

NEOTEC™

SHUGG™

# Product Manual

## Shugg Vertical Sliding Window Systems

Double Sliding Function

Single Sliding Function



**Super Shugg - Large Double Hung Windows**

**Super Shugg - Large Single Hung Windows**

**Double Glazed**

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# introduction

The Shugg vertical sliding window system is an innovative design solution for specifiers. Its clever sashless design offers unobstructed views and its narrow aluminium and timber profiles complement all architectural styles.

Since 1984 Neotec has prided itself on its response to clients' requests to solve many an opening problem and this technical manual now provides a range of product that can be adapted to many situations.

We are always willing to work directly with specifiers' designs. Sometimes this has been challenging but has also meant that we have developed a depth of knowledge on what is possible in these situations.

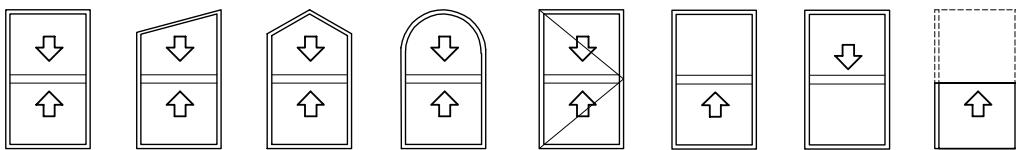
In a residential window the Shugg slider is now readily accepted as an excellent means of providing high and low level ventilation without obstruction to views. That it can be installed into aluminium and timber doors makes it especially useful in the apartment market or as a way of retrospectively solving ventilation problems.

Within the educational sector a greater awareness of student safety has seen the Shugg slider specified when non-projection and ventilation are of prime consideration.

The fact that the window does not slam open or shut in high wind areas is also appreciated. In response to school requests, Neotec has developed a school lock that operates at sill level to allow easy access over wide benches.

Probably the most exciting area of development has been the commercial area where architects and designers are constantly pushing the boundaries and our large balcony sliders have made an impressive impact on the Restaurant and Cafe scene. As well the use of the single slider to provide a variety of opening hatchs in glass, timber, white boards and laminated products.

Neotec enjoys working with architects and designers to enable their visions to become practical realities. Please feel free to contact us when you need advice in design details. Neotechnical Industries is constantly improving its products. Besides this technical manual we have a website ([www.shugg.co.nz](http://www.shugg.co.nz)) where up to date technical details and colour photos of recent projects are available.





## Chapter 1

# Shugg Double Hung Vertical Sliding Windows

### In This Chapter

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**General information**

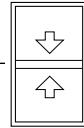
**Product overview**

**Data specification**

**Cross section drawings**

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## General information - Shugg double hung

### Main Features

- Two panes slide with one action.
- Provides high and low level ventilation.
- No projecting sashes.
- No rails to obstruct views.
- Narrow vertical profiles.
- Height from 600 to 3000mm - sizes outside these contact Neotec.
- Width from 400 to 1350mm - sizes outside these contact Neotec.
- Raking, curved or arched heads optional.
- No horizontal rails for unobstructed views.
- Needle bearing pulleys and superbraid cord for reliability and strength.
- Installation into hinged and bi-fold doors provides controlled non-projecting ventilation.
- Windows can be locked open when specified.
- Custom made in a wide range of sizes and shapes.
- Can be installed in tight or unusual spaces.
- Can be fitted retrospectively to solve ventilation problems.

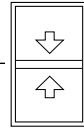
## Product overview - Shugg double hung

### Overview

Shugg double hung vertical sliding windows consist of two panes of glass, of equal size, that are connected by a cord and pulley system. As the bottom pane is raised the top pane lowers an equal distance in one action. The Shugg is an insert that can be installed into any brand of aluminium or timber windows and doors.

Shugg windows have proved to be ideal for the creation of full height windows without horizontal bars to obstruct views. Narrow profiles produce a clean line window that does not project beyond its own plane. This means that the exterior aspect of a building does not change when the Shugg vertical slider is opened. It is ideally suited for areas where a designer requires an unobtrusive ventilating window that is non-projecting. It can be used with confidence in residential, educational and commercial projects.

In an educational environment, the Shugg slider provides a robust window that is easy to use and which does not project into any walk or passageways. It can be easily opened even when reaching over a bench top and does not interfere with blackout curtains. In institutions, Shugg windows are fitted with a lock lift at sill level.



## Data specification - Shugg double hung

### Frame Dimensions

The Shugg vertical sliding window unit has four guides (two each side) screwed onto adaptors (aluminium frame), which are fixed into an outer frame made by others. The overall depth is 42mm and overall width 45mm.

### Frame Types

The Shugg vertical sliding window unit can be installed into all types of aluminium residential and commercial window frames; timber frames both new and existing, aluminium and timber doors, composite frames and internal frames.

### Finish / Colour

Powder coated 50-80 $\mu$ . Standard Duralloy finishes when specified.

Anodised 12 $\mu$ . Silver, bronze or black. Other anodising can be sourced.

All powdercoat brands and finishes can be sourced.

Timber - Cedar, Radiata Pine. Other timbers can be sourced.

### Hardware - Lock Options

Shugg windows are fitted with a standard knob type spring lock with variable lock open positions when nominated.

The alternative push / pull knob type lock is fitted to Shugg windows over 900mm wide (requiring two hands to lift).

Knob type locks are coloured to suit the window frames.

Keyed locks are available in white, black and satin chrome (lock closed position only).

Keyed sill lock is recommended for schools.

### Hardware - Lifter / Handle Options

Acrylic lifter blocks are fitted as standard to all residential installations.

Aluminium continuous lifters with locks are recommended for all commercial and educational installations.

### Pulleys

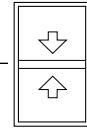
The standard Shugg has two-keyhole type pulleys fitted with a load capacity of 300kg per pulley.

### Cord

The Shugg window uses a 3mm superbraid, which has a high performance polyethylene core with a polyester outer sheath. The cord has a breaking strain of 350kg.

### Fixed Base Pane

As an option, a fixed base pane of glass, generally 125mm high, can be installed when windows go down to the floor level. The pane sits on the sill in front of the bottom pane, and means that sand, leaves and small animals do not come through the bottom opening while still allowing ventilation at the top. This makes it ideal for classrooms to control airflows away from the desktop on windy days.



### Protecting a level - Swimming pools

When Shugg windows are protecting a level or access to a swimming pool, they should be installed with a 150mm base pane and a keyed lock installed 250mm over the top edge of the bottom pane of glass or 1500mm from the floor when in the closed position. This will restrict the bottom opening to 100mm while allowing 250mm of ventilation at the top.

### Glazing

Glass for Shugg vertical sliding windows shall have all exposed horizontal edges polished. All glazing shall be in accordance with the current New Zealand standard. Single glazing of between 5mm - 7mm can be fitted to residential aluminium joinery. 6mm is the standard thickness. Units with 8mm-10mm glass or board products up to 18mm may be used in timber or shopfront frames. Sandblasted or specialist glass may be specified.

**Please note:** A draft document affecting NZS 4223: Glazing in Buildings: Part 3. Human Impact Requirements is currently in circulation and is likely to be adopted in late 1998. Designers should be aware that this draft will cover the glazing of Shugg vertical sliding windows and states the following:

### Clause 321 Two Edge Unframed Windows

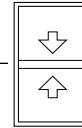
Two edge unframed windows in doors, side panels, low level and window seat glazing, for bathrooms, shopfronts, stairwells or when protecting a difference in level, shall be glazed in Grade A Safety Glazing Material to meet the requirements of table 3.3, column 2. All other two edge unframed operable windows shall meet the wind load requirements of Part 1.

### Clause 303.10 Schools and early childhood centres

In primary and secondary schools and early childhood centres, all glazing with a sill level less than 800mm above the floor level, ground level or verandah deck level shall be Grade A Safety Glazing Material in accordance with table 3.1 or 3.4. Glazing above 1500mm from the floor shall meet the requirements of this part.

### Testing

The Shugg vertical sliding window has a durability guarantee of fifteen years in accordance with the NZBC clause B2 Durability and in particular for Performance B2.3(c) and for five years as outlined in B1.3(d).



### Product Testing

- The Shugg vertical sliding window has been laboratory tested by the Architectural Profiles Testing laboratory - 2001. Testing certificate.
- The Shugg vertical sliding window has been laboratory tested by:
- Altherm Window Testing Laboratory, (registered by Testing Laboratory Registration of New Zealand) Test Certificate no. 1042.
- Dowell Australis Pty Ltd (registered by the National Association of Testing Authorities Australia) - Test Certificate no. 153.
- BRANZ Test report MTR 883/MTR868 -Report on the tensile adhesion strength of bonded rigid PVC to glass.
- BRANZ Test report MTR885/MTR867/MTR875 - Report of the adhesion strength of bonded rigid plastic to glass after heat ageing.
- BRANZ Test report MTC889 - Report on the shear tensile strength of Acrylic block to glass.
- Connecting cords - 3mm BSk000B super braid is a high performance polyethylene core with a polyester outer sheath. Our supplier (Kinnears Ropes) has carried out accelerated wear tests that show no visible wear after forty years.

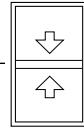
Copies of all testing results are available on request.

### Sizes

Shugg windows are custom made to 3000mm high and 1350mm wide.

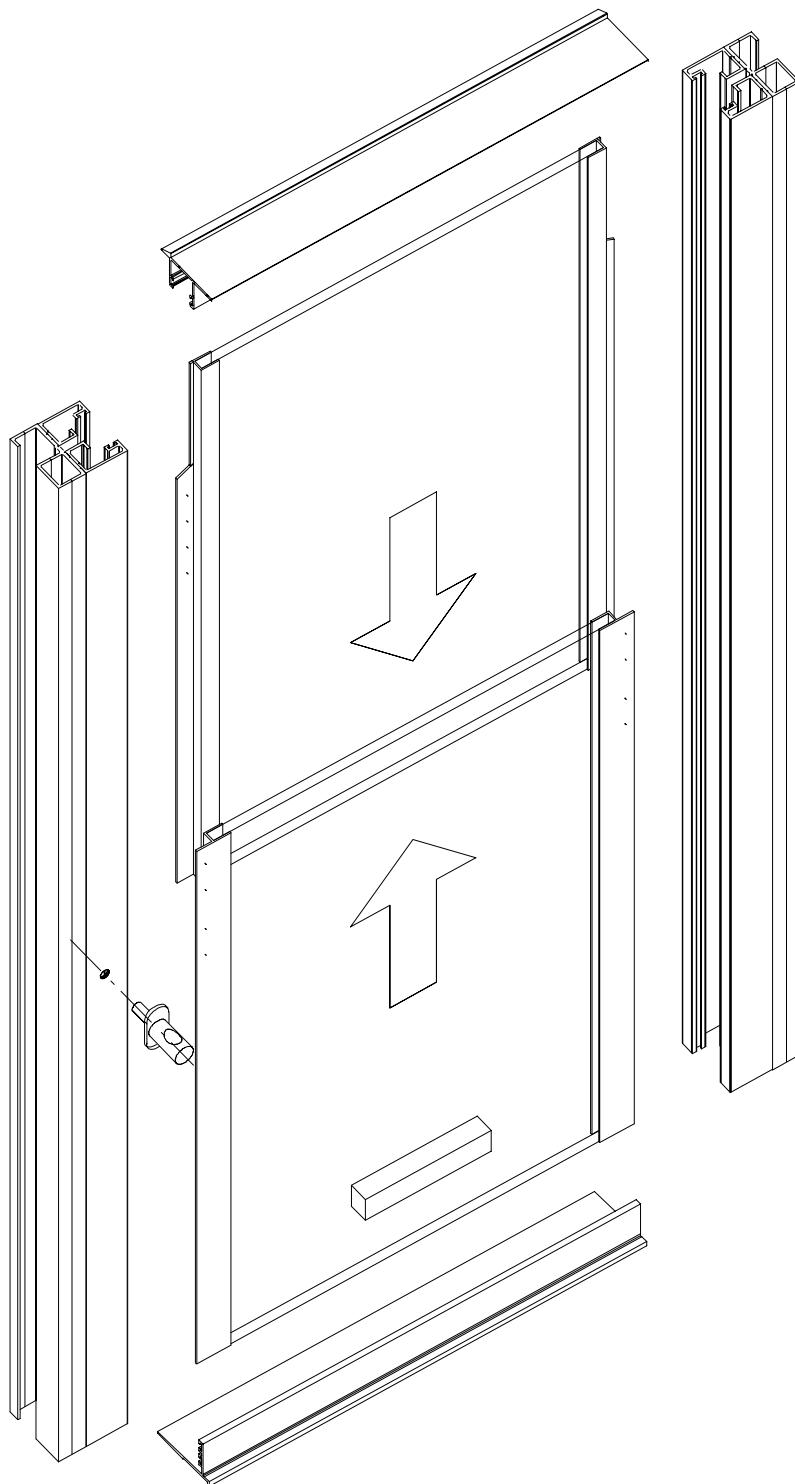
Minimum frame sizes are 600mm high and 400mm wide.

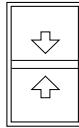
See Technical drawings for frame requirements. For sizes outside these guidelines contact Neotechnical Industries.



# Cross section drawings - Shugg double hung

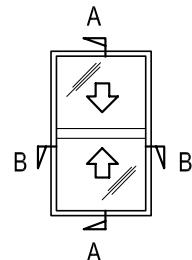
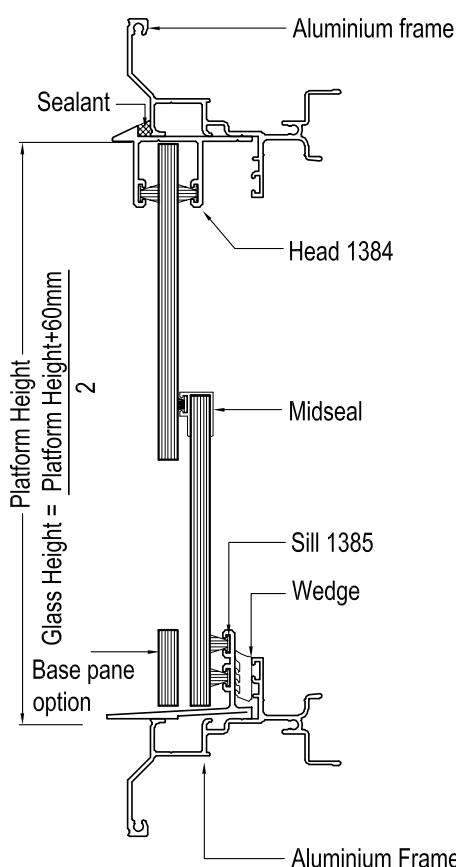
Perspective drawing of Shugg double hung - DH1000





## Residential aluminium window frame - DH1001

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### Features

- Two panes move within their own plane
- Provides top and bottom opening ventilation
- Narrow aluminium vertical profiles
- Fits all brands of aluminium joinery
- Can be retrofitted to solve ventilation problems
- Removable midseal closes off winter draughts
- Lock open position for secure ventilation
- Base pane option

### Specifications

- Curved or raking heads can be designed
- Frame height from 600mm to 3000mm
- Frame width from 370mm to 1350mm
- Annealed, laminated or toughened glass
- Non standard sizes available

### SECTION A-A

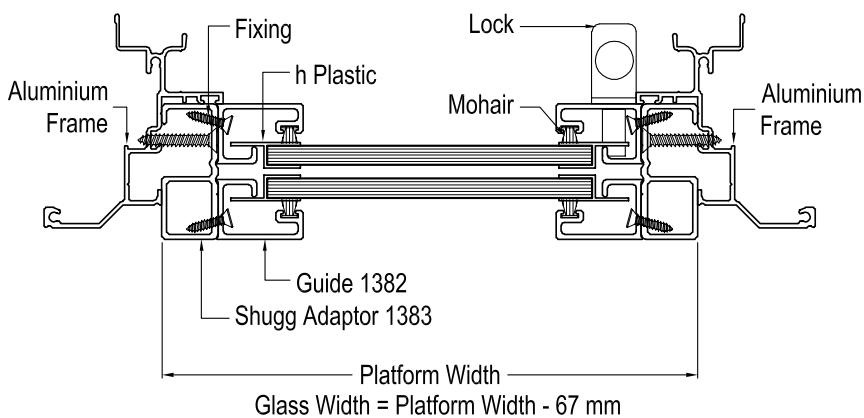
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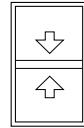
### Aluminium

All aluminium finishes available

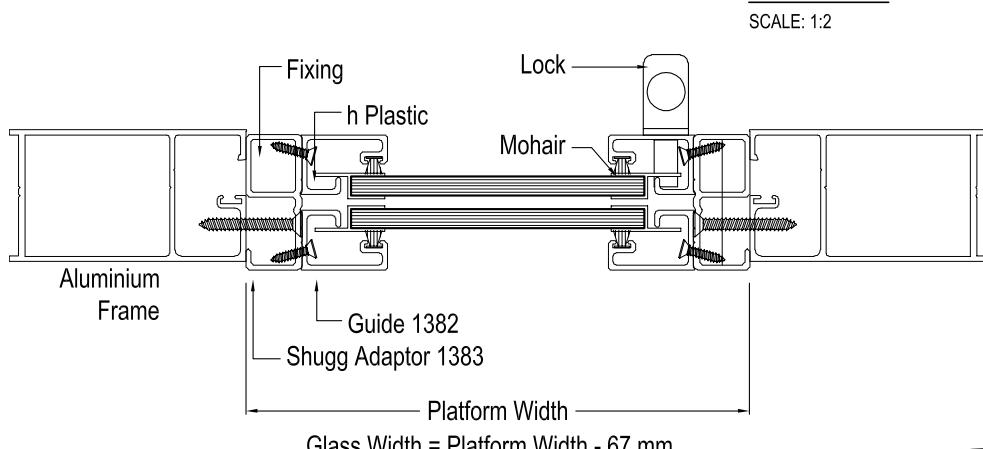
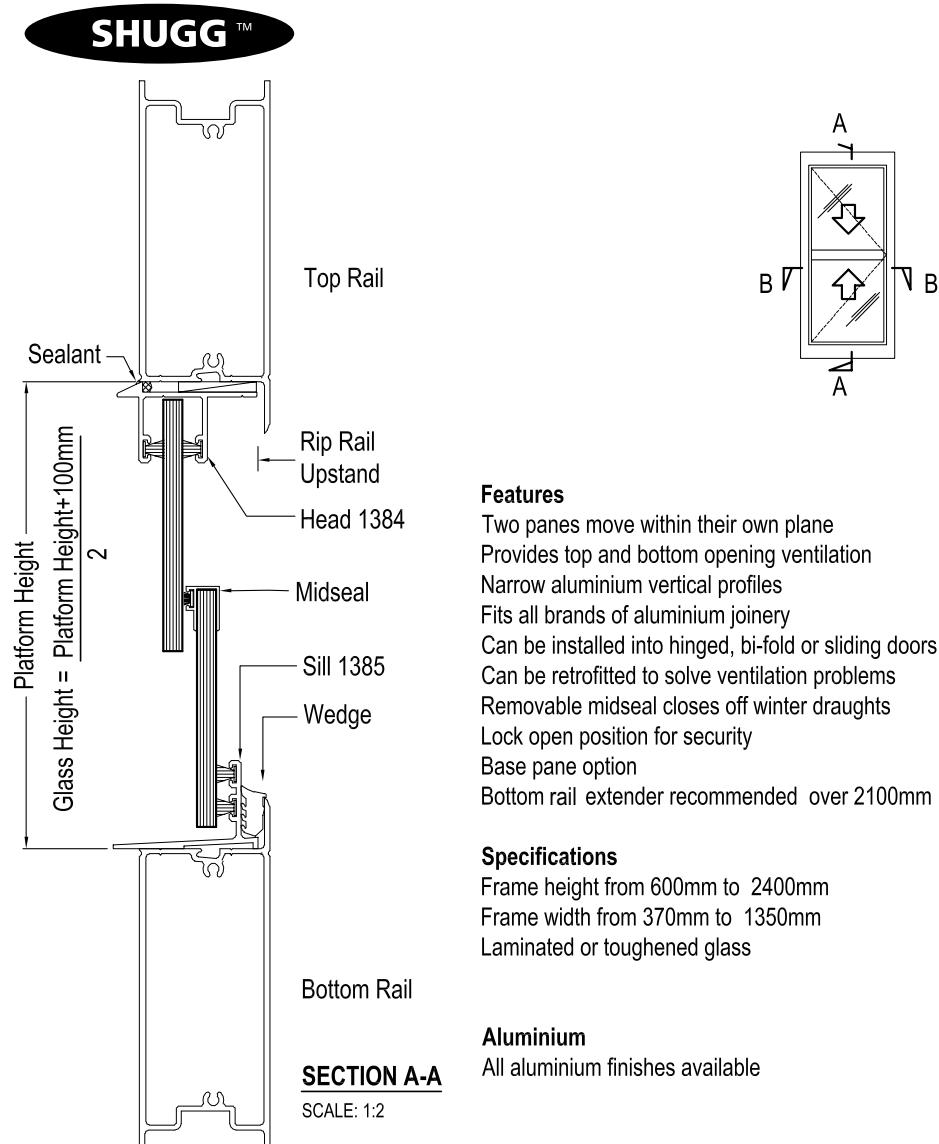
### SECTION B-B

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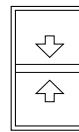




## Residential aluminium door frame - DH1002

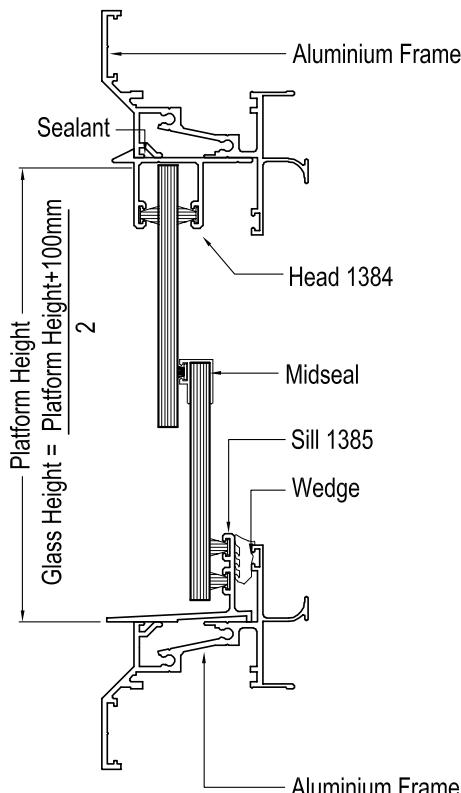


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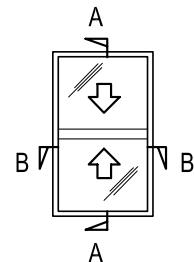
## Residential aluminium window frame - DH1003

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**SECTION A-A**

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### Features

- Two panes move within their own plane
- Provides top and bottom opening ventilation
- Narrow aluminium vertical profiles
- Fits all brands of aluminium joinery
- Can be retrofitted to solve ventilation problems
- Removable midseal closes off winter draughts
- Lock open position for secure ventilation
- Base pane option

### Specifications

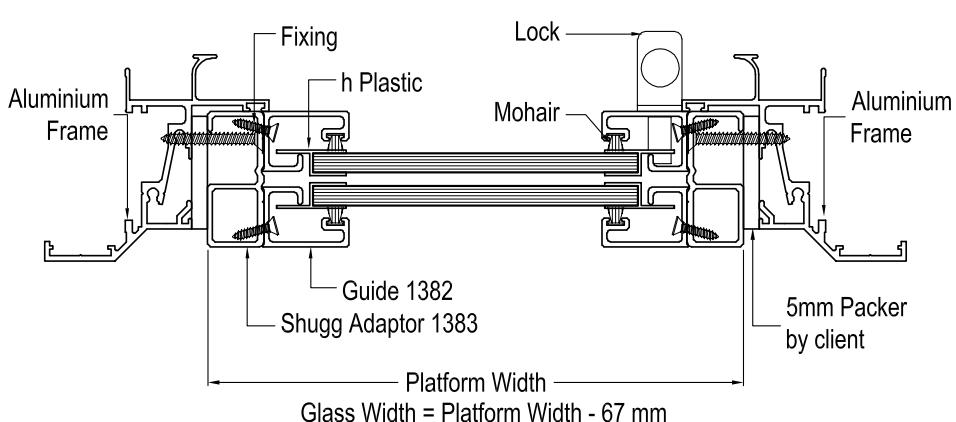
- Curved or raking heads can be designed
- Frame height from 600mm to 3000mm
- Frame width from 390mm to 1350mm
- Annealed, laminated or toughened glass
- Non standard sizes available

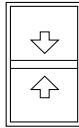
### Aluminium

All aluminium finishes available

**SECTION B-B**

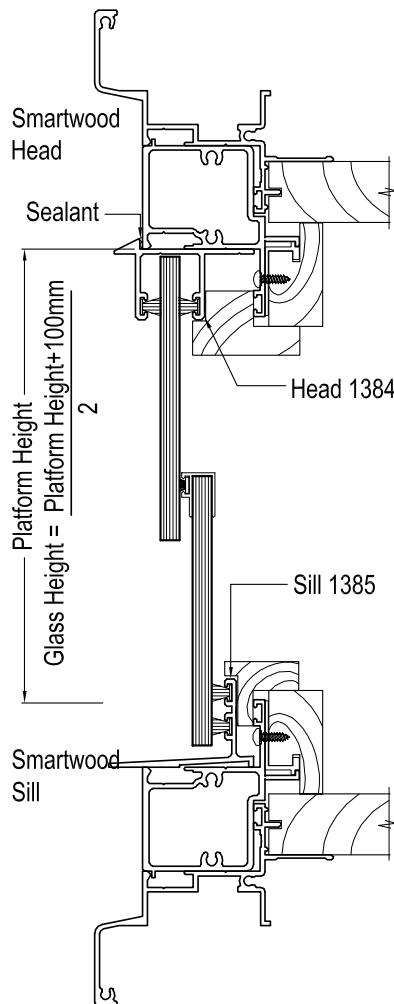
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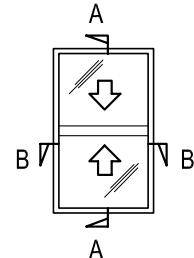
## Smartwood aluminium window frame with composite alum/timber guides - DH1004

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**SECTION A-A**

SCALE: 1:2



### Features

- Two panes move within their own plane
- Provides top and bottom opening ventilation
- Narrow aluminium vertical profiles
- Removable midseal closes off winter draughts
- Lock open position for secure ventilation
- Base pane option

### Specifications

- Curved or raking heads can be designed
- Frame height from 600mm to 3000mm
- Frame width from 390mm to 1350mm
- Annealed, laminated or toughened glass
- Non standard sizes available

### Aluminium

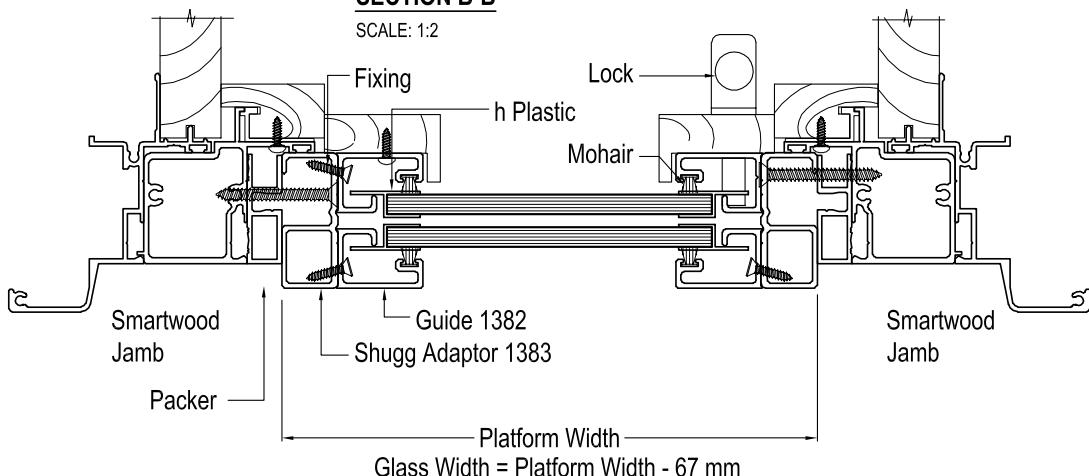
All aluminium finishes available

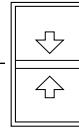
### Timber

Any available species

**SECTION B-B**

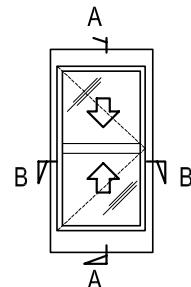
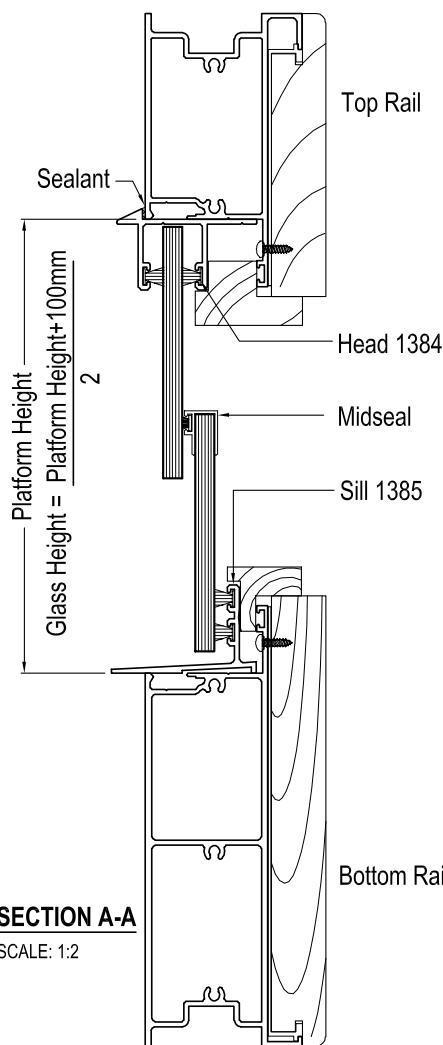
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## Smartwood aluminium door frame with composite alum/timber guides - DH1005

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### Features

- Two panes move within their own plane
- Provide top and bottom opening ventilation
- Narrow aluminium vertical profiles
- Can be installed into hinged, bifold or sliding doors
- Removable midseal closes off winter draughts
- Lock open position for secure ventilation
- Base pane option

### Specifications

- Frame height from 600mm to 3000mm
- Frame width from 390mm to 1350mm
- Laminated or toughened glass
- Non standard sizes are available

### Aluminium

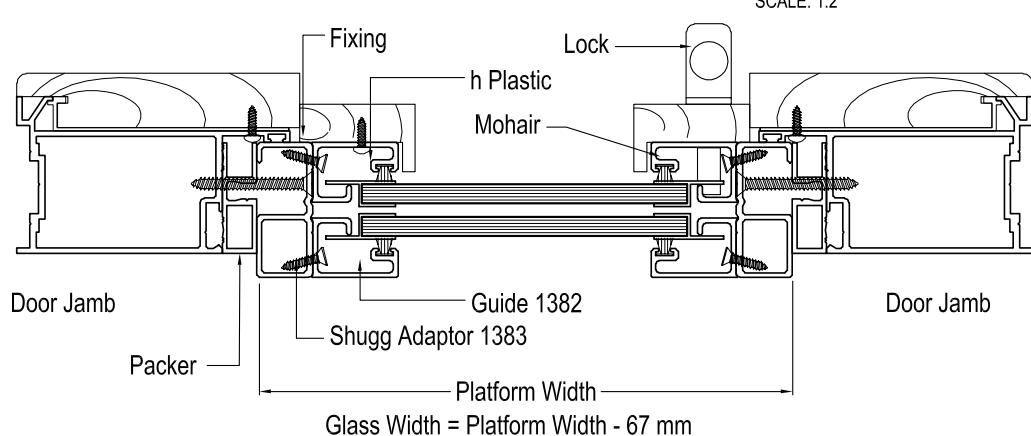
All aluminium finishes available

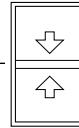
### Timber

Any available species

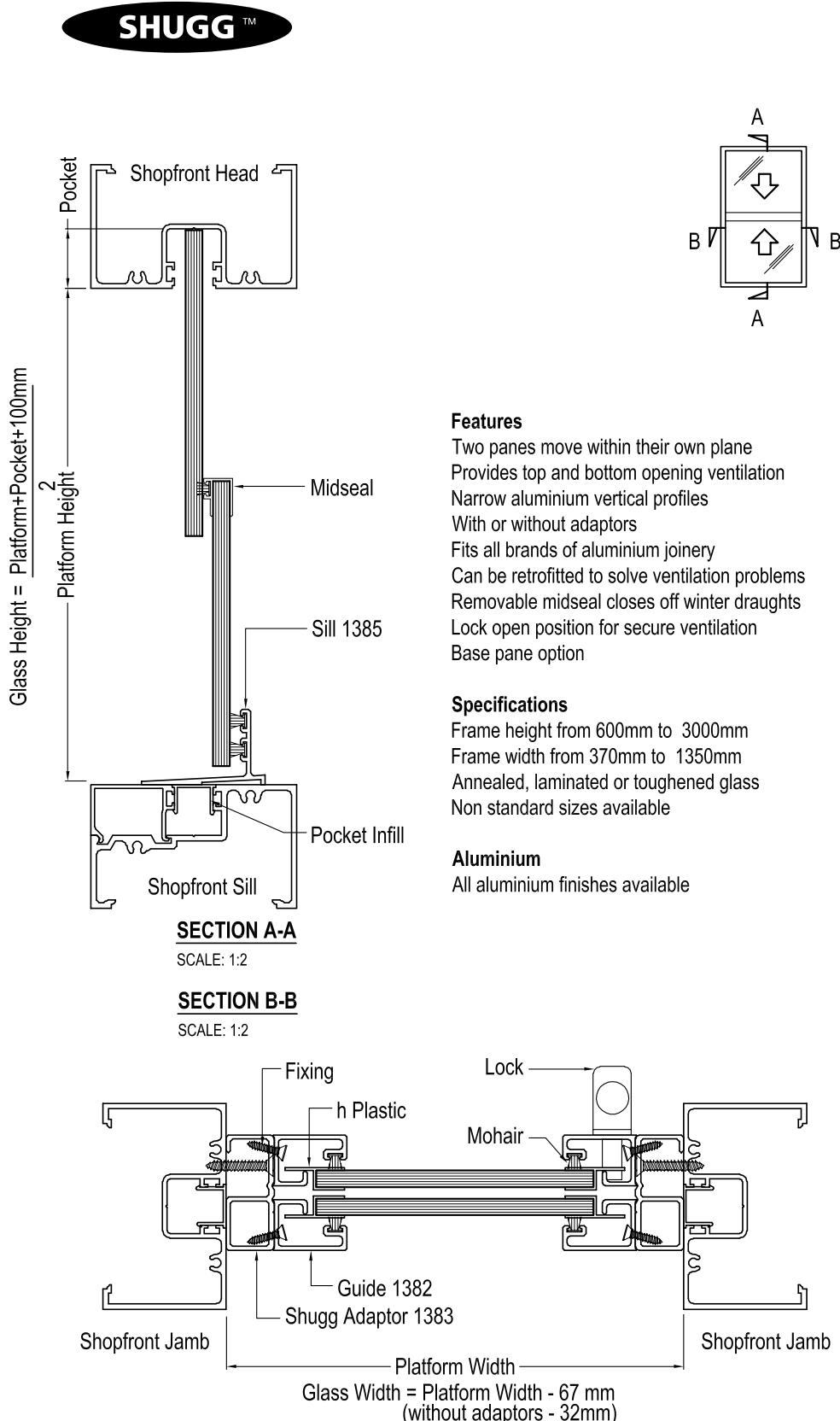
### SECTION B-B

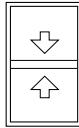
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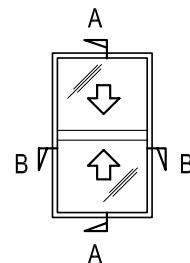
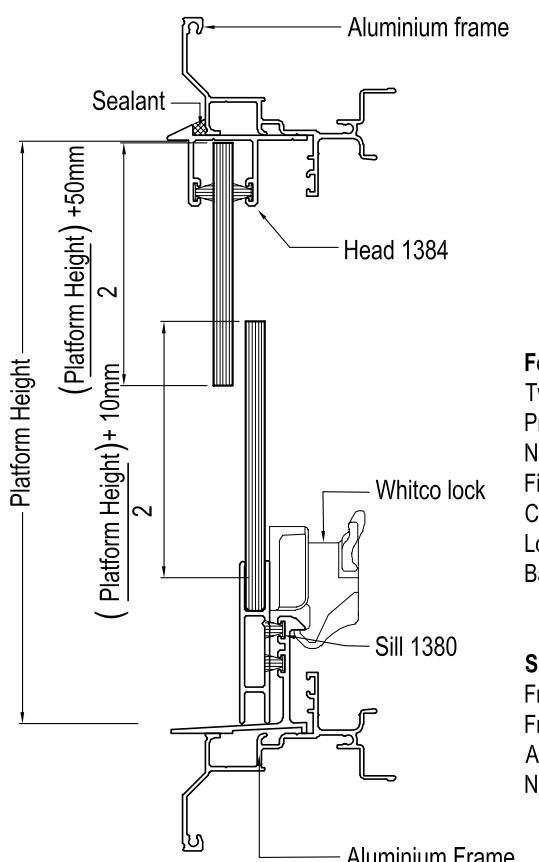
## Aluminium shopfront - DH1006





## Installed into a typical school aluminium window frame - DH1007

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### Features

- Two panes move within their own plane
- Provides top and bottom opening ventilation
- Narrow aluminium vertical profiles
- Fits all brands of aluminium joinery
- Can be retrofitted to solve ventilation problems
- Locks automatically when closed at sill level
- Base pane option

### Specifications

- Frame height from 600mm to 1500mm
- Frame width from 370mm to 800mm
- Annealed, laminated or toughened glass
- Non standard sizes available

### Aluminium

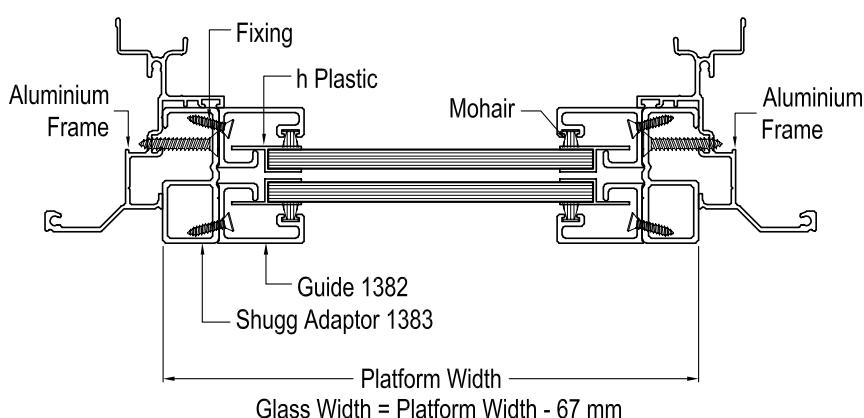
All aluminium finishes available

#### SECTION A-A

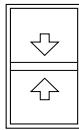
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#### SECTION B-B

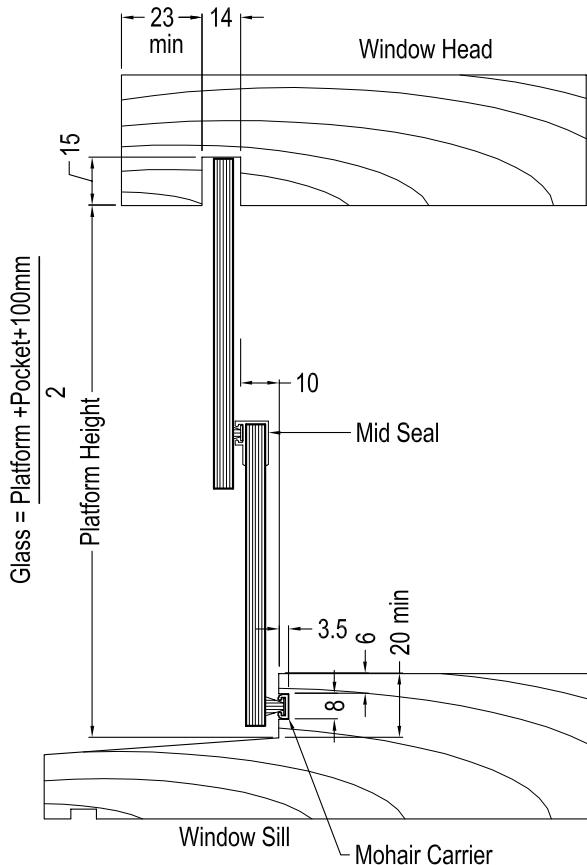
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## Timber window frame with timber guides - DH1008



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### SECTION A-A

SCALE: 1:2

### Features

- Two panes move within their own plane
- Provides top and bottom opening ventilation
- Narrow vertical profiles
- Can be retrofitted to solve ventilation problems
- Removable midseal closes off winter draughts
- Lock open position for secure ventilation
- Base pane option

### Specifications

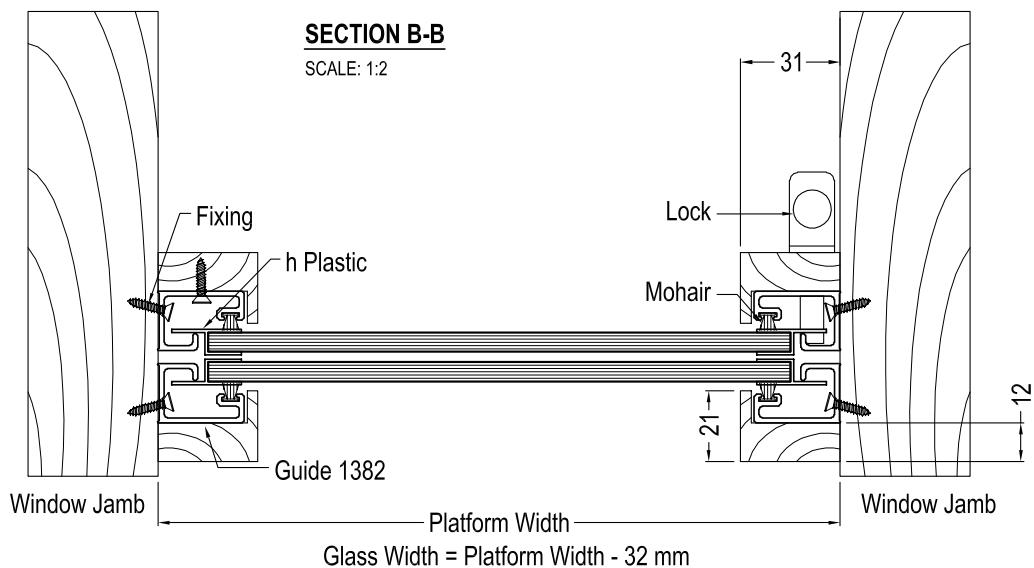
- Curved or raking heads can be designed
- Frame height from 600mm to 3000mm
- Frame width from 350mm to 1350mm
- Annealed, laminated or toughened glass
- Non standard sizes available

### Timber

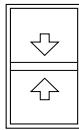
Any available species

### SECTION B-B

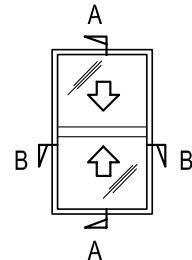
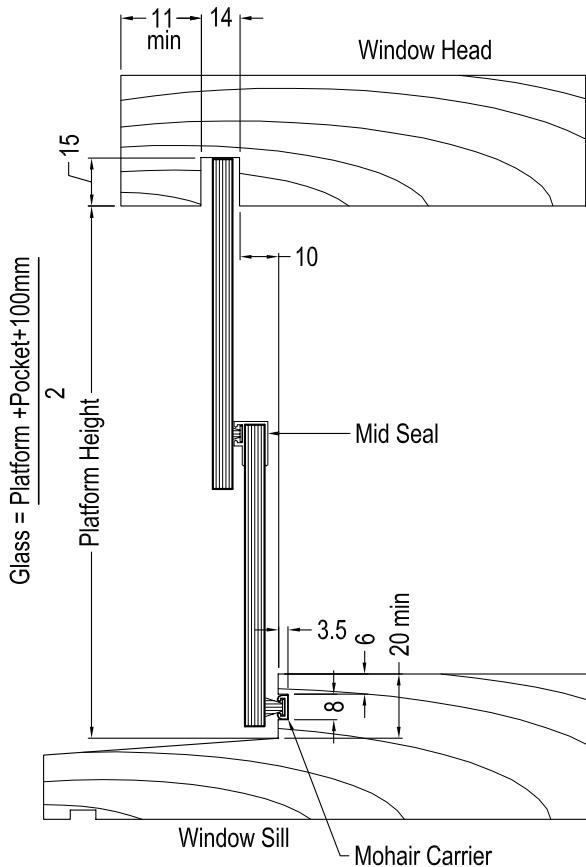
SCALE: 1:2



# Timber window frame with aluminium guides - DH1009



**SHUGG™**



## Features

- Two panes move within their own plane
- Provides top and bottom opening ventilation
- Narrow aluminium vertical profiles
- Can be retrofitted to solve ventilation problems
- Removable midseal closes off winter draughts
- Lock open position for secure ventilation
- Base pane option

## Specifications

- Curved or raking heads can be designed
- Frame height from 600mm to 3000mm
- Frame width from 350mm to 1350mm
- Annealed, laminated or toughened glass
- Non standard sizes available

## Timber

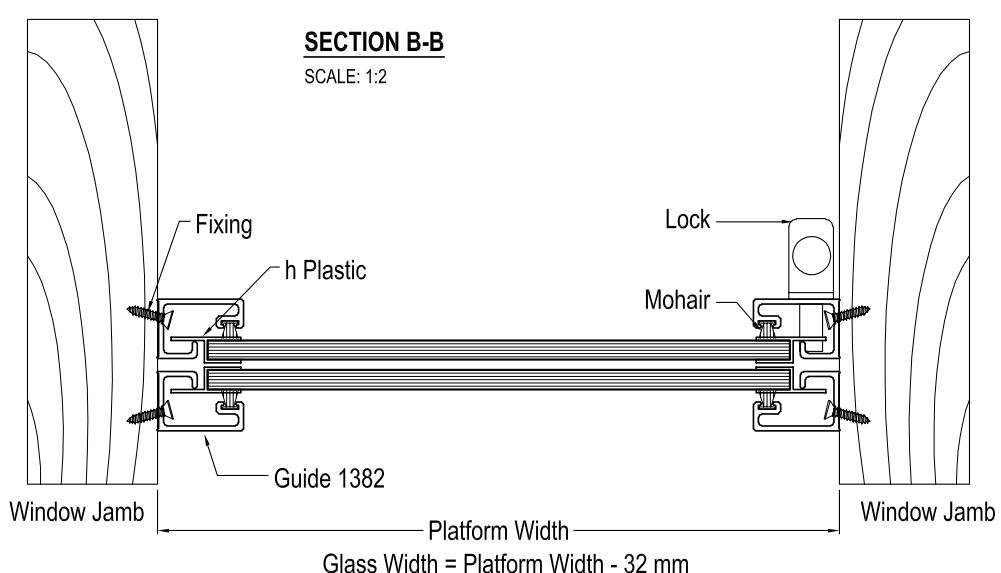
Any available species

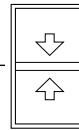
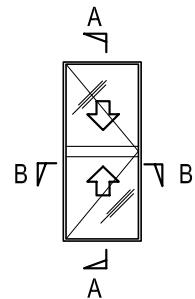
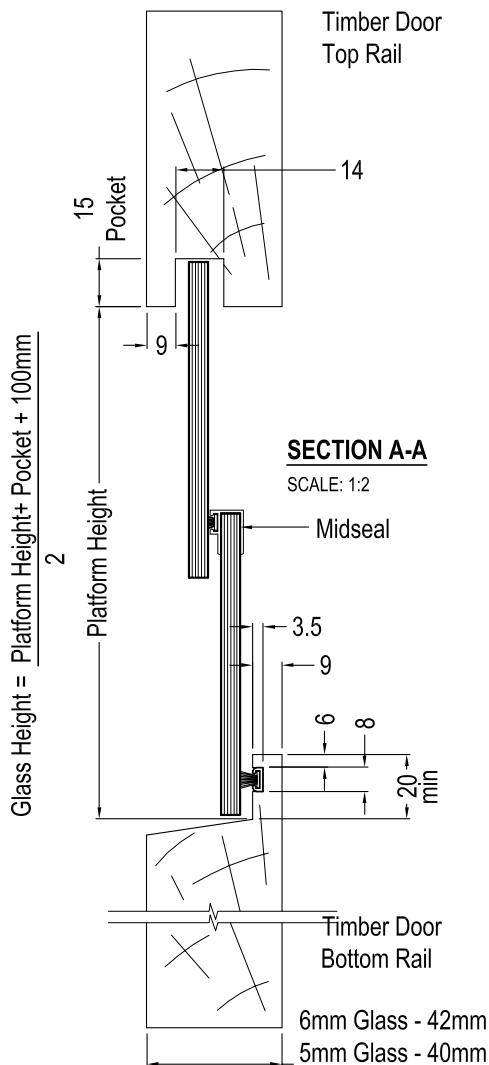
### SECTION A-A

SCALE: 1:2

### SECTION B-B

SCALE: 1:2



**Timber door frame with aluminium guides - DH1010****SHUGG™****Features**

Two panes move within their own plane  
Provides top and bottom opening ventilation  
Narrow aluminium vertical profiles  
Can be installed into hinged, bifold or sliding door  
Can be retrofitted to solve ventilation problems  
Removable midseal closes off winter draughts  
Lock open position for secure ventilation  
Base pane option

**Specifications**

Curved or raking heads can be designed  
Frame height from 600mm to 2600mm  
Frame width from 350mm to 1200mm  
Laminated or toughened glass  
Non standard sizes available

**Aluminium**

All aluminium finishes available



## Chapter 2

# Shugg Single Hung Vertical Sliding Windows

### In This Chapter

---

**General information**

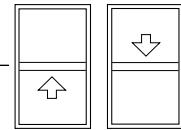
**Product overview**

**Data specification**

**Cross section drawings**

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**NEOTEC™**



## General information - Shugg single hung

### Main Features

A vertical sliding window that has one pane fixed (generally the top) and one sliding. Wide range of glass options and widths are available. Guides are attached to a box section; larger box sections are available for wider windows. Lead weights counter balance the glass. No horizontal rails. In internal slider the bench top is free of tracks. Cavity slider option - single pane or panel slides into cavity wall. Roller bearing pulley and super braid cord for reliability and strength. Window can be locked open when specified. Custom made in a wide range of sizes.

## Product overview - Shugg single hung

### Overview

In this installation one pane of glass is fixed and the other pane moves up or down to give an approximate 50% opening. In most installations the top pane is fixed and the lower slides up for a ticket box, servery or pass through hatch. The pane of glass is counter-balanced by lead weights enclosed in aluminium box sections.

The single slider can also be installed with the top pane sliding down. This may be used when protecting a difference in level or as a cafe style window. Note that in this situation the user must reach to the top of the window to open it.

Further design options include larger box sections to move larger weights of glass, combinations of fixed top and bottom and moving middle panes or cavity sliders.

Designers are invited to contact Neotechnical Industries to discuss their requirements.

## Data specification - Shugg single hung

### Frame Dimensions

The standard Shugg single hung slider unit has four guides (two each side) screwed onto box section extrusions, which are fixed into an outer frame made by others. The box sections can be concealed.

The Shugg cavity slider has four guides (two each side) twice as long as the opening required screwed onto box section extrusions, which are fixed onto an outer frame supplied by others. The guides and box sections can be concealed. Designers to confirm frame details at early design stage.

### Frame Types

The Shugg single hung and Cavity slider can be installed into all types of aluminium and timber frames. Contact should be made with Neotechnical Industries Ltd (Shugg manufacturers) in the early design stage when detailing for oversize or cavity sliders.

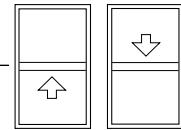
### Finish / Colour

Powder coated 50-80 $\mu$ . Standard. Duratec or Synthatec finishes when specified

Anodised 12 $\mu$ . Silver, bronze or black. Other anodising can be sourced.

All powdercoat brands and finishes can be sourced.

Timber - Cedar, Rimu, Radiata Pine. Other timbers can be sourced.



### **Hardware - Lock Options**

Shugg windows are fitted with a standard knob type

The alternative push / pull knob type lock is fitted to Shugg windows over 1000mm wide (requiring two hands to lift).

Knob type locks are coloured to suit the window frames.

Keyed locks are available in white, black and satin chrome (lock closed position only).

### **Hardware - Lifter / Handle Options**

Acrylic lifter blocks are fitted as standard to all residential installations.

Aluminium continuous lifters are recommended for all commercial and education installations. - Up to 6.38mm glass only.

### **Pulleys**

The Shugg single slider has two bearing type pulleys fitted with a load capacity of 300kg per pulley.

### **Cord**

The Shugg window uses a 3mm superbraid, which has a high performance polyethylene core with a polyester outer sheath. The cord has a breaking strain of 350kg.

### **Glazing**

Glass for Shugg Vertical sliding windows shall have all exposed horizontal edges polished. All glazing shall be in accordance with the current New Zealand standard. Single glazing of between 5mm - 6.38mm can be fitted. 6mm is the standard thickness in residential frames. Glass up to 8mm or board products up to 18mm may be used in shopfront or timber frames.

Sandblasted or obscure glass can be used for privacy.

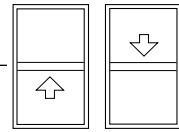
NB. A draft document affecting NZS 4223: Glazing in Buildings: Part 3. Human Impact Requirements is currently in circulation and is likely to be adopted in late 1998. Designers should be aware that this draft will cover the glazing of Shugg vertical sliding windows and states the following:

### **Clause 321 - Two Edge Unframed Windows**

Two edge unframed windows in doors, side panels, low level, window seat glazing, bathrooms, shopfronts, stairwells or when protecting a difference in level, shall be glazed in Grade A Safety Glazing Material to meet the requirements of table 3.3, column 2. All other two edge unframed operable windows shall meet the wind load requirements of Part 1.

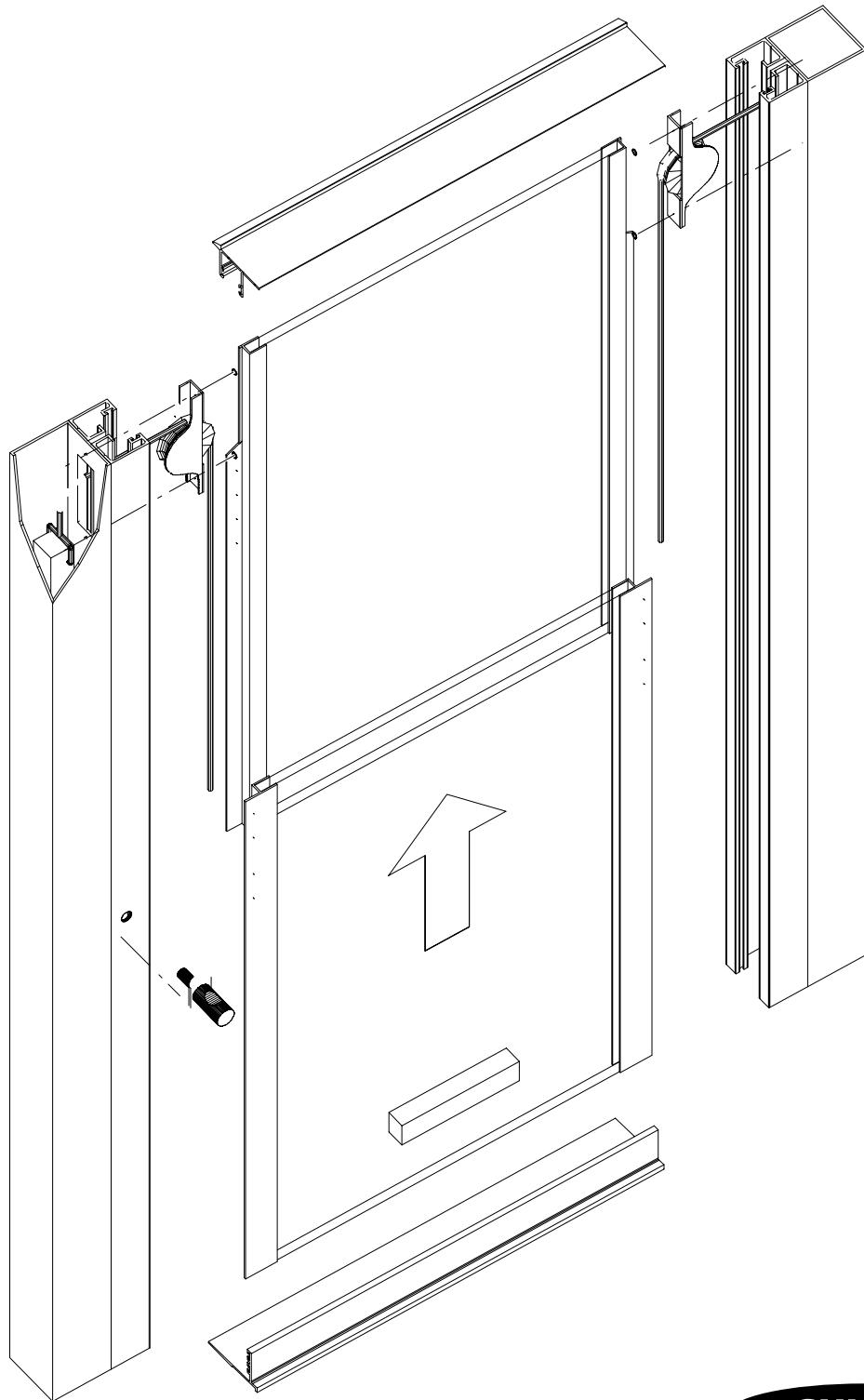
### **Sizes**

Shugg windows are custom made to a maximum 3000mm high and 1350mm wide. Minimum sizes are 600mm high and 400mm wide. Sizes outside this are possible but require discussion with Neotechnical Industries Ltd at the design stage.

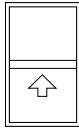


# Cross section drawings - Shugg single hung

## Perspective drawing of Shugg single hung - SH1000

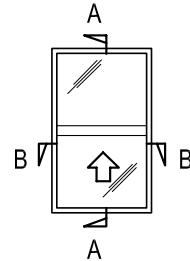
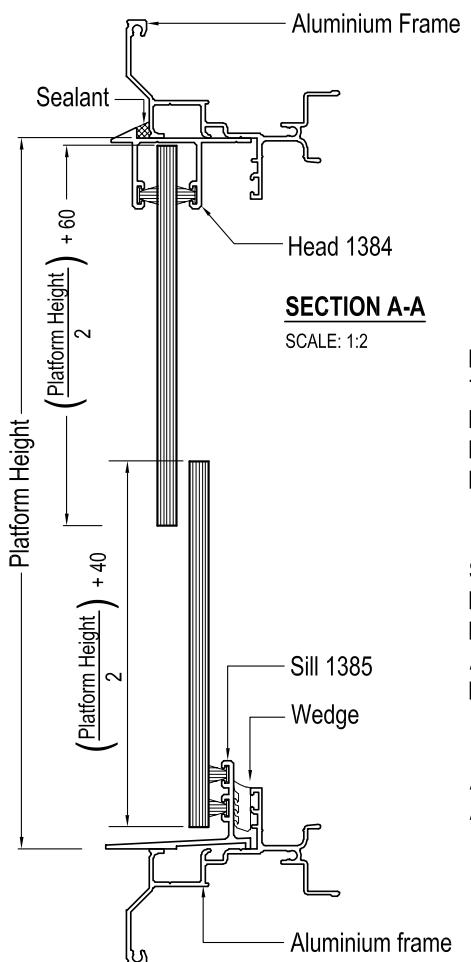


**SHUGG**™



## Residential aluminium window frame - SH1001

**SHUGG™**



### Features

Top pane fixed, bottom pane slides up  
Ideal for reception areas or serveries  
Fits all brand of aluminium joinery including Shopfronts  
Removable midseal closes off winter draughts

### Specifications

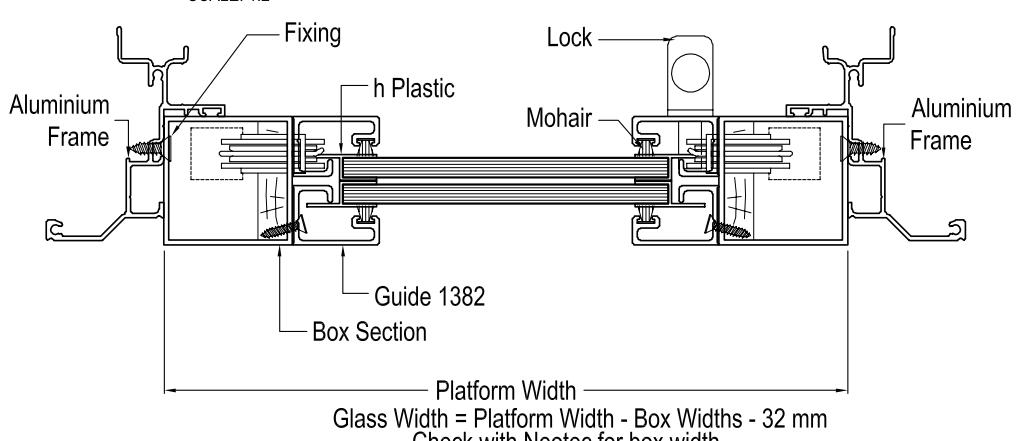
Frame height from 600mm to 3000mm  
Frame width from 400mm to 1350mm  
Annealed, toughened or laminated glass  
Non standard sizes available

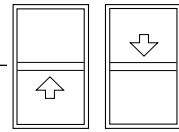
### Aluminium

All aluminium finishes available

### SECTION B-B

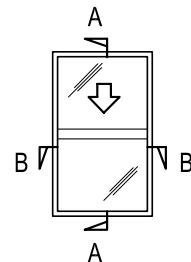
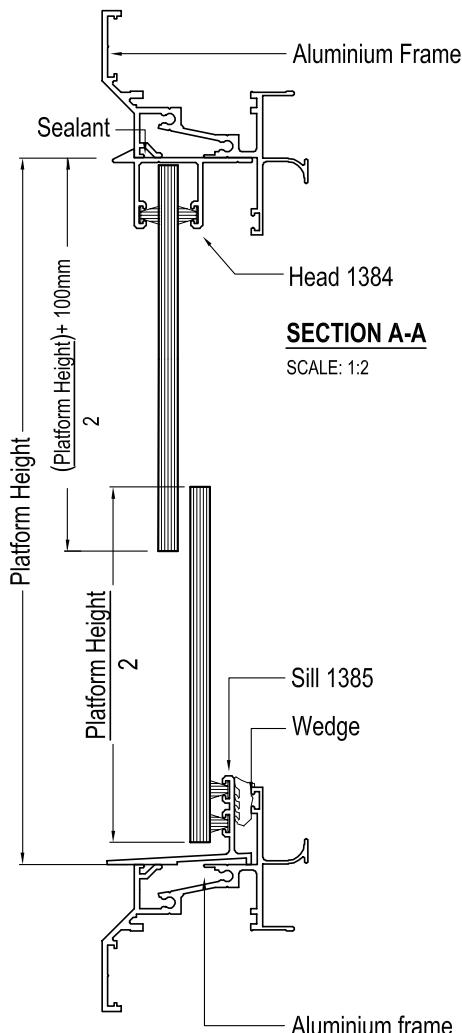
SCALE: 1:2





## 40mm commercial aluminium window frame - SH1002

**SHUGG™**



### Features

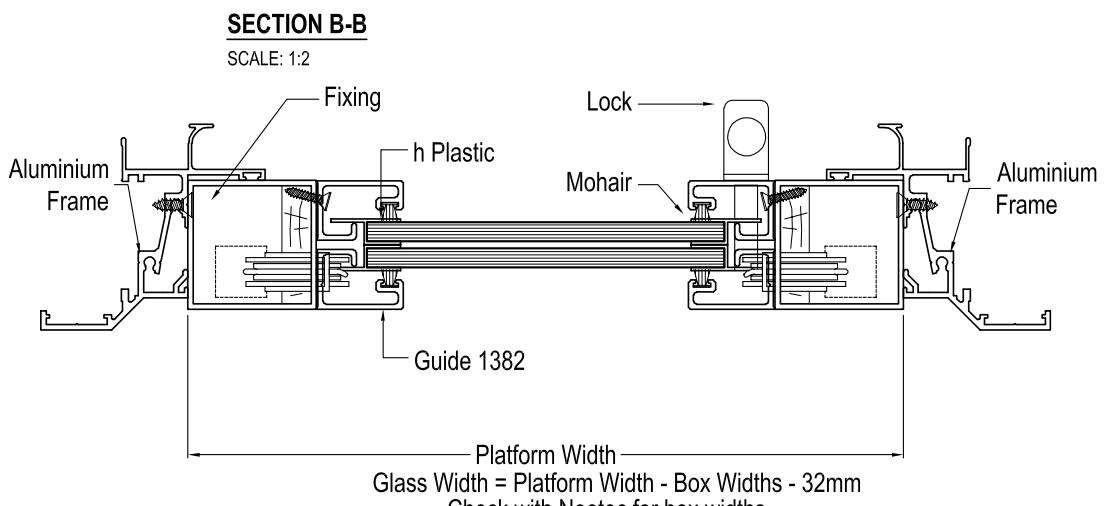
- Bottom pane fixed top slides down
- Used as a balcony window
- Protecting a drop
- Swimming pool restriction
- Fits all brands of aluminium joinery
- Removable midseal closes off winter draughts

### Specifications

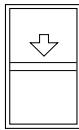
- Frame height from 600mm to 3000mm
- Wand available for opening tall windows
- Frame width from 400mm to 1600mm
- Toughened glass
- Non standard sizes available

### Aluminium

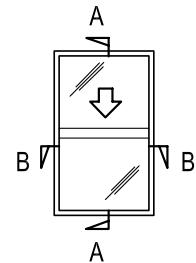
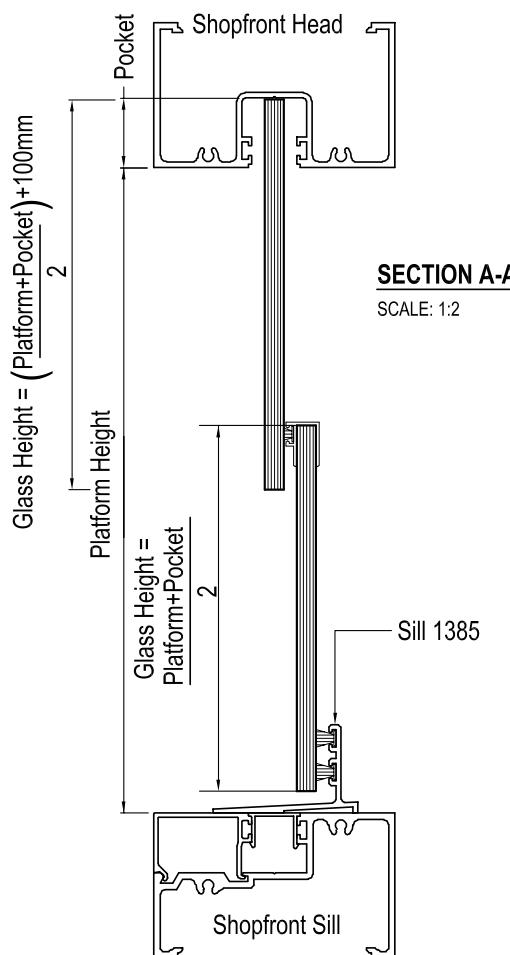
All aluminium finishes available



## Aluminium shopfront - top slides down - SH1003



**SHUGG™**



### Features

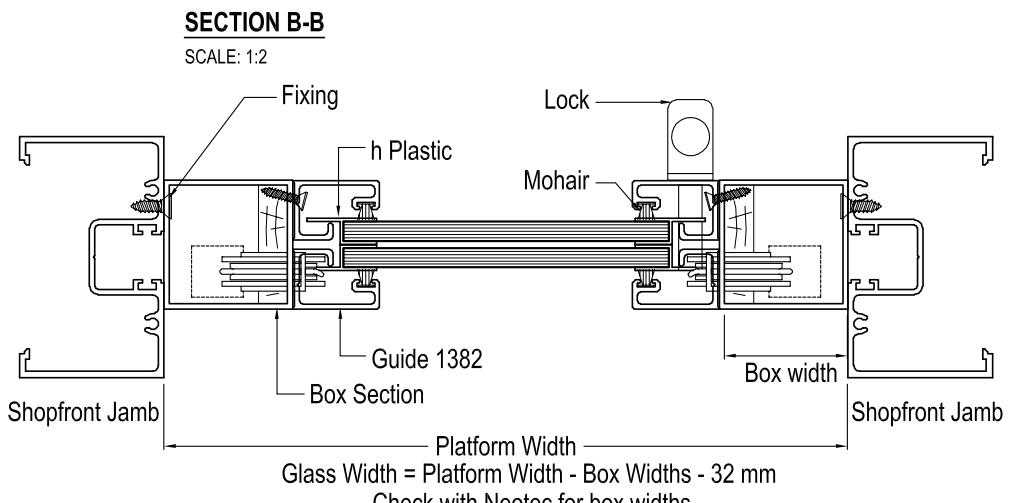
- Bottom pane fixed, Top pane slides down
- Used as balcony window
- Protection from falling
- Swimming pool restriction
- Fits all brand of aluminium joinery
- Removable midseal closes off winter draughts

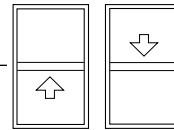
### Specifications

- Wand available for opening tall windows
- Frame height from 600mm to 3000mm
- Frame width from 400mm to 1350mm
- Toughened or laminate glass

### Aluminium

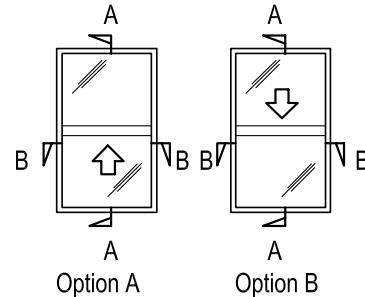
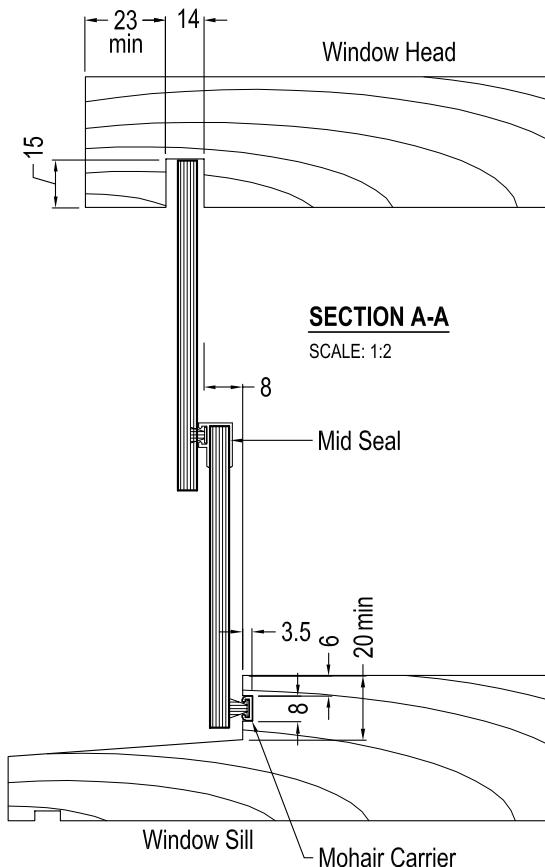
All aluminium finishes available





## Timber window frame with timber guides - SH1004

**SHUGG™**



### Features

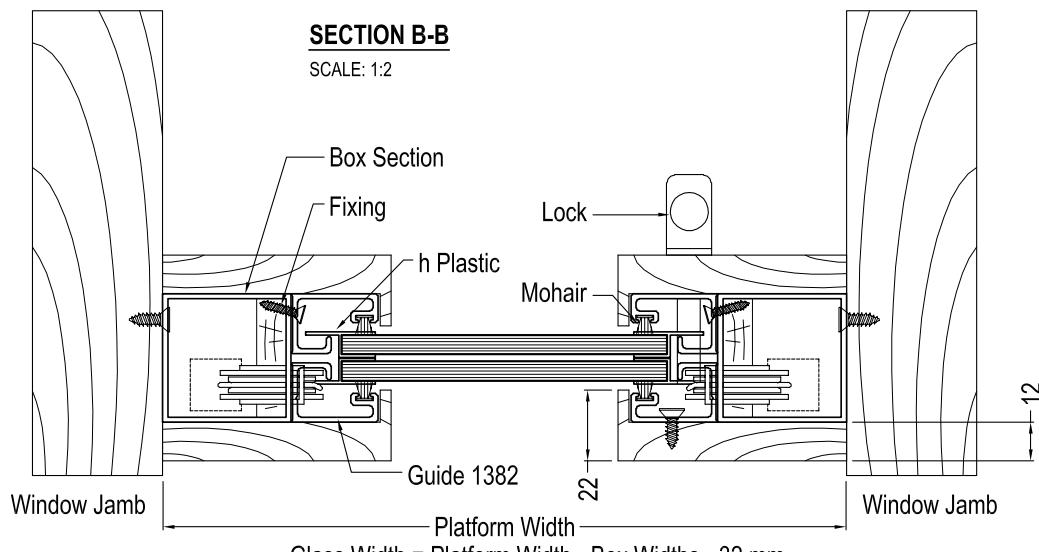
- One pane only moves within its own plane
- Available as top or bottom slider
- Provide top or bottom opening ventilation
- Can be retrofitted to solve ventilation problems
- Removable midseal closes off winter draughts
- Suitable for balcony windows - option B

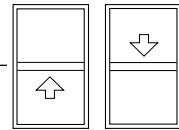
### Specifications

- Curved or raking heads can be designed
- Frame height from 600mm to 3000mm
- Frame width from 600mm to 1350mm
- Annealed, laminated or toughened glass

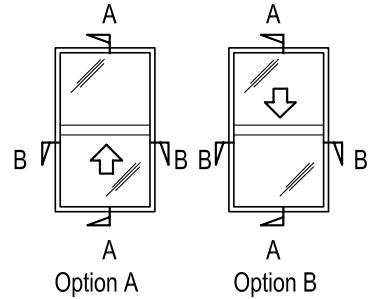
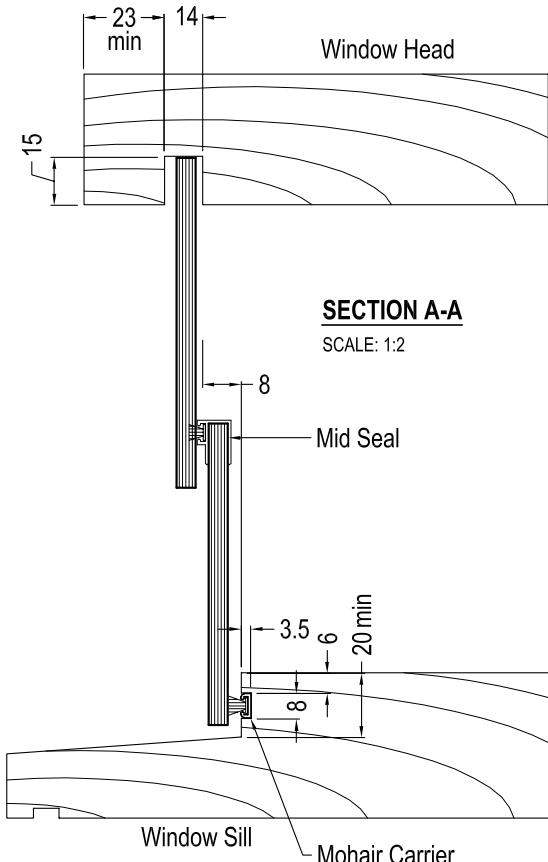
### Timber

Any available species





## Timber frame with aluminium guides - SH1005

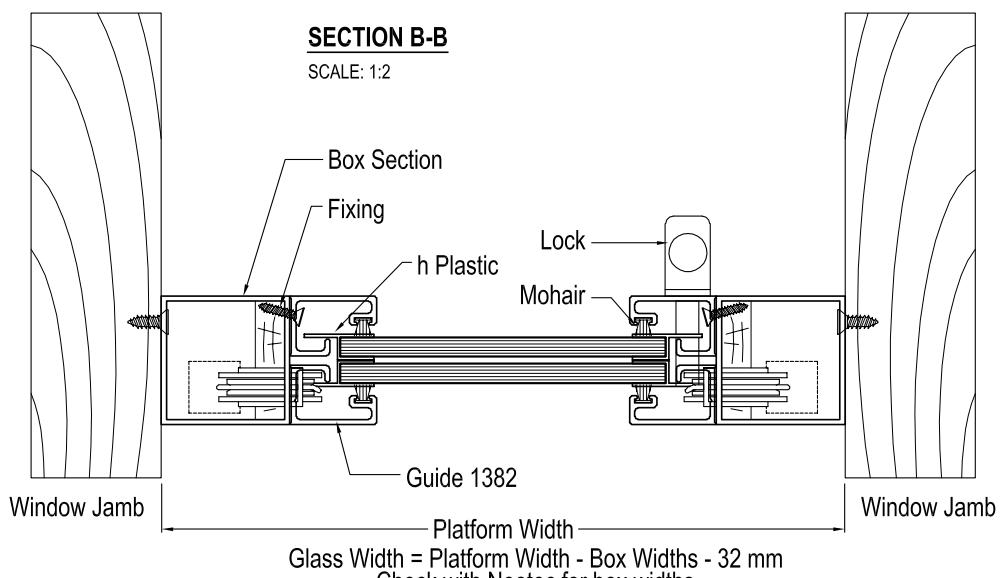


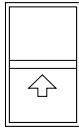
### Features

One pane only moves within its own plane  
Available as top or bottom slider  
Provide top or bottom opening ventilation  
Can be retrofitted to solve ventilation problems  
Removable midseal closes off winter draughts  
Suitable for balcony windows - option B

### Specifications

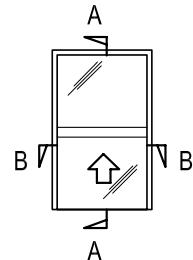
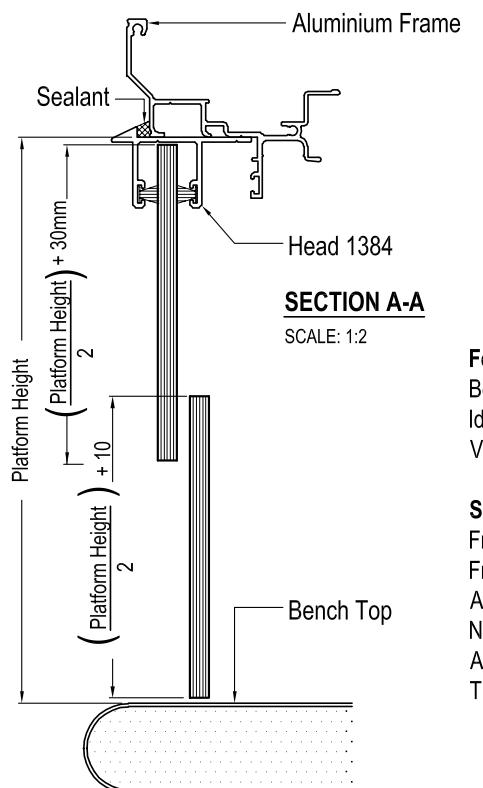
Curved or raking heads can be designed  
Frame height from 600mm to 3000mm  
Frame width from 400mm to 1350mm  
Laminated or toughened glass





## Bottom sliding interior window onto a bench top - SH1006

**SHUGG™**



### Features

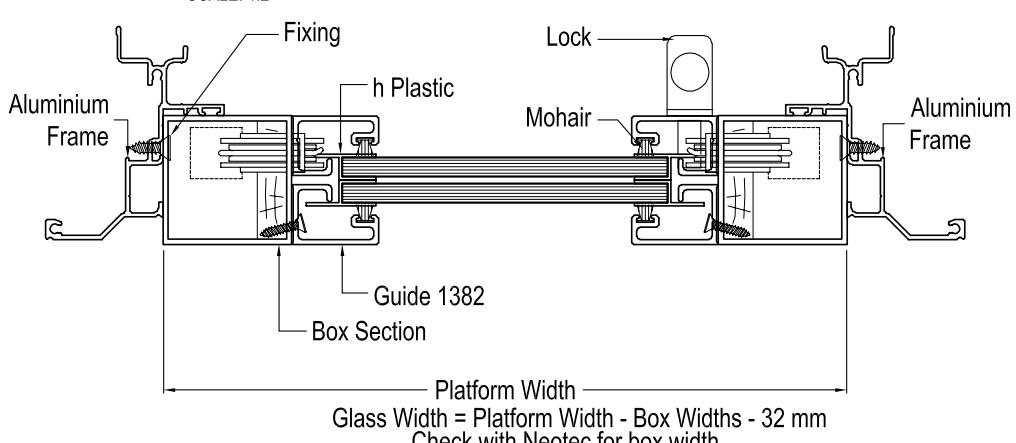
Bench is free of tracks  
Ideal for reception areas or serveries  
Veneer or solid wood panels instead of glass

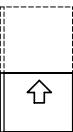
### Specifications

Frame height from 600mm to 3000mm  
Frame width from 600mm to 1350mm  
Annealed, toughened or laminated glass  
Non standard sizes available  
All aluminium finishes available  
Timber guides available

### SECTION B-B

SCALE: 1:2





## Cavity window - SH1007

**VERTICAL CAVITY SLIDING WINDOW - SINGLE HUNG  
SH1007 - CAVITY WINDOW**

**SECTION A-A**  
SCALE: 1:2

**SECTION B-B**  
SCALE: 1:2

glass Height =  
opening + 20mm

Frame

Cavity

Provide access for maintenance

Bench

Fixing

h Plastic

Lock

Mohair

Guide 1382

Frame

Box section

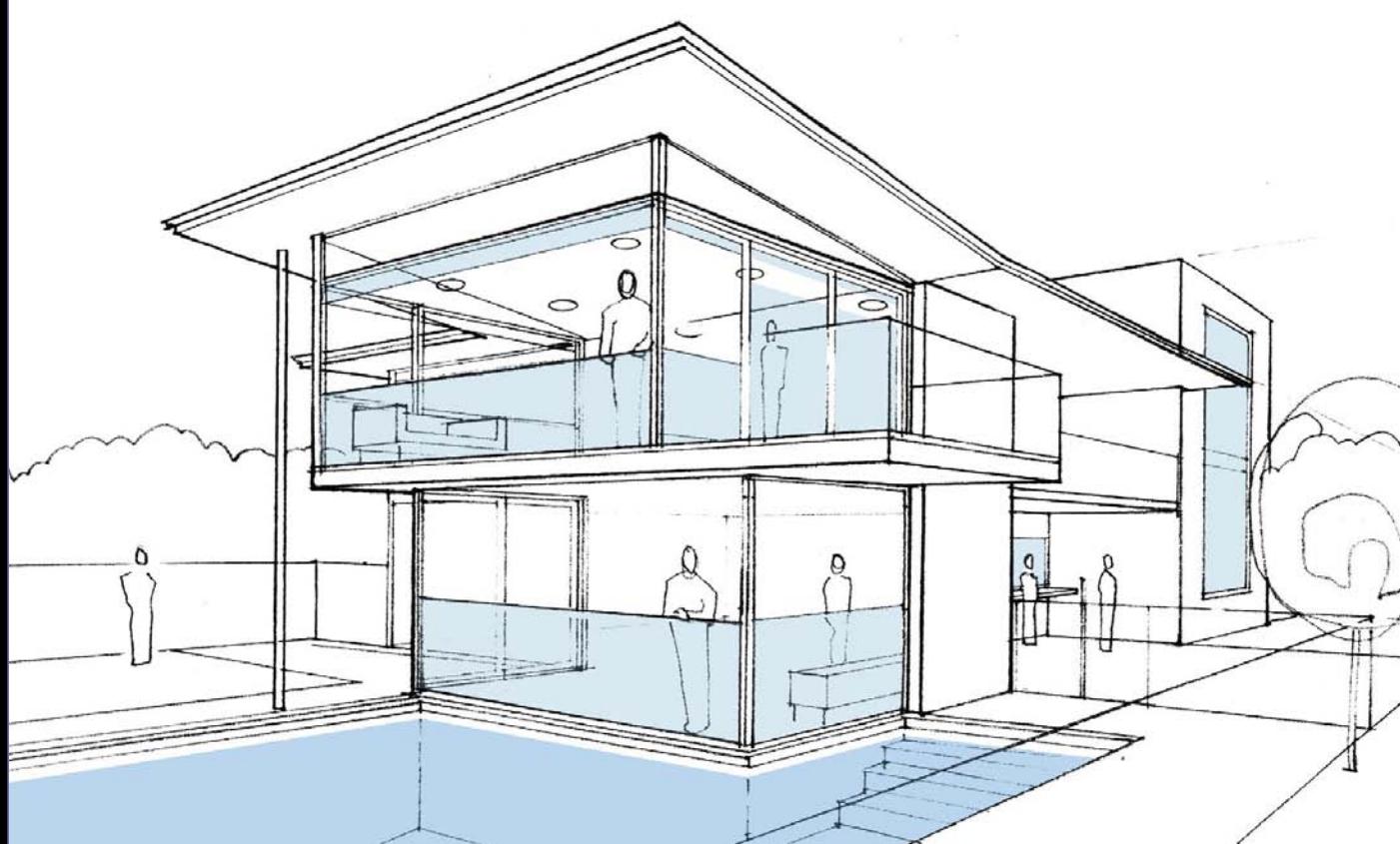
Platform Width

Glass Width = Platform Width - Box Widths - 32mm  
Check with NEOTEC for box widths

**SHUGG**™

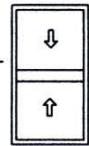
# Super Shugg

## Large Double Hung Windows

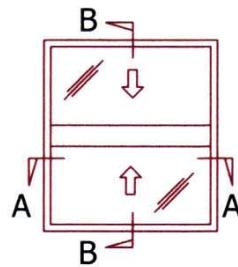
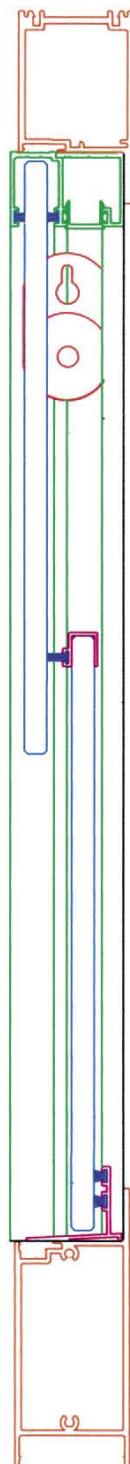


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## Shugg commercial vertical sliding windows



### Double hung - CS2003 (shown in architectural frame)



#### Features

- Two panes moves in their own plane.
- Provides top and bottom ventilation.
- Suitable for large panes of glass.
- Can be retrofitted
- Lock open position for secure ventilation.

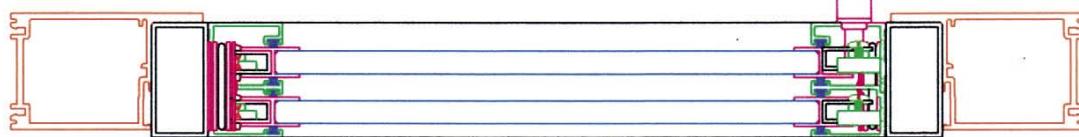
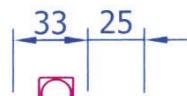
#### Specification

Frame heights up to 5100mm  
Frame widths up to 3500mm  
Glass thicknesses 8mm and over.  
Any aluminium finish.

#### Note

Human impact considerations must be taken into account when designing.

Section BB



Section AA

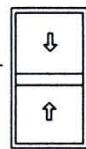


# Double Glazed

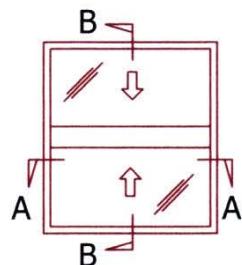
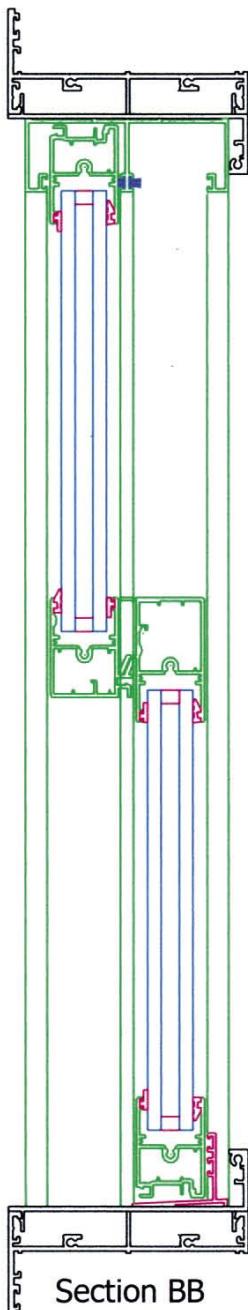
## Super Shugg Large Double Hung Windows

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Fax 09-379 9361  
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[www.shugg.co.nz](http://www.shugg.co.nz)

## Shugg commercial vertical sliding windows



### Double hung - CS2007 (shown in architectural frame)



#### Features

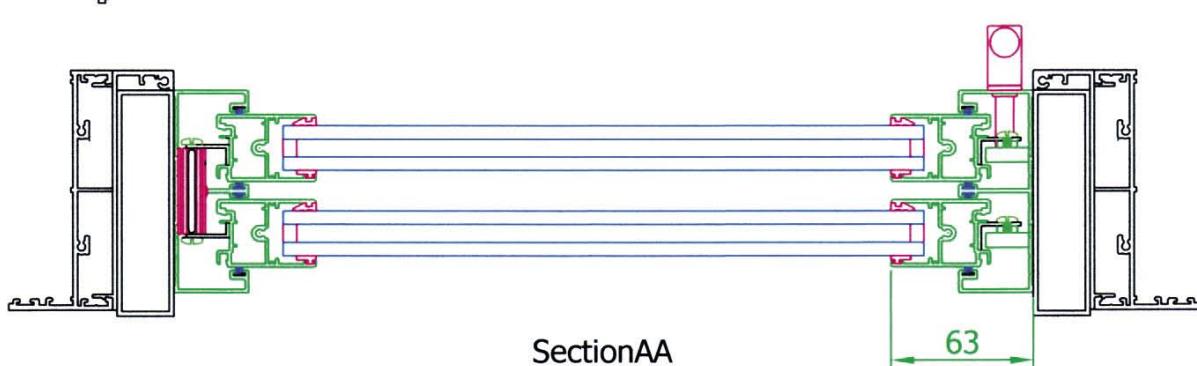
For double glazed windows.  
Two panes moves in their own plane.  
Provides top and bottom ventilation.  
Suitable for large panes of glass.  
Can be retrofitted  
Lock open position for secure ventilation.

#### Specification

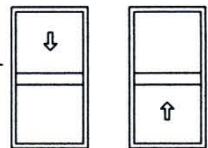
Frame heights up to 5100mm  
Frame widths up to 2000mm  
Glass thicknesses dependant on size.  
Any aluminium finish.

#### Note

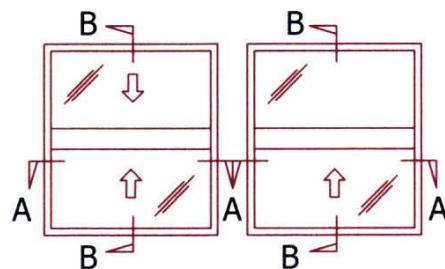
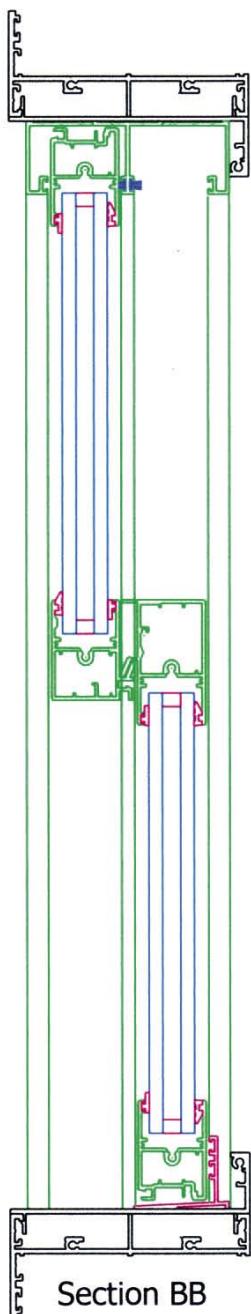
Human impact considerations must be taken into account when designing.



## Shugg commercial vertical sliding windows



### Single hung - CS2008 (Shown in architectural frame)



#### Features

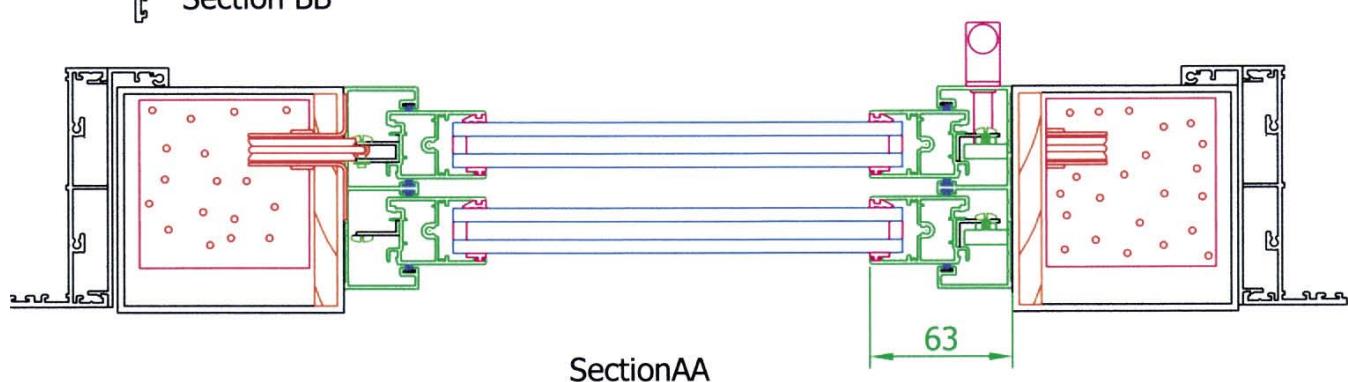
For double glazed windows.  
Single pane moves in its own plane.  
Provides top or bottom ventilation.  
Suitable for large panes of glass.  
Can be retrofitted  
Lock open position for secure ventilation.

#### Specification

Frame heights up to 4950mm  
Frame widths up to 2200mm  
Glass thicknesses dependant on size.  
Any aluminium finish.

#### Note

Human impact considerations must be taken into account when designing.





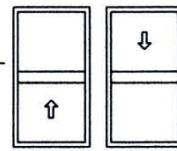
**SHUGG**™

# Super Shugg

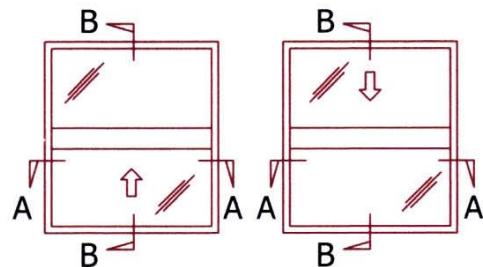
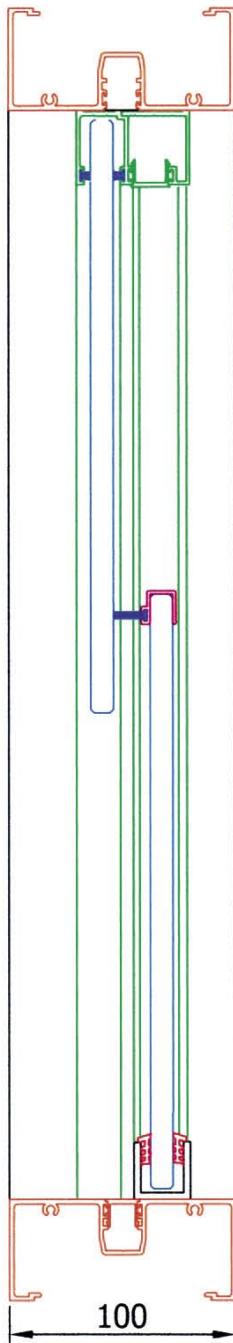
## Large Single Hung Windows

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[www.shugg.co.nz](http://www.shugg.co.nz)

## Shugg commercial vertical sliding windows



### Single sliding pane - CS2001 (Shown in shopfront frame)



#### Features

Single pane moves in its own plane.  
Top or bottom fixed pane.  
Suitable for large panes of glass.

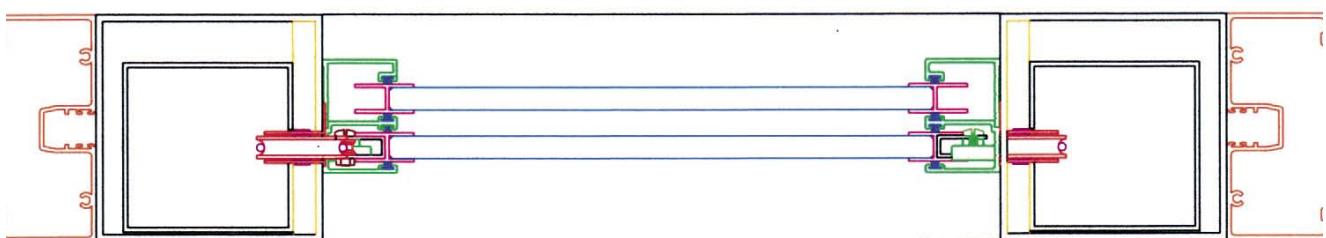
#### Specification

Frame heights up to 5100mm  
Frame widths up to 3500mm  
Glass thicknesses 8mm and over.  
Any aluminium finish.

#### Note

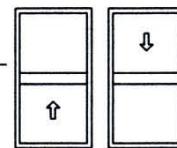
Human impact considerations must be taken into account when designing.

Section BB

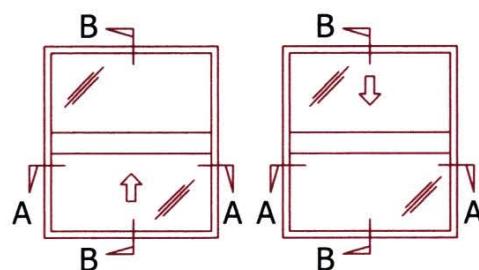
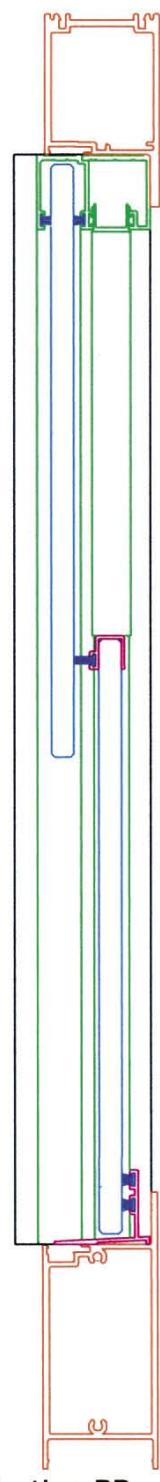


Section AA

## Shugg commercial vertical sliding windows



### Single sliding pane - CS2002 (Shown in architectural frame)



#### Features

Single pane moves in its own plane.  
Top or bottom fixed pane.  
Suitable for large panes of glass.

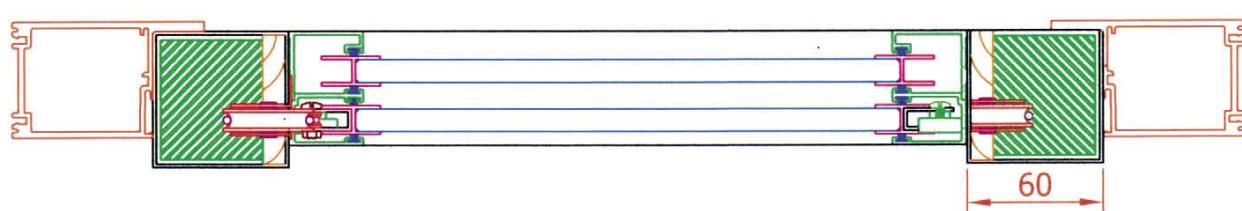
#### Specification

Frame heights up to 5100mm  
Frame widths up to 3500mm  
Glass thicknesses 8mm and over.  
Any aluminium finish.

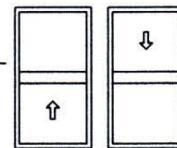
#### Note

Human impact considerations must be taken into account when designing.  
Box size housing weights dependant on size of moving pane.

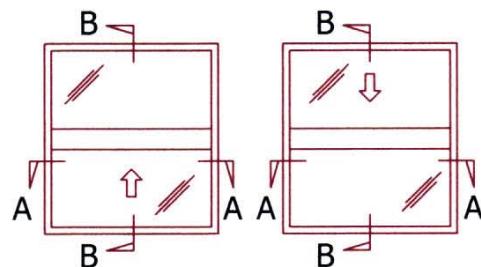
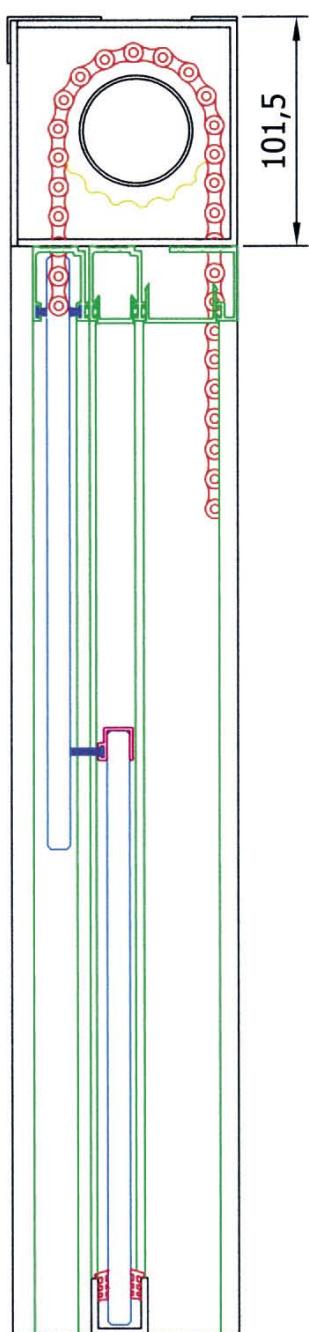
33



SectionAA



**Motor driven single sliding pane - CS2005**



**Features**

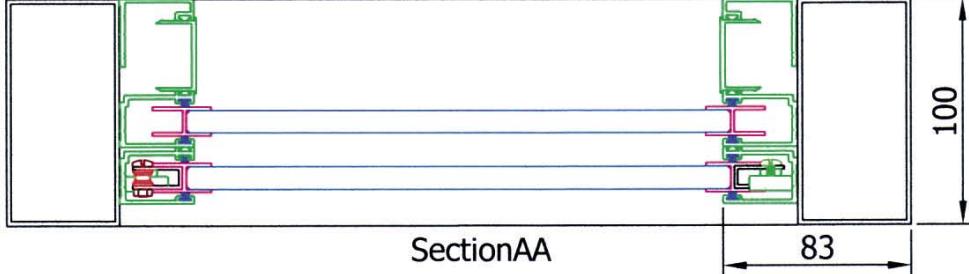
- Single pane moves in its own plane.
- Top or bottom fixed pane.
- Motor driven with remote control operation.
- Can be operated with fire alarm system for fire control.
- Suitable for large panes of glass.

**Specification**

Frame heights up to 5100mm  
Frame widths up to 3500mm  
Glass thicknesses 8mm and over.  
Any aluminium finish.

**Note**

Human impact considerations must be taken into account when designing.





## Chapter 3

# Fabricator Information

## Double hung unit for installation into aluminium frame

### In This Chapter

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**Fabricator Introduction**

**Kit price list**

**Template for pricing**

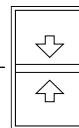
**Recommended supply and install prices**

**Order form**

**Glass preparation instructions**

**Installation instructions**

**Neotechnical Industries Ltd**  
7 Fenton Street, Eden Terrace  
PO Box 68-349 Newton  
Auckland New Zealand  
Phone 09-379 9368  
Fax 09-379 9361  
Email [neotec@xtra.co.nz](mailto:neotec@xtra.co.nz)  
[www.shugg.co.nz](http://www.shugg.co.nz)



## Fabricator Introduction

Neotechnical Products Ltd have developed the Shugg Vertical Sliding Window System to offer a range of solutions to difficult challenges. The window is generally specified for its qualities relating to ventilation, non- projection and retention of views.

Neotechnical Products Ltd offers a range of vertical sliding window systems that fit all brands of aluminium and timber joinery. This technical manual shows designs that will cover most of the situations you may encounter.

The Shugg vertical sliding double hung window is considered the standard and is able to be inserted in to all brands of aluminium and timber windows and doors. Two panes of glass move within their own plane. As the bottom pane is lifted the top pane moves down an equal amount. This gives approximately 25% opening at the top and 25% at the bottom. This window can also be retrofitted into doors where ventilation difficulties have arisen or can be inserted into timber frames when a more modern look is required but frame removal is an expensive option. Neotec recommends the use of a small base pane in all full-length windows to allow owners to achieve high-level ventilation without the fear of small animals or dirt entering the lower level. This is also an option to close the gap when meeting swimming pool restrictions and “safety from falling” requirements.

Within the school environment, Neotec has developed a window that locks at the sill level providing an easy to reach locking system.

The Shugg vertical sliding single hung window offers designers considerable flexibility. The most popular option is as a serving window but over the last two years we have installed a number of balcony type window where the top pane slides down to give a 50% opening at the top. Neotec is happy to work with your clients to decide which of these options is right for them.

Neotechnical Products Ltd owns the rights to the Shugg Vertical sliding window system and is therefore able to determine the terms and conditions of its supply and installation.

Neotec retains the right to supply and install Shugg Vertical sliding windows within the Auckland area from the Bombay Hills in the South to Waiwera in the north whether the fabricator is located in Auckland or not. Outside this area Neotec may install various projects if requested to by the fabricator or builder and indeed have installed complex projects as far south as Christchurch.

Outside the Auckland area, fabricators and joiners order Shugg vertical sliding window systems in kit form direct from Neotechnical Products Ltd and are invoiced by their prime die holder. Shugg product is sold only to aluminium fabricators and timber joiners who warranty the installation and should not be handed on to anyone else in kit form.

We are happy to provide technical assistance and support to help you with our product. We appreciate the jobs we get from you and promise you our best attention to detail at all times.

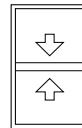


**NEOTEC**™

## **Fax order form for Shugg double hung window kit.**

Neotechnical Industries Ltd  
P.O Box 68349, Newton.  
7 Fenton Street,  
Eden Terrace,  
Auckland,  
NEW ZEALAND.

Phone: +64 9 3799 368  
Fax: +64 9 3799 361  
Email: neotec@xtra.co.nz



## **Delivery/Contact Details**

**Date:** \_\_\_\_\_ **Neotec Job no.** \_\_\_\_\_

**Company:** \_\_\_\_\_ **Ph:** \_\_\_\_\_ **Fax:** \_\_\_\_\_

**Contact:** \_\_\_\_\_ Date to site: \_\_\_\_\_

Delivery Address: \_\_\_\_\_ Builders: \_\_\_\_\_

---

Builders ph: \_\_\_\_\_

## Order Details

Order No.	Order No.
Aluminium frame brand/type:	Extrusion No.
Aluminium frame colour:	Aluminium ordered:
Glass thickness (mm):	Glass colour:

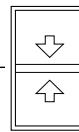
<b>Lock type/colour</b>	<input type="checkbox"/> Spring	<input type="checkbox"/> Push-pull	<input type="checkbox"/> School (black only)
<b>Lifter type</b>	<input type="checkbox"/> Acrylic Block	<input type="checkbox"/> Handle	<input type="checkbox"/> Continuous school lifter
<b>Timber guides</b>	<input type="checkbox"/> Cedar	<input type="checkbox"/> Pine	
<b>Adhesives</b>	<input type="checkbox"/> Sikaflex	<input type="checkbox"/> 215 primer	<input type="checkbox"/> 9 primer

## **Unit Details**

**Neotec Internal Use (please leave blank)**

Freight No. \_\_\_\_\_ Installed: \_\_\_\_\_

### **Special Details (if applicable)**



## Glass preparation instructions - double hung into aluminium frame or timber frame

**Note:** glass should be prepared 24 hours prior to installation into window to allow sikaflex to set.

### Tools Required

- Sikaflex 221 black, #9 primer for lifter, #215 primer for "h" plastic (available from Neotec)
- Meths or Colmar cleaner or similar.
- RTV Acetic cure silicone or similar.
- New Stanley blade or similar.
- Wooden block.

### Glass Size - Double hung Shugg in standard aluminium frame.

Glass height = Platform height plus overlap (100mm) divided by two. Rough arris vertical edges and polish horizontal edges.

Glass width = Platform width minus 67mm.

### Glass Size - Double hung Shugg into frame with Whitco school lock.

Glass height (top pane) = Platform height plus overlap (100mm) divided by two.

Glass height (bottom pane) = Platform height plus overlap (100mm) divided by two minus 40mm.

Glass width = Platform width minus 67mm.

### Glass Thickness

6mm is standard in most applications, especially in schools because of the exposed edge of the glass.

5mm is suitable in doors with widths under 750mm. All exposed edges of the glass must be flat polished.

"h" plastic is available in 4mm, 5mm, 6mm, 6.38mm and 6.76mm, 8mm, 10mm and 12mm.

### Fixed Base Pane Option

The base pane is generally 125mm high and cut to the same width as the other panes. Rough arris vertical edges and flat polish horizontal edges.

Fit h plastic to vertical edges protruding 5mm at bottom.

Sit into outside guides on sill.

### Glass preparation

This should be done at least 24 hours before the installation of the Shugg kit.

Bonding of "h" plastic requires # 215 primer, Sikaflex 221 black.

"h" plastic strips (4 per window) that should extend 1mm over each edge of the glass.

The "h" plastic strips with the cut out are for the top pane.

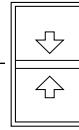
The flat side of the "h" plastic is to the outside for the top pane and the inside for the bottom pane.

The acrylic lifter handle goes on the bottom pane.

Prime inside of plastic strips with # 215 primer. Leave 30minutes.

Prime acrylic lifter handle with # 9 primer. Leave 30 minutes.

Check that glass has been delivered at the correct width.



Clean the vertical edges..

Apply a thin bead of black Sikaflex 221 to the edge of the glass.

Push h plastic down hard with wooden block. Re-measure.

Glass and "h" plastic should now measure 4mm over ordered glass width.

### Bonding Acrylic Lifter Handle

Prime the flat surface of the acrylic lifter with # 9 primer. Leave 30 mins.

Using any clear acetic cure silicone (sikaflex RTV or similar) bond primed acrylic lifter to inside surface of bottom pane - 55mm up from bottom edge.

For full height windows - fit 55cm down from top edge of bottom pane.

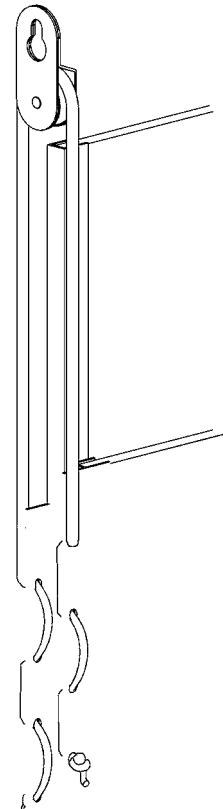
For windows over 1000mm wide use two lifters.

Apply pressure to lifter to squeeze out air bubbles, continue until silicone shows clear through block. Leave overnight.

Next day, using a clean sharp blade, clean sikaflex from edge of "h" plastic and clean excess silicone from around lifter handle.

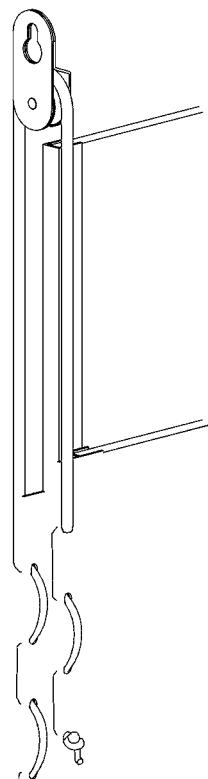
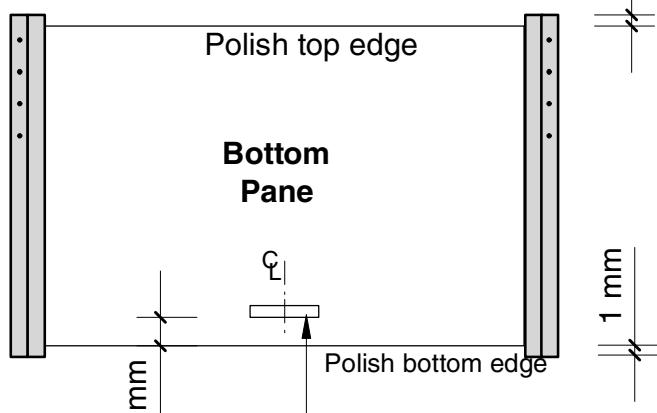
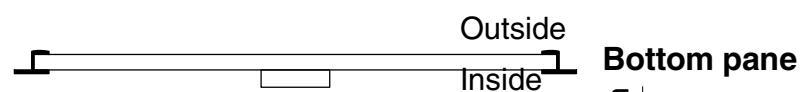
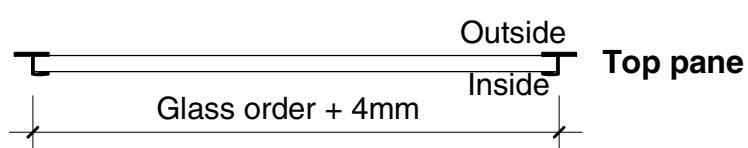
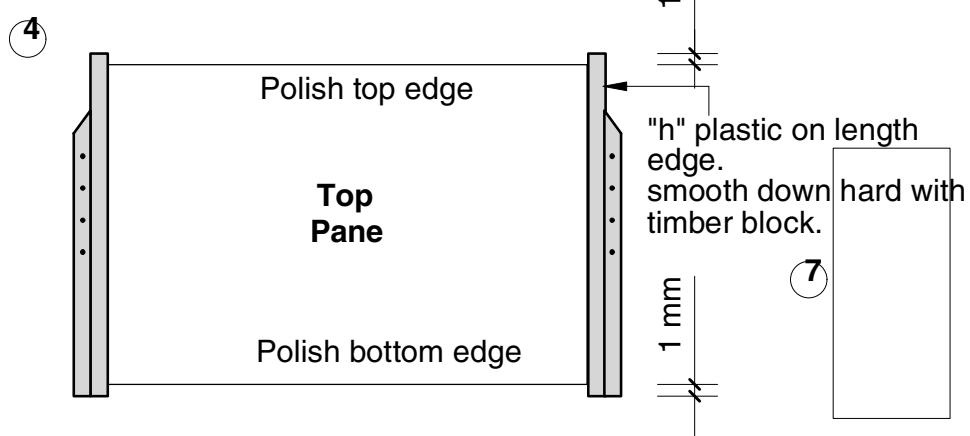
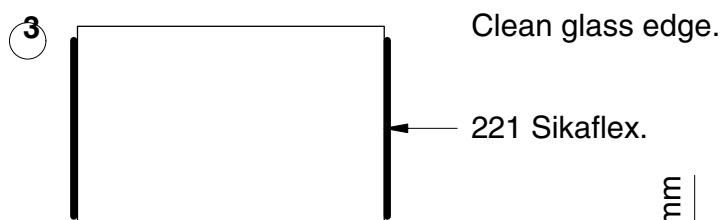
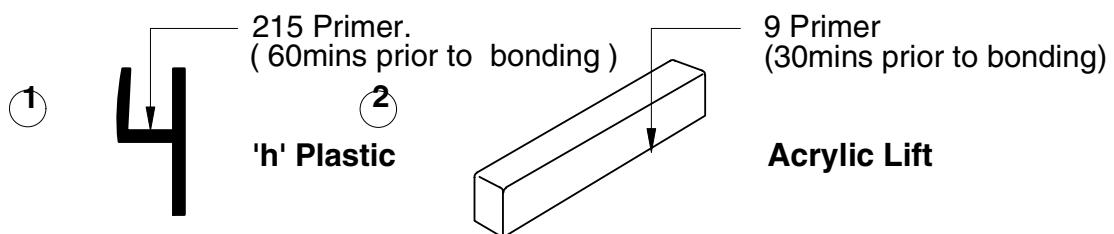
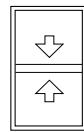
Thread cord though top pane "h" plastic starting from bottom hole on flat side ensuring the knot does not overhang the edge of the "h" plastic.

Thread through pulley then through bottom pane "h" plastic as shown, starting from the topside on flat side.



# Aluminium or Timber Glass Preparation for Double Hung

( to be done 24 hours prior to installation )

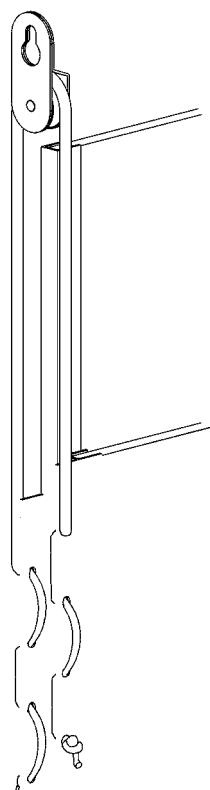
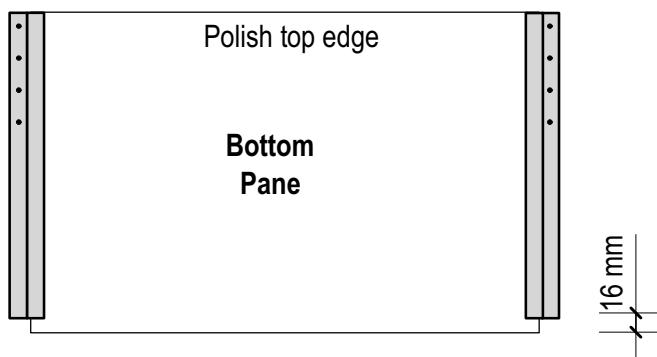
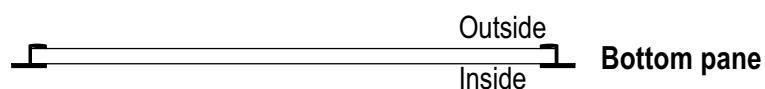
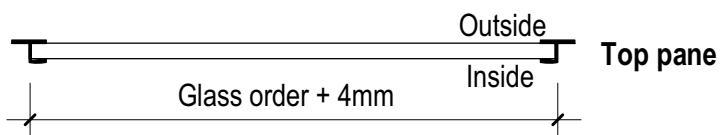
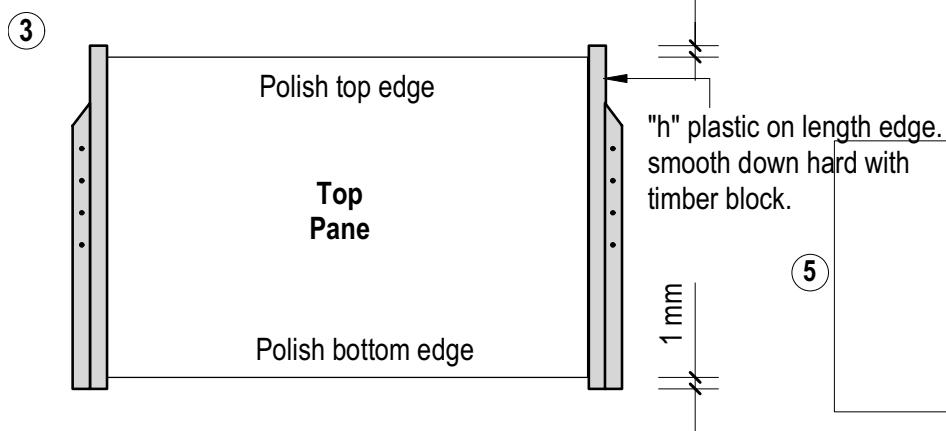
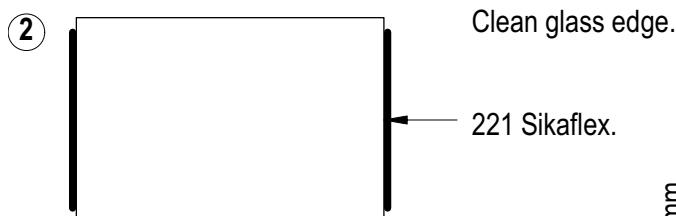
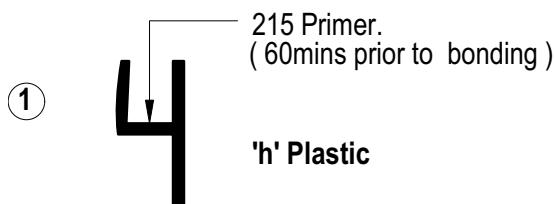
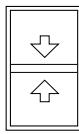


5 Glue using acetic cure silicon.

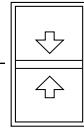
6 After 24 hour clean excess silicon and sikaflex.

# Glass Preparation for Double Hung School

( to be done 24 hours prior to installation )



- ④ After 24 hour clean excess silicon and sikaflex.

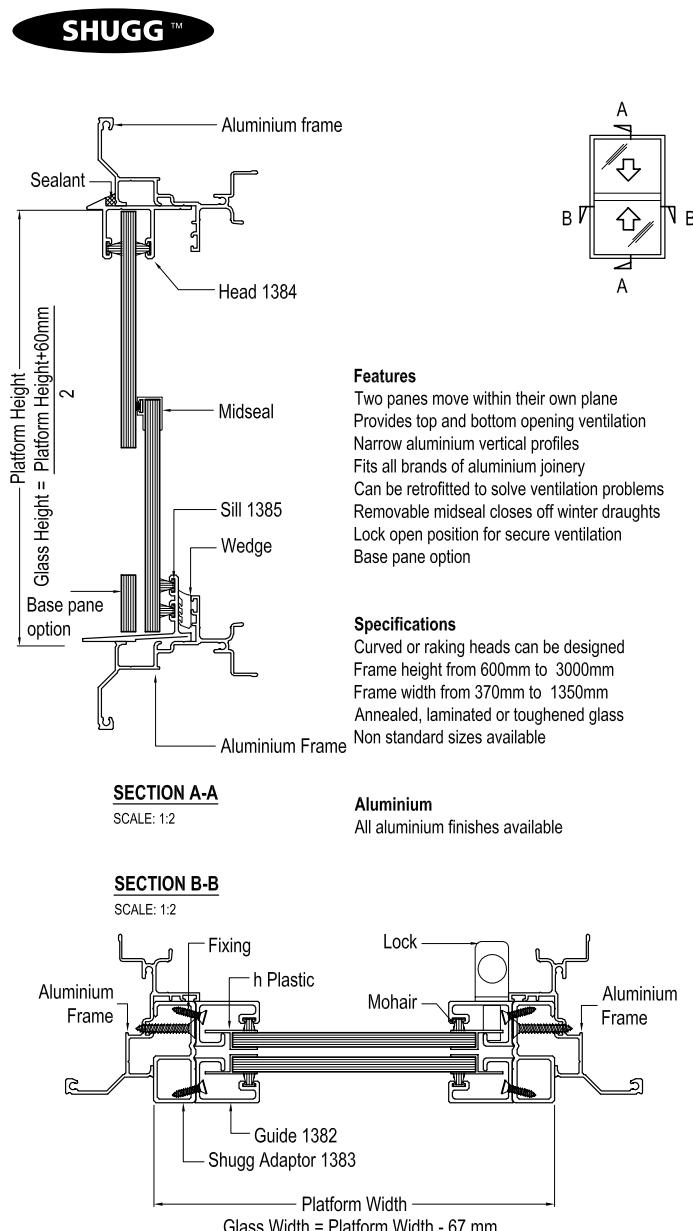


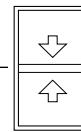
## Installation instructions - double hung into aluminium frame

**Note:** glass should be prepared 24 hours prior to installation into window to allow sikaflex to set.

### Tools Required

- Drill bits - 2.5mm, 3.5mm, 9mm, and 11.5mm.
- Drive bits - #0, #2 square drive.
- Meths.
- Colmar cleaner or similar.
- Rivet gun.
- RTV Acetic cure silicone.
- New Stanley blade or similar.
- Cigarette lighter or matches.





### **Head NI384**

Position head in frame. Attach with a thin bead of sealant.

### **Adaptors NI383**

Position adaptors in frame.

Using supplied 11/4 or 11/2 8g countersunk screws (#2 square drive) attach adaptors to frame.

### **Sill NI385**

Position the sill between the adaptors. Do not fix.

Pulley Screw

Using pan head 8g screws attach pulley screw - leave out 3mm. (Both sides)

### **Guides NI382**

Inside guides have a pulley cut out at top and a sill cut out at bottom.

Outside guides have a pulley cut out and a head cut out at top.

Position the outside guides flush with the adaptor. Use the grooves in the adaptor for positioning. Then using the 2.5mm bit, drill holes through guides into adaptor approximately 400mm apart. One set of holes should be 100mm above the centre of the adaptor and another set 200mm below the centre.

Drill sill as shown. Remove guides.

If the guides need trimming, trim the outside guides from the sill end and the inside guides from the head end.

### **Hang Glass**

With top pane to the outside, lift both panes of glass together and hang pulleys on pulley screws. Do not tighten.

### **Adjust Cord**

Lift outside pane up into head. Adjust cord until lower pane is level with top edge of the lower mohair in the sill. Check overlap to ensure both panes are parallel and top pane is hard up to head. Knot cord against "h" plastic. Cut cord 30mm from knot and melt end with match or lighter. Further adjustments to follow.

### **Inside Guide**

Remove Shugg sill. Working from inside, raise the inside pane to the top and slide inside guides onto h plastic of inside pane and position to inside of frame.

Replace Shugg sill firmly into guide rebate, ensuring guide is hard down on the sill. Ensure the window slides smoothly.

Attach sill with guide screws.

Attach guide to adaptor with the screws below the center of adaptor.

### **Outside Guide**

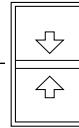
Lift outside pane to top and slide outside guide onto "h" plastic of outside pane.

Position the outside edge of guide flush with outside edge of the adaptor. The grooves should assist with this. Attach with lowest screws only.

### **Attach Guides**

Lift both panes slightly. Lift pulleys from screws and lower panes to bottom of frame.

Attach guides using guide screws provided. Lift glass, refit pulleys and tighten screws.



### Cord Adjustment

For final cord adjustment centralise both panes. Hold both panes at top and bottom in the centre of the glass. Raise both panes a small amount and pull down sharply. This will stretch the cord and tighten it through the h plastic. Do not use excessive force as this could break the h plastic. Repeat until the top pane is hard against the head and the bottom pane is just touching or slightly off the bottom of the sill. Check the lap of the glass is still parallel. You may have to remove one pulley and stretch the opposite cord to ensure this.

### Lock Installation

The spring lock is standard - locks automatically when window is closed and slides into a lock open position.

The push/pull lock looks the same but must be pushed in to lock. This is recommended for wide windows when two hands would be used to open it.

The keyed lock does not lock in an open position.

Close the window tightly.

250mm down from the top edge of bottom pane and 17mm from edge of guide drill a 9mm pilot hole through the front of the guide and through the "h" plastic, stopping before the back of the guide. (Make sure the drill bit does not touch the edge of the glass.)

For a lock open position at 50mm, raise the bottom pane 50mm above the sill and drill into the "h" plastic through the existing 9mm pilot hole in the guide. Lower pane.

Drill a 11.5mm hole 10mm deep into the 9mm pilot hole in the outer skin of the guide to accommodate base of lock. Do not drill into "h" plastic.

Drill & rivet lock to guide using rivets provided.

### Insert base pane (if required)

Remove lowest outside guide screws and insert the base pane into the outside guides. Re-insert screws. Using a wooden prop, chock both panes to the head of the window and fix remaining screws in the outside guide.

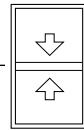
### Mid Seals

Midseals are provided as standard to all residential jobs.

Midseals should be placed on the top edge of the bottom pane of glass.

Should you require it to be bonded permanently, use any silicone.

Midseals are not generally installed in schools.



## Installation instructions - double hung into timber frame

**Note:** glass should be prepared 24 hours prior to installation into window to allow sikaflex to set.

Timber guides are delivered long and should be trimmed at installation.

### Tools Required

Drill bits - 2.5mm, 3.5mm, 9mm, and 11.5mm.

Drive bits - #0, #2 square drive.

Meths.

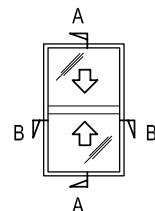
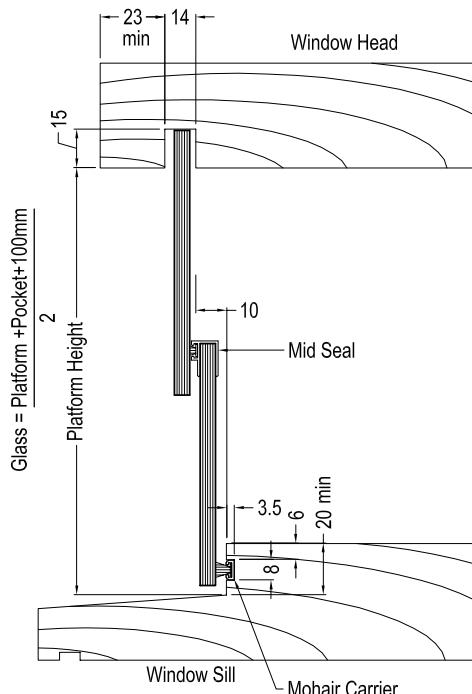
Colmar cleaner or similar.

Rivet gun.

RTV Acetic cure silicone.

New Stanley blade or similar.

Cigarette lighter or matches.



#### Features

Two panes move within their own plane  
Provides top and bottom opening ventilation  
Narrow vertical profiles  
Can be retrofitted to solve ventilation problems  
Removable midseal closes off winter draughts  
Lock open position for secure ventilation  
Base pane option

#### Specifications

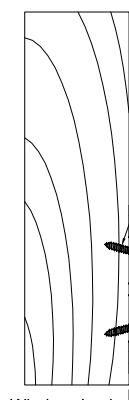
Curved or raking heads can be designed  
Frame height from 600mm to 3000mm  
Frame width from 350mm to 1350mm  
Annealed, laminated or toughened glass  
Non standard sizes available

#### Timber

Any available species

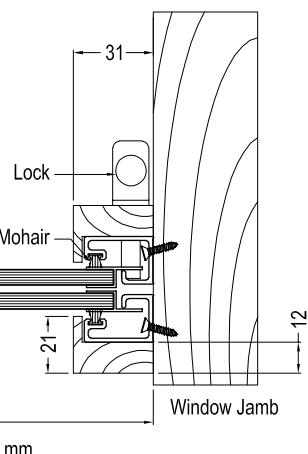
#### SECTION A-A

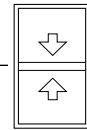
SCALE: 1:2



#### SECTION B-B

SCALE: 1:2





## Assembly Instructions for standard Shugg vertical sliding windows

Hold guides to frame and cut to correct length. (If the guides need trimming, trim from the sill end.)

### Pulley Screw

Drill a hole for the pulley screw at centre of guide cutouts and 40mm down from the head. (Both sides.)

Using pan head 8g screws attach pulley screw - leave out 3mm. (Both sides.)

### Mohair Carrier

Cut the mohair carrier to the width of the platform and fit to the rebate in the sill using the double-sided tape provided.

### Guides NI382

Inside guides have a pulley cut out at the top.

Outside guides have a pulley cut out at the top but are longer to accommodate the angle of the sill.

Determine the position of the guides and mark frame appropriately.

### Hang Glass

With top pane to the outside, lift both panes of glass together and hang pulleys on pulley screws. Do not tighten.

### Adjust Cord

Lift outside pane up to head. Adjust cord until lower pane is level with top edge of the mohair in the sill. Check overlap to ensure both panes are parallel and top pane is hard up to head. Knot cord against "h" plastic. Cut cord 30mm from knot and melt end with match or lighter. Further adjustments to follow.

### Inside Guide

Working from inside, raise the inside pane to the top and slide inside guides onto h plastic of inside pane and position to inside of frame.

Ensure guides are hard down on the sill. Attach to frame with guide screws through the pre-drilled holes below the window centre only.

Ensure the window slides smoothly.

### Outside Guide

Lift outside pane to top and slide outside guide onto "h" plastic of outside pane.

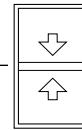
Position the outside edge of the guide flush with the frame. Attach with bottom screws only.

### Attach Guides

Lift both panes slightly. Lift pulleys from screws and lower panes to bottom of frame. Attach guides using guide screws provided. Lift glass, refit pulleys and tighten screws.

### Cord Adjustment

For final cord adjustment centralise both panes. Hold both panes at top and bottom in the centre of the glass. Raise both panes a small amount and pull down sharply. This will stretch the cord and tighten it through the h plastic. Do not use excessive force as this could break the h plastic. Repeat until the top pane is hard against the head and the bottom pane is just touching or slightly off the bottom of the sill. Check the lap of the glass is still parallel. You may have to remove one pulley and stretch the opposite cord to ensure this.



### Lock Installation

The spring lock is standard - locks automatically when window is closed and slides into a lock open position.

The push/pull lock looks the same but must be pushed in to lock. This is recommended for wide windows when two hands would be used to open it.

The keyed lock does not lock in an open position.

Close the window tightly.

250mm down from the top edge of bottom pane and 17mm from edge of guide drill a 9mm pilot hole into the guide and through the "h" plastic. (Make sure the drill bit does not touch the edge of the glass.)

For a lock open position at 50mm, raise the bottom pane 50mm and drill into the "h" plastic through the existing 9mm pilot hole in the guide. Lower pane.

Drill a 11.5mm hole 10mm deep into the 9mm pilot hole in the guide to accommodate base of lock. If the guides do not have timber covers drill through the outer skin of the guide only. Do not drill into "h" plastic.

Drill & rivet lock to guide using rivets provided.

If guides have timber covers use 4g 3/4 counter sunk screws.

### Insert base pane (if required)

Remove lowest outside guide screws and insert the base pane into the outside guides. Re-insert screws. Using a wooden prop, chock both panes to the head of the window and fix remaining screws in the outside guide.

### Mid Seals

Midseals are provided as standard to all residential jobs.

Midseals should be placed on the top edge of the bottom pane of glass.

Should you require it to be bonded permanently, use any silicone.

Midseals are not generally installed in schools.



## Chapter 5

# Fabricator Information

## Single hung unit

### In This Chapter

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**Template for pricing**

**Kit price list**

**Recommended supply and install prices**

**Order form**

**Glass preparation instructions**

**Installation instructions**

**Neotechnical Products Ltd**  
7 Fenton Street, Eden Terrace  
PO Box 68-349 Newton  
Auckland New Zealand  
Phone 09-379 9368  
Fax 09-379 9361  
Email [neotec@xtra.co.nz](mailto:neotec@xtra.co.nz)  
[www.shugg.co.nz](http://www.shugg.co.nz)

**NEOTEC™**

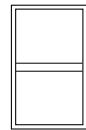


**NEOTEC**™

## **Fax order form for Shugg single hung windows.**

Neotechnical Industries Ltd  
P.O Box 68349, Newton.  
7 Fenton Street,  
Eden Terrace,  
Auckland,  
NEW ZEALAND.

Phone: +64 9 3799 368  
Fax: +64 9 3799 361  
Email: neotec@xtra.co.nz



## **Delivery/Contact Details**

**Date:** \_\_\_\_\_ **Neotec Job no.** \_\_\_\_\_

**Company:** \_\_\_\_\_ **Ph:** \_\_\_\_\_ **Fax:** \_\_\_\_\_

**Contact:** \_\_\_\_\_ **Date to site:** \_\_\_\_\_

**Delivery Address:** \_\_\_\_\_ **Builders:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ **Builders ph:** \_\_\_\_\_  
\_\_\_\_\_

## Order Details

Order No.	Order No.
Aluminium frame brand/type:	Extrusion No.
Aluminium frame colour:	Aluminium ordered:
Glass thickness (mm):	Glass colour:

	<input type="checkbox"/> Top fixed	<input type="checkbox"/> Bottom fixed	<input type="checkbox"/> Internal	<input type="checkbox"/> Cavity
<b>Lock type</b>	<input type="checkbox"/> Spring	<input type="checkbox"/> Push-pull	<input type="checkbox"/> School (black only)	<input type="checkbox"/> Keyed
<b>Lifter type</b>	<input type="checkbox"/> Acrylic Block Handle	<input type="checkbox"/> Continuous school lifter		
<b>Timber guides</b>	<input type="checkbox"/> Cedar	<input type="checkbox"/> Pine	<input type="checkbox"/> No	
<b>Adhesives</b>	<input type="checkbox"/> Sikaflex	<input type="checkbox"/> 215 primer	<input type="checkbox"/> 9 primer	

## **Unit Details**

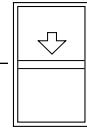
**Neotec Internal Use** (please leave blank)

## Lead weights

Dispatched \_\_\_\_\_

Installed \_\_\_\_\_

## **Frame Detail**



## Glass preparation instructions - single hung

**Note:** glass should be prepared 24 hours prior to installation into window to allow sikaflex to set.

### Tools Required

- Sikaflex 221 black, #9 primer for lifter, #215 primer for “h” plastic (available from Neotec)
- Methyls and Colmar cleaner or similar.
- RTV Acetic cure silicone.
- New Stanley blade or similar.
- Wooden block.

### Glass Size - Single hung bottom pane slides up

Glass height top pane = (Platform height divided by 2) + 60mm.

Glass height bottom pane = (Platform height divided by 2) + 40 mm.

Glass width = Platform width minus (box section x 2) - 32mm.

### Glass size - Single hung top pane slides down

Glass height top pane = (Platform height divided by 2) + 100mm.

Glass height bottom pane = Platform height divided by 2.

Glass width = Platform width minus (box section x 2) - 32mm.

Note: All glass should have rough arris to vertical edges and polish to horizontal edges.

### Glass Thickness

6mm is standard in most applications, especially in schools because of the exposed edge of the glass.

5mm is suitable in doors with widths under 750mm. All exposed edges of the glass must be flat polished.

“h” plastic is available in 4mm, 5mm, 6mm, 6.38mm and 6.76mm, 8mm, 10mm and 12mm.

### Glass preparation

This should be done at least 24 hours before the installation of the Shugg kit.

Check that glass has been delivered at the correct width.

Bonding of “h” plastic requires # 215 primer, Sikaflex 221 black.

“h” plastic strips (4 per window) that should extend 1mm over each edge of the glass.

The “h” plastic strips with the cut out are for the sliding pane.

The fixed pane “h” plastic is not drilled for cord.

The flat side of the “h” plastic is to the outside for the top pane and the inside for the bottom pane.

The acrylic lifter handle goes on the sliding pane.

Prime inside of “h” plastic strips with # 215 primer. Leave 30 minutes.

Prime acrylic lifter handle with # 9 primer. Leave 30 minutes.

Clean the vertical edges of the glass with Colmar or similar.

Apply a thin bead of black Sikaflex 221 to the edge of the glass.

Push “h” plastic down hard with wooden block. Re measure. Glass and “h” plastic should now measure 4mm over ordered glass width.

### Bonding Acrylic Lifter Handle

For windows over 1000mm wide you may use two lifters if required.

Prime the flat surface of the acrylic lifter with # 9 primer. Leave 30 mins.

Using any clear acetic cure silicone (sikaflex RTV or similar) bond primed acrylic lifter to glass. For bottom slider attach lifter to inside surface of bottom pane - 55mm up from bottom edge.

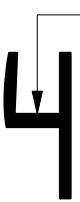
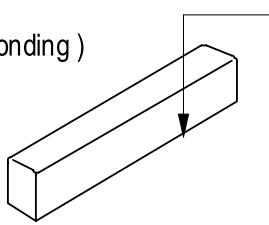
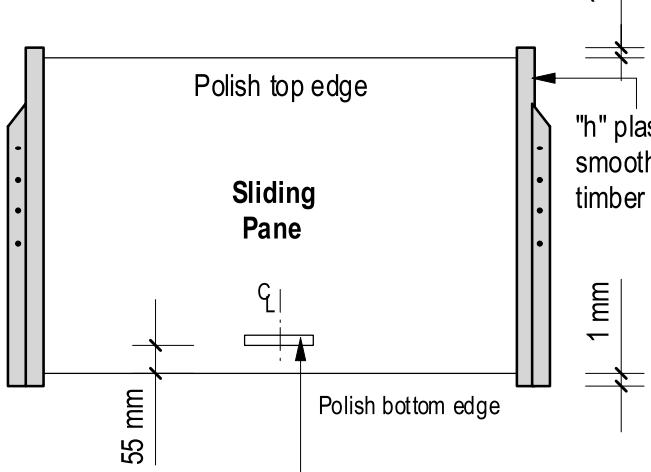
For top slider attach lifter to inside surface of top pane - 55mm down from top edge.

Press lifter to squeeze out air bubbles, continue until silicone shows clear through acrylic lifter. Leave overnight.

Next day, using a clean sharp blade, clean sikaflex from edge of “h” plastic and clean excess silicone from around acrylic lifter.

# Glass Preparation for Single Hung Bottom Sliding

( to be done 24 hours prior to installation )

- ①  215 Primer.  
( 60mins prior to bonding )
- ②  9 Primer  
(30mins prior to bonding)
- ③  Clean glass edge with meths.  
221 Sikaflex.
- ④ 

Sliding Pane

Polish top edge

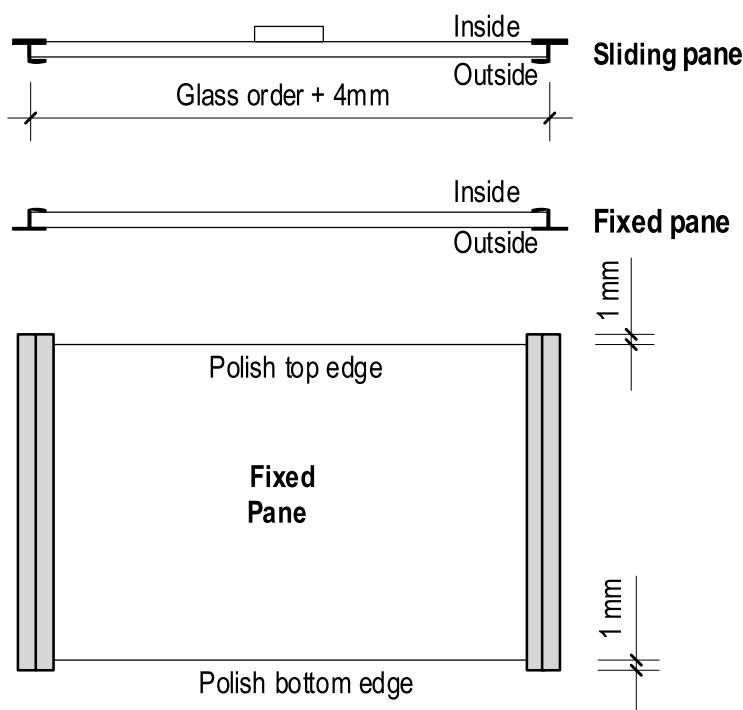
Polish bottom edge

"h" plastic on length edge.  
smooth down hard with timber block.

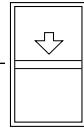
1 mm

1 mm

55 mm
- ⑤ Glue using acetic cure silicon.



- ⑥ After 24 hour clean excess silicon and sikaflex.



## Installation instructions - single hung bottom slider

**Note:** glass should be prepared 24 hours prior to installation into window to allow sikaflex to set.

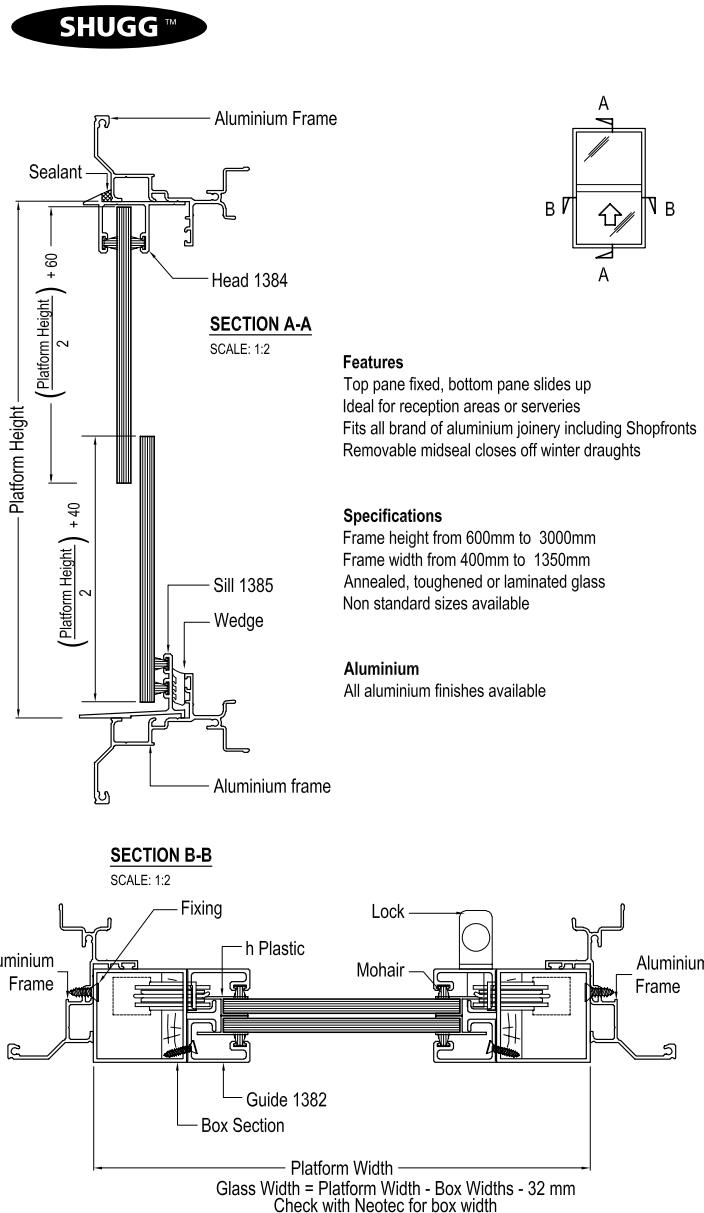
Timber guides are delivered long and should be trimmed at installation.

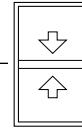
### Tools Required

- Drill bits - 2.5mm, 3.5mm, 9mm, and 11.5mm.
- Drive bits - #0, #2 square drive.
- Methyls.
- Colmar cleaner or similar.
- Rivet gun.
- RTV Acetic cure silicone.
- New Stanley blade or similar.
- Cigarette lighter or matches.

### Assembly Instructions for single hung bottom slider

Remove the guides, stops and pulleys from the box section.





### **Head N1384**

Position head in frame. Attach with thin bead of sealant.

### **Box section**

Position Box section in frame. Pre-drill through guide holes with 3.5mm bit. Attach with 8g c/s screws supplied.

### **Insert counterweights**

Thread the cord through hole in counterweight and insert counterweight into box section. (Both sides.)

Thread the cord through pulleys and then refit pulleys to box section.

### **Bottom pane**

Position bottom pane of glass on the sill.

Pull the cord so counterweight is at the top of its travel.

Attach cord to "h" plastic by threading through holes.

Check required movement is possible.

Tie cord off and trim excess, melt end with lighter or matches.

Note: Glass will find its own level even if weights are slightly offset.

### **Internal guides N1382 and sill N1385**

Reattach inside guides and sill.

### **Outside guides N1382 and fixed pane.**

Place the outside guides either side of the fixed pane and move into position in frame.

Attach top half of guides to box section (using guide screws.)

Raise glass to head and prop up.

Twist stops into the outside guides and raise up to outside pane.

Reattach stops with guide screws in final position.

Reattach bottom half of guides to box section (using guide screws.)

### **Lock Installation**

The spring lock is standard - locks automatically when window is closed and slides into a lock open position.

The push/pull lock looks the same but must be pushed in to lock. This is recommended for wide windows when two hands would be used to open it.

The keyed lock does not lock in an open position.

Close the window tightly.

250mm down from the top edge of bottom pane and 17mm from edge of guide drill a 9mm pilot hole into the guide and through the "h" plastic.

Drill a 11.5mm hole through the outer skin only of the guide (using the 9mm pilot hole), to accommodate base of lock. Do not drill into the "h" plastic.

Drill & rivet lock to guide using rivets provided.

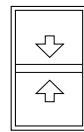
### **Mid Seals**

Midseals are provided as standard to all residential jobs.

Midseals should be placed on the top edge of the bottom pane of glass.

Should you require it to be bonded permanently, use any silicone.

Midseals are not generally installed in schools or interior windows.



## Installation instructions - single hung top slider

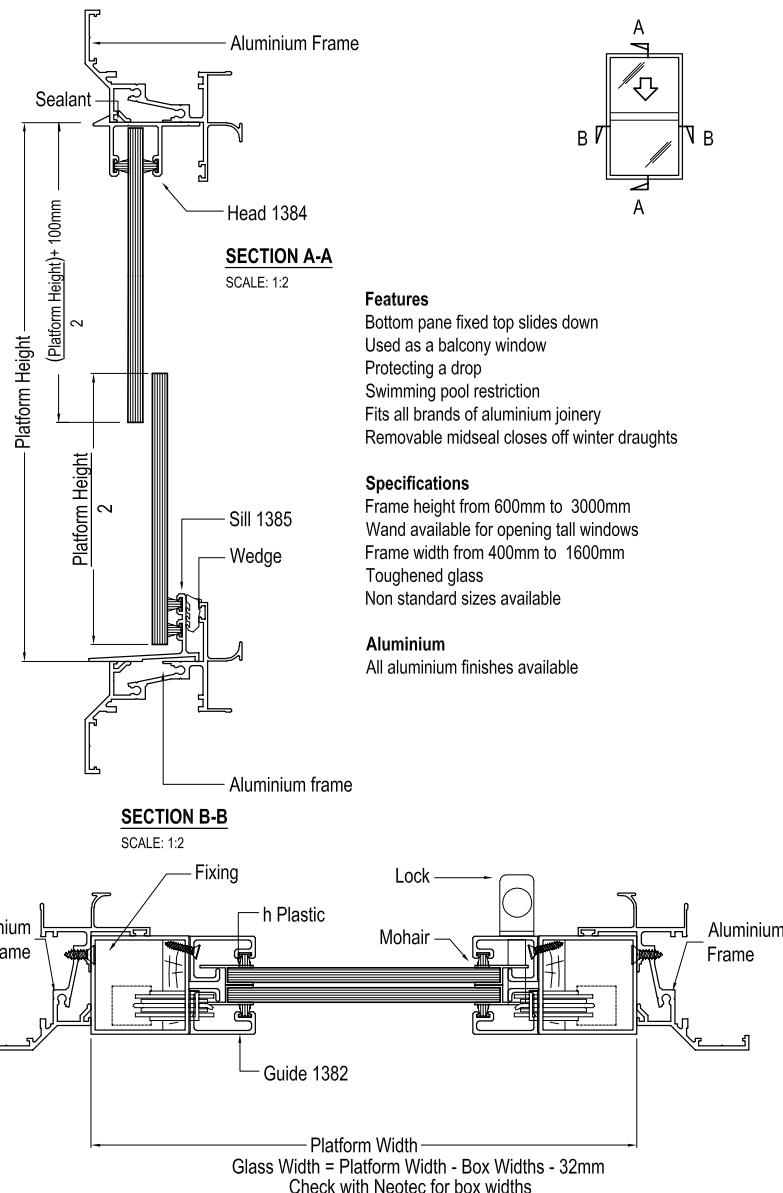
**Note:** glass should be prepared 24 hours prior to installation into window to allow sikaflex to set.

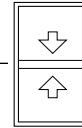
Timber guides are delivered long and should be trimmed at installation.

### Tools Required

- Drill bits - 2.5mm, 3.5mm, 9mm, and 11.5mm.
- Drive bits - #0, #2 square drive.
- Meths.
- Colmar cleaner or similar.
- Rivet gun.
- RTV Acetic cure silicone.
- New Stanley blade or similar.
- Cigarette lighter or matches.
- Assembly Instructions for single hung top slider
- Remove the guides, stops and pulleys from the box section.

**SHUGG™**



**Head N1384**

Position head in frame. Attach with thin bead of sealant.

Box section

Position box section in frame. Pre drill using 3.5mm bit through pre-drilled holes.

**Insert counterweights**

Thread the cord through hole in counterweight and insert counterweight into box section. (Both sides.)

Thread the cord through pulleys and then refit pulleys to box section.

Attach box section with supplied 8g screws.

**Bottom pane**

Position bottom pane of glass with the inside guides on the sill.

**Inside guides N1382 and sill N1385**

Reattach inside guides and sill using guide screws.

Raise both panes to head and prop up.

Reattach bottom half of outside guides to box section (using guide screws.)

**Sliding pane**

Pull the cord so counterweight is at the top of its travel.

Attach cord to "h" plastic of sliding pane by threading through holes.

Check required movement is possible.

Tie cord off and trim excess, melt end with lighter or matches.

Note: Glass will find its own level even if weights are slightly offset.

**Outside guides N1382**

Reattach top half of outside guides to box section (using guide screws.)

Lower fixed pane to sill.

**Lock Installation**

**Note:** The push/pull lock is standard for top sliders.

Close the window tightly.

10mm above the top edge of bottom pane and 8mm from the box section edge of guide, drill a 9mm pilot hole into the guide and through the "h" plastic.

For a lock open position at 50mm, lower the top pane 50mm and drill into the "h" plastic through the existing 9mm pilot hole in the guide.

Drill a 11.5mm hole through the guide skin only (into the 9mm pilot hole in the guide), to accommodate base of lock. Do not drill into 'h' plastic.

Drill & rivet lock to guide using rivets provided.

**Mid Seals**

Midseals are provided as standard to all residential jobs.

Midseals should be placed on the top edge of the bottom pane of glass.

Should you require it to be bonded permanently, use any silicone.

Midseals are not generally installed in schools or interior windows.



## Chapter 6

# Terms of trade and warranty

### In This Chapter

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**Terms of trade for Neotechnical Industries Ltd**

**Producer statement and warranty**

**Educational facilities fitted with Shugg windows**

**Commercial facilities fitted with Shugg windows**

**Neotechnical Industries Ltd**  
7 Fenton Street, Eden Terrace  
PO Box 68-349 Newton  
Auckland New Zealand  
Phone 09-379 9368  
Fax 09-379 9361  
Email [neotec@xtra.co.nz](mailto:neotec@xtra.co.nz)  
[www.shugg.co.nz](http://www.shugg.co.nz)

**NEOTEC™**

# Chapter 6 - Terms of trade and warranty

## TERMS & CONDITIONS OF TRADE

### 1. DEFINITIONS

- 1.1 "Neotec" shall mean Neotechnical Products Limited, or any agents or employees thereof.
- 1.2 "Client" shall mean the Client, any person acting on behalf of and with the authority of the Client, or any person purchasing products and services from Neotec.
- 1.3 "Products" shall mean:
  - 1.3.1 all Products of the general description specified on the front of this agreement and supplied by Neotec to the Client; and
  - 1.3.2 all Products supplied by Neotec to the Client; and
  - 1.3.3 all inventory of the Client that is supplied by Neotec; and
  - 1.3.4 all Products supplied by Neotec and further identified in any invoice issued by Neotec to the Client, which invoices are deemed to be incorporated into and form part of this agreement; and
  - 1.3.5 all Products that are marked as having been supplied by Neotec or that are stored by the Client in a manner that enables them to be identified as having been supplied by Neotec; and
  - 1.3.6 all of the Client's present and after-acquired Products that Neotec has performed work on or to or in which goods or materials supplied or financed by Neotec have been attached or incorporated.
  - 1.3.7 The above descriptions may overlap but each is independent of and does not limit the others.
- 1.4 "Products" shall also mean all products, goods, services and advice provided by Neotec to the Client and shall include without limitation the design, manufacture and supply of vertical sliding windows known as Shugg Vertical Sliding Window Systems and all charges for time and attendances, hire charges, insurance charges, or any fee or charge associated with the supply of Products by Neotec to the Client.
- 1.5 "Price" shall mean the cost of the Products as agreed between Neotec and the Client and includes all disbursements eg charges Neotec pay to others on the Client's behalf subject to clause 4 of this contract.

### 2. ACCEPTANCE

- 2.1 Any instructions received by Neotec from the Client for the supply of Products shall constitute a binding contract and acceptance of the terms and conditions contained herein.

### 3. COLLECTION AND USE OF INFORMATION

- 3.1 The Client authorises Neotec to collect, retain and use any information about the Client, for the purpose of assessing the Client's credit worthiness, enforcing any rights under this contract, or marketing any Products provided by Neotec to any other party.
- 3.2 The Client authorises Neotec to disclose any information obtained to any person for the purposes set out in clause 3.1.
- 3.3 Where the Client is a natural person the authorities under clauses 3.1 and 3.2 are authorities or consents for the purposes of the Privacy Act 1993.

### 4. PRICE

- 4.1 Where no price is stated in writing or agreed to orally the Products shall be deemed to be sold at the current amount as such Products are sold by Neotec at the time of the contract.
- 4.2 The price may be increased by the amount of any reasonable increase in the cost of supply of the Products that is beyond the control of Neotec between the date of the contract and delivery of the Products.

### 5. PAYMENT

- 5.1 Payment for Products shall be 30 days following the date of the invoice ("the due date").
- 5.2 Interest may be charged on any amount owing after the due date at the rate of 2.5% per month or part month.
- 5.3 Any expenses, disbursements and legal costs incurred by Neotec in the enforcement of any rights contained in this contract shall be paid by the Client, including any reasonable solicitor's fees or debt collection agency fees.
- 5.4 Receipt of a cheque, bill of exchange, or other negotiable instrument shall not constitute payment until such negotiable instrument is paid in full.
- 5.5 A deposit may be required.

### 6. QUOTATION

- 6.1 Where a quotation is given by Neotec for Products:
  - 6.1.1 Unless otherwise agreed the quotation shall be valid for thirty (30) days from the date of issue; and
  - 6.1.2 The quotation shall be exclusive of goods and services tax unless specifically stated to the contrary;
  - 6.1.3 Neotec reserve the right to alter the quotation because of circumstances beyond its control.
- 6.2 Where Products are required in addition to the quotation the Client agrees to pay for the additional cost of such Products.

### 7. TITLE AND SECURITY (PERSONAL PROPERTY SECURITIES ACT 1999)

- 7.1 Title in any Products supplied by Neotec passes to the Client only when the Client has made payment in full for all Products provided by Neotec and of all other sums due to Neotec by the Client on any account whatsoever. Until all sums due to Neotec by the Client have been paid in full, Neotec has a security interest in all Products.
- 7.2 If the Products are attached, fixed, or incorporated into any property of the Client, by way of any manufacturing or assembly process by the Client or any third party, title in the Products shall remain with Neotec until the Client has made payment for all Products, and where those Products are mixed with other property so as to be part of or a constituent of any new Products, title to these new Products shall deemed to be assigned to Neotec as security for the full satisfaction by the Client of the full amount owing to Neotec and Client.
- 7.3 The Client gives irrevocable authority to Neotec to enter any premises occupied by the Client or on which Products are situated at any reasonable time after default by the Client or before default if Neotec believes a default is likely and to remove and repossess any Products and any other property to which Products are attached or in which Products are incorporated. Neotec shall not be liable for any costs, damages, expenses or losses incurred by the Client or any third party as a result of this action, nor liable in contract or in tort or otherwise in any way whatsoever unless by statute such liability cannot be excluded. Neotec may either resell any repossessed Products and credit the Client's account with the net proceeds of sale (after deduction of all repossession, storage, selling and other costs) or may retain any repossessed Products and credit the Client's account with the invoice value thereof less

such sum as Neotec reasonably determines on account of wear and tear, depreciation, obsolescence, loss or profit and costs.

- 7.4 Where Products are retained by Neotec pursuant to clause 7.3 the Client waives the right to receive notice under s.120 of the Personal Property Securities Act 1999 ("PPSA") and to object under s.121 of the PPSA.

- 7.5 The following shall constitute defaults by the Client:

- 7.5.1 Non payment of any sum by the due date.
- 7.5.2 The Client intimates that it will not pay any sum by the due date.
- 7.5.3 Any Products are seized by any other creditor of the Client or any other creditor intimates that it intends to seize Products.
- 7.5.4 Any Products in the possession of the Client are materially damaged while any sum due from the Client to Neotec remains unpaid.
- 7.5.5 The Client is bankrupted or put into liquidation or a receiver is appointed to any of the Client's assets or a landlord distains against any of the Client's assets.
- 7.5.6 A Court judgment is entered against the Client and remains unsatisfied for seven (7) days.
- 7.5.7 Any material adverse change in the financial position of the Client.

- 7.6 If the Credit Repossession Act applies to any transaction between the Client and Neotec, the Client has the rights provided in that Act despite anything contained in these terms and conditions of trade.

### 8. DISPUTES

- 8.1 No claim relating to Products will be considered unless made within thirty (30) days of installation.

### 9. LIABILITY

- 9.1 The Consumer Guarantees Act 1993, the Fair Trading Act 1986 and other statutes may imply warranties or conditions or impose obligations upon Neotec which cannot by law (or which can only to a limited extent by law) be excluded or modified. In respect of any such implied warranties, conditions or terms imposed on Neotec, Neotec's liability shall, where it is allowed, be excluded or if not able to be excluded only apply to the minimum extent required by the relevant statute.

- 9.2 Except as otherwise provided by clause 9.1 Neotec shall not be liable for:

- 9.2.1 Any loss or damage of any kind whatsoever, arising from the supply of Products by Neotec to the Client, including consequential loss whether suffered or incurred by the Client or another person and whether in contract or tort (including negligence) or otherwise and irrespective of whether such loss or damage arises directly or indirectly from Products provided by Neotec to the Client; and

- 9.2.2 The Client shall indemnify Neotec against all claims and loss of any kind whatsoever however caused or arising and without limiting the generality of the foregoing of this clause whether caused or arising as a result of the negligence of Neotec or otherwise, brought by any person in connection with any matter, act, omission, or error by Neotec its agents or employees in connection with the Products.

- 9.3. If, contrary to the disclaimer of liability contained in these terms and conditions of trade, Neotec is deemed to be liable to the Client, following and arising from the supply of Products by it to the Client, then it is agreed between Neotec and the Client that such liability is limited in its aggregate to \$500.00.

### 10. WARRANTY

- 10.1 Manufacturer's warranty applies where applicable.

- 10.2 Any producer statement and warranty that Neotec provide to the Client will also form part of these terms and conditions of trade.

### 11. COPYRIGHT AND INTELLECTUAL PROPERTY

- 11.1 Neotec owns and has copyright in all work, designs, documents, systems, drawings, specifications, software and solutions produced by Neotec in connection with the Products provided pursuant to this contract and the client may use the Products only if paid for in full and for the purpose for which they were intended and supplied by Neotec.

### 12. CONSUMER GUARANTEES ACT

- 12.1 The guarantees contained in the Consumer Guarantees Act 1993 are excluded where the Client acquires Products from Neotec for the purposes of a business in terms of section 2 and 43 of that Act.

### 13. PERSONAL GUARANTEE OF COMPANY DIRECTORS OR TRUSTEES

- 13.1 If the Client is a company or trust, the director(s) or trustee(s) signing this contract, in consideration for Neotec agreeing to supply Products and grant credit to the Client at their request, also sign this contract in their personal capacity and jointly and severally personally undertake as principal debtors to Neotec the payment of any and all monies now or hereafter owed by the Client to Neotec and indemnify Neotec against non-payment by the Client. Any personal liability of a signatory hereto shall not exclude the Client in any way whatsoever from the liabilities and obligations contained in this contract. The signatories and Client shall be jointly and severally liable under the terms and conditions of this contract and for payment of all sums due hereunder.

### 14. MISCELLANEOUS

- 14.1 Neotec shall not be liable for delay or failure to perform its obligations if the cause of the delay or failure is beyond its control.

- 14.2 Failure by Neotec to enforce any of the terms and conditions contained in this contract shall not be deemed to be a waiver of any of the rights or obligations Neotec has under this contract.

- 14.3 If any provision of this contract shall be invalid, void or illegal or unenforceable the validity, existence, legality and enforceability of the remaining provisions shall not be affected, prejudiced or impaired.

- 14.4 Where applicable the Construction Contracts Act 2002 applies.

- 14.5 If the Client defaults in payment then the Client agrees that where the Products relate to Clients land, then the amount of such default gives rise to a legal or equitable estate or interest in the Client's land which entitles Neotec to enter a caveat against the Client's land pursuant to the Land Transfer Act 1952 and its amendments or any legislation in substitution thereof.

# NEOTECHNICAL PRODUCTS LIMITED

PO Box 68349 Newton. 7 Fenton Street, Eden Terrace, Auckland.  
Tele: (09) 379 9368. Fax: (09) 379 9361. Mobile: 0274 769 850  
Email: neotec@xtra.co.nz

## ACCOUNT APPLICATION FORM

### ENTITY DETAILS:

APPLICANT'S FULL LEGAL NAME (i.e. not trading name): ..... ("the Client")

(Please tick) Sole Trader  Individual  Partnership  Ltd Company  Other (please state): .....

Trading as: ..... Postal Address: .....

Physical Address: ..... Email: .....

Nature of Business: ..... Years in Business: .....

Telephone: ..... Fax: ..... Date of Birth: .....

Contact Name & Position: .....

### OWNERSHIP

please insert Owner(s) / Directors Name(s) in full

1: ..... Address: .....

2: ..... Address: .....

IF LIMITED LIABILITY COMPANY - Address of Registered Office: .....

Date of Incorporation: ..... Incorporation No: .....

### FINANCIAL & PROFESSIONAL ADVISORS

Shareholders Funds: ..... Paid Up: .....

Name of Accountant: ..... Solicitor: .....

Bank: ..... Branch: ..... Acct No: .....

### TRADE REFERENCES

Company	Contact Name	Phone Number	Account open since

**General Description of Goods/Products/Services to be Provided:** .....

I/We have read and agree to be bound by the terms and conditions of trade as printed overleaf or attached. I/We warrant to Neotechnical Products Limited that the above information is to the best of my/our knowledge, information and belief true and correct and that I/we am/are duly authorised to enter into this application and future contracts on behalf of the Client. I/we also acknowledge that pursuant to the personal guarantee contained in the terms and conditions of trade that, where relevant, I/we am/are also signing this application form in my/our personal capacity.

**If the applicant is a company then this application form must be signed by a director of the company.**

Signed ..... Print Name ..... Designation .....

Dated this ..... day of ..... 20.....

## Producer Statement and Warranty

### Producer Statement and Warranty

Neotechnical Industries Limited certify that the products supplied and installed by our company for the manufacture of Shugg Vertical Sliding window systems meet or exceed the requirements of the New Zealand Building Code ‘Means of Compliance NZS 411.1985’ specification for Performance of Windows and ‘Code of Practice for Glazing in Buildings NZS 4223 1993’.

This means that Shugg windows have been designed and tested to perform under the most diverse New Zealand weather conditions and:

- Have been successfully tested for strength under a range of wind pressures appropriate for the various wind zones in NZ.
- Meet the requirements for deflection under simulated loads.
- Meet requirements for waterproofing and air leakage.
- Have glass of the correct thickness and toughness to cope with expected wind loads and accidental human impact.

In accordance with our Terms and Conditions of Sale a guarantee for all Neotec products is provided under normal conditions of use against failure of materials and workmanship for five years from date of practical completion.

### Durability

Shugg Vertical Sliding windows can be expected to have a trouble free serviceable life of not less than 15 years as required by section B2 of the Building Code. This pertains specifically to the structural elements of the joinery.

In the course of normal maintenance, non-structural fittings such as handles, weather strips, and the like may need to be replaced as they wear out. This process does not contravene the b2 Durability requirements of the New Zealand Building Code as given by the manufacturer.

This warranty is subject to correct installation as outlined in our installation procedure document. Such a document is available from your fabricator or joiner on request.

### Surface Finishing of Shugg Vertical Sliding Window Systems

The surface finishes for Shugg window systems are of two types - powder coating and anodising. The surface treatment protects and aluminium and enhances the appearance of aluminium joinery in providing scope for choice of finish colour.

Shugg Window systems are powder coated by Colourworks Ltd in Hamilton and are warranted to be free of defects and to conform to the manufacturer’s specifications.

Anodising is by Auckland Anodisers and provides a durable anodic finish for aluminium surfaces. Due to the nature of anodising, colour variation may occur within jobs. Anodising gives a hard surface to the aluminium that does not peel, chip or flake and achieves good protection against sunlight, atmospheric corrosion, heat and moisture.

## **Chapter 6 - Terms of trade and warranty**

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### **Care and Maintenance of Aluminium Joinery**

The Shugg vertical sliding windows systems have been designed to the highest quality specification.

Regular cleaning will retain the appeal of the joinery for many years. During house construction ensure that fresh concrete, plaster or mortar is immediately removed from the surface of the aluminium or glass. Wipe with a damp cloth and wash down with clean water.

Pay particular attention to ensuring that builder's debris and dirt is cleaned from the sill so that the window can close correctly. The homeowner should clean the aluminium frames each time the windows are washed in order to remove atmospheric dirt and grime. Please note that in a coastal/industrial environment site it is the manufacturer's recommendation that aluminium joinery is washed down each month with clean warm water and a mild household detergent, paying careful attention to ensure that builder's debris and dirt is removed from the sills so that drainage holes remain unobstructed.

Use only methylated spirits, mineral turpentine or water to remove fresh paint splashes. Do not use abrasive steel wool, scrapers, scouring liquids or powders, as these will damage powder coating and anodising.

Do not use aggressive solvents thinners or petrol as these attack glass levels.

Note also the Manufacturer's recommendation as regards the care of glass.  
The use of high-pressure hoses is not recommended.

## Educational facilities fitted with Shugg windows

### **Northland**

Bay of Islands College  
Onerahi Primary School  
Hikurangi Primary School  
Parua Bay School  
Mangonui School  
Taurauroa Area School  
Whangarei School  
Ohaewai School

Kaitaia College  
Te Ti School  
Rodney College  
Northland Polytechnic  
Tiraumea School  
Hurupaki School  
Kamo High School

### **Auckland**

Avondale College  
Aorere College  
Carlson Cerebral Palsy School  
Glenfield College  
Kings College  
Manurewa High School  
Monte Cecilia  
Onehunga High School  
Papakura High  
Rosmini College  
Selwyn College  
St Cuthberts Junior School  
St Kentigerns School  
St John's College  
St Peter's College - Library  
Westlake Boys High  
University of Auckland - Engineering Dept  
  
Massey University Campus - Albany  
Ngaiwi Primary School  
Waitemata Creche  
St Joseph's School Onehunga  
Unitec Humanities Building  
Papatoetoe Central School  
Kohia Terrace School  
Takapuna Grammar  
Michael Park School  
Northcross Intermediate  
Greenhithe Primary  
Whangaparoa School  
Hill Park Primary  
Oratia Primary School  
Hillary College  
Westlake Girls Science Block  
Diocesan School For Girls  
May Road  
Swanson School  
Pigeon Mountain School  
Hoani Waititi Marei

Auckland Girls Grammar  
Corran School  
Diocesan School For Girls  
Kelston Boys High  
Marcellin College  
Meadowbank Primary School  
Mount Carmel School  
Otahuhu College  
Pigeon Mountain Kindergarten  
Sacred Heart School Epsom  
St Anne's School  
St Kentigerns College  
St Joseph's Primary Grey Lynn  
St John the Evangelist School  
Tuakau College  
Carrington Polytechnic  
College of Education Epsom - School of Music  
St Mary's - Northcote  
Morningside Playcentre  
Merivale Pre-school  
Wesley College  
Albany Primary School  
Hauraki School  
St Anne's Primary School  
Long Bay College  
Newton Central Primary  
Milford Primary  
De La Salle College  
St Joseph's Takapuna  
Freemans Bay School  
Carmel College  
Vauxhall School  
Edgewater College  
Willow Park School  
Meadowbank Primary  
Parnell School  
Koru School  
Green Bay School

## **Chapter 6 - Terms of trade and warranty**

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St Peters School	Kaipara College
Pukekohe Intermediate	Waikowhai Intermediate
Kings Preparatory School for boys	Birkdale Primary School
Tinytown Pakuranga	Takapuna Normal
St Peters Epsom	St Thomas School
Hay Park Primary	Mt Roskill Primary
Papatoetoe Primary	Everglade School
Manakau View Primary	Marlborough Primary School
Ngaiwi School	Pigeon Mountain Kindergarten
Glendowie School	Tuakau College
Rosehill College	De La Salle College
Kristin School	Pearl Baker Kindergarten

### **Waikato**

Waikato University	Ngati-Haua School
Putaruru Intermediate	Turua School
Thames College	Southwell School
Sacred Heart School	McGechie School
Waihi High School	Fairfield School
St Johns School	Woodstock School
Pukekawa School	David St School
Owhata School	TePuketea School
Horsham Downs Primary	Te Puke High School- Performing
Arts Centre	
Insoll Ave School	Elston School
Salvation Army Preschool	Hillcrest Primary
Ngahinapouri School	David Street School

### **Bay of Plenty**

Reporoa College	Bay of Plenty Polytechnic
Rerehakaaitu School	Waihi College
Te Puna School	Tahatai School
Tahatai School	Tauranga Boys High School
Katikati Primary School	Otumoetai Intermediate School
Otoemoetai Technical Block	Te Wananga Student Hostel
Bookfield School	Mount College
Selwyn Ridge Primary	Awakeri Primary
Papamoa Kindergarten	Bethlehem Primary School
Green Park School	Katikati Primary

### **Hawkes Bay**

Bledisloe Primary	Central Primary
Flaxmere Primary	Hastings Central Primary
Kimi Ora Primary	Karamu High School
Lytton High School	Napier Boys High
Nelson Park Primary	North Clyde Primary

## **Chapter 6 - Terms of trade and warranty**

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Napier Teachers College  
Onekawa School  
Eskdale School  
Central Normal School

Rudolph Steiner School  
Whakarongo School  
Milson School  
Raureka School

### **Taranaki**

Hawera Intermediate  
Puketapu Primary  
Pukekura School  
Motorua School  
Western School  
Otumoetai Intermediate  
Mimi School  
Ongaru School  
Urenui School  
Vogeltown School  
Frankley School  
Marcel School

Kahutea School  
Waitara High  
Opunake School  
Inglewood High School  
Mangonui School  
St Josephs School  
Motunui School  
Central School  
Kaiti School  
Mangorei School  
Brooklyn School  
St Mary's School

### **Wanganui**

Wanganui High Schoo  
Aramoho School  
Rangatea School  
Keith St School  
Westmere School  
Wanganui Intermediate  
Upoknagara School  
Stratford Primary  
Te Kura O kokohua

St John's Hill Kindergarten  
Brunswick School  
Tairua School  
Kaiwi School  
Mostown School  
Durie St School  
Waterloo School  
Makirkiri School  
Oruha School

### **Manawatu**

Russell Street Primary  
Kumeroa School  
Central School  
Cornerstone School

Aokoutere School  
Ashhurst School  
Aokautere School  
Gladstone School

### **Wellington**

Queen Margaret College  
Houghton Borough Primary  
Rudolph Steiner School  
St Marks Church School  
Wellington Polytechnic  
Hutt International Boys School  
Tahatai Coast School  
Paramata School  
Fairfield School  
St Patrick's  
Diocesan School for Girls Hamilton  
Wellesley College

Hutt Intermediate School  
Natone School  
St Catherines School  
Ohau School Levin  
Wellington Girls College  
Raumati School  
Kuranui School  
Foxton Beach School  
Rongatai College  
Newlands School  
Paraparaumu Primary School  
Clifton Terrace School

### **Canterbury**

Kaiapoi Borough Primary  
Timaru Main Primary  
Hillmorton High School  
St Peter's School  
Christchurch Polytechnic  
Tamarake School  
Craighead Girls School, Timaru  
Lincoln High School  
Shirley Boys High School  
Medbury School

St Theresa Primary  
Weedons Primary  
St Paul's School  
Our Lady of Victories School  
Parkhouse Ave. Childcare Centre  
Rudolf Steiner School  
Hornby Kindergarten  
Northcote Kindergarten  
Mairehow Playcentre

### **Otago**

Kakanui Primary  
St Mary's  
School for the Blind  
Arthur Street Primary School  
Arrowtown School

MacAndrew Intermediate  
Tairei High School  
Waitaki Boys High  
School of Art-Dunedin

### **Southland**

Makerewa Primary School  
Rosedale Intermediate  
Bluff Primary School  
Queenstown Childcare Centre

Rockdale Park Kindergarten  
Clarendon Primary School  
Queenstown School  
St George's School

## Commercial facilities fitted with Shugg windows

### Northland

Paihia Medical Centre  
Kerikeri Medical Centre  
Waipu Cove Surf Life Saving Club

Kerikeri Geriatric Hospital  
Whangarei Hosp - Oncology  
Waipu Cove Domain Board Camp

### Auckland

Medical Centre, Albany  
Rawhiti Hospital, Mt Eden  
Lopdell House, Titirangi  
Community Centre, Otahuhu  
Rainbows End Adventure Park, Manukau  
St Benedicts Church, Neweton  
St Patrick's Church, City  
West Auckland Swimming Centre, Henderson  
War Memorial Swimming Centre, Onehunga  
Greyhound Racing Club, Manukau  
Tennis Club, Parnell  
Cooper's Creek Vineyard, Kumeu  
St George Tavern, Papatoetoe  
Hotel du Vin, Pokeno  
Smith and Nephew Cafeteria, Avondale  
NZ Post Shopping Complex, Remuera  
Northern Refuse Transfer Station, Nth Shore  
Mercy Hospital, Epsom  
Glenburn Private Hospital  
Kiosk - North Shore Golf Club  
Wintergarden - Auckland Domain  
Berlin Restaurant, Mt Eden  
Tippitts Nurseries  
Greenlane Hospital Pharmacy  
Remuera Eye Clinic  
Papakura Regional Police Station  
Waitemata Electricity, Albany  
North Shore City Council  
St John's Ambulance, New Lynn  
Eden-Epsom Community Centre  
Church of Samoa, Dominion Road  
Devonport Methodist Church  
Alexandra Raceway, Presidents Lounge  
Television New Zealand  
ASB Staff Training Facility  
Otahuhu Town Hall  
Maureen Plowman Retirement Village  
Royal Foundation for the Blind  
Otahuhu Town Hall  
Takapuna Athletic Club  
Victoria Square  
O Connells Hairdressing, Takapuna  
North Harbour Tennis Club  
Middlemore Hospital Drug Store  
Burgerfuel - Parnell and Dominion Road  
Atomic Cafes

Knox Home & Hospital, Epsom  
Comm Health Centre, Gt Barrier  
Community Centre, Avondale  
Creche Playground, St Lukes Mall  
Pompallier House, St Mary's Bay  
Old St Mary's Church, Parnell  
Wesley Methodist Church,  
War Memorial Swimming Pool,  
Papatoetoe Community and Sports  
Racing Club Grandstand, Ellerslie  
Selaks Wines, Kumeu  
Birdcage Tavern, Freemans Bay  
Masonic Tavern, Devonport  
Addis Press Building, Mairangi Bay  
Repco Building, Otahuhu  
Mong Koh Restaurant  
Regional Botannical Garden  
Ronald Caughey Assessment Centre  
Onepoto Community Centre  
Takapuna Swimming Pool  
Regional House, Bell South  
Returned Services Ass - Pt Chevalier  
Public Restroom, Panmure  
Barfoot & Thompson office fitout  
Wilson Home Community & Sports  
Ronald McDonald House, Auckland  
Pukekohe Eventide Home  
North Shore Golf Club  
Returned Services Assoc, Newmarket  
Regent Hotel  
NEC Building Victoria Park  
Dils Funeral Services  
Ronald McDonald House, Ak Hosp  
Orakei Baptist Church  
Glen Eden Physio  
Cavit & Co  
Allan Aspell Building, Mairangi Bay  
Auckland Casino  
Unsworth Medical Centre  
The Store - Broadway  
Royal New Zealand Yacht Squadron  
Civic Theatre Sound Booth  
Takapuna Athletic Club  
Papakura Arts and Cultural Centre  
Ellerslie Tongan Church  
Massey University Gymnasium

### **Waikato / Bay of Plenty**

Blandford Lodge Matamata  
State Services Bldg, Matamata  
Airport Terminal, Rotorua  
Resort Timeshare, Taupo  
Taupo Restaurant  
Regional House, Hamilton  
Te Puna Library

Public Gardens, Hamilton  
Motel, Mt Maunganui  
Retirement Village, Omokoroa  
Ohaaki Geothermal Power Station  
Waitehuna Lodge, Raglan  
Moose Lodge

### **Poverty Bay / Hawkes Bay**

Evans Funeral Services, Gisborne  
Bay Medical Centre, Hastings  
Policity Centre, Flaxmere  
Heretaunga Building Society, Hastings

Carlisle Dowling Solicitors, Napier  
G White Dentist, Havelock North  
Insurance Brokers, Hastings  
Hastings Building Society, Hastings

### **Manawatu**

City Library Complex, Palmerston North  
Castlecliff Golf Club  
Marton Police Station  
Palmerston North Athletic Stadium

Old Railway Hotel, Palmerston North  
Tower Building, Wanganui  
McDonalds Restaurant

### **Wellington**

Premier House, City  
Te Omanga Hospice, Lower Hutt  
Kapiti Coast Retirement Home  
Trust Bank Building

Bowen House, City  
Wellington City Council Building  
Ports of Wellington

### **Marlborough**

RSA Dining Room, Blenheim  
Cloudy Bay Winery

Hadley & Lyall Valuers, Blenheim

### **Canterbury**

Barrington Medical Centre, Spreydon  
Central Fire Station, City  
John Rhind Funeral Premises, Richmond  
Ashburton  
Bardelli's Café, Cashel St, Mall  
Lancaster Park  
Aikmans Bar Merivale  
Royal Foundation for Blind, Christchurch  
Bedford Road Carpark  
Holiday House  
Cholmondeley House  
Aikmans Road Gift Shop  
Munro Hubbard & Co Building, Timaru  
Rendezvous on Barrington Café  
Clearwater Golf Club

Cashel St Parking Building, City  
Salvation Army Residential Home  
Stewards Stand, Racecourse

Mt Cavendish Gondola Building  
Christchurch Public Hospital  
GL Bowron Building  
Loaded Hog Restaurant  
Quinn's Merivale Building  
Textile Bag Company  
Orana Park  
Margaret Wilson Home, Timaru  
Nazareth House  
123 Café

### **Southland**

Community Police House, Invercargill

Centennial Hall, Invercargill

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