

4554VS

VELUX OPENING & FIXED SKYLIGHTS

1

GENERAL

If you have pre-customised this work section using the "questions and answers" provided as part of the downloading process, it may be necessary to amend some clauses to suit the final project-specific version.

The section must still be checked and customised to suit the project being specified, by removing any other irrelevant details and adding project-specific details and selections.

This section relates to the manufacture, supply, and installation of VELUX opening and fixed skylights and roof windows:

It includes;

- operating systems
- accessories
- proprietary flashings

This section covers stand-alone VELUX skylight / roof window installations only. VELUX provide proprietary flashing solutions to be carried out as part of the system installation. Where custom flashings are required, refer to section 4821 FLASHINGS or the relevant roofing section.

Refer to VELUX Statement of Building Code Compliance, at www.velux.co.nz, under Technical Data.

Documents

1.2

DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E2/AS1	External moisture
AS/NZS 2208	Safety glazing materials in buildings
NZS 3604	Timber-framed buildings
NZS 4223.4	Code of practice for glazing in buildings - Wind, dead, snow and live actions

The following are related documents and if referred to in the work section need to be added to the list of DOCUMENTS.

NZBC G4/AS1	Ventilation
AS/NZS 1170	Structural design actions
NZS 3602	Timber and wood-based products for use in building
AS/NZS 1734	Aluminium and aluminium alloys - flat sheets, coiled sheet and plate
AS 3715	Metal finishing - Thermoset powder coatings for architectural applications
NZS 4223.1	Code of practice for glazing in buildings - Glass selection and glazing
NZS 4223.2	Glazing in buildings - Insulating glass units
AS/NZS 4666	Insulating glass units
BRANZ BU 313	Domestic glazing safety
BRANZ BU 598	Insulating glass units

1.3

MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Current Sales Brochure

Installation instructions for GGU/GGL Roof Window and Flashing

Installation instructions for VS/VSE/VSS Skylight

Installation instructions for FS Skylight

Installation instructions for VCM/VCS curb mounted Skylight

Installation instructions for FCM curb mounted Skylight

Installation instructions for EDW flashing

Installation instructions for EDL flashing

Manufacturer/supplier contact details

Company: VELUX New Zealand Limited

Web: www.velux.co.nz

Email: info@velux.co.nz

Telephone: 0800 650 445

Warranties

1.4

WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years: For VELUX Skylights

1.5

WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

~ years: For installation of VELUX Skylights

Requirements

1.6

QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

1.7

NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified VELUX systems, components and associated products listed in this section.

Performance

1.8

PERFORMANCE, WIND, DEAD, SNOW, AND LIVE ACTIONS

The design wind pressures and snow loads to [NZS 3604](#). Live loads and glazing design, for glass or equivalent plastics, to [NZS 4223.4](#).

Use this clause for non-specific design for wind where all items are to the manufacturer's standard details and requirements. Modify this clause for specific design using appropriate parts of [AS/NZS 1170](#).

NOTE: [NZS 4223.4](#) does not match [NZS 3604](#) for wind and snow loads.

2 PRODUCTS

2.1 SKYLIGHTS

VELUX Skylights, either top hinged with INTEGRA (electric or solar) or manual opening, or fixed skylight, for roof pitches between 15° to 90°. Manufactured from high quality treated timber, prefinished frame and sash in white, semi-gloss paint. External cappings in umber grey manufactured from polyester coated aluminium. Refer to SELECTIONS for type, finish and accessories.

2.2 ROOF WINDOWS - EVERFINISH - WHITE

VELUX opening Roof Windows, pivot hinged at centre with vent flap for roof pitches between 15° to 90°. Manufactured from high quality treated timber, encapsulated in a white, virtually maintenance free, 3mm thick polyurethane. External cappings in umber grey manufactured from polyester coated aluminium. Refer to SELECTIONS for type, finish and accessories.

2.3 ROOF WINDOWS - TIMBER FINISH

VELUX opening Roof Windows, pivot hinged at centre with vent flap for roof pitches between 15° to 90°. Manufactured from high quality treated timber, prefinished with a clear water-based lacquer, semi-gloss paint. External cappings in umber grey manufactured from polyester coated aluminium. Refer to SELECTIONS for type, finish and accessories.

2.4 LOW PITCH SKYLIGHTS

VELUX Low Pitch Skylights, either top hinged with solar or manual opening or fixed, for roof pitches between 0° to 60° manufactured from internal ABS frame in white high quality treated timber, prefinished frame and sash in white, semi-gloss paint. External composite cappings in umber grey manufactured of Kynar 500 coated aluminium. Refer to SELECTIONS for type, finish and accessories.

Modify description to suit selected roof window where required.

VELUX INTEGRA opening (model VCS), manual opening (model VCM) and fixed (model FCM) Skylights. Refer to VELUX at www.velux.co.nz for detailed descriptions of roof window material and finish.

Components

2.5 FIXINGS

VELUX proprietary fixings and brackets compatible with the skylight/roof window.

2.6 GLAZING - ELECTRIC OPENING SKYLIGHTS

VELUX proprietary heat strengthened, laminated double glazing with Argon gas fill and low E³ coating.

INTEGRA Opening Skylights - models VSE

2.7 GLAZING - MANUAL OPENING SKYLIGHTS

VELUX proprietary toughened double glazing with Argon gas fill and low E³ coating.
Manual Opening Skylights - models VS, VCM.

2.8 GLAZING - FIXED SKYLIGHTS

VELUX proprietary toughened double glazing with Argon gas fill and low E³ coating.
Fixed Skylights - models FS, FCM.

2.9

GLAZING - ROOF WINDOWS

VELUX proprietary laminated double glazing with Argon gas fill and low E² coating.
Roof Windows - model GGU/GGL.

2.10

HARDWARE

Fasteners, stays, locks, vents and other hardware as supplied with the unit.

2.11

FLASHINGS FOR FS/VS/VSE/VSS/GGL/GGU

VELUX proprietary flashing solutions to VELUX instructions. Refer to SELECTIONS for type. Modify clause to suit project specifications. VELUX proprietary flashings are categorised according to roof material and skylight/roof window application. Refer to VELUX for advice and types.

Note: All skylights except models VCS/VCM/FCM can be installed using VELUX proprietary flashing systems, subject to roof pitch and roof material.

2.12

FLASHINGS FOR FCM/VCM/VCS

Custom flashings are required in accordance with [NZBC E2/AS1](#).

2.13

FLASHINGS FOR MEMBRANE AND METAL TROUGH SECTION ROOFS

Custom flashings are required when skylights or roof windows are installed in membrane or metal trough section roofing, in accordance with [NZBC E2/AS1](#). Refer to section 4821 FLASHINGS for details.

Refer to VELUX at www.velux.co.nz for detail requirements when installing in membrane or metal trough section roofs.

Accessories

2.14

MANUAL OPENING DEVICES FOR VS/VCM/GGL/GGU

Proprietary rod for manual opening.

Manual control for out of reach situations.

2.15

MOTORISED OPENING DEVICES FOR GGL/GGU

Motorised control unit including remote, electric motor, keypad and transformer.

Rain sensor for automatic control of opening.

Modify to project requirements. Motorised controls are always included with VSE, VSS and VCS motorised opening skylights.

2.16

INTERNAL BLINDS/SCREENS

Blind/s to suit the type of Skylight. Refer to SELECTIONS for type.

Modify to project requirements. Refer to VELUX at www.velux.co.nz for detailed options, these include:

VSE INTEGRA opening skylight blinds: INTEGRA Solar Blackout Blind DSH

VSS INTEGRA solar opening skylight blinds: INTEGRA Solar Blackout Blind DSH

VS manual opening skylight blinds: INTEGRA Solar Blackout Blind DSH

FS fixed skylight blinds: INTEGRA Solar Blackout Blind DSD, Manual Blackout Blind DKD

GGU/GGL roof window blinds: Manual Venetian Blind PAL, Manual Blackout Blind DKL

VCS INTEGRA opening skylight blinds: INTEGRA Solar Blackout Blind DSC

VCM manual opening skylight blinds: INTEGRA Solar Blackout Blind DSC

FCM fixed skylight blinds: INTEGRA Solar Blackout Blind DSC, Manual Blackout Blind DKC both

with ZZZ 199 accessory tray

Note: Manual controlled blinds are suitable for skylights up to 3.2 metres above the floor level

2.17

INSTALLATION ACCESSORIES

VELUX installation accessories as supplied with the unit. Refer to SELECTIONS for type.

Finishes

2.18

FINISH

VELUX proprietary finishes.

3

EXECUTION

Conditions

3.1

DELIVERY, STORAGE AND HANDLING

Avoid distortion of elements during transit, handling and storage. Deliver in original containers, dry, undamaged with seals and labels intact. Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement. Do not deliver to site any elements which cannot be immediately unloaded into suitable conditions of storage.

3.2

PRE-INSTALLATION REQUIREMENTS

Site measure during roof framing stage to ensure the VELUX proprietary Skylight / Roof Window and flashings can be installed correctly and in accordance with the installation instructions. Where a unit is installed adjacent to another unit confirm the set out distance between units in accordance with the installation instructions.

Refer to VELUX at www.velux.co.nz for installation details.

Add further information as to when site measurements should take place, especially where the timing of the installation is critical. Also relate this clause to shop and/or standard drawings and details (if supplied) as these should incorporate confirmed dimensions.

3.3

EXECUTION GENERALLY

Check that the preparation of the opening is to [NZBC E2/AS1](#), 8.4.17, Roof penetrations.

3.4

HARDWARE GENERALLY

Factory fit all required and scheduled hardware.

3.5

RETAIN PROTECTIVE COVERINGS

Retain protective coverings and coatings in place during fixing wherever possible. Provide additional protection to prevent marking of surfaces visible in the completed work. Remove protection on completion.

Installation

3.6

GENERALLY

Check that the trimmed openings are formed and constructed to suit the required units. Do not proceed until roof and structural openings are properly formed.

3.7

INSTALL UNITS

Install and fix the units strictly in accordance with manufacturer's requirements and installation instructions. Repack any thermal insulation around rough openings where disturbed by the installation to maintain continuity of thermal barriers. When using VELUX flashings (EDW, EDL, EKW) with VELUX Skylights and Roof Windows, install as detailed by VELUX to make the installation completely weatherproof. Refer to VELUX at www.velux.co.nz for installation instructions. If using custom flashings, ensure upstand height and flashing meet NZBC E2/AS1 upstand height and flashing requirements.

3.8

ACCESSORIES AND OPERATING SYSTEMS

Install selected VELUX accessories and hardware and complete all operating systems.

Completion

3.9

CLEAN FRAMES AND GLAZING

On completion clean down both sides of unit frames, using the methods required by the manufacturer. Remove any manufacturer's stickers and clean glass. Ensure all installed units are adequately protected from damage and adverse weather during construction.

3.10

CONFIRM

Confirm the proper operation of hardware and operating systems on completion of the installation and again at completion of the contract works.

4

SELECTIONS

For further details on selections go to www.velux.co.nz

Substitutions are not permitted to the following, unless stated otherwise.

Select the options to suit the project and delete options not specified.

VELUX provide a total unit complete with flashings for most units, reveal lining and all hardware, glazing and operating systems.

Carefully read VELUX literature before selecting the preferred unit and detailing the required opening. Proprietary flashing work is carried out as part of the system installation.

Skylights

4.1

VELUX - VSE - INTEGRA OPENING SKYLIGHT, ELECTRIC

Location:	~
Brand:	VELUX
Model:	VSE INTEGRA Opening (electric)
Type/size:	~, ~
Glazing:	Pre installed. VELUX proprietary laminated double glazing with Argon gas fill and low E ³ coating.
Colour:	White, semi gloss finish
Roof type/pitch:	~, ~
Flashing:	~
Controls:	Fully integrated INTEGRA electric motor and rain sensor, with radio frequency remote control
Options:	

Type/size: C04, 550mm x 980mm
MO4, 780mm x 980mm
M08, 780mm x 1400mm
SO1, 1140mm x 700mm
SO6, 1140mm x 1180mm

Roof type: Metal longrun, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing

Roof pitch: Between 15 and 90 degrees (when fitted with correct flashing)

Flashing: Proprietary VELUX flashing, custom flashing

4.2

VELUX - VSS -INTEGRA OPENING SKYLIGHT, SOLAR POWER

Location: ~

Brand: VELUX

Model: VSS INTEGRA Opening (solar)

Type/size: ~, ~

Glazing: Pre installed. VELUX proprietary laminated double glazing with Argon gas fill and low E³ coating.

Colour: White, semi gloss finish

Roof type/pitch: ~, ~

Flashing: ~

Controls: Fully integrated INTEGRA solar motor and rain sensor, with radio frequency remote control

Options:

Type/size: C04, 550mm x 980mm
MO4, 780mm x 980mm
M08, 780mm x 1400mm
SO1, 1140mm x 700mm
SO6, 1140mm x 1180mm

Roof type: Metal longrun, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing

Roof pitch: Between 15 and 90 degrees (when fitted with correct flashing)

Flashing: Proprietary VELUX flashing, custom flashing

4.3

VELUX - VS - MANUAL OPENING SKYLIGHT

Location: ~

Brand: VELUX

Model: VS Manual Opening

Type/size: ~, ~

Glazing: Pre installed. VELUX proprietary toughened double glazing with Argon gas fill and low E³ coating.

Colour: White, semi gloss finish

Roof type/pitch: ~, ~

Flashing: ~

Controls: ~

Options:

Type/size: C04, 550mm x 980mm

	MO4, 780mm x 980mm
	M08, 780mm x 1400mm
	SO1, 1140mm x 700mm
	SO6, 1140mm x 1180mm
Roof type:	Metal longrun, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing
Roof pitch:	Between 15 and 90 degrees (when fitted with correct flashing)
Flashing:	Proprietary VELUX flashing, custom flashing
Controls:	Manual, handle (in reach) 1800mm telescopic rod (out of reach)

4.4

VELUX - FS - FIXED SKYLIGHT

Location:	~
Brand:	VELUX
Model:	FS Fixed
Type/size:	~, ~
Glazing:	Pre-installed. VELUX proprietary toughened double glazing with Argon gas fill and low E ³ coating.
Colour:	White, semi-gloss finish
Roof type/pitch:	~, ~
Flashing:	~
Options:	
Type/size:	C01, 550mm x 700mm C04, 550mm x 980mm MO4, 780mm x 980mm M08, 780mm x 1400mm SO1, 1140mm x 700mm SO6, 1140mm x 1180mm
Roof type:	Metal long-run, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing
Roof pitch:	Between 15 and 90 degrees (when fitted with correct flashing)
Flashing:	Proprietary VELUX flashing, custom flashing

Roof windows

4.5

VELUX - GGU - ROOF WINDOW - EVERFINISH - WHITE

Location:	~
Brand:	VELUX
Model:	GGU Everfinish
Type/size:	~, ~
Glazing:	Pre installed. VELUX proprietary laminated double glazing with Argon gas fill and low E ² coating.
Colour:	White Everfinish encapsulated in a white, virtually maintenance free, 3mm thick polyurethane.
Roof type/pitch:	~, ~
Flashing:	~
Vent Controls:	~

Options:	
Type/size:	CK02, 550mm x 780mm CK04, 550mm x 980mm MK04, 780mm x 980mm MK06, 780mm x 1180mm MK08, 780mm x 1400mm SK06, 1140mm x 1180mm SK08, 1140mm x 1400mm
Roof type:	Metal longrun, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing
Roof pitch:	Between 15 and 90 degrees (when fitted with correct flashing)
Flashing:	Proprietary VELUX flashing, custom flashing
Vent Controls:	For out of reach manual control use ZCT 200 Control Rod For out of reach electric control use INTEGRA Window Operator KMG 100K INTEGRA Control Unit KLC 500 and INTEGRA Control Pad KLR 200

4.6

VELUX - GGL - ROOF WINDOW TIMBER FINISH

Location:	~
Brand:	VELUX
Model:	GGL Timber finish
Type/size:	~, ~
Glazing:	Pre-installed. VELUX proprietary laminated double glazing with Argon gas fill and low E ² coating.
Colour:	Clear Top-Finish (Timber look)
Roof type/pitch:	~, ~
Flashing:	~
Vent Controls:	~
Options:	
Type/size:	CK04, 550mm x 980mm MKO4, 780mm x 980mm MKO6, 780mm x 1180mm MKO8, 780mm x 1400mm SKO6, 1140mm x 1180mm
Roof type:	Metal long-run, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing
Roof pitch:	Between 15 and 90 degrees (when fitted with correct flashing)
Flashing:	Proprietary VELUX flashing, custom flashing
Vent Controls:	For out of reach manual control use ZCT 200 Control Rod For out of reach electric control use INTEGRA Window Operator KMG 100K INTEGRA Control Unit KLC 500 and INTEGRA Control Pad KLR 200

Low pitch skylights

4.7

VELUX - VCS - INTEGRA LOW PITCH OPENING SKYLIGHT, SOLAR

Location:	~
Brand:	VELUX

Model:	VCS INTEGRA Low Pitch Opening (Solar)
Type/size:	~, ~
Glazing:	Pre installed. VELUX proprietary laminated double glazing with Argon gas fill and low E ³ coating.
Colour:	White ABS interior
Roof type/pitch:	~, ~
Flashing:	Custom flashing
Controls:	Fully integrated INTEGRA solar motor and rain sensor, with radio frequency remote control
Options:	
Type/size:	2222, 692mm x 692mm 2246, 692mm x 1302mm 3030, 895mm x 895mm 4646, 1302mm x 1302mm
Roof type:	Metal longrun, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing
Roof pitch:	Between 0 and 60 degrees (when fitted with NZBC E2/AS1 compliant flashing)

4.8

VELUX - VCM - LOW PITCH OPENING SKYLIGHT, MANUAL

Location:	~
Brand:	VELUX
Model:	VCM Low Pitch Opening (Manual)
Type/size:	~, ~
Glazing:	Pre-installed. VELUX proprietary toughened double glazing with Argon gas fill and low E ³ coating.
Colour:	White ABS interior
Roof type/pitch:	~, ~
Flashing:	Custom flashing
Controls:	~
Options:	
Type/size:	2222, 692mm x 692mm 2246, 692mm x 1302mm 3030, 895mm x 895mm 4646, 1302mm x 1302mm
Roof type:	Metal longrun, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing
Roof pitch:	Between 0 and 60 degrees (when fitted with NZBC E2/AS1 compliant flashing)
Controls:	Manual, handle (in reach) 1800mm telescopic rod (out of reach)

4.9

VELUX - FCM - LOW PITCH FIXED SKYLIGHT

Location:	~
Brand:	VELUX
Model:	FCM Low Pitched Fixed
Type/size:	~, ~

Glazing:	Pre-installed. VELUX proprietary toughened double glazing with Argon gas fill and low E ³ coating.
Colour:	~
Roof type/pitch:	~, ~
Flashing:	Custom flashing
Options:	
Type/size:	2222, 692mm x 692mm 2246, 692mm x 1302mm 2270, 692mm x 1911mm 3030, 895mm x 895mm 3434, 997mm x 997mm 4622, 1302mm x 692mm 4646, 1302mm x 1302mm
Roof type:	Metal longrun, metal trough section, metal tile, concrete tile, shingle up to 8mm thick, slate up to 8mm thick, membrane roofing
Roof pitch:	Below 15 degrees (when fitted with NZBC E2/AS1 compliant flashing)

Components

4.10

VELUX HARDWARE/OPENING DEVICE FOR VS/VCM/GGU/GGL

Manual Control:	VELUX control rod/handles
Motorised Control:	For GGU/GGL INTEGRA Window Operator KMG 100K, INTEGRA Control Unit KLC 500 and INTEGRA Control Pad KLR 200, complete with rain sensor transformer.
Manual Control:	Control rods and handles to be ordered to suit skylight application as follows: -For out of reach situations, telescopic rod, standard length 1800mm. - VS/VCM skylight: in reach use ZZZ 201 handle, out of reach to 4 metres use ZCT 300 rod control (1.8 metre length) and ZCT 100 extension pieces (1m metre length) as required. - GGU/GGL roof window: out of reach use ZCT 200 rod control (1.2 metre length) and ZCT 100 extension pieces (1 metre length) as required.
Note:	-Models VSE, VSS and VCS come complete with fully integrated electric/solar controls hence no need to specify controls separately. .

4.11

VELUX FLASHING SYSTEM

Brand:	VELUX
Roofing type:	~
Roof pitch:	~
Flashing type:	~, to match unit/roof type
Colour:	Greyfriars

NOTE: All skylights except model VCS/VCM/FCM are to be installed using the manufacturer's proprietary flashing systems if installed in roofs with pitch of 15-90 degrees. Refer to VELUX at www.velux.co.nz for details.

Options:

- Flashing type:
- EDW Flashing, for metal or tile roofing, e.g. corrugate, tile
Available for models VSE, VS, VSS, GGU, GGL, FS
 - EDL Flashing, for flat profile roofing, e.g. shingle, slate
Available for models VSE, VS, VSS, GGU, GGL, FS
 - EKW Combi Flashing, available for coupling of units with 100mm gap
in between for metal or tile roofing, e.g. corrugate, tile
Available for VSE, VS, VSS, GGU, GGL, FS
- Note: For all installations with below 15 degrees roof pitches, membrane roofs and metal trough roofs refer to VELUX at www.velux.co.nz for requirements.

4.12

CUSTOM FLASHINGS

Type: Custom flashings to meet the requirements of NZBC AS/E2.

Accessories

Refer to VELUX at www.velux.co.nz for range of roof window/skylight accessories and technical details.

4.13

VELUX INTERNAL BLINDS/SCREENS

Brand: VELUX

Type: ~

Colour/pattern: ~

Type options:

- VSE INTEGRA opening skylight blinds: INTEGRA Solar Blackout Blind DSH
- VSS INTEGRA solar opening skylight blinds: INTEGRA Solar Blackout Blind DSH
- VS manual opening skylight blinds: INTEGRA Solar Blackout Blind DSH
- FS fixed skylight blinds: INTEGRA Solar Blackout Blind DSD, Manual Blackout Blind DKD
- GGU/GGL roof window blinds: Manual Venetian Blind PAL, Manual Blackout Blind DKL
- VCS INTEGRA opening skylight blinds: INTEGRA Solar Blackout Blind DSC
- VCM manual opening skylight blinds: INTEGRA Solar Blackout Blind DSC
- FCM fixed skylight blinds: INTEGRA Solar Blackout Blind DSC, Manual Blackout Blind DKC
both with ZZZ 199 accessory tray

Note: Manual controlled blinds are suitable for skylights up to 3.2 metres above the floor