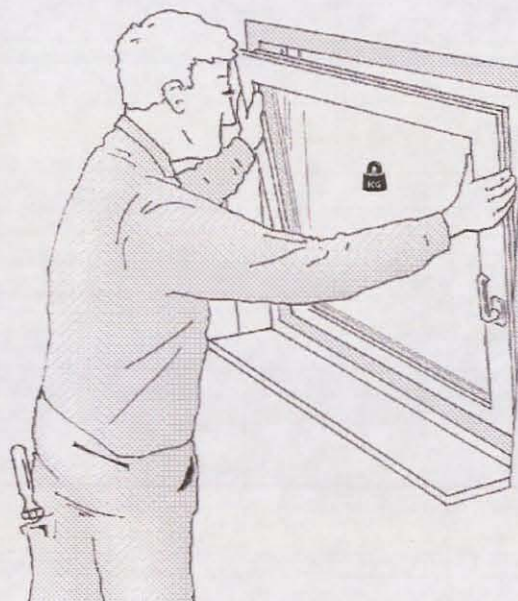
**S Skub vinduet/døren i og vip den ud i
kip foroven. Vrid låsspärren (2) på sax-
beslaget och lyft beslaget.**



**DK Tryk låsepalen midt i den røde kappe
ind og frigør beslaget.**

**Eng Press in the end of the arm catch in the
red block and free the arm.**

**S Tryck in låsspärren mitt i den röda
plastkåpan och frigör beslaget.**



DK Løft rammen af.

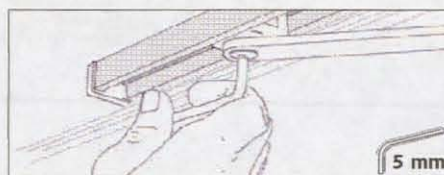
Eng Lift off the sash.

S Lyft av bågen.

VELFAC 541 Alu-facadedør med standardhængsel Aluminium door with standard hinge

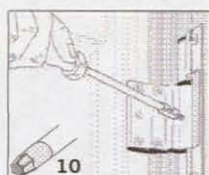
Marknadsförs ej i Sverige.

Wird in Deutschland nicht vermarktet.



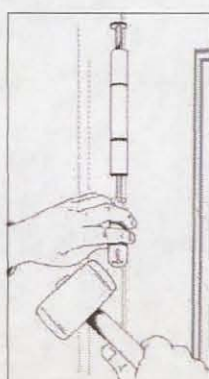
DK Afmontering: Åbn døren. Afmonter dørpumpen ved at fjerne skruen i pumpearmen og køre armen til side.

Eng Dismounting: Open the door. Dismount the door closer removing the screw in the door closer arm and turn the arm aside.



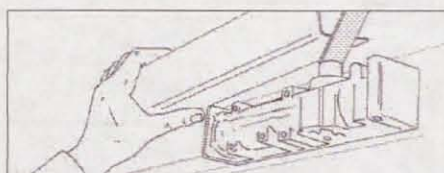
DK Løsn pinolskruen i alle hængsler. Luk døren.

Eng Turn the screw on each of the hinges. Close the door.



DK Bank naglen ud med en dorn gennem det 3 mm hul midt i dækproppen - nedefra eller oppefra - og løft døren af.

Eng Knock the pin out with a punch through the 3mm hole in the middle of the hinge cover cap and lift the door out.



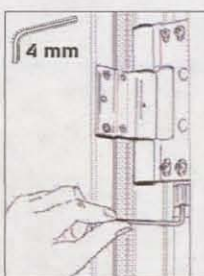
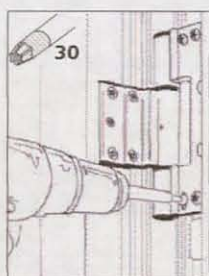
DK Justering af dørpumpe: Skub dækkappen af dørpumpen og følg vejledningen.

Eng Adjusting the door closer: Slide the cover off the door closer and follow the instructions on the door closer.



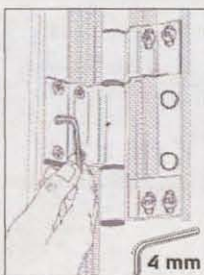
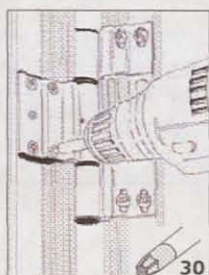
OBS: Hængslerne må ikke smøres. Rengøres evt. med vand.

N.B. The hinges must not be lubricated. If necessary, clean with water.



DK Justering i højden: Løsn hængsels-skruerne på karmen og juster højden vha. skrue i bunden af hængslerne.

Eng To adjust the height: Loosen the hinge screws fastened to the mainframe and adjust the height tightening or loosening the screw at the bottom of the hinges.



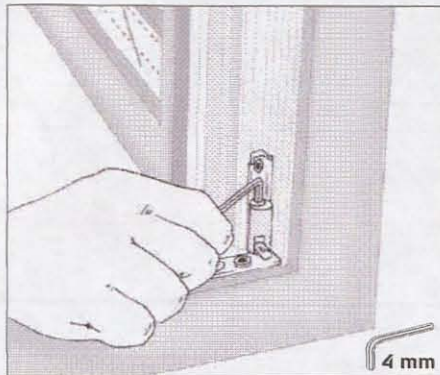
DK Justering sidevæts: Løsn hængsels-skruerne på dørbladet, så kilen bag hængslet sidder løst. Flyt på kilen ved at dreje på skruen i midten.

Eng Adjusting sideways: Loosen the hinge screws fastened to the door leaf and the wedge behind the hinge will become loose. Reposition the wedge by turning the screw in the middle.

VELFAC®



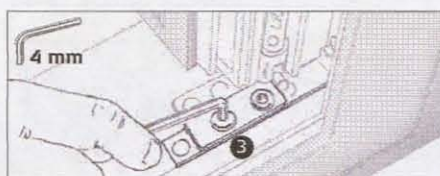
DK Ny version.
Eng New version.
s Ny version.



DK **Højdejustering.** Drej skruen i hjørnebundhængslet.

Eng **Adjusting the height.** Turn the screw in the bottom hinge.

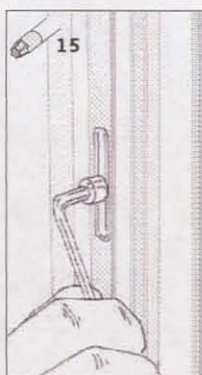
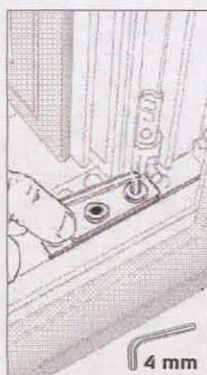
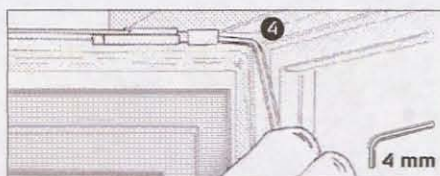
s **Höjdjustering.** Vrid skruven i bottengångjärnet.



DK **Sideværts justering.** Drej den forreste skrue i hjørnebundhængslet (3) eller skruen i enden af saksebeslaget (4).

Eng **Adjusting sideways.** Turn the front screw in the bottom hinge (3) or the screw at the top of the scissor fitting (4).

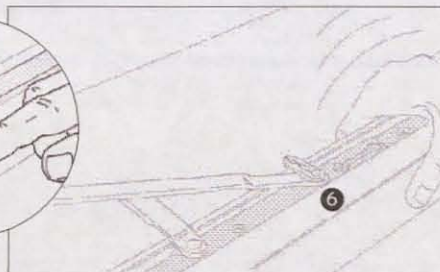
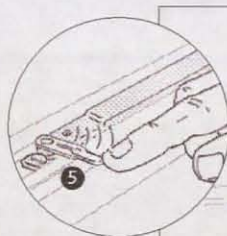
s **Justering i sidled.** Vrid den främre skruven i bottengångjärnet (3) eller skruven i änden på saxbeslaget (4).



DK **Justering af lukketryk.** Drej den bageste skrue i hjørnebundhængslet eller låserullerne på siderne af vinduet/døren eller ...

Eng **Adjusting the closing pressure.** Turn the back screw in the bottom hinge or the rollers on the side of the window/door or ...

s **Justering av stängningstryck.** Vrid den bakre skruven i bottengångjärnet eller låsrullarna i sidorna på fönstret/dörren eller ...

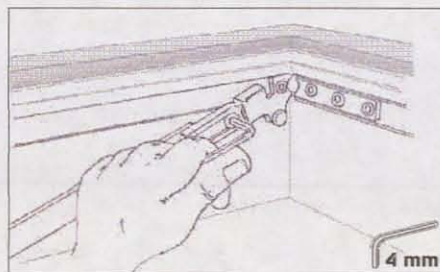


DK ... juster i undersiden af saksebeslaget i toppen af karmhjørnet: kip vinduet/døren, drej låsepalen (5) på saksebeslaget og løft beslaget fri i punkt (6)...

Eng ... adjust using the scissor fitting: tilt the window/door, turn the catch (5) on the scissor fitting and lift away (6)...

s ... justera i undersidan på saxbeslaget upptill i karmhörnet: Öppna fönstret/dörren i kipläge, vrid låsspärren (5) på saxbeslaget och lyft beslaget i punkt (6)

...



DK ... juster nu i unbracoskruen.

Eng ... now adjust the Allen key screw.

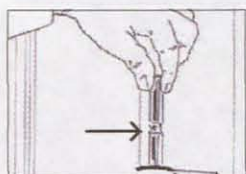
s ... justera nu i insexskruven.

VELFAC 541

Alu-facadedør, hængsel for klemfri bagkant Aluminium door with claw hinge

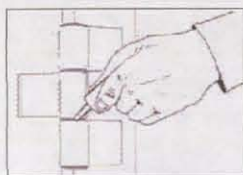
Marknadsförs ej i Sverige.

Wird in Deutschland nicht vermarktet.



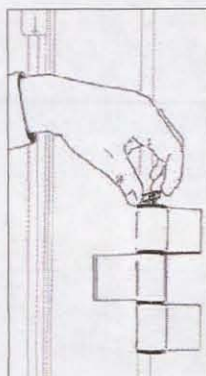
Tip: Unbrakoskrue griber ind i rille i naglen.

Tip: The hinge pin is operated using an Allen key.



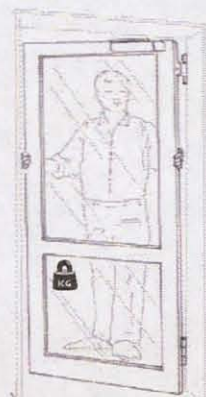
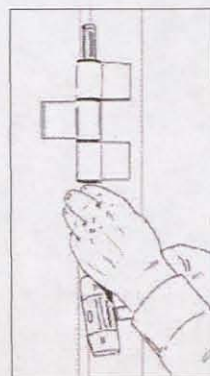
Tip: Giv hængslerne en dråbe olie før justering.

Tip: Apply a drop of oil to the hinges before adjusting.



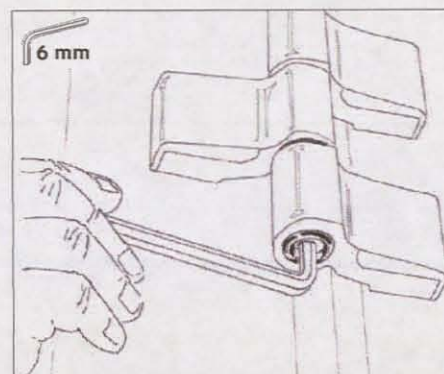
DK Afmontering: Åbn døren. Løsn unbrakoskrue midt på hængslerne. Fjern dækpropperne.

Eng Dismounting: Open the door. Loosen the Allen screw in the middle of the hinges. Remove the cover caps.



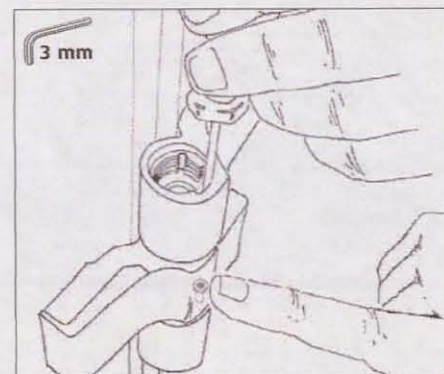
DK Bank naglerne ovenud vha. en dorn og træk dem op. Løft så døren af.

Eng Knock the pins out using a punch and pull them up. Now lift the door out.



DK Justering i højden: Pil proppen ud på undersiden af hængslerne og skru døren op/ned.

Eng Adjusting the height: Remove the cap from the bottom of the hinges and tighten or loosen the screw to move the door up or down.



DK Justering sideværts: Fjern dækprop. Drej på skruen i hængslernes midterste led.

Eng Adjusting sideways: Remove the cover cap. Tighten or loosen the screw in the middle part of the hinges.

VELFAC 600 (+ VELFAC 700) Facadedør VELFAC 600 (+ VELFAC 700) Entrance door



OBS: Vælges et greb fra en anden leverandør, tjek da at det passer til boreskabelonen, der sidder på dørens sidekarm - ellers vil låsekassen blive ødelagt.

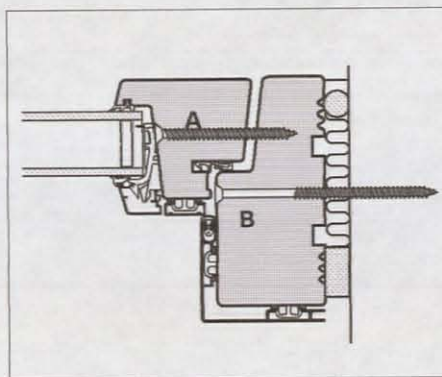
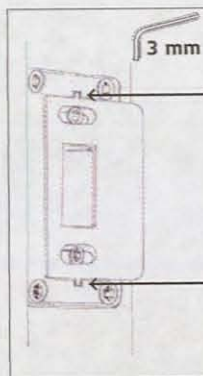
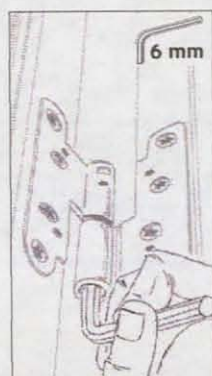
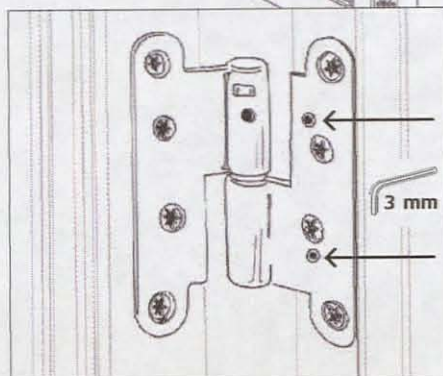
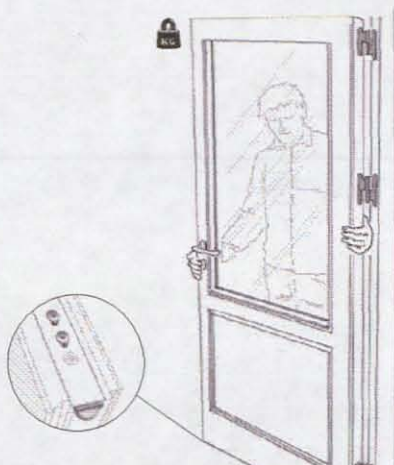
N.B. If you are fitting a handle from another supplier, you must ensure the spindle and handle face match the template.

DK Eventuelt greb, låsekasse, dørpumpe og motorlås ligger i en æske påklæbet døren. Følg montagevejledning, der ligger i æsken.

Til greb med roset bruges boreskabelonen, der sidder på sidekarmen.

Eng Optional handle, lock-box, door closer or motor lock is found in a box attached to the door. Follow the instructions which you will find in the box.

To install handles with rosettes, use the drilling template attached to the jamb.



DK Afmontering: Åbn døren og løft den af.
Eng Dismounting: Open the door and lift it out.

DK Rammeløfter: Bredde døre er forsynet med rammeløfter forned i lukkesiden. Denne frigøres vha. 2 skruer.

Eng Door lifter: Large doors have a door lifter underneath the bottom edge of the closing side, which must be activated by loosening the 2 screws.

DK Justering sideværts: Løsn hængselskruerne på karmen, juster vha. unbrakoskruerne.

Eng Adjusting sideways: Loosen the hinge screws on the frame and adjust by loosening or tightening the Allen screws.

DK Justering i højden: Vha. gevind under bæretappen i midterste hængsel.

Eng Adjust the height by using the thread underneath the pivot of the middle hinge.

DK Justering af lukketryk: Klip tapper af forreste plade i slutblik og flyt plade.

Eng Adjusting closing pressure: Cut pins off the front of the striking plate and relocate the plate.

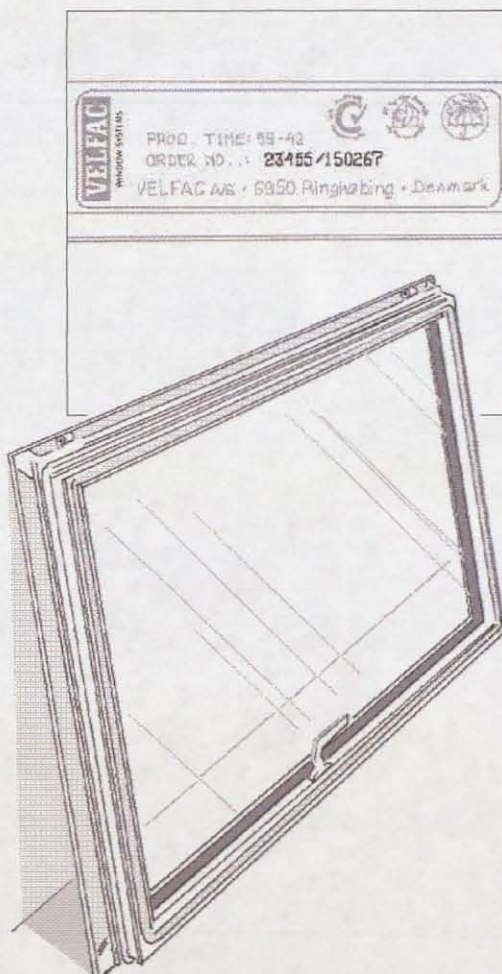
DK Skjult montage af fast sideparti til indadgående dør: Afmonter sidepartiets rude, se s. 52. Fjern skruer (A) og tag rammen af. Karmen fastgøres vha. fx skruer (B), og elementet samles igen.

Eng Hidden installation of a fixed side light for an inward opening door: Remove the double glazed unit of the side light (see p. 52). Remove screws (A) and lift off the sash. Install the frame with screws (B) (not included!), and remount the element.

VELFAC 200, VELFAC 400 Glasudskiftning

VELFAC 200, VELFAC 400 Glass replacement

VELFAC 200, VELFAC 400 Glasbyte



DK Brækage af glas: Aflæs ordrenr. på skiltet i elementet og kontakt VELFAC Serviceafdeling, tlf. 7628 8500.

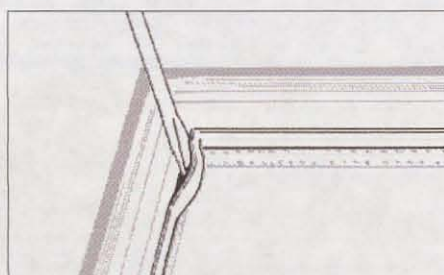
Eng Glass breakage: Find the id. tag usually located in the bottom left rebate and call the Service Dept, tel. 01223 897100 (GB) or tel. 01 2697406 (IRL).

s Trasigt glas: Notera ordernumret på etiketten i elementet och kontakta VELFAC AB, tel. 036-344690.

DK Afmonter ramme med glas (se side 14-42). Stil rammen med paskvilgrebet nedad skråt op ad fx en væg.

Eng Dismount the sash with the glazing installed (see pages 14 to 42). Place the sash against a wall in a sloping position, with the espagnolette handle at the bottom.

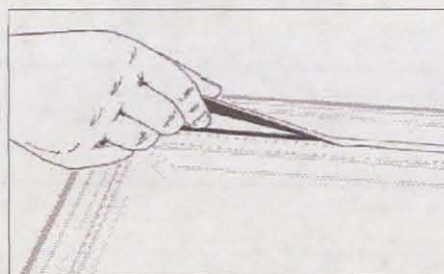
s Avmontera bågen med glas (se sid. 14-42). Ställ bågen, med spanjoletthandtaget nedåt, snett mot t.ex. en vägg.

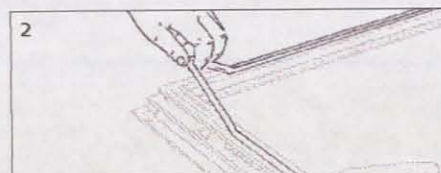
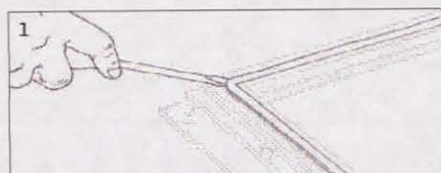
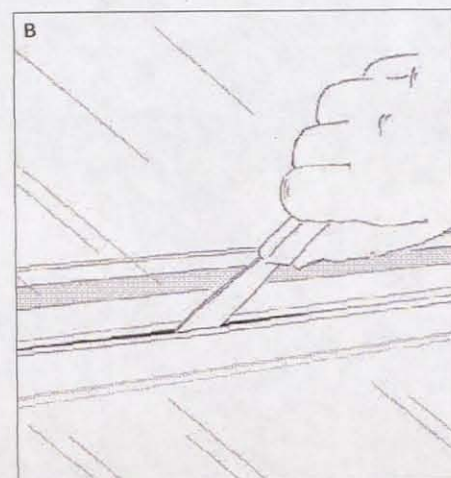
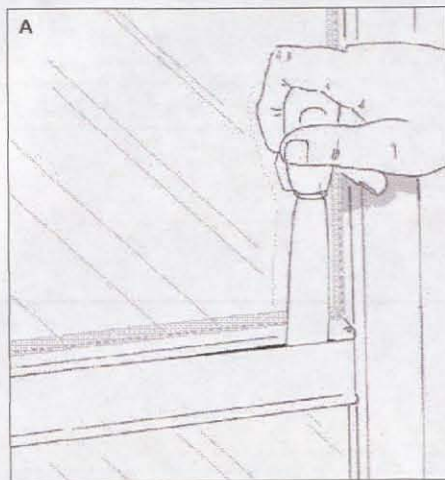


DK Løsn indvendigt glasbånd og træk det af.

Eng Detach the internal glazing gasket and strip it out.

s Lossa det invändiga glasbandet och dra av det.





DK Ved gennemgående sprosser: Stik en spartel ind bag den indvendige dækkappe (A), kød den langs sprossen (B) og vip dækkappen af.

Ved energisprosser på VELFAC 400:

Benyt plastkile. For yderligere information kontaktes VELFAC Serviceafdeling, tlf. 7628 8500.

Eng Glazing bars: Insert a putty knife behind the internal cover cap (A), move it along the glazing bar (B) and detach the cover cap.

'Energy' glazing bars VELFAC 400:

Use a plastic wedge. Contact the Service Dept, tel. 01223 897100 (GB) or tel. 01 2697406 (IRL).

S Vid genomgående spröjsar: Stick in en spackel bakom den invändiga täckkappen (A), dra den längs spröjsen (B) och vik av täckkappen.

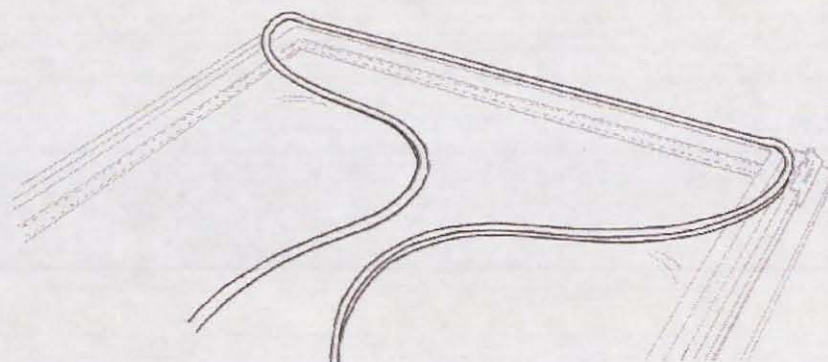
Vid energispröjsar på VELFAC 400:

Använd en plastkil. Kontakta VELFAC AB, tel. 036-344690.

DK Løsn tætningslisten og træk den af rammens bund og sider. OBS: Lad den sidde på foroven, da den er limet fast.

Eng Prise the weather strip loose and strip it out free of the bottom and sides of the sash. N.B.: Do not strip it out at the top where it has been glued on.

S Lossa tåtningslisten och dra av den nertill och på sidorna. OBS: Låt den sitta kvar upptill då den är fastlimmad.

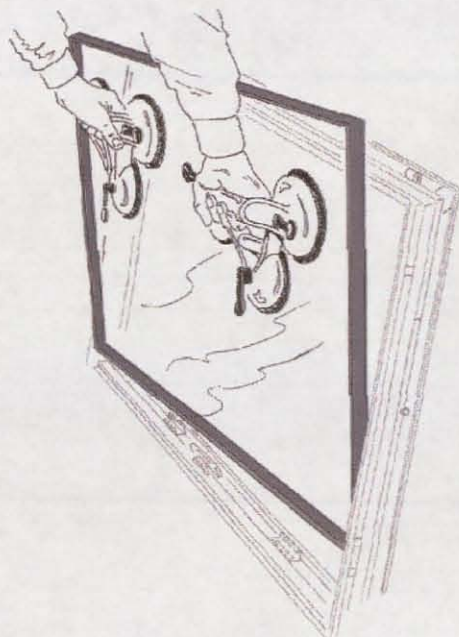
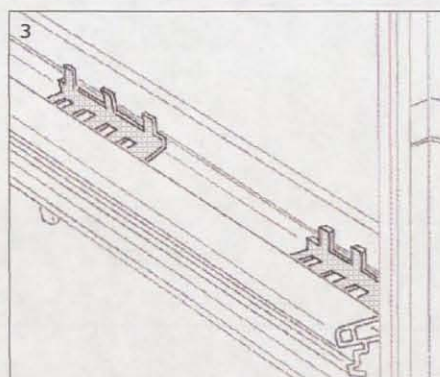
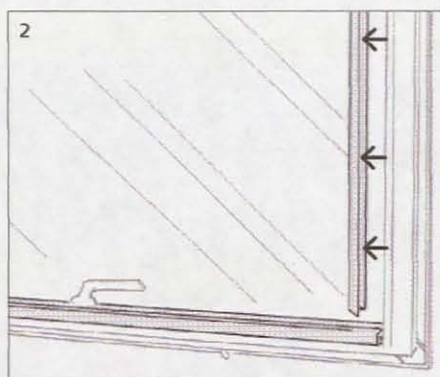
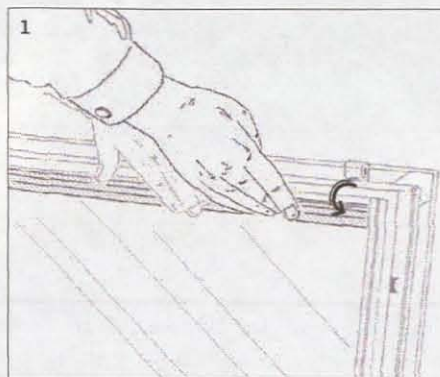




Vinduer med gennemgående sprosser: Når glaslister fjernes, kan flere glasfelter løsne sig.

Windows with glazing bars: Please be careful, once the glazing beads have been removed, more glass sections may work loose.

Fönster med genomgående spröjsar: När glaslisterna tas bort kan flera glasfält lossna.



DK Tryk glaslister fri og træk dem af - først sider, så top og bund (1). Lad glasliste med paskvilgreb sidde. Ved sidehængt og sidestyret vindue vrides glaslister i top og bund ud og trækkes opad (2).

Eng Press the glazing beads loose and pull them out - first on the sides, then at the top and bottom of the sash (1). Do not detach glazing beads with espagnolette handles. On side-hung and side-hung projecting windows, twist the glazing beads out at the top and bottom and pull them out (2).

S Tryck loss glaslisterna och dra av dem - först sidorna, sedan upptill och nertill (1). Låt glaslist med spanjoletthandtag sitta. På sidohängt och sidostyrt fönster vrids glaslisterna upptill och nertill ut och dras uppåt (2).

DK Læg mærke til glasklodsernes placering. De skal genmonteres på samme måde (3).

Eng Note carefully the location of the glazing packers. They have to be re-installed in exactly the same position (3).

S Läggs märke till glasklotsarnas placering. De ska återmonteras på samma sätt (3).

DK Vip glasset fri foroven og løft ruden ovenud. Hvis glasset er > 1420 mm er ruden limet fast. Se næste side.

Eng Tip the glazing out at the top and lift the pane up and out. If the glazing > 1420mm, the pane is glued on. See next page.

S Tippa ut glaset upptill och lyft ut rutan. Om glaset är > 1420 mm är rutan fastlimmad. Se nästa sida.



OBS: Glasset i skydedøren er altid limet fast i hjørnerne i bunden.

N.B. The glazing in the sliding doors is always glued in the bottom corners.

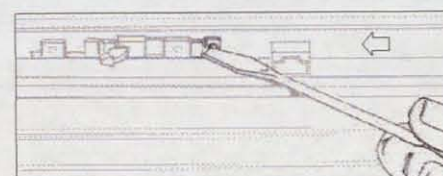
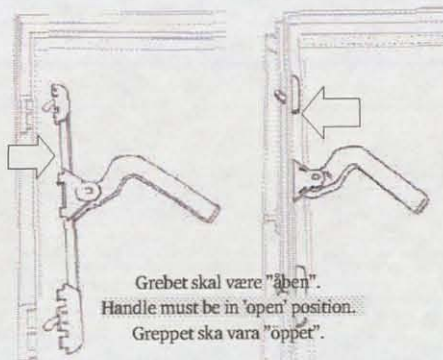
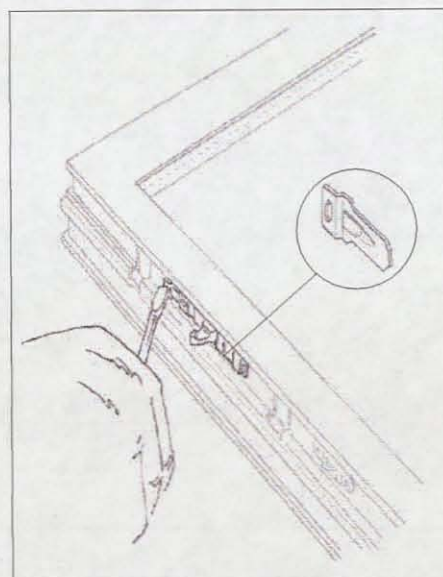
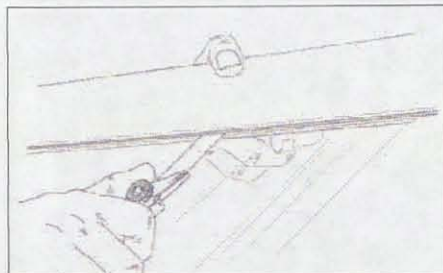
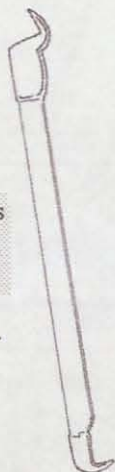
OBS: Glaset i skjutdörren är alltid fastlimmat i hörnen i botten.



Rekvirer VELFAC stabelaftrækker varenr. 51.413.

VELFAC pin remover is available on request, order code 51.413.

Rekvirera VELFAC avdragare artikel nr 51.413.



DK Ved glaslængde >1420 mm: Ramme-profilet er limet fast midt på rudens lange sider inde i glasfalsen. Skær ruden fri, før den kan løftes ud. Ny rude skal limes fast på samme måde fx med montagelim.

Eng Glazing lengths >1420mm: Silicone sealant is fitted at mid-span between the sash profile and the glazing rebate of the long sides of the pane. The glass must be cut free of the sealant before it can be removed. The sealant must be replaced when re-glazing.

S Vid glaslängd >1420 mm: Bågprofilen är fastlimmad mitt på rutans långa sidor inne i glasfalsen. Rutan måste skäras loss innan den kan lyftas ur. Ny ruta ska limmas fast på samma sätt med t.ex. byggsilikon.

DK Hvis der er limet bag paskvilgrebet skal det først afmonteres. Frigør paskvilgreb fra glasliste ved at banke alle kiler ud.

Eng If the sealant is fitted behind the espagnolette handle, it must be removed. Detach the espagnolette handle from the glazing bead by knocking all the wedges out.

S Om det är limmat bakom spanjolett-handtaget måste det monteras av först. Frigör greppet från glaslisten genom att slå ur alla kilar.

DK Fjern nu glaslisten og tag grebet ud. Genmonteres på samme måde og...

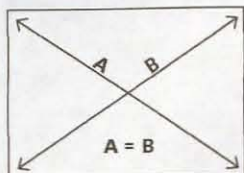
Eng Now remove the glazing bead and take out the handle. The handle is re-installed in the same way ...

S Ta bort glaslisten och ta loss greppet. Återmonteras på samma sätt och...

DK ...sættes fast ved at skubbe kilerne i.

Eng ...the wedges are pushed back into position to secure the handle.

S ... sätts fast genom att kilarna skjuts i.



DK Tjek diagonal mål.

Eng Check diagonal dimensions.

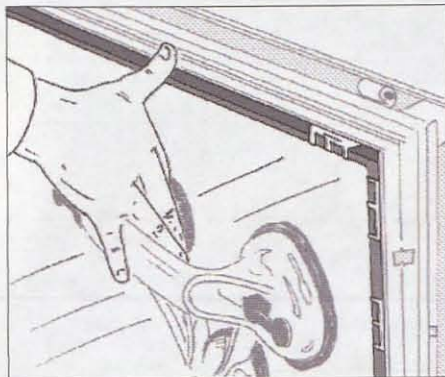
S Kontrollera diagonalmåttet.



Tip: Gør glasbånd og tætningslister smidige med sæbevand.

Tip: Soften the gaskets and weather strips with soapy water.

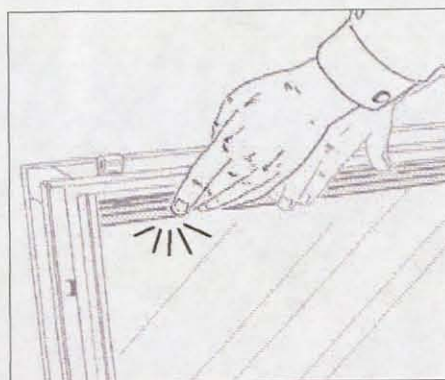
Tips: Mjuka upp glasband och tåtningslister med lite såpvatten.



DK Isætning af rude: Den nye rude sænkes på plads. Opklods som før.

Eng Re-glazing: The new pane is lowered into position. Fit the glazing packers in the same position as before.

S Isättning av ruta: Den nya rutan sänks på plats. Gör klar uppklotsningen.



DK Klik glaslister på plads - først top og bund, så sider.

Eng Click the glazing beads into position - start at the top and bottom.

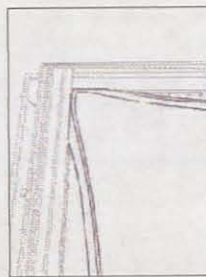
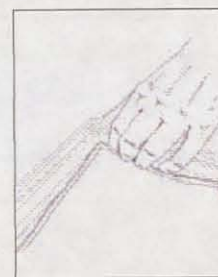
S Klicka glaslisterna på plats - först upptill och nertill, sedan sidorna.



DK Klem glasbånd på plads. Start i alle hjørner og fordel så båndet. Pas på ikke at sno båndet.

Eng Press the glass gasket in, starting at the corners, and then proceeding on the sides. Be careful not to twist the gasket.

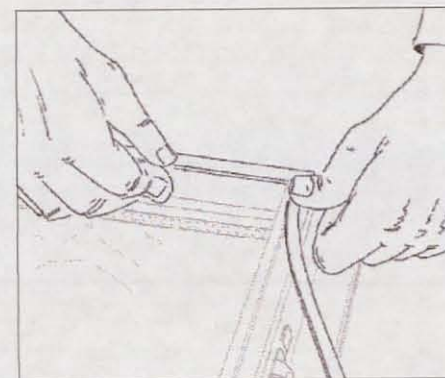
S Kläm glasbandet på plats. Börja i alla hörn och fördela bandet. Se till att bandet inte snor sig.



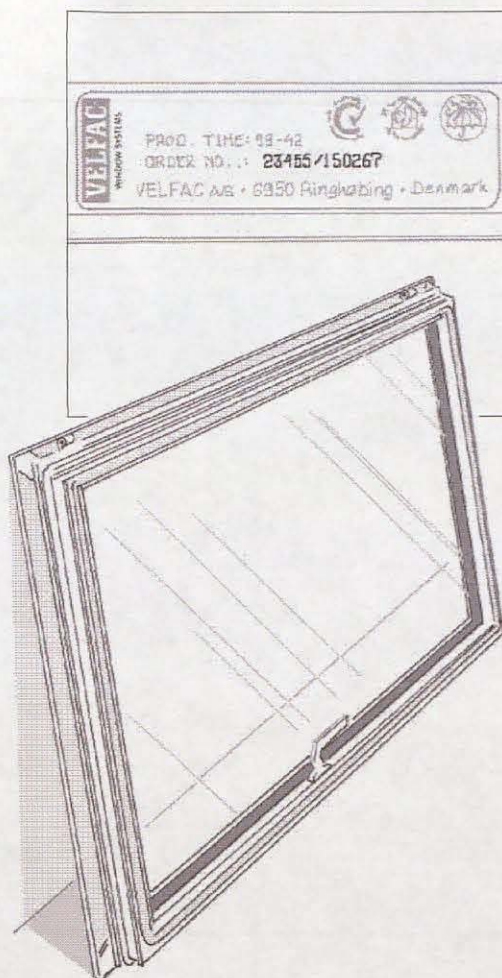
DK Sæt tætningsliste på plads - start foroven, sæt hjørner fast, fordel liste.

Eng Attach the weather strip, starting at the top, then proceed to the corners and sides.

S Sätt tätningsslisten på plats - börja upptill, sätt fast hörnen, fördela listen.



VELFAC 200, VELFAC 400 Glasudskiftning VELFAC 200, VELFAC 400 Glass replacement VELFAC 200, VELFAC 400 Glasbyte



DK Brækage af glas: Aflæs ordrenr. på skiltet i elementet og kontakt VELFAC Serviceafdeling, tlf. 7628 8500.

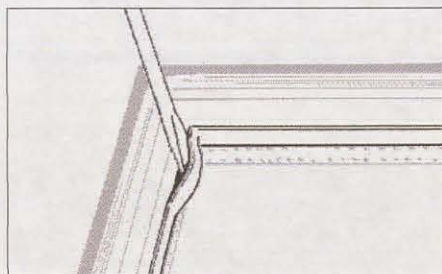
Eng Glass breakage: Find the id. tag usually located in the bottom left rebate and call the Service Dept, tel. 01223 897100 (GB) or tel. 01 2697406 (IRE).

s Trasigt glas: Notera ordernumret på etiketten i elementet och kontakta VELFAC AB, tel. 036-344690.

DK Afmonter ramme med glas (se side 14-42). Stil rammen med paskvilgrebet nedad skråt op ad fx en væg.

Eng Dismount the sash with the glazing installed (see pages 14 to 42). Place the sash against a wall in a sloping position, with the espagnolette handle at the bottom.

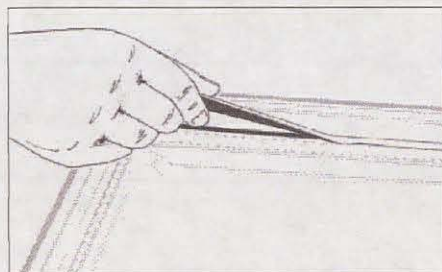
s Avmontera bågen med glas (se sid. 14-42). Ställ bågen, med spanjoletthandtaget nedåt, snett mot t.ex. en vägg.

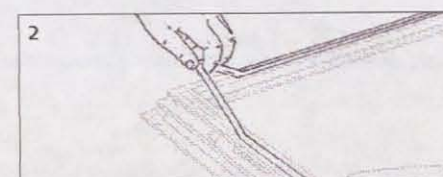
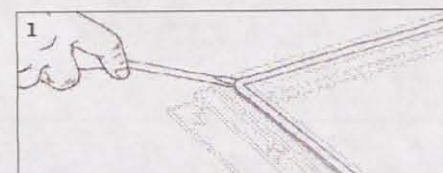
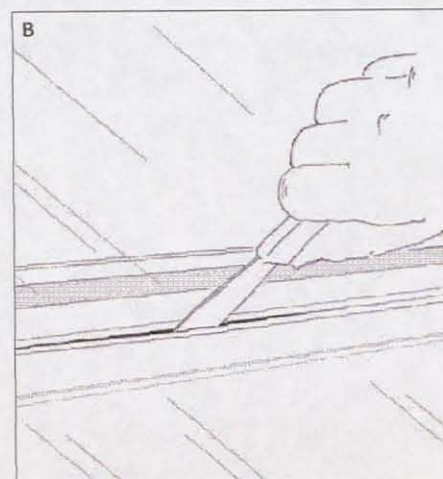
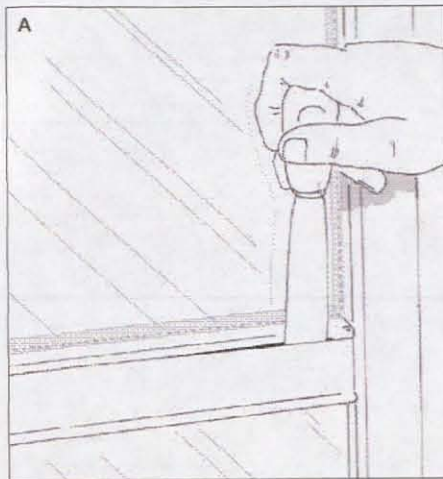


DK Løsn indvendigt glasbånd og træk det af.

Eng Detach the internal glazing gasket and strip it out.

s Lossa det invändiga glasbandet och dra av det.





DK Ved gennemgående sprosser: Stik en spartel ind bag den indvendige dækkappe (A), kød den langs sprossen (B) og vip dækkappen af.

Ved energisprosser på VELFAC 400: Benyt plastkile. For yderligere information kontaktes VELFAC Serviceafdeling, tlf. 7628 8500.

Eng Glazing bars: Insert a putty knife behind the internal cover cap (A), move it along the glazing bar (B) and detach the cover cap.

'Energy' glazing bars VELFAC 400: Use a plastic wedge. Contact the Service Dept, tel. 01223 897100 (GB) or tel. 01 2697406 (IRE).

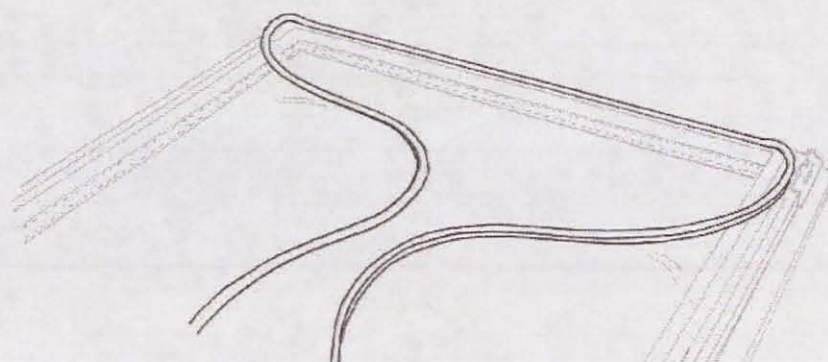
s Vid genomgående spröjsar: Stick in en spackel bakom den invändiga täckkappen (A), dra den längs spröjsen (B) och vik av täckkappen.

Vid energispröjsar på VELFAC 400: Använd en plastkil. Kontakta VELFAC AB, tel. 036-344690.

DK Løsn tætningslisten og træk den af rammens bund og sider. OBS: Lad den sidde på foroven, da den er limet fast.

Eng Prise the weather strip loose and strip it out free of the bottom and sides of the sash. N.B.: Do not strip it out at the top where it has been glued on.

s Lossa tättningslisten och dra av den nertill och på sidorna. OBS: Låt den sitta kvar upptill då den är fastlimmad.

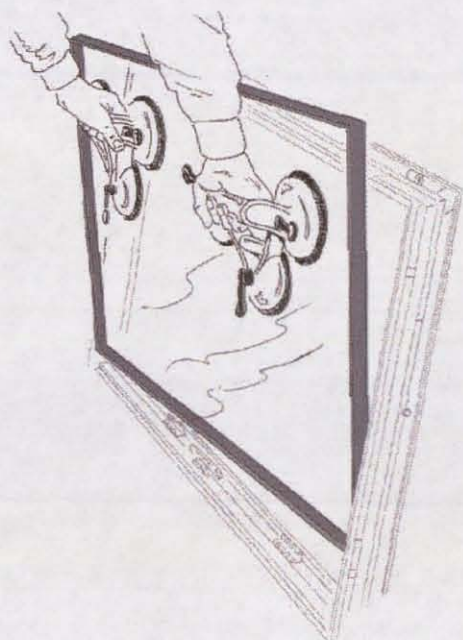
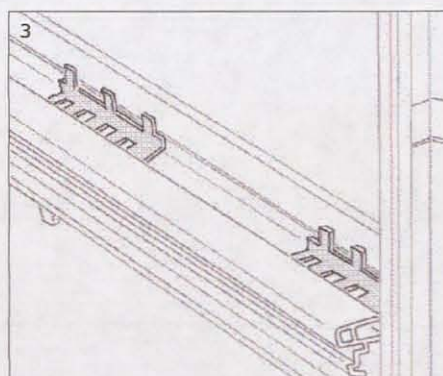
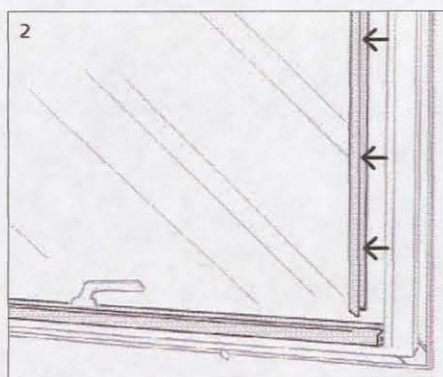
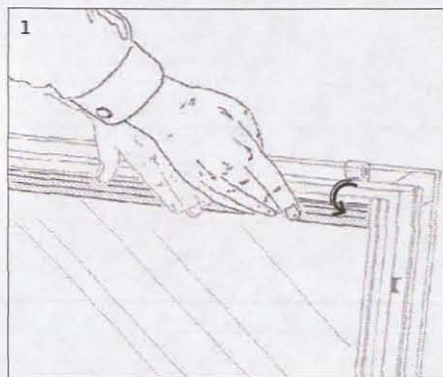




Vinduer med gennemgående sprosser: Når glaslister fjernes, kan flere glasfelter løsne sig.

Windows with glazing bars: Please be careful, once the glazing beads have been removed, more glass sections may work loose.

Fönster med genomgående spröjsar: När glaslisterna tas bort kan flera glasfält lossna.



DK Tryk glaslister fri og træk dem af - først sider, så top og bund (1). Lad glasliste med paskvilgrib sidde. Ved sidehængt og sidestyret vindue vrides glaslister i top og bund ud og trækkes opad (2).

Eng Press the glazing beads loose and pull them out - first on the sides, then at the top and bottom of the sash (1). Do not detach glazing beads with espagnolette handles. On side-hung and side-hung projecting windows, twist the glazing beads out at the top and bottom and pull them out (2).

S Tryck loss glaslisterna och dra av dem - först sidorna, sedan upptill och nertill (1). Låt glaslist med spanjolettband sitta. På sidohängt och sidestyrt fönster vrider glaslisterna upptill och nertill ut och dras uppåt (2).

DK Læg mærke til glasklodsernes placering. De skal genmonteres på samme måde (3).

Eng Note carefully the location of the glazing packers. They have to be re-installed in exactly the same position (3).

S Läggs märke till glasklotsarnas placering. De ska återmonteras på samma sätt (3).

DK Vip glasset fri foroven og løft ruden ovenud. Hvis glasset er > 1420 mm er ruden limet fast. Se næste side.

Eng Tip the glazing out at the top and lift the pane up and out. If the glazing > 1420mm, the pane is glued on. See next page.

S Tippa ut glaset upptill och lyft ut rutan. Om glaset är > 1420 mm är rutan fastlimmad. Se nästa sida.



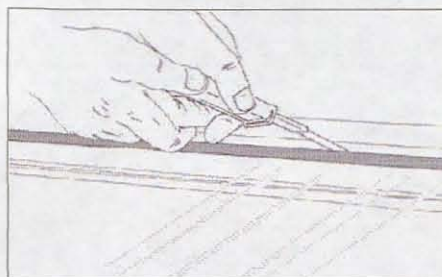
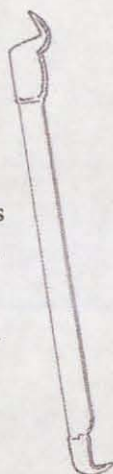
OBS: Glasset i skydedøren er altid limet fast i hjørnerne i bunden.

N.B. The glazing in the sliding doors is always glued in the bottom corners.

OBS: Glaset i skjutdörren är alltid fastlimmat i hörnen i botten.

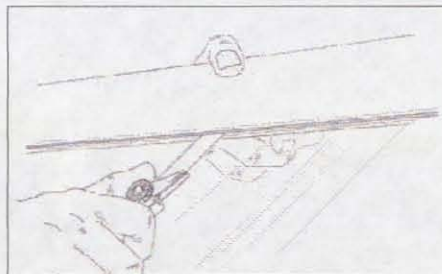


Rekvirer VELFAC stabelaftrækker varenr. 51.413.
VELFAC pin remover is available on request, order code 51.413.
Rekvirera VELFAC avdragare artikel nr 51.413.

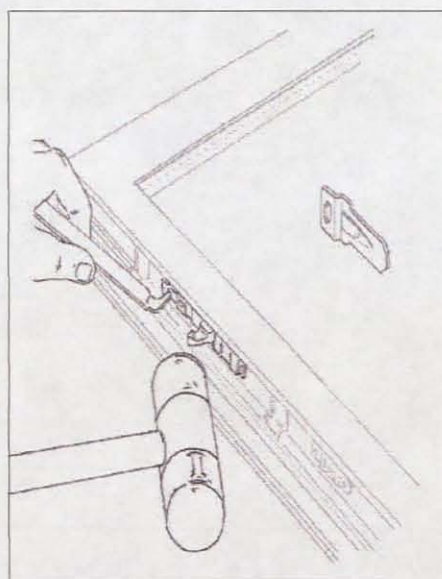


DK Ved glaslængde >1420 mm: Rammeprofilen er limet fast midt på rudens lange sider inde i glasfalsen. Skær ruden fri, før den kan løftes ud. Ny rude skal limes fast på samme måde fx med bygningssilicone.

Eng Glazing lengths >1420mm: Silicone sealant is fitted at mid-span between the sash profile and the glazing rebate of the long sides of the pane. The glass must be cut free of the sealant before it can be removed. The sealant must be replaced when re-glazing.



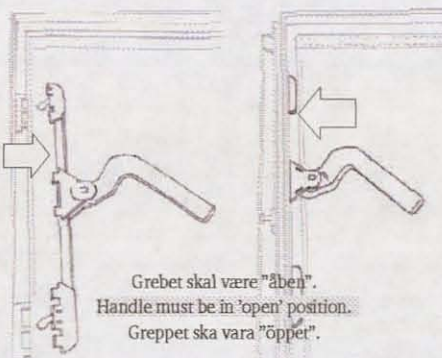
S Vid glaslängd >1420 mm: Bågprofilen är fastlimmad mitt på rutans långa sidor inne i glasfalsen. Rutan måste skäras loss innan den kan lyftas ur. Ny ruta ska limmas fast på samma sätt med t.ex. byggsilikon.



DK Hvis der er limet bag paskvilgrebet skal det først afmonteres. Frigør paskvilgreb fra glasliste ved at banke alle kiler ud.

Eng If the sealant is fitted behind the espagnolette handle, it must be removed. Detach the espagnolette handle from the glazing bead by knocking all the wedges out.

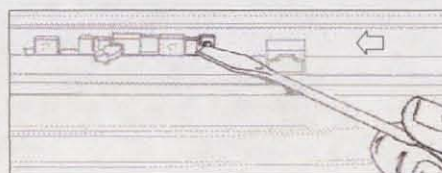
S Om det är limmat bakom spanjolett-handtaget måste det monteras av först. Frigör greppet från glaslisten genom att slå ur alla kilar.



DK Fjern nu glaslisten og tag grebet ud. Genmonteres på samme måde og...

Eng Now remove the glazing bead and take out the handle. The handle is re-installed in the same way ...

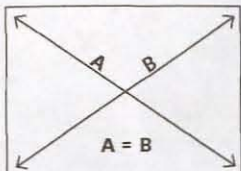
S Ta bort glaslisten och ta loss greppet. Återmonteras på samma sätt och...



DK ...sættes fast ved at skubbe kilerne i.

Eng ...the wedges are pushed back into position to secure the handle.

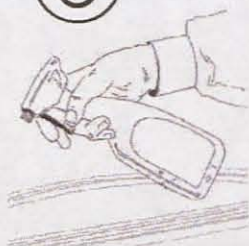
S ... sätts fast genom att kilarna skjuts i.



DK Tjek diagonal mål.

Eng Check diagonal dimensions.

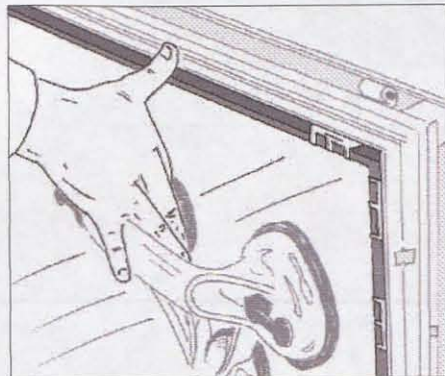
S Kontrollera diagonalmåttet.



Tip: Gør glasbånd og tætningslister smidige med sæbevand.

Tip: Soften the gaskets and weather strips with soapy water.

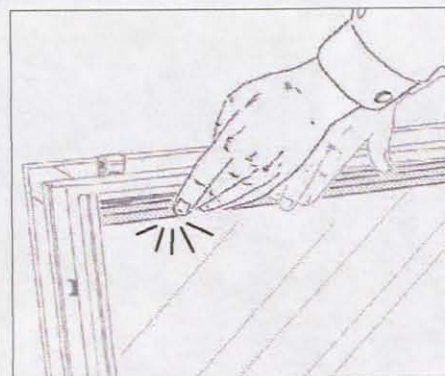
Tips: Mjuka upp glasband och tättningslister med lite såpvatten.



DK Isætning af rude: Den nye rude sænkes på plads. Opklods som før.

Eng Re-glazing: The new pane is lowered into position. Fit the glazing packers in the same position as before.

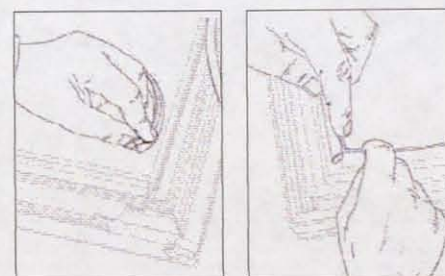
S Isättning av ruta: Den nya rutan sänks på plats. Gör klar uppklotsningen.



DK Klik glaslister på plads - først top og bund, så sider.

Eng Click the glazing beads into position - start at the top and bottom.

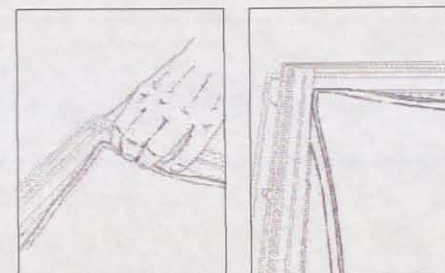
S Klicka glaslisterna på plats - först upptill och nertill, sedan sidorna.



DK Klem glasbånd på plads. Start i alle hjørner og fordel så båndet. Pas på ikke at sno båndet.

Eng Press the glass gasket in, starting at the corners, and then proceeding on the sides. Be careful not to twist the gasket.

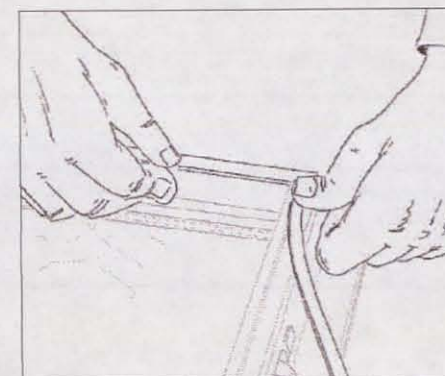
S Kläm glasbandet på plats. Börja i alla hörn och fördela bandet. Se till att bandet inte snor sig.



DK Sæt tætningsliste på plads - start foroven, sæt hjørner fast, fordel liste.

Eng Attach the weather strip, starting at the top, then proceed to the corners and sides.

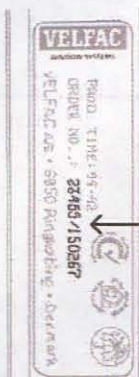
S Sätt tättningslisten på plats - börja upptill, sätt fast hörnen, fördela listen.



VELFAC 100 Glasudskiftning VELFAC 100 Glass replacement VELFAC 100 Glasbyte



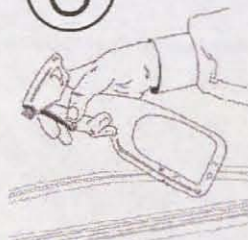
DK Gammel version.
Eng Old version.
S Gammal version.



Brækage af glas: Aflæs ordrenr. og kontakt VELFAC Serviceafd., tlf. 7628 8500.

Glass breakage: Find the id. tag and call the Service Department, tel. 01223 897100 (GB) or tel. 01 2697406 (IRE).

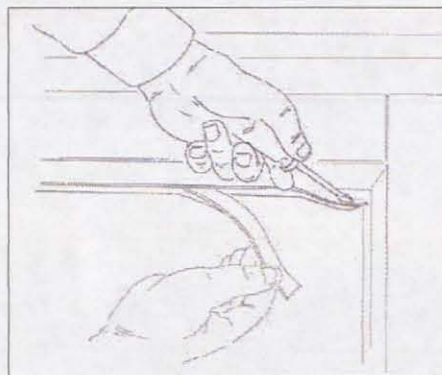
Trasigt glas: Notera ordernumret och kontakta VELFAC AB, tel. 036-344690.



Tip: Gør glasbånd smidige med sæbevand.

Tip: Soften the gaskets with soapy water.

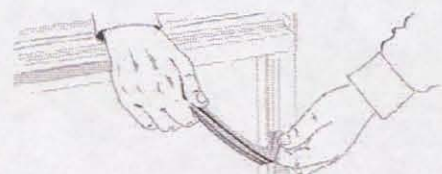
Tips: Mjuka upp glasbanden med lite såpvatten.



DK Afmontering: Lad rammen sidde på karmen. Løsn indvendigt glasbånd og træk det af.

Eng Dismounting: Do not remove the sash from the frame. Detach the internal glazing gasket and strip it out.

S Avmontering: Låt bågen sitta kvar på karmen. Lossa det invändiga glasbandet och dra av det.



DK Træk udvendigt glasbånd af.

Eng Strip out the external glazing gasket.

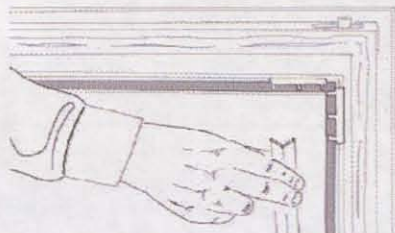
S Dra av det utvändiga glasbandet.



DK Tryk glaslisterne ind mod glasset og pres dem fri med en spartel. Støt glasset så det ikke falder ud.

Eng Remove the glazing beads, pressing them against the glazing and prising them loose with a putty knife. Attention: the glazing may fall out.

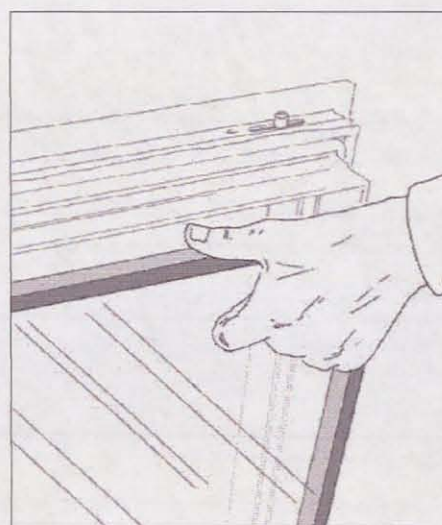
S Tryck glaslisterna in mot glasset och pressa loss dem med en spackel. Stöd glasset så att det inte faller ut.



DK Vip glasset ud. Læg mærke til glasklodsernes placering. **Glasisætning:** Som afmontering - bare bagfra.

Eng Note carefully the location of the glazing packers and tilt the glazing out. **Re-glazing** is carried out by following the de-glazing procedure in reverse.

S Lägg noga märke till glasklotsarnas placering och fäll sedan ut glasset. **Glasisättning:** Som avmontering - men i omvänd ordning.



VELFAC 100 - Glasudskiftning VELFAC 100 - Glass replacement VELFAC 100 - Glasbyte



DK Ny version.
Eng New version.
s Ny version.



Brækage af glas: Aflæs ordrenr. og kontakt VELFAC Serviceafd., tlf. 7628 8500.

Glass breakage: Find the id. tag and call the Service Department, tel. 01223 897100 (GB) or tel. 01 2697406 (IRE).

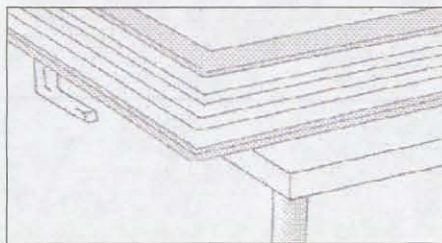
Trasigt glas: Notera ordernumret och kontakta VELFAC AB, tel. 036-344690.



Tip: Gør glasbånd smidige med sæbevand.

Tip: Soften the gaskets with soapy water.

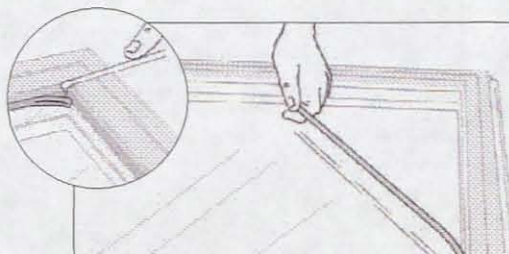
Tips: Mjuka upp glasbanden med lite såpvatten.



DK Afmonter rammen (se side 33) og læg den med alu-siden opad.

Eng Dismount the sash (see page 33) and lay it down aluminium side up.

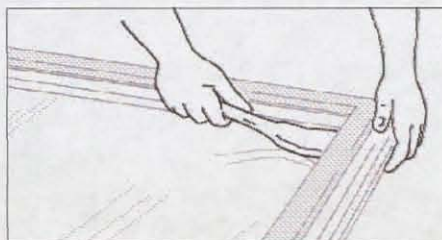
s Avmontera bågen (se sid 33) och lägg den ned med alusidan upp.



DK Løsn glasbåndet og træk det af (4 dele).

Eng Pull the external gasket away (4 parts).

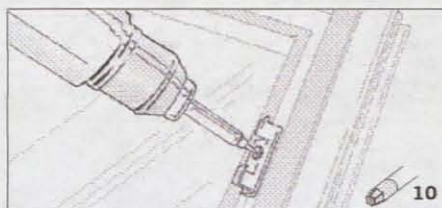
s Lossa glasbandet och dra av det (4 delar).



DK Vip aluglaslisten af - placer glasløfteren mellem glaslet og glaslisten.

Eng Remove the glazing bead by placing the glazing lifter tool between the bead and the glass.

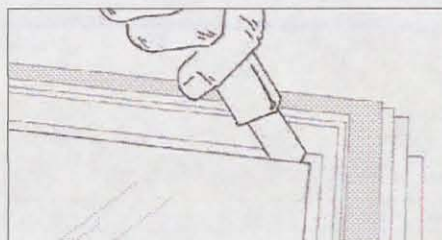
s Fäll av aluglaslisten - placera glaslyftaren mellan glaset och glaslisten.



DK Skru alle plasticclips af.

Eng Unscrew all the plastic retailing clips.

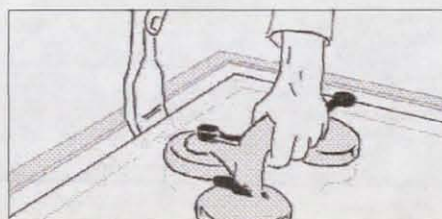
s Skruva av alla plasticclips.



DK Ruden er fastgjort med silicone i alle hjørner. Skær den fri med en hobbykniv.

Eng Cut the fixing silicone in the corners so the glazing is loose.

s Rutan är fäst med silikon i alla hörn. Skär loss den med en hobbykniv.

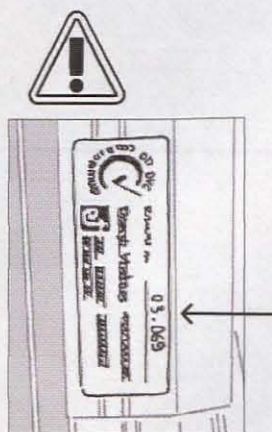


DK Glaslet kan nu løftes ud.

Eng Remove the glazing.

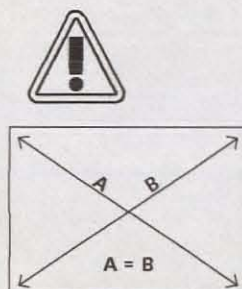
s Glaset kan nu lyftas ut.

VELFAC 500 Glasudskiftning
VELFAC 500 Glass replacement

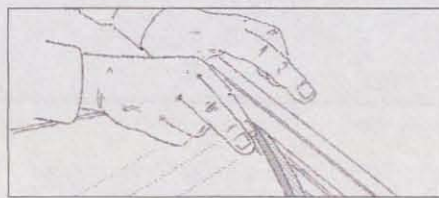
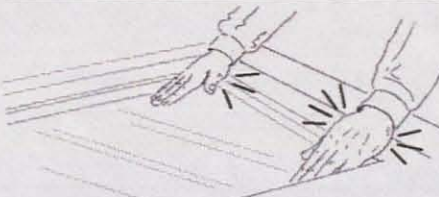
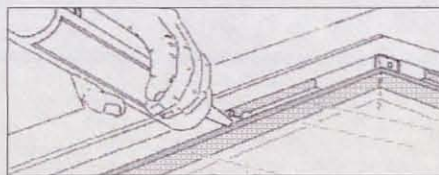
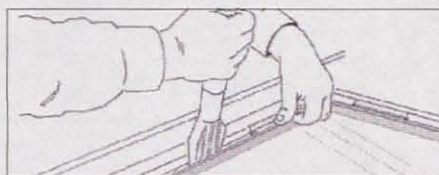
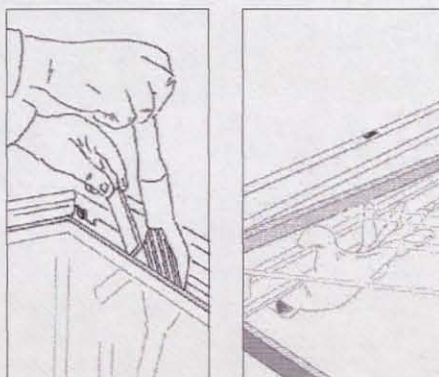
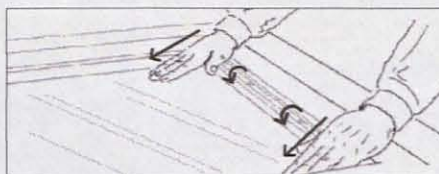


Brækage af glas: Tag karmmål, aflæs ordrenr. på karmen og kontakt VELFAC Serviceafdeling, tlf. 7628 8500.

Glass breakage: Measure the frame size, find the id. tag in the rebate and call the Service Dept, tel. 01223 897100 (GB) or tel. 01 2697406 (IRL).



DK Tjek diagonalmål.
Eng Check the diagonal dimensions.



DK Tag døren af og læg den på fx bukke.
Pil glasbåndet af vha. kile - først sider,
så top og bund.

Eng Lift the door off and lay it on trestles.
Take out the gaskets by using a wedge
- side gaskets first.

OK Pres glaslisterne mod glasset og tag dem af - først sider, så top og bund.

Eng Press the glazing beads against the pane and pull them out - side glazing beads first.

DK Pres glasset ud fra rammen vha. kiler og fjern glasklodserne. Glasset kan nu løftes ud.

Eng Use a wedge to press the pane free of the frame and remove the glazing packers. The pane can now be lifted out.

OK Opklods den nye rude på samme steder som den gamle rude. Tjek diagonal mål.

Eng Mock up the new pane and glazing packers in the same way as before. Check the diagonal dimensions.

OK Lim glasklodser under bunden af glas-
set fast med montagelim.

Eng Glue the glazing packers under the bottom of the pane with silicone sealant.

DK Klik glaslisterne på plads - først top og bund, så sider.

Eng Click the glazing beads in place - top and bottom glazing beads first.

DK Genmonter glasbånd - først top og bund, så sider. Top- og bundglasbånd skal skubbes helt ind i hjørnerne!

Eng Re-mount the gaskets - top and bottom first. Make sure the top and bottom gaskets are pushed in completely.

VELFAC 600, VELFAC 700 Glasudskiftning VELFAC 600, VELFAC 700 Glass replacement



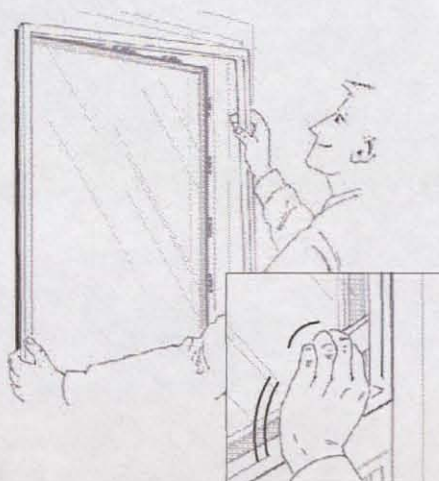
DK Ved genmontering af glasbånd:
Smidiggør glasbånd med sæbevand og tryk det på plads.

Eng Remounting tip:
Spray the glazing gaskets with soapy water and press it into position.



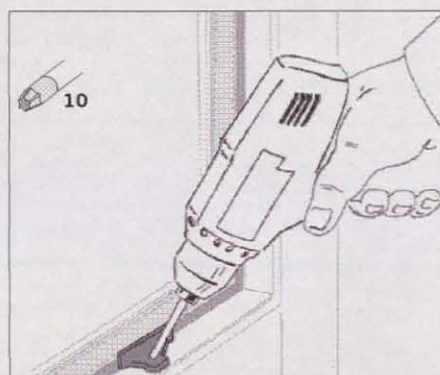
DK Brækage af glas: Aflæs ordrenr. på skiltet i elementet og kontakt VELFAC Serviceafdeling, tlf. 7628 8500.

Eng Glass breakage: Find the id. tag usually located in the bottom left rebate and call the Service Dept, tel. 01223 897100 (GB) or tel. 01 2697406 (IRL).



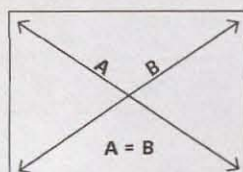
DK Løsn den udvendige glasliste (inkl. glasbånd) med en kile og løft den ud.

Eng Loosen the external glazing bead and gasket with a wedge and pull it out.

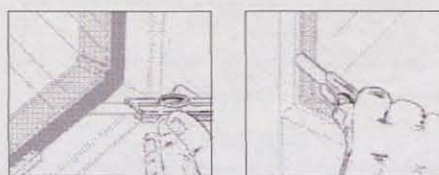


DK Skru glaslisteholdere af. Bemærk placering af glaslisteholdere og glasklodser.

Eng Unscrew the glazing bead keepers. Mark where the glazing bead keepers and glazing packers are placed.



DK Tjek diagonal mål.
Eng Check the diagonal dimensions.



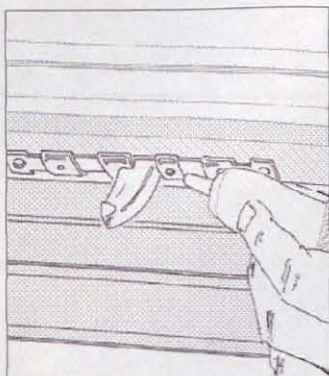
DK Glasset er limet fast, skær det fri indefra og evt. udefra. Løft ruden ud.

Eng The pane is glued. Cut sealant and lift out the pane.

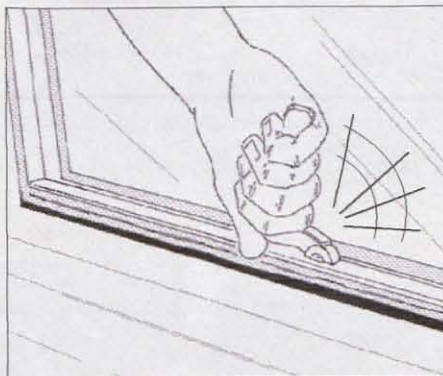
DK Montering af nyt glas: 1. Lim det fast i hjørnerne med fx montagelim. 2. Sæt glasklodser og glaslisteholdere fast som før. 3. Tjek diagonal mål. 4. Isæt glasliste inkl. glasbånd som før.

Eng Installation of new pane: 1. Glue the corners with silicone sealant. 2. Replace glazing packers and glazing bead keepers as before. 3. Check the diagonal dimensions. 4. Replace glazing beads (with gaskets) in position.

Efter veludført montage Operation Checks Efter utført montage



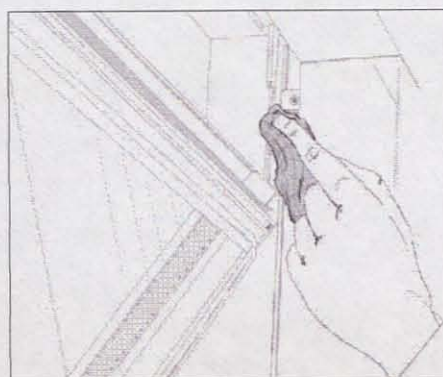
N.B. As all VELFAC windows are properly lubricated before installation, the relevant services can be performed at additional cost should they be required.



DK Smøring af paskvilsystem: Rens alle kolver for snavs, giv dem 2-3 dråber syrefri olie hver og aktiver paskvilgrebet.

Eng Lubrication of espagnolette handle: Clean all the bolts, apply 2 or 3 drops of acid free oil/spray a lubricating oil to each of them, and activate the espagnolette handle.

S Smøring af spanjolethandtag: Rengør alle kolvar från smuts, droppa i 2-3 droppar syrafri olja i varje kolv och vrid handtaget.



DK Rens alle glideskinner for snavs.

Eng Remove the dirt from all slide rails.

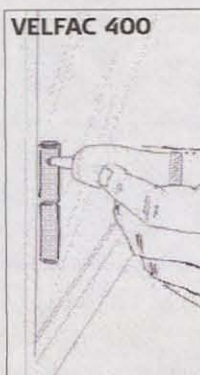
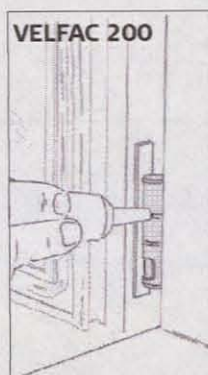
S Rengör alla gidskenor från smuts.



OBS: For opretholdelse af garanti skal eventuelle skader i overfladebehandlingen på karmtræ og aluminium udbedres.

N.B. Any damage to sash or frame must be repaired to ensure your warranty.

OBS: För att garantin ska gälla måste eventuella skador i ytbehandling och aluminium åtgärdas.



DK Giv alle hængsler 2-3 dråber syrefri olie. Gælder ikke alu-dørene.

Eng Apply 2 or 3 drops of acid free oil to all the hinges. Do not oil hinges on VELFAC 500 System aluminium door.

S Ge alla gångjärn 2-3 droppar syrafri olja.



DK Tjek at alle rammer åbner og lukker gnidningsløst. Finjuster eventuelt - se under åbnefunktion side 14-46.

Eng Check that all elements open and close smoothly. If not - please adjust as shown under opening function page 14-46.

S Kontrollera att alla bågar öppnar och stänger mjukt. Finjustera eventuellt - se under öppningsfunktion sid. 14-46.

VELFAC®

WINDOW SYSTEMS

VELFAC A/S

Ribovej 5
DK- 6950 Ringkøbing

Kundeservice i DK:

VELFAC A/S
tlf. 7628 8500
service@VELFAC.dk
www.VELFAC.dk

Service Dept. in GB:

VELFAC LTD
T: 01223 897100
E: post@VELFAC.co.uk
W: www.VELFAC.co.uk

Service Dept. in IRL:

VELFAC Ireland Ltd
tel. 01 2697406
irishpost@VELFAC.ie
www.VELFAC.ie

Kundservice i S:

VELFAC AB
tel: 036-344690
jonkoping@VELFAC.se
www.VELFAC.se



Før du kontakter VELFAC: Aflæs ordrenr. på skiltet i elementet.

Before contacting VELFAC: Please find the id. tag usually located in the bottom left rebate.

Innan du kontaktar VELFAC: Notera ordernumret som står på etiketten på elementet.

VELFAC®

ADVANCED WINDOW DESIGN

User Guide



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Welcome to VELFAC Advanced Window Design. Our commitment to quality ensures that your VELFAC windows will retain their looks and functionality for years with the minimum of care.

Please feel free to contact us if you have any questions which are not answered in this User Guide.

Kind regards
VELFAC LTD

T: 01223 897100

W: www.VELFAC.co.uk

In this guide you will find an introduction to some of the benefits of VELFAC windows, questions and answers regarding your 12 Year Warranty, and information about our environmental policies. You will also find useful tips on the security of your property, and advice about condensation and how to prevent it.

Detailed recommendations on the care of your windows can be found on pages 14 & 15, and an introduction to the VELFAC Customer Service team is provided on pages 18 & 19, which include recommendations for damage, break-ins or operation failure.

On page 20 you will find a guide to establish which VELFAC window system you own, and page 21 contains illustrations and an explanation of the technical terms used in this guide to describe the functionality of your windows.

Page 22 onwards describes how to use your windows, and provides information on minor adjustments.

We hope that by using this guide, you will be able to make the most of your VELFAC windows and enjoy them for many years to come.



Life and light

We ensure that VELFAC windows use the best raw materials available, sourced from environmentally conscious suppliers. The combination of high performance glazing, internal wood frame and external aluminium sash provides a service lifetime of 40 years or more.

Light generates a feeling of well being so it is essential to bring light into our homes. The slim frame of a VELFAC window lets in significantly more natural daylight than traditional alternatives. This increases the feeling of light, space and warmth within a room and creates a relaxing atmosphere in which you can unwind and re-charge your batteries.

Energy efficiency

It has been proved that windows and doors are the main sources of heat loss from a building. In order to reduce this loss, it is important that high performance windows are installed.

The pine frame of a VELFAC window possesses the natural insulating properties of wood.

The double-glazing incorporates a low-energy coating and contains argon between the panes of glass - the argon provides better insulation than air.

The slim frame also allows more light to enter the room, generating free heat from the sun known as solar gain.

This combination means that your windows are some of the most energy efficient around.





Secured by Design

Secured by Design is an initiative launched by the Association of Chief Police Officers Crime Prevention Initiatives, and is backed by the Home Office Crime Reduction Unit. The programme encourages the building industry to adopt crime prevention measures as part of development design. The aim is to reduce the opportunity for crime, and the fear of potential crime, resulting in a safer and more secure environment.

VELFAC windows have been put through several severe tests which replicate forced entry, and the following opening functions are Secured by Design accredited:

VELFAC 200 Sidehung window

VELFAC 200 Fixed window

VELFAC 200 Tophung projecting window

VELFAC 200 Patio door



Feel secure

Burglars can enter a building through a window either by breaking the glass or frame, picking the lock, or removing the glass panes entirely. VELFAC windows resist all such forms of attack.

VELFAC windows are internally beaded so it is impossible to remove the glass from the outside; the double glazed panes require considerable force - and resulting noise - to break; and frames are designed to withstand even the most determined criminal.

Lockable handles can further enhance the security of each window, and specially designed child locks also provide a safer environment for families.



Stop the thief - before he breaks in

- Make it look like you're at home, even if you're out
- If you go away, ask your neighbour to empty your letterbox and use your dustbin
- Install movement responsive sensor lights outside
- Place valuables out of sight



A friend of the environment

VELFAC has long recognised the need to care for and protect the environment, and this philosophy lies at the heart of all that the company does; a unique demonstration of how a major manufacturer can implement an effective environmental policy.

VELFAC applies strict principles to every stage of the design, production and installation process: wood is sourced from controlled forests practising sustained management; local wind farms provide the majority of power to our manufacturing facilities, surface treatments are 100% water-based; and hydroelectricity contributes to the production of aluminium, a proportion coming from re-cycled sources.

Environmental Declaration

In order to measure the real impact of a product upon the environment, all aspects - such as energy consumption, use of resources or waste disposal - must be analysed at all stages of a window's life.

In collaboration with the Technological Institute in Denmark, VELFAC has undertaken a 'cradle to grave' analysis of window performance, with the results published as an 'Environmental Declaration'. The document contains an analysis of all materials used in window production, and gives a measure of environmental impact across five distinct areas:

1. Raw materials
2. Production processes
3. Window performance and use
4. Disposal
5. Transport

To download a copy, please visit www.VELFAC.co.uk





Raw materials

The quality of the raw materials used is fundamental to the lifetime performance of each VELFAC window. By using only the best materials we achieve the highest level of performance from our windows. For example:

- Pine trees used in the production of frames for VELFAC windows are grown in northern forests, which mean they mature slowly - as a result the wood is denser and harder-wearing than standard pine
- Low-energy double-glazed units are used as standard in all VELFAC windows, delivering better insulating properties
- Polyester powder coated aluminium is extremely weather resistant and does not rust or corrode
- Only water-based fungicides, lacquers and paints are used - as well as being vapour-free, they are also more environmentally friendly

Manufacturing processes

Our objective is to develop highly efficient manufacturing processes which do not lose sight of the value of individual craftsmanship.

We aim to streamline our production flow whilst encouraging the individual to constantly assess the quality of each stage in the process and each part of the finished product.

Wherever possible, we exploit the latest technology - computer-driven machinery is commonplace, and automatic systems surface-treat and dry frames quickly.

Team responsibility is actively encouraged to ensure production standards remain consistently high. Random independent inspection of finished windows further ensures quality standards are maintained.





Aircraft engines are used to generate wind pressure against VELFAC windows, to test their resistance to the extreme forces of nature.

Testing

Millions of VELFAC windows are installed across Europe and thousands of people test them every day. Despite our highly successful track record, we maintain a demanding testing programme to ensure our windows continue to satisfy, and often exceed all necessary regulatory standards. Our windows have been tested by Europe's most rigorous standards agencies, which have analysed all aspects of window design and performance.

This tough programme of testing ensures that your windows are at the forefront of window technology and will perform for many years.

12 Year Product Warranty

Over 50 years experience in window manufacture lies behind every VELFAC window. This experience, combined with our testing programme, enables us to offer a comprehensive warranty of 12 years on our windows and double-glazed units.

This warranty is one of the best offered by any window supplier, and reflects the confidence we have in the quality of our product, guaranteeing the performance in all weather conditions.

A national system of service support ensures a fast and efficient response to any issues which may arise. For more information on VELFAC Customer Service, please consult pages 18 & 19.





Your windows will need more regular maintenance if they are exposed to strong sunlight on South facing facades, if you live in a marine or industrial environment, or if you have high levels of internal humidity.

How to care for your VELFAC windows

The correct cleaning and maintenance of your windows will keep them looking good and ensure they will resist even the harshest weather conditions for years to come.

Washing and oiling. Once installed, a VELFAC window virtually takes care of itself - all it needs is regular cleaning, and oiling of the hinges, handle and locking mechanism with acid-free oil at least once a year. Pages 22-37 contain diagrams showing the parts which require oiling, indicated by 2 drops of oil. 📄

Windows should be cleaned with a soft cloth or soft bristle brush and luke warm water with a few drops of mild detergent - detergents must not contain solvent or abrasive. To dry the window, use a window scraper, or wipe with a slightly damp Chamois leather or fine cloth.

Traces left on the glass after removing stickers can be removed with meths or other alcohol based substances - care must be taken to avoid contact with other parts.

These maintenance instructions must be followed to ensure that your warranty remains valid.

How to care for your VELFAC windows

The external window sash is made from aluminium with a powder coated finish. It will need cleaning at least once every year with a soft cloth or soft bristle brush and luke warm water with a few drops of mild detergent. If any material (such as paint, wet concrete etc.) splashes on to this surface, it must be washed off immediately.

A scratch will not affect the durability of the sash as the aluminium will form a natural layer of oxide, however, **scratches should be repaired immediately to ensure that your warranty remains valid.**

The internal window frame is manufactured from pine which has been coated with a water-based lacquer or paint. The frame should be dusted and wiped clean regularly. Minor scratches can be repaired with water-based diffusion open paint or lacquer, although contact with other window materials should be avoided.

The glazing bead, weather seals and gaskets (see page 21 for more information) should be cleaned using a damp cloth.



Wood is a natural product containing resin. Occasionally beads of crystallised resin may form on the surface of the frame. These beads can be removed by gently rubbing with a cloth dampened with meths or other alcohol based substance.



Did you know that:

- You must air new-build properties more regularly than old ones - this also applies to refurbishments or extensions
- People give off approximately 2L of water every 24 hours - airing is the only way to remove it
- Damp indoor climates may cause headaches, coughing, sore eyes, allergies and skin problems

Condensation on your windows (inside)

Formation of condensation on the inside of your windows is a natural occurrence, which cannot be completely avoided. It forms when warm moisture held in the internal atmosphere cools against the glass and forms small droplets of water. Because warm air can hold more moisture, condensation increases as the room temperature is lowered and improves as the temperature rises. Moisture running on to the wood frame may generate fungus or discolouration.

There are three important measures to combat condensation:

1. Rooms should be aired thoroughly two or three times a day for at least 10 minutes, especially after baths or showers, cooking, or if clothes are dried inside
2. A consistent indoor temperature of 20-22°C should be maintained
3. Good air circulation in all rooms should be ensured

Condensation on your windows (outside)

Due to the low-energy double-glazing used in VELFAC windows, condensation may form on the outside. During colder months, the outer pane cools further than the inner pane and moisture in the external atmosphere forms small droplets of water against the glass. This kind of condensation is completely harmless to the window and will disappear as the external temperature increases.

Condensation between the two glazing panes. If condensation forms between the two glazing panes, the sealed double-glazed unit has been punctured and must be replaced. Please call the VELFAC Service Department on 01223 897100.

If condensation has recently formed, it may be due to:

- Recently installed windows which are completely air tight
- Installation of under floor heating
- New curtains
- Moisture in new houses
- it may take as long as a year to dry a new house completely
- The season - condensation is more likely in autumn and winter



When you contact the Police to report a suspected crime, ensure you seek advice on how to preserve the scene for forensic examination prior to clearing.

Operation failure, damage or break-ins

If the window cannot be easily operated, check for any outside obstructions and remove. If the window resists closing, check for obstructions between the moving aluminium sash and the fixed timber mainframe.

Ensure that no debris is obstructing the slide motion of the moving arm.

If the window is operable after being damaged by forced entry or accident, it should be closed and secured. If the glass unit has been broken, any remains should be carefully removed taking all necessary safety precautions i.e. wearing protective clothing such as gloves, safety glasses, suitable footwear etc.

To restore building security, temporary glazing material (such as plywood or similar) may be glazed into the aluminium sash profile until a replacement glass unit is available.

In order to ensure your product warranty is maintained, please contact VELFAC Customer Service to arrange repair of windows or to supply and fit replacement glass units.

VELFAC Customer Service

A national system of service support ensures a fast and efficient response to any issues which may arise. A wide range of modifications and repairs are possible through VELFAC Customer Service including:

- Supply and installation of replacement double-glazed units
- Supply and installation of replacement components
- Repair of damaged wood frames or aluminium sashes
- Conversion of fixed windows to opening
- Retro-fitting of opening restrictors
- Retro-fitting of electric motor openers

All our Service Engineers undergo a comprehensive training programme that equips them with interpersonal and problem solving skills, and in depth product knowledge. Using a VELFAC Engineer will ensure your 12 Year Product Warranty is maintained.

VELFAC Customer Service: 01223 897100

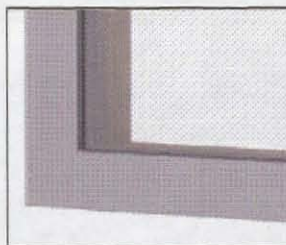


All VELFAC windows carry a unique identity tag to enable immediate tracing of spare parts should damage occur.



Which type of window do you have?

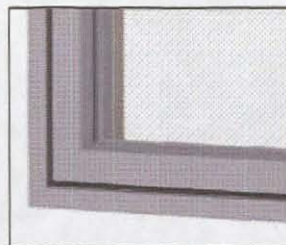
VELFAC 200



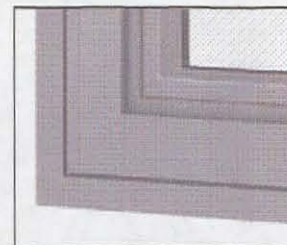
You need to establish which VELFAC window system you have to understand how they operate and what adjustments are possible.

Please take a look at the diagrams and the descriptions to decide which of VELFAC 200, VELFAC 400 or VELFAC 100 windows you own.

VELFAC 400



VELFAC 100

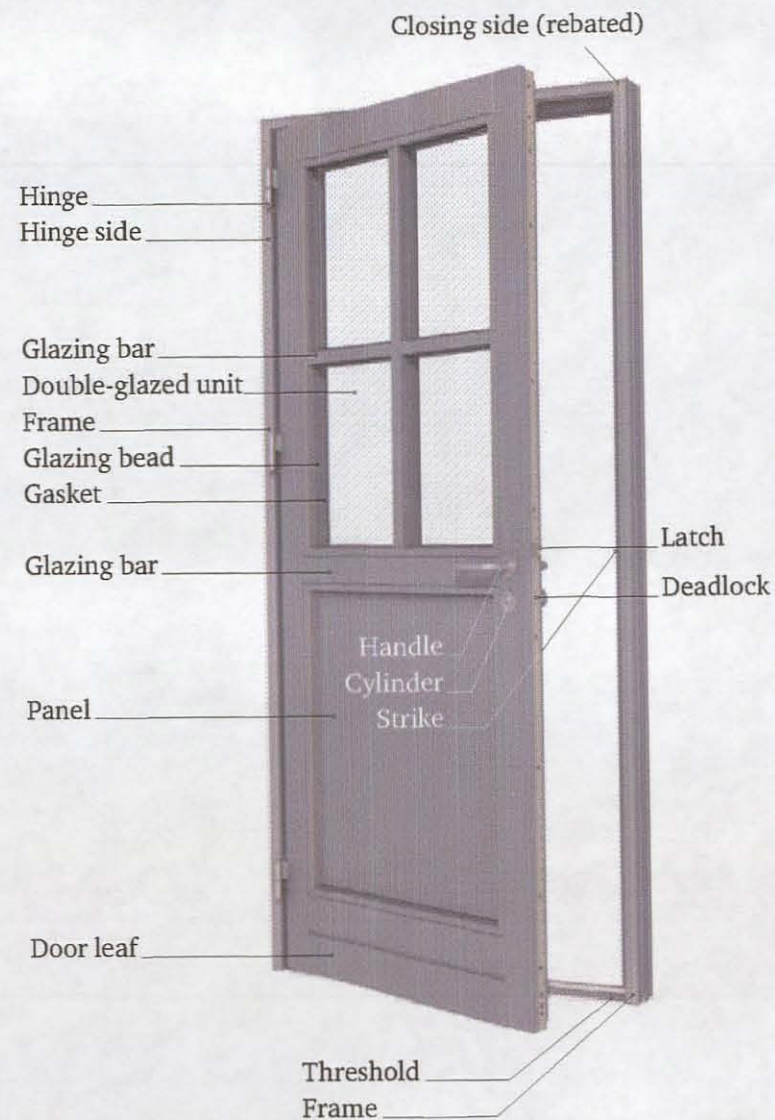
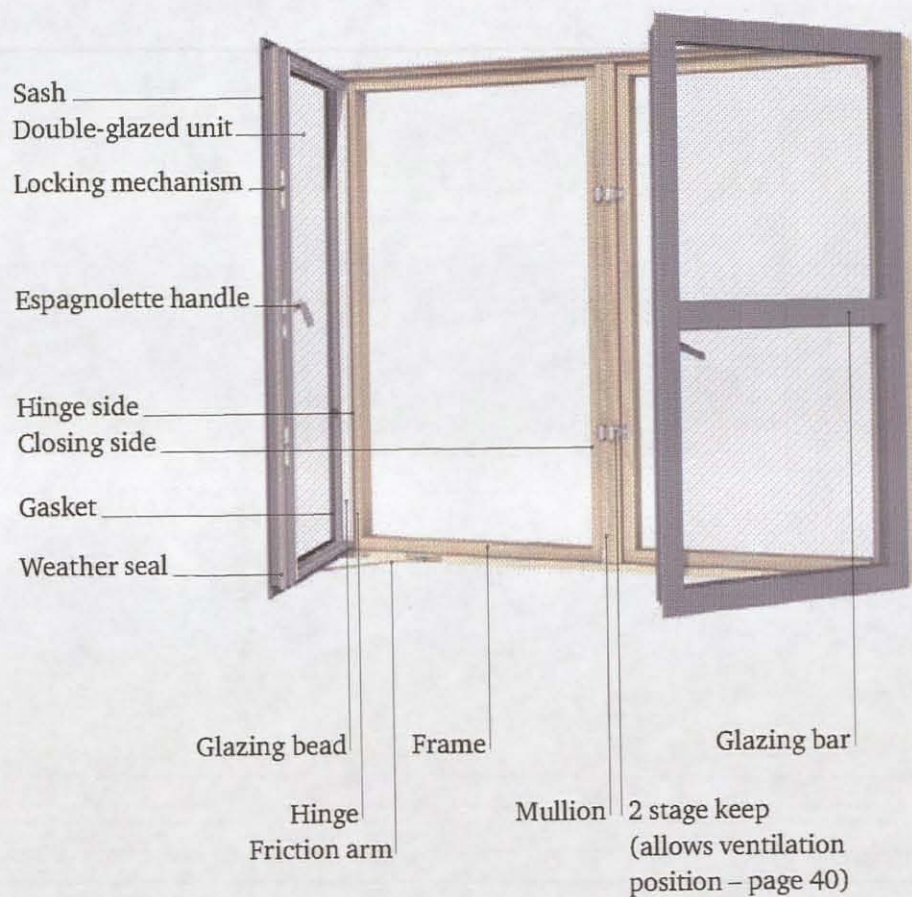


VELFAC 200 windows have a single sightline on the external side.

VELFAC 400 windows have a double sightline on the external side.

VELFAC 100 windows are inward opening.

Technical terms



This window is equipped with:

See more

Espagnolette handle	40
Ventilation position	41
Friction arm	43

It can also be fitted with:

See more

Espagnolette handle with child-lock	40
Espagnolette handle with lock	40
Espagnolette handle for cylinder lock	40
Electric opener for remote operation	41
PN-fitting	42
Integral blind	42
Window stay	42
Safety restrictor	42
Lockable restrictor	43
Click vent	43

Sidehung window

This window is opened by turning the handle to a horizontal position and pushing the sash outwards. The window opens to 90° and is equipped with a friction arm which allows the sash to be held in any position between closed and fully open.

The window is closed by pulling the sash back to the frame and returning the handle to the vertical position.

Double leafed windows can be supplied with different types of mullion - see page 39 for more information.



Double leafed window

Sidehung window

Friction arm adjustment. The friction arm, found at the bottom edge (or occasionally top), can be adjusted by turning the friction bolt using a 4mm hexagon key.

Care. It is important to keep the slide rails free of dust and dirt by using a soft brush or cloth. The slide rails should not be oiled as this will accumulate dust and dirt, and remove friction.

The hinges require oiling at least once a year using acid-free oil. In order to ensure the hinges are properly lubricated, the window should be opened and closed several times during and after oiling.



Maintenance tip. If the window is situated on the ground floor, open and clean or maintain it from the outside.

This window is equipped with:

See more

Espagnolette handle 40

Ventilation position 41

Friction arm 43

It can also be fitted with:

See more

Espagnolette handle
with child-lock 40

Espagnolette handle
with lock 40

Espagnolette handle
for cylinder lock 40

Electric opener
for remote operation 41

PN-fitting 42

Window stay 42

Safety restrictor 42

Integral blind 42

Lockable restrictor 43

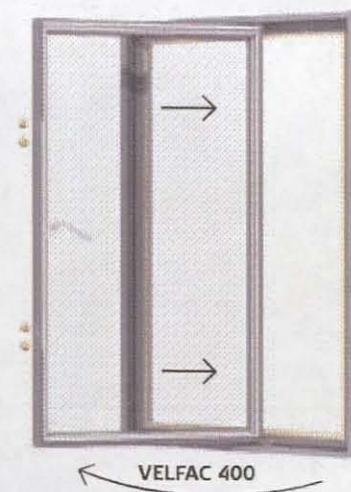
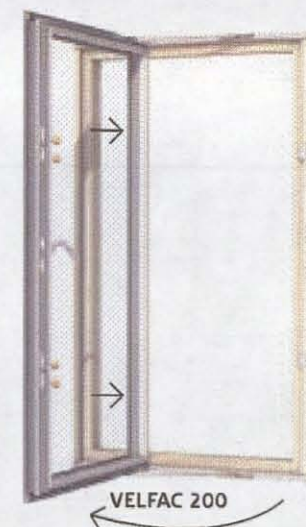
Click vent 43

Sidehung projecting window

This window opens by turning the handle to a horizontal position and pushing the sash outwards.

The window is closed by pulling the sash back to the frame and returning the handle to the vertical position.

Sidehung projecting windows are fitted with friction arms and guide rails which allow the window to be held in any position between closed and fully open at 90° for



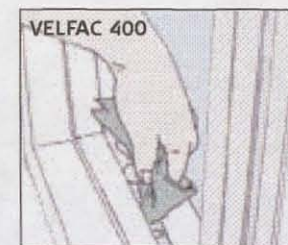
Sidehung projecting window

VELFAC 200, and 135° for VELFAC 400.

Friction adjustment. Friction in the guide rails can be adjusted by turning the screws at the top of the sash with a 4mm hexagon key for VELFAC 200, and a Torx T20 screwdriver for VELFAC 400.

Cleaning. When the sash is fully opened, a gap is formed at the hinge side. This allows the external side of the sash to be cleaned from inside the building.

Care. Guide rails should be kept free of dust or dirt by cleaning with a soft brush or cloth. The slide rails should not be oiled as this will accumulate dust and dirt, and remove friction.



This window can be fitted with:

See more

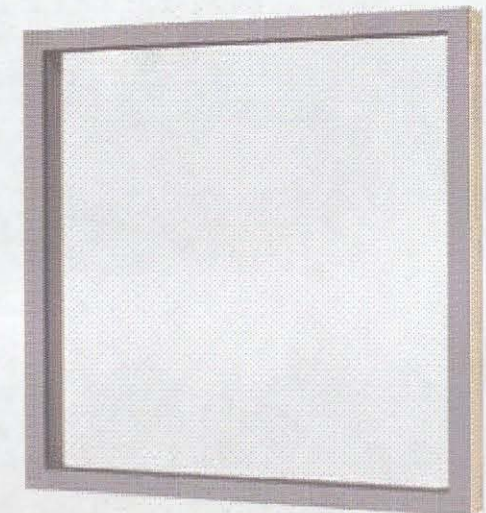
Integral blind 42

Click vent 43

Fixed window

A fixed window cannot be opened and therefore requires no maintenance or adjustments of opening fittings.

Fixed windows can be converted to opening. Please call VELFAC Customer Service on 01223 897100 for more information.

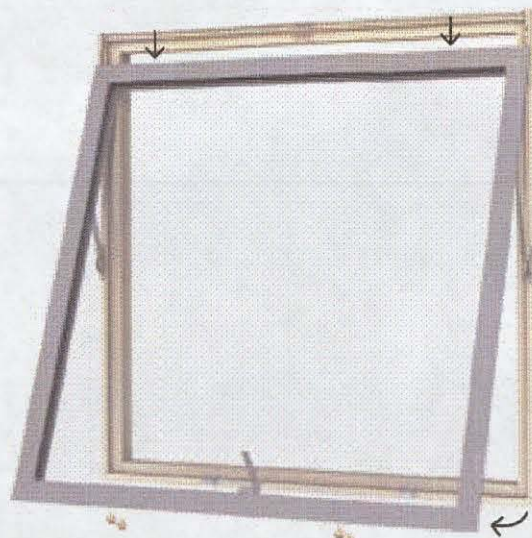


Tophung projecting window

This window is opened by turning the handle to a vertical position and pushing the sash outwards.

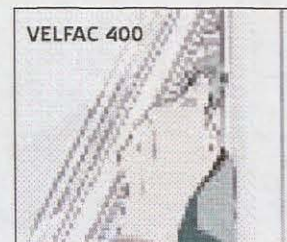
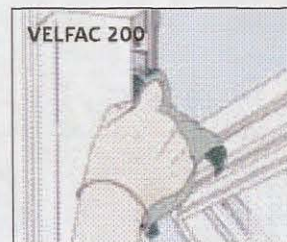
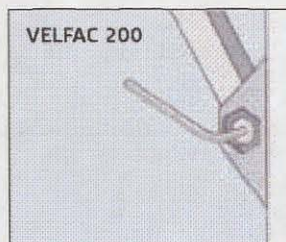
The window is closed by pulling the sash back to the frame and returning the handle to the horizontal position.

Friction arm adjustment. Friction can be adjusted by turning the friction screws at the sides of the sash using a



4mm hexagon key. Each screw is adjusted equally to keep the sash level and square.

Cleaning. Ensure that guide rails are free from dust and dirt.



This window is equipped with:

	See more
Espagnolette handle	40
Ventilation position	41
Friction arm	43

It can also be fitted with:

	See more
Espagnolette handle with child-lock	40
Espagnolette handle with lock	40
Espagnolette handle for cylinder lock	40
Electric opener for remote operation	41
PN-fitting	42
Integral blind	42
Safety restrictor	42
Lockable restrictor	43
Click vent	43

This window is equipped with:

See more

Safety catch	29
Espagnolette handle	40
Ventilation position	41
Safety restrictor	42
Friction arm	43

It can also be fitted with:

See more

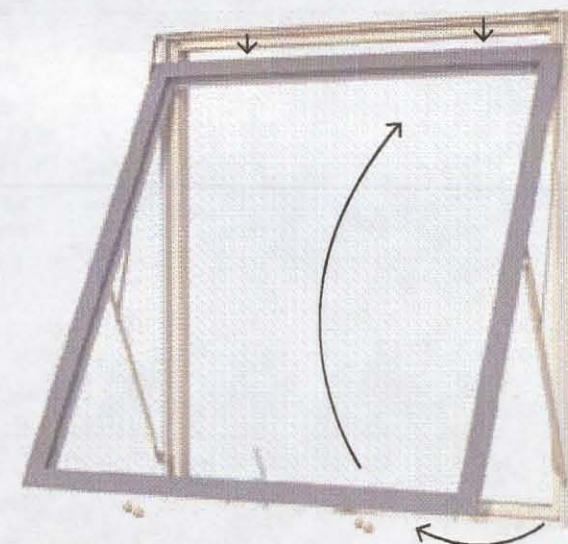
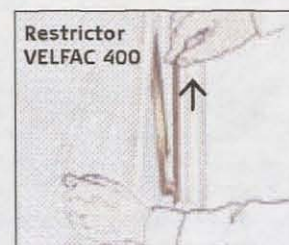
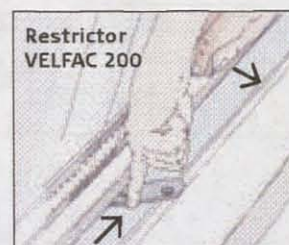
Espagnolette handle with child-lock	40
Espagnolette handle with lock	40
Espagnolette handle for cylinder lock	40
Electric opener for remote operation	41
PN-fitting	42
Lockable restrictor	43
Click vent	43

Reversible window

The window opens by turning the handle to a vertical position and pushing the sash outwards until the safety restrictor engages at an opening of 5-10cm.

The window is closed by pulling the sash back to the frame and returning the handle to the horizontal position.

The VELFAC 200 restrictor is disengaged by pulling the sash slightly back until loose

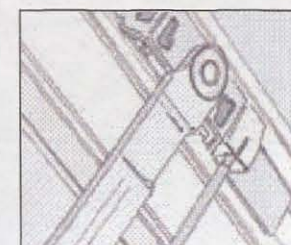


and the restricting arm moved to the side to deactivate.

VELFAC 400 has restrictors on both sides which need disengaging in sequence, right first then left.

Friction arm adjustment.

Friction is adjusted in VELFAC 200 by



Reversible window

equally turning the screws at the sides of the sash anti-clockwise using a 3mm hexagon key. VELFAC 400 reversible windows have no friction arm.

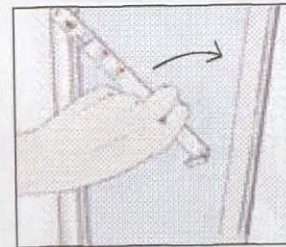
Cleaning. The external side of the window can be cleaned from inside the building by reversing the sash.

When pushed outwards, the top of the sash can be pulled gently downwards



toward the bottom of the window. The sash is fully reversed when the catch engages to keep it in the cleaning position.

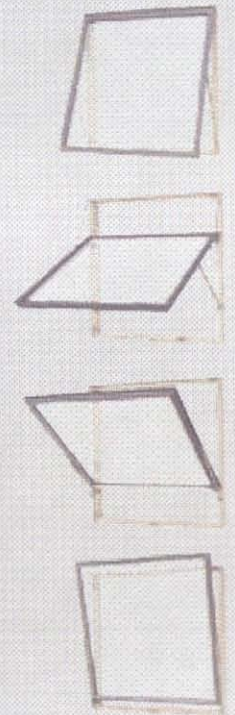
Large reversible windows have an additional safety arm which is moved outwards and fixed to the frame to ensure the sash is stable before cleaning.



When the sash has been cleaned, the catch and arm are disengaged and the bottom of the sash is guided back towards the top. The safety restrictor will automatically re-engage when the sash is closed.

DO NOT LEAN OUT OF THE WINDOW WHEN REVERSING SASH.

NEVER LEAVE WINDOW UNATTENDED WHILE RESTRICTOR IS DISENGAGED.



This window / door is equipped with:

[See more](#)

Handle

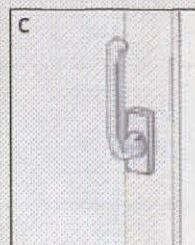
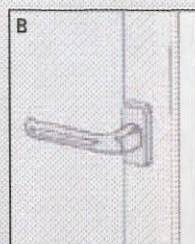
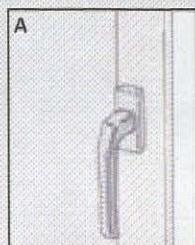
41

This window / door can also be fitted with:

[See more](#)

Trickle vent

43



Inward opening windows and patio doors

Inward opening windows and doors can be sidehung, bottomhung, or turn and tilt, which allows both sidehung and bottomhung functions. The sidehung opening function allows the window or door to be opened inwards by turning the handle 90° from A to B. A bottom hung window or door allows a 10cm ventilation gap at the top by turning the handle 180° from A to C.

A turn and tilt window or door allows both functions using the same handle positions.

To close the window or door, the sash is pushed back to the frame and the handle returned to position A.

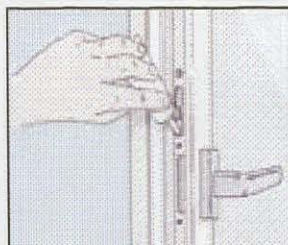


2 leaf windows and doors. To open both leaves, the handle must be operated and the first leaf opened. Then the lever at the edge of second leaf must be operated to dis-engage the flushbolt. The lever must be re-engaged when closing.

Inward opening windows and patio doors

Care. The hinges require oiling at least once a year using acid-free oil.

In order to ensure the hinges are properly lubricated, the window should be opened and closed several times during and after oiling.



Adjustment of the sash

1. Height is adjusted in the bottom corner hinge using a 4mm hexagon key (D).

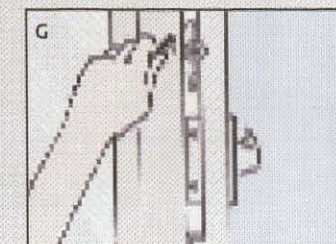
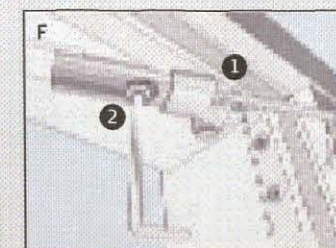
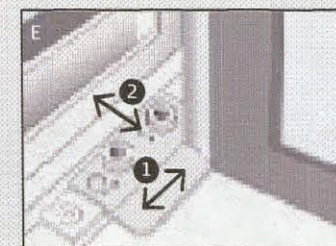
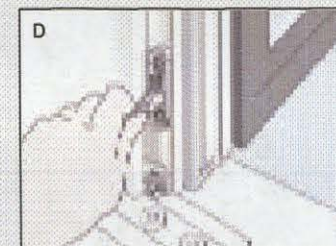
2. You can adjust sideways by turning the screw in front in the bottom corner hinge (E1), and/or by turning the screw in the

end of the scissor hinge located in the top frame corner (F1), both with a 4mm hexagon key.

Adjustment of closing

If you are not easily able to close the window or if the gasket is not tight, then you are able to adjust the pressure in the following ways:

- a) Turning the bottom corner hinge screw using a 4mm hexagon key (E2)
- b) Turning the top scissor hinge screw while the window is tilted (F2)
- c) Turning the locking pins on the side of the window with a Torx T15 screwdriver (G). Clock wise to loosen and anti clock wise to tighten.



The patio door is equipped with:

See more

Espagnolette handle	40
Ventilation position	41
Friction arm	43

It can also be fitted with:

See more

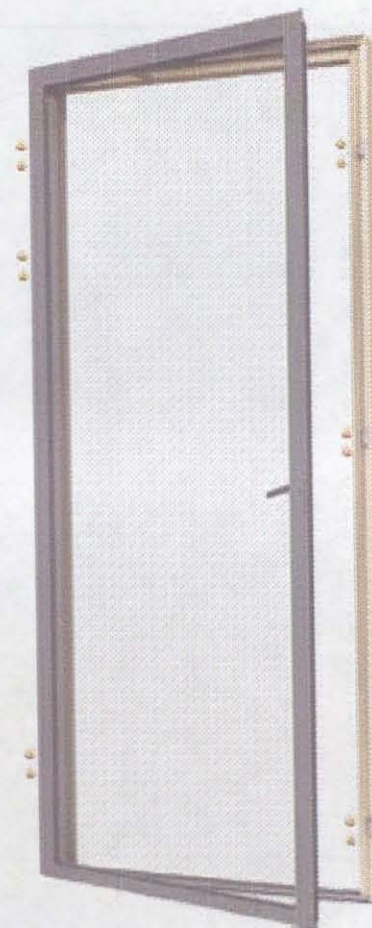
Espagnolette handle with child-lock	40
Espagnolette handle with lock	40
Espagnolette handle for cylinder lock	40
PN-fitting	42
Window stay	42
Integral blind	42
Click vent	43

Patio door

The patio door is opened by turning the handle to a horizontal position and pushing the door leaf outwards. The door opens to 90° and is equipped with a friction arm which allows it to be held in any position between closed and fully open. Doors can be fitted with a hinge to allow 180° opening but then cannot be fitted with a friction arm.

The patio door is closed by pulling back to the frame and returning the handle to the vertical position.

Double doors can be supplied with different types of mullion - see page 39 for more information.

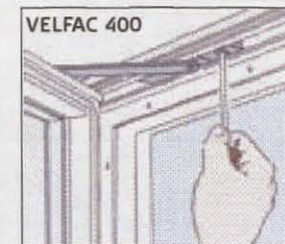
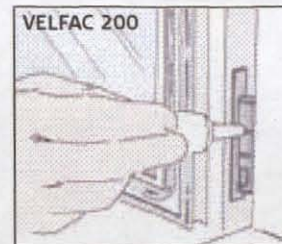


Patio door

Care. It is important to keep the slide rails free of dust and dirt by using a soft brush or cloth. The slide rails should not be oiled as this will accumulate dust and dirt, and remove friction.

The hinges require oiling at least once per year using acid-free oil. In order to ensure the hinges are properly lubricated, the window should be opened and closed several times during and after oiling.

Friction arm adjustment. The friction arm, found at the top edge, can be adjusted by turning the friction bolt using a 4mm hexagon key.



The sliding door is equipped with:

See more

Espagnolette handle 40

Ventilation position 41

It can also be fitted with:

See more

Espagnolette handle
with child-lock 40

Espagnolette handle
with lock 40

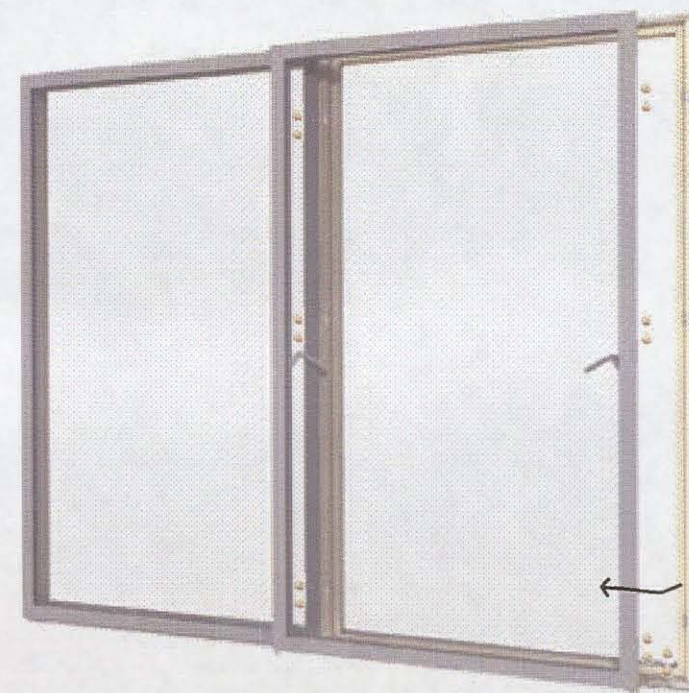
Espagnolette handle
for cylinder lock 40

Click vent 43

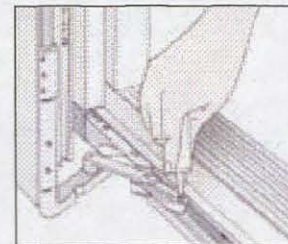
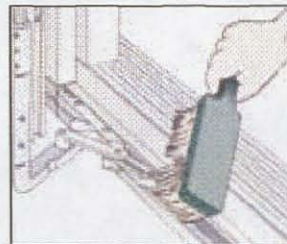
Sliding door

The sliding door is opened by turning the handles at the sides of the door leaf to a horizontal position. The door is then pushed outwards approximately 10cm and slid across.

The door is closed by sliding across and pulling back toward the frame. The handles are then turned back to a vertical position.



Care. The slide rails must be kept free from dust and dirt with a cloth or soft brush. The front 'carriage' - the hinge that moves in the slide rail at the leading edge of the door - must be oiled at least once a year.

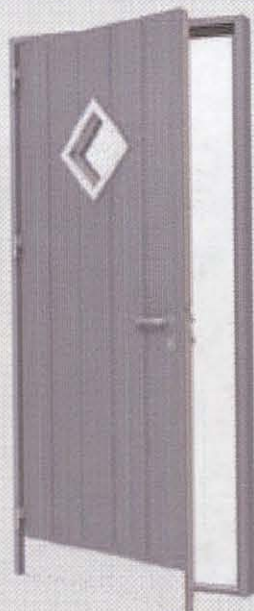


The door can be fitted with:

see more

Trickle vent

s. 43



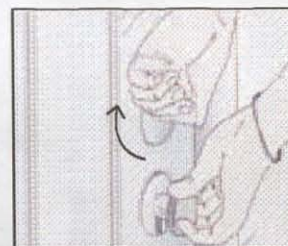
Flush door

Entrance door

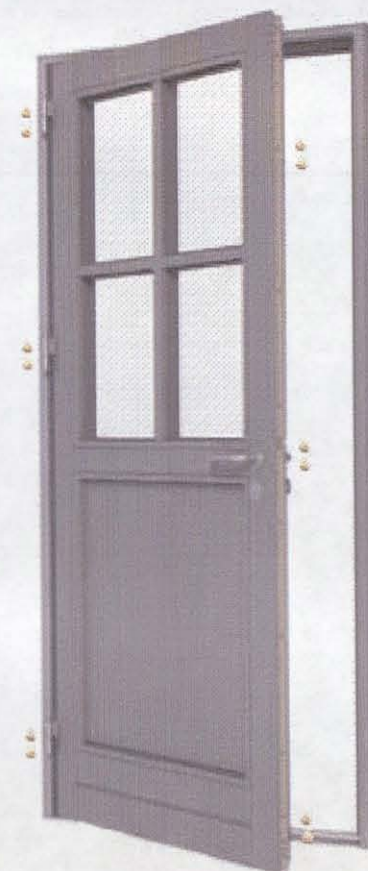
The entrance door opens by pushing down the handle and opening outwards. The door leaf will open to 180°.

To close, the door is pulled back to the frame, where the latch re-engages.

To lock the door, the handle is lifted before turning the key or thumbturn.



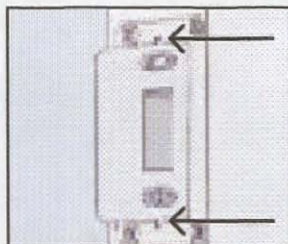
Care. The hinges require oiling at least once a year using acid-free oil. In order to ensure the hinges are properly lubricated, the door should be opened and closed several times during and after oiling.



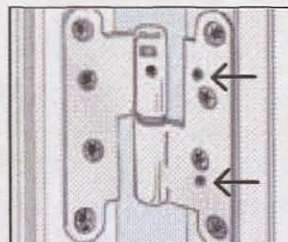
It is recommended that the door leaf of a flush door be painted every 5 years to maintain the finish.

Entrance door

Adjustment. The closing pressure may be adjusted by relocating the front section of the strike plate. The screw fittings are undone using a Torx T10 screwdriver, the pins on the front section removed, and the plate relocated.



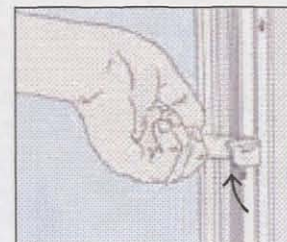
The door leaf can be adjusted sideways by loosening the hinge screws using a 3mm hexagon key, and the door adjusted to suit.



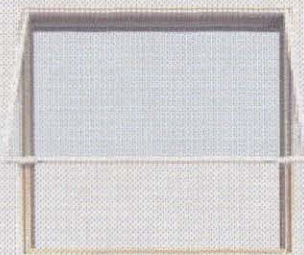
The height of the door leaf may be adjusted by turning the thread underneath the pivot of the middle hinge using a 6mm hexagon key.



2 leaf doors. To open both leaves, the handle must be operated and the first leaf opened. Then the lever at the edge of second leaf must be operated to dis-engage the flushbolt.



The internal sash is equipped with handles or screws.



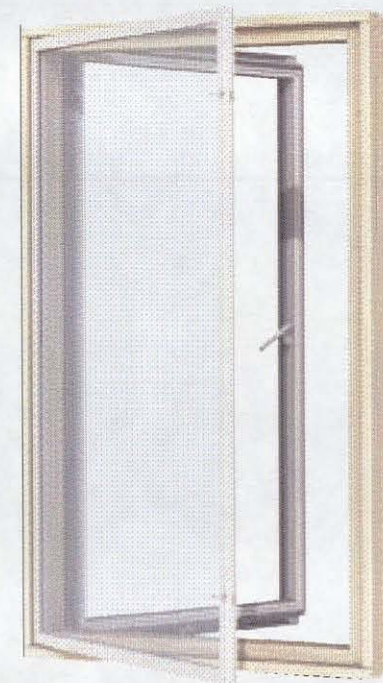
Tophung

2+1 window internal sash

The internal sash of a 2+1 window significantly improves acoustic and thermal properties. In order to constantly maintain this improvement, the internal sash must remain closed.

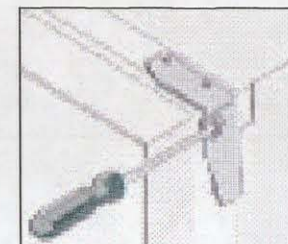
The internal sash can be supplied as sidehung or tophung and should only be opened for cleaning purposes. The sidehung sash is opened by turning the small handle(s) and pulling inwards. The tophung sash should be completely dismounted before commencing.

Dismounting a tophung internal sash. In order to remove the tophung sash, loosen the screws, hold down the



Sidehung

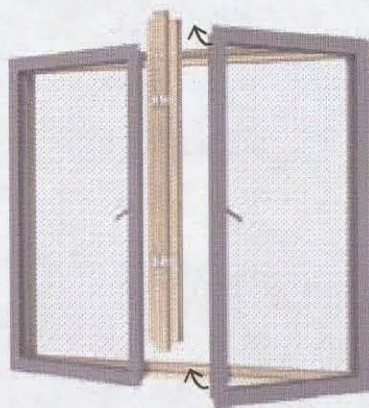
top hinge pin and tip out the sash - this operation will require 2 persons.



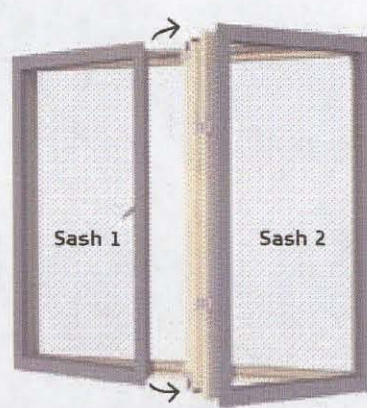
Mullions for 2 leaf windows and patio doors



Fixed



Escape



French Casement

A fixed mullion cannot be moved when both sashes are open.

The escape mullion is fixed when both sashes are opened, but in an emergency, the flushbolt at the top of the mullion can be disengaged, and the mullion completely removed to allow a double escape opening.

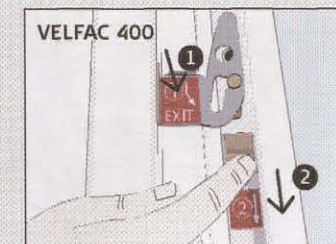
The French Casement mullion is fixed to the leading edge of the Sash 2. Once Sash 1 has been opened, flushbolts at the top and bottom of the mullion can be disengaged and Sash 2 subsequently opened. The mullion will move with the sash providing a clear opening for both sashes. The flushbolts of Sash 2 must be re-engaged before closing Sash 1.



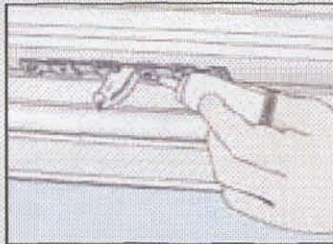
Flush bolt for escape and French Casement mullion.



Handle for Sash 2 with narrow French Casement.



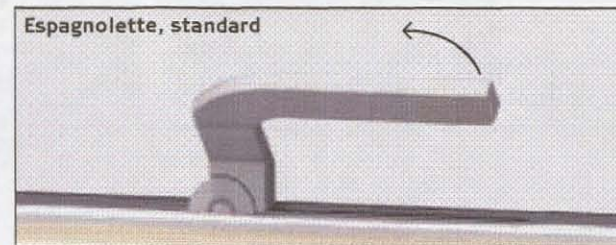
Operation of VELFAC 400 removeable mullion



Care. The locking mechanism at the leading edge of the sash will require oiling at least once a year using acid-free oil. Operate the handle during oiling to lubricate properly.

Tip. Standard Espagnolette handles can be changed to other options by VELFAC Customer Service.

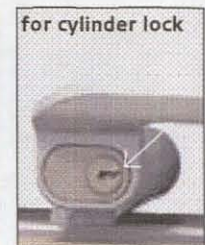
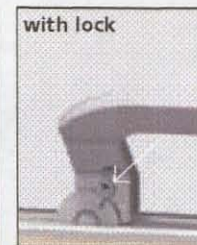
Window handles



VELFAC windows are usually operated by Espagnolette handles, although electric motors can be fitted for remote operation. Espagnolette handles operate the locking mechanism at the leading edge of the sash.

Espagnolette with child lock.

Espagnolette handles can be fitted with a child-proof safety lock. This is a button which must be pressed at the same time as the handle is turned. The button



automatically re-engages when the sash is closed.

Espagnolette with lock. Lockable Espagnolette handles are available with a small key to provide greater security.

Espagnolette for cylinder lock.

Espagnolette handles can be supplied to fit cylinders as part of a key strategy around a building.

Ventilation, remote operation and other handles

Ventilation position.

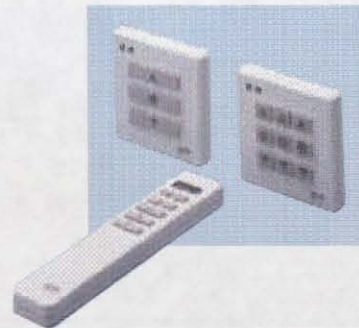
All outward opening windows and doors are fitted with 2 stage keeps. The locking mechanism engages in stage 1 when fully closed. The sash can also be opened to approximately 1cm and the handle returned to the locked position in the second stage. This allows a ventilation gap whilst keeping the window secure.

N.B: Please note that some insurance companies won't cover losses from burglaries which have been committed when windows have been left in a ventilation position.



Electric motor.

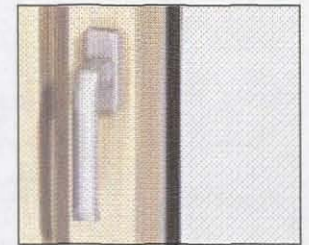
The electric motor is operated using a wall mounted switch or a remote control. The motor chain must be kept clean and oiled.



Handle for inward opening windows and doors.

The handle can be used to operate sidehung and bottomhung opening functions.

The handle is also available with a child lock and a key operated lock.

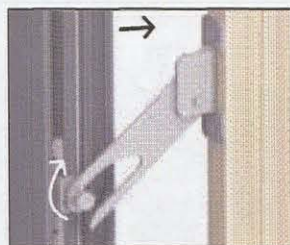


Safety fittings and other accessories

Safety restrictor.

This restrictor automatically engages when the sash is

opened to approximately 10cm. To open further, the sash is pulled slightly back until the restrictor is loose, then the restricting arm is moved to the side to deactivate. The restrictor arm must be back in place before the sash is closed - on closing, the restrictor will automatically re-engage.



PN fitting.

The fitting makes it difficult for unwanted guests to enter if the window is open.

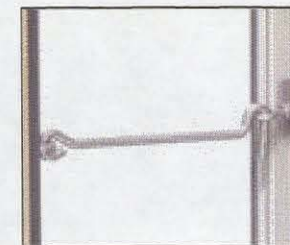
When opening the window, the arm is lifted and re-engaged when the required opening is achieved.

The arm is raised to a vertical position to disengage, allowing the sash to open fully.

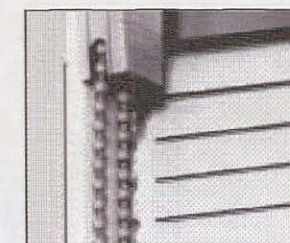


Window stay.

The arm is fitted to the wood frame and when used, is hooked into an eyelet on the sash to achieve an opening of approximately 130mm.



Integral blind. Integral blinds within the double glazed unit are operated using a cord or an electric motor, depending on specification.



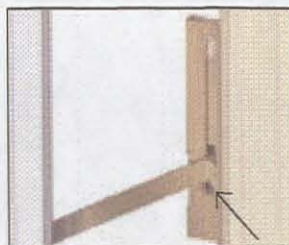
Safety fittings and other accessories

Lockable restrictor.

This restrictor limits the opening of the sash to 10cm.

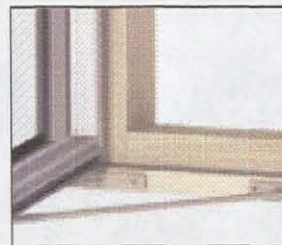
It is possible to disengage the restrictor by turning the lock through 90° with a 5mm hexagon key. The lock must always be re-engaged after use.

Care must be taken to ensure the restricting arm is clear of the structure before being allowed to hang loose.



Friction arm.

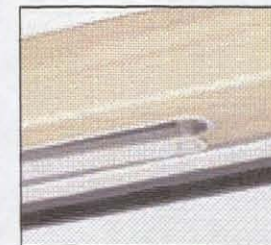
This fitting allows the sash to be held in any position between closed and fully open, although the ventilation position should be used in bad weather. The friction arm can be adjusted if operation is too tight or loose - please consult pages which refer to your specific opening function.



Clickvent.

The vent is fitted within the frame and provides background ventilation.

The vent is opened by pressing one or both ends marked with circles.





ADVANCED WINDOW DESIGN

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Certificate No. FS 32 087

2.45	Walltec Ltd	-	Render
	Midlands Office		
	28b Denton Avenue		
	Grantham		
	Lincolnshire		
	NG31 7JL		
	Tel	0147 640 9947	
	Fax	0147 640 9948	
	Contact	Mr P Roles	

Wtm/3851/015



Quarmby Construction Ltd.,

OPERATION AND MAINTENANCE MANUAL

**For: Wakefield Waterfront, Building 20,
Wakefield**

STO VEROTEC RENDER SYSTEM

INSTALLED BY:

Walltec Limited
28b Denton Avenue,
Grantham
Lincs., NG31 7JL

Date : June 2008

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=====

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- * Project Team
- * Health & Safety

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- * Cleaning & Recoating

CHAPTER TWO

- * Manufacturers' Literature
 - i) Sto Ltd

CHAPTER THREE

- * Directory
- * Colour References

PREAMBLES

PREAMBLES

Project Team

Director

Paul Roles

Contract Support

Paul Dixon

Site Team Leader

Paul Cronin



HEALTH & SAFETY POLICY

1. Walltec is committed to progressive improvement in health, safety and welfare standards and will conduct its undertakings accordingly.
2. It is the policy of Walltec Ltd:
 - i) to pursue high standards of health, safety and welfare as an integral part of efficient management of the business and to ensure that decisions about other priorities take proper account of health and safety requirements.
 - ii) to safeguard the health, safety and welfare of its employees whilst at work, and to provide, as far as is reasonably practicable, working environments which are safe and without risk to health.
 - iii) to conduct its undertakings in such a way as to ensure, as far as is reasonably practicable, that people not in its employment, but who may be affected, are not exposed to risks to their health & safety.
 - iv) to comply with all relevant legislative requirements pertaining to health, safety and welfare as the minimum standard.
3. The Managing Director has overall responsibility for this policy. Details of individual levels of responsibility are published in the Safety Procedures Manual which, together with this Policy, will be revised when appropriate.
4. A quarterly Company safety meeting is held for monitoring the performance of the company on health and safety issues and making recommendations for improvements. The meeting is responsible for developing policy on health and safety matters and will oversee and co-ordinate the work.
5. The Company will provide the necessary training to enable all employees to carry out their responsibilities under this policy.
6. Company employees must set an example by wearing appropriate protective clothing and equipment where necessary.
7. This statement is displayed at all site and work places. Employees can obtain further information about health and safety through their manager and / or the Langley office.

The purpose of this manual is to identify the Sto applications, and so offer the personnel concerned with the maintenance of the application, assistance in the performance of their duties.

The manual is intended for guidance in the maintenance of the system and includes a chapter regarding cleaning of the finishes.

Any repairs and alterations to the Sto systems should be carried out by approved Sto applicator companies.

CHAPTER ONE

REPAIR and MAINTENANCE

CLEANING and RECOATING

i) Sto

Sto Render Systems - Repair and Maintenance

Planned Maintenance

A. General Information

The advanced design and high performance levels offered by **Sto** synthetic resin based External Render and Paint coatings ensure that maintenance requirements are reduced to an absolute minimum.

Sto products and systems are more resistant to soiling than most traditional building materials and their continued performance and durability does not rely on periodic maintenance. The need for cleaning or over-coating is usually determined by a degradation in the aesthetic appearance of the facade caused by surface soiling and the Client's desire for a fresh appearance. The rate at which soiling accumulates is dependent on a number of local factors including:

colour	(light shades show dirt more than darker ones)
texture	(the heavier the texture the more possibility for dirt retention)
aspect	(north facing facades remain wetter for longer thereby increasing the likelihood of algal and fungal growth).
location	(city environments are more subject to pollution, traffic grime, etc. than rural ones)
client	requirements.

B. Frequency

Taking account of the above noted variable criteria it is not possible to accurately determine a cyclic period for planned maintenance.

High quality latex and solvent based paints would require re-coating every 5-6 years. Sto Silco coatings are still performing after 15 years without the need to re-coat. When over-coating becomes necessary, renovation should be infrequent, quickly executed and economical.

C. Method Statement

Cleaning of Soiled Synthetic Resin Coatings.

The removal of soiling can be divided in to two categories:-

- a. Surface soiling that can be removed by washing.
- b. Surface soiling that requires overpainting.

Surface soiling removable by washing

1. Light soiling may be removed by the use of a soft brush and warm water with the addition of a mild household detergent.
2. Heavier soiling may require the use of a power washer, subject to the following rules:-

Water pressure not to exceed 30 bar.

Water temperature not to exceed 30°C.

Nozzle to be no closer than 500mm to the surface being cleaned.

Surface Soiling that requires over-painting

After washing as above, apply one or two coats of **StoColor Crylan** or **StoColor Maxicryl** acrylic resin paint, or **StoSilco Color** silicone resin paint tinted to the colour reference of the original plaster if the same colour scheme is required or to any other colour if a change is desired.

Repair Procedure for Sto Render Systems

Mechanical Damages

Method Statement

a. Material requirements:

Reinforcing coat: StoLevell Uni or Sto BTS/B or Sto RFP or Sto Flexyl

Reinforcing mesh Sto Armor Mesh and/or Sto Sto Glass Fibre Mesh
Sto PVC Mesh Angle Bead or Sto Armor Angle

Primer Sto Primer (only required with StoLevell Uni Sto BTS/B and Sto Flexyl)

Decorative finish: Stolit or StoSilco or Superlit

b. Repair procedure

Wherever possible ensure that the repaired area is finished to align with existing features such as doors, windows, string courses, down pipes etc to reduce its visual impact.

1. Remove the existing Sto finish from the wall approximately 150mm beyond the damaged area. Care should be exercised to avoid damaging the reinforcing coat and mesh in this area. This may be achieved by grinding the surface with a suitable electric hand-tool or by softening the surface with a steam stripper and carefully removing the finish.
2. Carefully cut away the Sto Reinforcing Mesh to within 100mm from the edges of the existing Sto finish.
3. Fill the hole with a suitable repair mortar (e.g. StoCrete SM/Sto-Fibrecoat etc.) back to the original level or the substrate.
4. Cut a piece of Sto reinforcing mesh to cover the repair and to overlap the existing mesh by about 50mm on all sides.
5. Apply the appropriate reinforcing plaster over the area to be meshed and immediately embed the pre-cut piece of mesh. Ensure the correct thickness of plaster is applied and 'feather out' at edges.

6. If required, brush apply 1 coat of Sto Primer when the reinforcing coat has fully dried.
7. Mask off the surrounding area of finish plaster.
8. Apply the decorative finish and texture to match the existing surface finish. The finish should be applied to within 5-10mm of the surrounding finish and then carefully 'stippled in' with a small brush to blend the wet finish into the existing surface.

NB Due to normal colour variations between different batches of material and the effects of natural weathering over a period of time it may be necessary to clean or over paint the area or section where the repair has been effected to ensure minimal visibility of the repair. In this case, please refer to the section headed 'Cleaning of Soiled Synthetic Resin Coatings'.

CHAPTER TWO

MANUFACTURER'S LITERATURE AND SAFETY DATA SHEETS

i) Sto

- ❖ Sto Armat Classic
- ❖ Sto Reinforcing Mesh
- ❖ Sto Primer
- ❖ Sto Verotec
- ❖ Sto Lit K 1.5

369402
Reviewed on: 08.01.2004
Printing date: 13.01.2004**1 Identification of the substance/preparation and of the company/undertaking**

- **Product details**
- **Trade name:**
StoArmat Classic natur
- **Article number:**
0250
- **Application of the substance / the preparation**
Knife filler/ Surfacers
- **Manufacturer/Supplier:**
Sto AG
Ehrenbachstraße 1
D - 79 780 Stühlingen
Telephone: (49) 07744 57-0
Telefax: (49) 07744 57-2178
- **Further information obtainable from:**
Department MA-S / Sto AG Germany Tel. (49) 7744-57 1131

2 Composition/information on ingredients

- **Chemical characterization**
- **Description:**
Water dilutable levelling coat

3 Hazards identification

- **Hazard description:**
Not applicable.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4 First-aid measures

- **General information:**
In all cases of doubt, or when symptoms persist, seek medical attention
Never give anything by mouth to an unconscious person.
- **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Do not use solvents or thinners.
- **After eye contact:**
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
Keep at rest.

5 Fire-fighting measures

- **Suitable extinguishing agents:**
Use fire extinguishing methods suitable to surrounding conditions.
not combustible under normal conditions

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StoArmat Classic natur
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0250
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Sto AG
Ehrenbachstraße 1
D - 79 780 Stühlingen
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5 Fire-fighting measures

- **Suitable extinguishing agents:**
Use fire extinguishing methods suitable to surrounding conditions.
not combustible under normal conditions

PRODUCT : StoArmat Classic natur

(continued of page 1)

6 Accidental release measures

- **Person-related safety precautions:**
Refer to protective measures listed in sections 7 and 8.
- **Measures for environmental protection:**
Do not allow product to reach sewage system or any water course.
If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.
- **Measures for cleaning/collecting:**
Contain and collect spillage with a vacuum cleaner or by wet brushing and place in container for disposal according to local regulations. (See section 13)

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:**
No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Keep container tightly closed.
Containers which are opened must be carefully resealed and kept up-right to prevent leakage.
- **Information about storage in one common storage facility:**
Not required.
- **Further information about storage conditions:**
Store always in containers which correspond to the original container. Observe the instructions on the label.
Protect from frost.
Keep out of direct sunlight in temperatures over +35°C.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:**
No particular measures required.
- **Ingredients with limit values that require monitoring at the workplace:**
- **Additional information:**
The lists valid during the making were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Wash hands before breaks and at the end of work.
- **Respiratory protection:**
Avoid inhaling dust when rasping. Use a face mask.
- **Protection of hands:**
After washing hands replace lost skin oils with oil containing skin creams.
- **Eye protection:**
Should much dust or fibre particles be present in the air, use protective eye-wear.
- **Body protection:**
All parts of the body should be washed after contact.

9 Physical and chemical properties**General Information**

Form:	Pasty
Colour:	White
Odour:	Weak, characteristic

(continued on page 3)

369402
Reviewed on: 08.01.2004
Printing date: 13.01.2004

PRODUCT : StoArmat Classic natur

(continued of page 2)

Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Self-igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Density:	1,5000 g/cm3 +-
Solubility in / Miscibility with water:	Insoluble.
pH-value:	8,0
Viscosity:	
Dynamic:	at 23 °C 24.000,00 - 27.000,00 mPa.s

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
Stable under recommended storage and handling conditions (See selection 7).
- **Materials to be avoided:**
None, if handled according to order.
- **Dangerous decomposition products:**
No dangerous decomposition products known.

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
 - on the skin:
No irritant effect.
 - on the eye:
No irritating effect.
- **Sensitization:**
No sensitizing effects known.
- **Additional toxicological information:**
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

12 Ecological information

- **Additional ecological information:**
- **General notes:**
Material must not be emptied into drains. Observe item 15 (water pollution class) in the safety data sheet.

13 Disposal considerations

- **Product:**
- **Recommendation**
Allow left-over plaster or paint to dry or thicken with cementitious binders and dispose with site waste in accordance with local regulations.
Unhardened leftover product should be disposed of under the recommended waste code.
- **European waste catalogue**
08
WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS

(continued on page 4)

PRODUCT : StoArmat Classic natur

(continued of page 3)

08 01
wastes from MFSU and removal of paint and varnish
08 01 12
waste paint and varnish other than those mentioned in 08 01 11

- **Uncleaned packaging:**
- **Recommendation:**
Empty packaging should be recycled through disposal systems.

14 Transport information• **Land transport ADR/RID (cross-border)**

ADR/RID class: -

• **Maritime transport IMDG:**

IMDG Class: -

• **Air transport ICAO-TI and IATA-DGR:**

ICAO/IATA Class: -

15 Regulatory information• **Labelling according to EU guidelines:**

The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV) .

• **Special labelling of certain preparations:**

Safety data sheet available for professional user on request.

• **National regulations:**• **Classification according to VbF:**

-

• **Technical instructions (air):**

Class	Share in %
II	0,02
I	0,01
III	0,01

• **Waterhazard class:**

Water hazard class 1 (#): slightly hazardous for water.

16 Other information

The details in this Safety Data Sheet are equivalent to our current knowledge and comply with the national as well as the EC legislation. The working conditions of the user however escape our knowledge and control. The user is responsible for the observance of all necessary legal regulations. The details in this Safety Data Sheet describe the safety requirements of our product and are no guarantee for the product characteristics.

• **Department issuing MSDS:**

Department TIQR / Sto AG Germany

• **Contact:**

Sto AG (Germany) Telephone : (49) 7744 57-1131

• *** Data compared to the previous version altered.**

Changes from previous edition are marked with *.

• **Additional information:**

Printing date: 07.04.2003

347600
Reviewed on: 07.04.2003**1 Identification of substance:**

- **Product details:**
- **Trade name:**
StoGlassfibre Mesh
- **Article number:**
2036
- **Manufacturer/Supplier:**
Sto AG
Ehrenbachstraße 1
D - 79 780 Stühlingen
Telephone: (49) 07744 57-0
Telefax: (49) 07744 57-2178
- **Information department:**
Department MA-S / Sto AG Germany Tel. (49) 7744-57 1131

2 Composition/information on ingredients

- **Chemical characterization**
- **Description:**
Textile glass fibre mesh

3 Hazards identification

- **Hazard description:**
Not applicable.
- **Information pertaining to particular dangers for man and environment**
Glass particles may cause irritation of skin.
- **Classification system**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4 First aid measures

- **General information**
No special measures required.
- **After skin contact**
Immediately wash with water and soap and rinse thoroughly.

5 Fire fighting measures

- **Suitable extinguishing agents**
foam, carbon dioxide, powder extinguisher, water haze, water spray jet
- **Special hazards caused by the material, its products of combustion or resulting gases:**
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide (CO)
- **Protective equipment:**
Wear protective clothing!
Appropriate breathing apparatus may be required.

6 Accidental release measures

- **Person-related safety precautions:**
Refer to protective measures listed in sections 7 and 8.
- **Measures for environmental protection:**
No special measures required.
- **Measures for cleaning/collecting:**
No special measures required.

Printing date: 07.04.2003

347600
Reviewed on: 07.04.2003

PRODUCT : StoGlassfibre Mesh

(continued of page 1)

7 Handling and storage

- **Handling**
- *Information for safe handling:*
Additionally, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded.
- *Information about protection against explosions and fires:*
Keep ignition sources away - Do not smoke.
- **Storage**
- *Requirements to be met by storerooms and receptacles:*
No special requirements.
- *Information about storage in one common storage facility:*
Not required.
- *Further information about storage conditions:*
Store in dry conditions.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:**
No particular measures required.
- **Components with limit values that require monitoring at the workplace:**

CAS No.	Designation of material	%	Type	Value	Unit
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.					
- *Additional information:*
The lists valid during the making were used as basis.
- **Personal protective equipment**
- *General protective and hygienic measures*
The usual precautionary measures are to be adhered to when handling chemicals.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- *Protection of hands:*
Protective gloves

9 Physical and chemical properties:

Form:	Woven fabric
Colour:	According to product specifica
Odour:	undistinguishable
CHANGE IN CONDITION	value unit methode
Melting point/Melting range	:Undetermined.
Boiling point/Boiling range	:Undetermined.
Flash point:	Not applicable.
Self igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Solubility in / Miscibility with Water:	Insoluble.

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
Stable under recommended storage and handling conditions (See selection 7).
- **Materials to be avoided:**
None, if handled according to order.
- **Dangerous products of decomposition:**
No dangerous decomposition products known.

GB

(continued on page 3)

Printing date: 07.04.2003

347600
Reviewed on: 07.04.2003

PRODUCT : StoGlassfibre Mesh

(continued of page 2)

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
 - on the skin:
No irritant effect.
 - on the eye:
No irritating effect.
- **Sensitization:**
No sensitizing effects known.
- **Additional toxicological information:**
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

12 Ecological information

- **Additional ecological information:**
- **General notes:**
Material must not be emptied into drains. Observe item 15 (water pollution class) in the safety data sheet.

13 Disposal considerations

- **Product:**
- **Recommendation**
Can be disposed of under the recommended waste code in accordance with local regulations.
- **European waste catalogue**
 - 10
WASTES FROM THERMAL PROCESSES
 - 10 11
wastes from manufacture of glass and glass products
 - 10 11 03
waste glass-based fibrous materials
- **Uncleaned packagings:**
- **Recommendation:**
Empty packaging should be recycled through disposal systems.

14 Transport information

- | | |
|--|---|
| • Land transport ADR/RID (cross-border)
ADR/RID class: | - |
| • Maritime transport IMDG:
IMDG Class: | - |
| • Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: | - |

15 Regulatory information

- **Markings according to EU guidelines:**
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV) .
- **National regulations**
- **Classification according to VbF:**
-
- **Waterhazard class:**
Generally not hazardous for water.

GB

(continued on page 4)



MATERIAL SAFETY DATA SHEET
according to 91/155/EWG

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Printing date: 07.04.2003

347600
Reviewed on: 07.04.2003

PRODUCT : StoGlassfibre Mesh

(continued of page 3)

16 Other information

The details in this Safety Data Sheet are equivalent to our current knowledge and comply with the national as well as the EC legislation. The working conditions of the user however escape our knowledge and control. The user is responsible for the observance of all necessary legal regulations. The details in this Safety Data Sheet describe the safety requirements of our product and are no guarantee for the product characteristics.

• **Department issuing MSDS:**

Department TIQR / Sto AG Germany

• **Contact:**

Sto AG (Germany) Telephone : (49) 7744 57-1131



PRODUCT INFORMATION RECORD

Manufacturer: *Sto AG*
Stühlingen-Weizen
D-79778 Federal Republic of Germany

Distributor: *Sto Ltd.*
Unit 3, Lyon Road
Linwood Industrial Estate
PAISLEY, GB-SCOTLAND PA3 3BQ

Trade name: **Sto Verotec Carrier Board**

1.0 General

1.1 Chemical characteristics:

Sto Verotec Carrier Board is a lightweight, rigid material manufactured from 95% recycled glass and a low proportion of bonding agent, and is supplied in the form of moulded architectural profiles or sheets of varying thicknesses.

1.2 Form: rigid 1.3 Colour: olive grey 1.4 Odour: none

2.0 Technical specification and safety information

- | | | | |
|------|---|---------------------------------|-------------------------|
| 2.1 | Change in state: | softens above | °C |
| | | flammable vapour produced above | °C |
| 2.2 | Density | (20°C) | 0.380 g/cm ³ |
| | Powder density | (°C) | kg/m ³ |
| 2.3 | Vapour pressure: | (°C) | mbar |
| 2.4 | Viscosity: | (20°C) | |
| 2.5 | Solubility in water: | (°C) | g/l |
| | in | (°C) | g/l |
| 2.6 | pH-Value (at g/l H ₂ O) (20°C) | | |
| 2.7 | Flashpoint: classified as having limited combustibility | | |
| 2.8 | Flame temperature: | °C | |
| 2.9 | Explosion limits: | under: over: | |
| 2.10 | Thermal decomposition: | °C | |
| 2.11 | Dangerous decomposition products: smoke (carbon)) | | |
| 2.12 | Dangerous reactions: | | |

2.13 Further particulars:

3.0 Transport

GGVSee / IMDG-Code:

UN-Nr.:

GGVE / GGVS:

RID/ADR:

ICAO / IATA-DGR:

ADNR:

Other information:

4.0 Regulations

No compulsory safety markings requirements.

5.0 Protective measures, storage and handling

5.1 Technical protective measures: as the material is relatively fragile careful storage and handling is advised.

5.2 Personal protective equipment:

Breathing protection: see Note 7

Eye protection: see note 6.3

Hand protection:

Other:

5.3 Working conditions / handling:

5.4 Fire and explosion protection: no special measures necessary

5.5 Disposal: waste material does not constitute a hazard but should be disposed of in a recognised waste disposal facility.

6.0 Accident and Fire Precautions

6.1 Fire precautions: none

6.2 Extinguishing method:

May be used: water, CO₂, powder, BCF

Do not use:

6.3 First Aid:

Eye contact - In the event of Sto-Verotec dust particles in the eye rinse with copious quantities of water. Seek medical advice if irritation persists.

Inhalation of smoke or fumes - Remove from exposure into fresh air. Keep warm and at rest. If there is respiratory distress, give oxygen. If breathing stops or shows signs of failing, apply artificial respiration. Obtain immediate medical attention

6.4 Further particulars:

7.0 Information on Toxicity

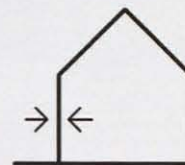
Sto Verotec Carrier Board is not known to lead to any skin irritations and is regarded as biologically inert. If stored and handled properly it does not constitute a health hazard.

Where substantial dust is produced in subsequent processing of Sto-Verotec Carrier Board e.g. sawing, grinding, rasping, suitable dust extraction must be provided to ensure that exposure does not exceed 10 mg/m³ 8 hours TWA (Occupational Exposure Limit for total inhaleable dust).¶

8.0 Environmental Considerations

Dispose of waste material properly in a recognised waste disposal facility.

9.0 Additional Warnings



Sto-Primer

Filled, pigmented intermediate coat for organically and silicone resin bound plasters.

Product Characteristics/ Advantages

- ☐ Good adhesion to all suitable, load bearing and properly prepared substrates.
- ☐ High water vapour permeability.
- ☐ Alkali resistant according to DIN 18 558.
- ☐ Good filling properties and good hiding power.
- ☐ Easy application.
- ☐ Matt finish according to DIN 53 778.
- ☐ Suitable as intermediate coat for all organically and silicone resin bound plasters.

Material Description

Material Type

Intermediate coat for all organically and silicone resin bound Sto plasters.

Binder Base

Acrylate copolymer.

Pigments

Organic/inorganic white and coloured pigments.

Fillers

Carbonates, silicates, special mixture of fillers.

Additives

Film forming agent, anti-foaming agent, thickeners, preservatives.

Diluting Agent

Clean water.

Uses

Areas of Use

For exterior and interior use.

Note

Do not use on damp substrates.

Application

Surface Preparation

The substrate should be load-bearing, clean and dry. Remove loose paint and plaster coatings. New plaster should be left to harden for at least 14 days.

Coatings Procedure (for plaster coatings)

Undercoat (if necessary)

Undercoat according to type and condition of substrate (see table 2).

Intermediate Coat

Sto-Primer, diluted by up to 10 % with clean water and tinted to match the colour of the top coat.

Top Coat

With organically bound plasters.

exterior: Stolit K/R, Sto-Roll Plaster, Sto-Rillit, Sto-Rustic Coarse, Sto-Antik, Sto-Lastic, Sto-Superlit.

interior: StoDecolit K/R/MP, Sto-Granit, StoSilco K/R/MP, StoLook Reverlit K/R/MP, etc.

With silicone resin bound plasters.
StoSilco K/R/MP.

Material Preparation

Sto-Primer is ready to use but in order to achieve best application consistency can be diluted by up

to 10 % with clean water (depending on substrate). Stir thoroughly before application.

Application

By brush or roller. Sto-Primer **cannot be applied by airless spray!**

Consumption

Approx. 0.3 kg/m². Consumption will vary according to the type and condition of substrate.

Application Temperature

Air and substrate temperature should not be less than + 5 °C.

Drying Time

Sto-Primer dries physically by water evaporation. At + 20 °C and 65 % relative humidity the product will be touch dry in 4 - 6 hours and can be overcoated after approx. 8 hours. Drying times will be prolonged by low temperatures and/or high humidity.

Delivery

Product Code and Name

0801 Sto-Primer, natural coloured.
0681 Sto-Primer, tinted.

Packaging

PE pail, 25/18/8 kg.

Colours

Available in all 390 colours of the StoColor System.

Additional information

Algae and Fungus Prevention.

Sto-Primer can be manufactured (at extra cost) with additional bactericidal, fungicidal and algicidal additives. If required,

please add the code "BFA" when ordering. Please note that while this will prolong the prevention of algae and fungus growth, the effects are not guaranteed to last indefinitely.

Cleaning of Tools

Immediately after use with water.

Protective Measures

No special protective measures (e.g. face masks) are necessary.

Disposal

Dried or set material can be disposed of with normal household rubbish. Old, non-set material should be mixed with cement, left to dry and then disposed of.

Repairs

Sto-Primer is overcoatable with StoSilco K/R/MP and StoSilco Color as well as with all organically bound plasters and paints of Sto AG.

Storage and Transport

Storage

Keep containers tightly closed and store in frost free conditions.

Transport

No special protective measures or hazardous goods markings are necessary.

Table 1: Physical Values

Density	1.5 kg /dm ³
pH-value	8.5 - 9
Water vapour permeability (measured according to DIN 52 615 - wet samples on sintered glass) μ H ₂ O measured value s_d -value	2733 0.251 m
Water vapour diffusion current density WDD	3.4 (g/m ² · h)
Water absorption and rain protection (measured according to DIN 52 617 on lime sandstone) Water absorption coefficient w_{24}	0.065 kg/(m ² · h ^{0.5})

Table 2: Priming Coat

Substrate		Type of Coating (if necessary)
Dispersion paint	new	-
	old	Stoplex W
Silicone resin paint	new	-
	old	Stoplex W, StoPrim Micro
Silicate paint	new	-
	old	Stoplex W
Lime paint / plaster ¹⁾ (mortar group P I)	new ¹⁾	-
	old	StoPrim Grundex, StoPrim Micro
Base plaster (mortar group P II/III)	new	Stoplex W
	old	StoPrim Grundex, StoPrim Micro
Glasal boards	new	StoPrim Activ
	old	StoPrim Activ
Cement bound chipboard	new	StoCryl V 400
	old	StoCryl V 400
Chipboard V 100 G	new	StoPrim DD
	old	StoPrim DD
Gypsum plaster boards ²⁾	new	Stoplex W
	old	StoPrim Isol ²⁾

¹⁾ On lime bound substrates only coating materials with sufficient CO₂ permeability are allowed!

²⁾ If untinted plasters are applied you can also use StoPrim Isol Q instead of StoPrim Isol. With critical substrates two coats of StoPrim Isol or StoPrim Isol Q are necessary!

Contract Terms

Liability for defects caused through construction settlement or movement, misuse, mis-handling, improper storage, improper

application, improper combination with Sto products or those from third parties, or failure to follow Sto's specifications or application procedures, will not be accepted under any circumstances.

For all contracts, whether made verbally or in writing, Sto AG's general conditions of sale as printed in the price list apply.

UK and Ireland Authorised Distributor

Sto Ltd. Unit 3, Lyon Road Linwood Industrial Estate PAISLEY GB-Scotland PA3 3BQ Tel: +44 (0)1505-324262 Fax: +44 (0)1505-323618 E-mail: info@sto.co.uk	Sto Ltd. Unit 4, The Ringway Centre Edison Road BASINGSTOKE GB-England RG21 6YH Tel: +44 (0)1256-332770 Fax: +44 (0)1256-810887 E-mail: info@sto.co.uk
---	--

Germany
Sto AG
Ehrenbachstraße 1
D-79780 Stühlingen
Tel: 07744/57-0
Fax: 07744/57-2178

Switzerland
Sto AG
Südstrasse 14
CH-8172 Niederglatt/ZH
Tel: 01/851 5353
Fax: 01/851 5300

Austria
Sto Ges.m.b.H.
Richtstraße 47
A-9500 Villach
Tel: 04242/331330
Fax: 04242/34347

France
Sto S.à.r.l.
Rue du Château d'Angleterre
F-67300 Schiltigheim
Tel: 88.19.27.27
Fax: 88.81.37.10

Sweden
Sto Scandinavia AB
Gesällgatan 6
S-582 77 Linköping
Tel: 013/31 10 77
Fax: 013/10 47 82

Poland
Sto Sp. z o.o.
ul. Generala Sowińskiego 47
PL-01-105 Warszawa
Tel: 022/36 91 22
Fax: 022/36 91 22

USA
Sto Corp.
6175 Riverside Drive, SW
Atlanta, Georgia 30336-5609
Tel: 404-346-3666
Fax: 404-346-3119

1 Identification of substance:

. Product details:

. Trade name:

Stolit Kratz/Rille

. Article number:

0132

. Manufacturer/Supplier:

Sto AG

Ehrenbachstraße 1

D - 79 780 Stühlingen

Telephone: (49) 07744 57-0

Telefax: (49) 07744 57-2178

Sto Ltd.

Unit 3, Lyon Road;

Linwood Industrial Estate

GB - Paisley PA3 3BQ

Telephone : (44) 1505 324 262

Telefax : (44) 1505 323 618

. Information department:

Product safety department.

. Emergency information:

Telefon : (49) 07744 - 57 1999

Telephone : (44) 1505 324262

2 Composition/information on ingredients

. Chemical characterization

. Description:

Water based synthetic resin plaster for exterior use.

3 Hazards identification

. Hazard description:

Not applicable.

. Classification system

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4 First aid measures

. General information

In all cases of doubt, or when symptoms persist, seek medical attention
Never give anything by mouth to an unconscious person.

. After inhalation

Supply fresh air; consult doctor in case of complaints.

. After skin contact

Immediately wash with water and soap and rinse thoroughly.

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Reviewed on: 21/03/2002

PRODUCT : **Stolit Kratz/Rille**

(continued of page 1)

Do not use solvents or thinners.

. After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

. After swallowing

Do not induce vomiting; call for medical help immediately.

Keep at rest.

5 Fire fighting measures**. Suitable extinguishing agents**Use fire extinguishing methods suitable to surrounding conditions.
not combustibile under normal conditions

6 Accidental release measures**. Person-related safety precautions:**

Refer to protective measures listed in sections 7 and 8.

. Measures for environmental protection:Do not allow product to reach sewage system or any water course.
If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.**. Measures for cleaning/collecting:**

Contain spillt product with an absorbant material (e.g. sand, sawdust, vermiculite etc., collect in a suitable container and then dispose of in accordance with local regulations.

7 Handling and storage**. Handling****. Information for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

. Information about protection against explosions and fires:

No special measures required.

. Storage**. Requirements to be met by storerooms and receptacles:**Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep container tightly closed.**. Information about storage in one common storage facility:**

Not required.

. Further information about storage conditions:Store always in containers which correspond to the original container.
Observe the instructions on the label.
Protect from frost.

8 Exposure controls and personal protection**. Additional information about design of technical systems:**

No paritcular measures required.

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(GB)

MATERIAL SAFETY DATA SHEET
according to 91/155 EC

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PRODUCT : Stolit Kratz/Rille

(continued of page 2)

- . **Components with limit values that require monitoring at the workplace:**
 - . **Additional information:**
The lists valid during the making were used as basis.
 - . **Personal protective equipment**
 - . **General protective and hygienic measures**
The usual precautionary measures are to be adhered to when handling chemicals.
Wash hands before breaks and at the end of work.
 - . **Breathing equipment:**
Avoid inhaling dust when rasping. Use a face mask.
 - . **Protection of hands:**
After washing hands replace lost skin oils with oil containing skin creams.
 - . **Eye protection:**
Should much dust or fibre particles be present in the air, use protective eye-wear.
 - . **Body protection:**
All parts of the body should be washed after contact.
-

9 Physical and chemical properties

- . **Form:** Pasty
- . **Colour:** White
- . **Odour:** Weak, characteristic
- . **Change in condition**
- . **Melting point/Melting range:**
Undetermined.
- . **Boiling point/Boiling range:** +- 100 °C
- . **Flash point:** > 100 °C
- . **Self-igniting:**
Product is not selfigniting.
- . **Danger of explosion:**
Product does not present an explosion hazard.
- . **Density:** 1,8000 g/cm3
- . **Solubility in / Miscibility with**
- . **water:**
Soluble.
- . **pH-value:**
at 20 °C 8-9,5

(continued on page 4)

MATERIAL SAFETY DATA SHEET
according to 91/155 EC

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PRODUCT : **Stolit Kratz/Rille**

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* . **Viscosity:**
* . **Dynamic:** at 20 °C 17,00 - 20,00 Pa.s

10 Stability and reactivity

- . **Thermal decomposition / conditions to be avoided:**
Stable under recommended storage and handling conditions (See selection 7).
 - . **Materials to be avoided:**
None, if handled according to order.
 - . **Dangerous products of decomposition:**
No dangerous decomposition products known.
-

11 Toxicological information

- . **Acute toxicity:**
 - . **Primary irritant effect:**
 - . **on the skin:**
No irritant effect.
 - . **on the eye:**
No irritating effect.
 - . **Sensitization:**
No sensitizing effects known.
 - . **Additional toxicological information:**
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
-

12 Ecological information:

- . **Additional ecological information:**
 - . **General notes:**
Material must not be emptied into drains.
Observe item 15 (water pollution class) in the safety data sheet.
-

13 Disposal considerations

- . **Product:**
- . **Recommendation**
Allow left-over plaster or paint to dry or thicken with cementitious binders and dispose with site waste in accordance with local regulations.
Unhardened leftover product should be disposed of under the recommended waste code.
- . **European waste catalogue**

08

- * WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF
- * COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS
- * AND PRINTING INKS

08 01

- * wastes from MFSU and removal of paint and varnish

(continued on page 5)

(GB)

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according to 91/155 EC

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Reviewed on: 21/03/2002

PRODUCT : **Stolit Kratz/Rille**

(continued of page 4)

- * 08 01 12
- * waste paint and varnish other than those mentioned in 08 01 11

. Uncleaned packaging:

. Recommendation:

Empty packaging should be recycled through disposal systems.

14 Transport information

- . Land transport ADR/RID (cross-border)
 - . ADR/RID class: -
 - . Maritime transport IMDG:
 - . IMDG Class: -
 - . Air transport ICAO-TI and IATA-DGR:
 - . ICAO/IATA Class: -
-

15 Regulations

- . **Markings according to EU guidelines:**
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV)
 - . **National regulations**
 - . **Classification according to VbF:**
-
 - . **Water hazard class:**
Water hazard class 1 (#): slightly hazardous for water.
-

16 Other information:

- . The details in this Safety Data Sheet are equivalent to our current knowledge and comply with the national as well as the EC legislation. The working conditions of the user however escape our knowledge and control. The user is responsible for the observance of all necessary legal regulations. The details in this Safety Data Sheet describe the safety requirements of our product and are no guarantee for the product characteristics.
- . **Department issuing MSDS:**
Department VIQR / Sto AG Germany
- . **Contact:**
Sto AG (Germany)
Telephone : (49) 7744 57-1534

CHAPTER THREE

COLOUR REFERENCES

DIRECTORY

Sto Primer	-	White
Sto Primer Grey	-	37107
StoLit K		White
StoLit K Grey		37107

CHAPTER THREE

Directory

Name

Address

Supplier of:

Sto Ltd

Unit 3, Lyon Road
Lynwood Industrial Estate
Paisley
PA3 3BQ

Sto Render Systems

Tel : 01505 324262
Fax : 01505 323618

Walltec offer and provide a full maintenance cleaning and Anti-Graffiti Service on own and others installed EWI / EIFS Systems, render systems and stonework.

This service is offered on a nation wide basis.

For further information contact :

Mr Martin Pickard

Walltec Limited
Unit 1, Cherry Orchard Nursery
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SL3 6DH

Telephone : 01753 540808
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2.46 Yorkshire Building Services

- Mechanical & Electrical

Access Works

Martin Street

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WF17 9PJ

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Contact Mr Phil Callaghan

Refer to separate files