

# **VELUX**®

Velux New Zealand Limited 62b Princes Street Onehunga Auckland, 1061 Tel.: 0800 650 445 Email: info@velux.co.nz Web: www.velux.co.nz



Déan Pocock Logistics Manager Velux New Zealand Limited

### CERTIFICATION BODY



1222 Moonshine Rd, RD1, Porirua 5381 Private Bag 50 908 Porirua 5240, New Zealand Tel: 04 237 1170

Email:assuranceservices@branz.co.nzWeb:branz.nz

Chelydra Percy Chief Executive Officer BRANZ Limited

# JAS-ANZ

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# PRODUCT CERTIFICATE THIS IS TO CERTIFY VELUX SUN TUNNELS

# **KEY INFORMATION**

# **1. DESCRIPTION OF PRODUCT**

Velux Sun Tunnels are aluminium framed double glazed roof windows with a light transmission tunnel and ceiling mounted light diffuser. Velux Sun Tunnels (TWF, TWR, TLR and TCR) can be identified by their brand markings on both the units themselves and the packaging.

# 2. USE OF PRODUCT

Velux Sun Tunnels (TWF, TWR and TLR) are for use on roofs of buildings to provide natural light into spaces in buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan area; and,
- with roof structures designed and constructed to meet the requirements of the NZBC; and,
- with pitched roof cladding types and profiles specified in NZBC Acceptable Solution E2/AS1; and,
- with a roof pitch between 15° and 60°; and,
- situated in NZS 3604 Wind Zones, up to and including, Extra High; and,
- on buildings designed for up to a 1 kPa snow loading.

Velux Low-Pitch Sun Tunnels (TCR) are for use on roofs of buildings to provide natural light into spaces in buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan area; and,
- with roof structures designed and constructed to meet the requirements of the NZBC; and,
- for use on flat or nominally flat roofs making use of membrane roof systems; and,
- with a roof pitch between 0° and 60°; and,
- situated in NZS 3604 Wind Zones, up to and including, Extra High; and,
- on buildings designed for up to a 1 kPa snow loading.

The Certificate Holder must maintain compliance with the conditions set out in Regulation 15 of the Building (Product Certification) Regulations 2008.

This Certificate is issued by BRANZ Limited, an independent certification body accredited by the product certification body appointed by the Chief Executive of the Ministry of Business, Innovation and Employment (MBIE) under the Building Act 2004. MBIE does not in any way warrant, guarantee or represent that the building method or product the subject of this certificate conforms with the New Zealand Building Code, nor accept any liability arising out of the use of the building method or product. MBIE disclaims, to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages and costs arising as a result of the building method(s) or products(s) referred to in this certificate.

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Information regarding BRANZ's complaints process can be found at the following link: Complaints Process

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3. COMPLIES WITH THE FOLLOWING PROVISIONS OF THE NEW ZEALAND BUILDING CODE (NZBC)

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.3(g), (h) and (j) [loads arising from snow, wind and impact]. Clause B2 DURABILITY: Performance B2.3.1 (b) [15 years]. Clause E2 EXTERNAL MOISTURE: Performance E2.3.1 and E2.3.2. Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1 and F2.3.3 (a).

Clause G7 NATURAL LIGHT: Performance G7.3.1 and G7.3.2. Velux Sun Tunnels will contribute to meeting these requirements.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1 and H1.3.2E. Velux Sun Tunnels will contribute to meeting these requirements.

# 4. CONDITIONS AND LIMITATIONS OF USE

- Velux Sun Tunnels must be installed in accordance with the Technical Literature supplied by Velux New Zealand Limited.
- The installation of Velux Sun Tunnels must be completed by installers trained by Velux New Zealand Limited or by competent, experienced tradespersons with an understanding of roof window installation and weathertightness details.
- The roof structure must be checked by a suitably qualified person for structural adequacy and suitability of the existing roof cladding prior to installation.

# 5. HEALTH AND SAFETY INFORMATION

Velux Sun Tunnels are glazed with glass. Manufacturer's instructions and typical practices for working with, handling and maintaining glazing should be observed.

# 6. REFERENCE DOCUMENTS

This Product Certificate must be read in conjunction with:

• Technical Manual - Velux Skylights and Roof Windows - New Zealand - Product: Sun Tunnels - April 2020.

# SCHEDULE: INFORMATION THAT SUPPORTS KEY INFORMATION

# 7. SUPPORTING INFORMATION ABOUT DESCRIPTION OF THE PRODUCT

# PRODUCT SPECIFICATION

Velux Sun Tunnels (TWF, TWR and TLR) incorporate a square external roof window with integral flashings suitable for use with profiled metal and tiled roofing. The interior component of Velux Sun Tunnels comprises a ceiling mounted frosted acrylic double glazed diffuser with white ceiling trim ring. The roof window is connected to the ceiling diffuser with either a flexible (TWF) or a rigid (TWR and TLR) highly reflective aluminium light transmission tunnel. The rigid aluminium 'light-tunnel' is made up of straight and adjustable-angle tube sections to allow passage through the roof-space.

The Velux TCR Sun Tunnel incorporates a light-capture dome above roof level attached to a highly reflective aluminium light transmission tunnel providing light to the interior via a diffuser unit mounted on the ceiling below. The rigid aluminium 'light-tunnel' is made up of straight and adjustable-angle tunnel sections to allow passage of light through the roof-space.

The minimum ceiling to roof distance is 400 mm for the TWF models and 900 mm for the TWR, TLR and TCR models.

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The Velux Sun Tunnel models covered by this Product Certificate are:

#### Sun Tunnel Models:

- TWF OK14: 350 mm diameter tube external size 475 mm x 475 mm
- TWR OK10: 250 mm diameter tube external size 374 mm x 374 mm
- TWR 0K14: 350 mm diameter tube external size 475 mm x 475 mm
- TLR OK14: 350 mm diameter tube external size 475 mm x 475 mm
- TCR OK14: 350 mm diameter tube external size 530 mm x 530 mm

Velux Sun Tunnels TWF, TWR and TLR all use a single pane of 4 mm toughened glass to the exterior. Sun Tunnel TCR features an acrylic dome to the exterior. All Sun Tunnels use an acrylic double glazed diffuser designed to be fixed to the ceiling.

Velux Sun Tunnels TWF, TWR and TLR all feature an integrated proprietary flashing system suitable for a variety of roofing types. Flashings and roof detailing for the Velux Low-Pitch Sun Tunnels (TCR) must be specifically designed and are outside the scope of this Product Certificate and will need to be considered by the designer at the time of preparing design documentation.

# 8. SUPPORTING INFORMATION ABOUT INTENDED USE OF PRODUCT

#### MAINTENANCE REQUIREMENTS

Maintenance of Velux Sun Tunnels shall be carried out in accordance with the relevant manufacturer's instructions and at prescribed intervals.

#### BUILDING CODE

Η1

B2 DURABILITY

On exposure to the weather, the coil coated aluminium may gradually lose the original surface finish. A faster reduction in both surface finish and overall serviceable life can be anticipated in severe industrial, geothermal and marine exposures.

#### ENERGY EFFICIENCY

#### **Velux Schedule Method**

The Velux Schedule Method may be used as an alternative solution to the Schedule Method contained in NZBC Acceptable Solution H1/AS1 for housing, and other buildings up to 300 m<sup>2</sup> in floor area. The Velux Schedule Method requires that:

- the sum of the vertical glazing area and the Velux product area (Velux skylights, roof windows and sun tunnels) is 30% or less of the total wall area; and,
- the combined glazing area on the east, south, and west facing walls is 30% or less of the combined total area of these walls; and,
- the Velux product area is no more than 1.5 m<sup>2</sup> or 1.5% of the total roof area (whichever is greater); and,
- the opaque door area is no more than 6 m<sup>2</sup> or 6% of the total wall area (whichever is greater); and,
- the roof, wall, floor, window and door glazing R-values are in accordance with Section 2.1.2 of NZBC Acceptable Solution H1/AS1.

#### **Calculation and Modelling Methods**

Alternatively, designers can use the calculation methods contained in NZBC Acceptable Solutions H1/AS1 or H1/AS2, or the modelling methods contained in NZBC Verification Methods H1/VM1 or H1/VM2. Contact Velux New Zealand Limited for the relevant product R-values.

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Original Issue Date: 15 May 2020 **CERTIFICATE HOLDER** 



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## 9. SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE

All conditions and limitations provided as stated in this Product Certificate.

# **10. BASIS FOR CODEMARK CERTIFICATION**

The following evaluations have been carried out on Velux Sun Tunnels to determine compliance with the NZBC:

- Velux Sun Tunnels have been assessed for resistance to impact loads, snow loads and resistance to wind pressures (non-cyclonic regions). These assessments have been reviewed by BRANZ and were found to be satisfactory.
- Velux Sun Tunnels have been subjected to dynamic weather resistance testing by a National Association of Testing Authorities (NATA) registered laboratory in Australia.
- Weathertightness detailing of the Velux Sun Tunnels has been assessed by BRANZ and found to be satisfactory. Instructions for installation of units and associated flashing components for different roof types have also been reviewed and found to be satisfactory.
- BRANZ Expert Judgement [Materials Scientist] confirmation of compliance to the NZBC Clause B2 Durability Performance Requirements.
- BRANZ Expert Judgement [Materials Scientist] confirmation of thermal performance.
- The practicability of installation of Velux Sun Tunnels has been assessed by BRANZ and found to be satisfactory.
- The referenced Technical Literature has been examined by BRANZ and found to be satisfactory.

# **11. DOCUMENTATION SUPPORTING CERTIFICATION**

- AS 4285:1995 Skylights.
- BRANZ Appraisal No. 970 Velux Sun Tunnels.
- NZS 3604:2011 Timber-framed buildings.
- NZS 4223.4:2016 Code of practice for glazing in buildings Dead, wind and snow loading
- Ministry of Business, Innovation and Employment Record of amendments Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

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# **12. CONDITIONS RELATING TO NOTIFICATION**

The Certificate Holder (Velux New Zealand Limited) must notify the Product Certification Body (BRANZ) in writing, of any intended change to any of the following particulars:

- The name, address, or contact details of the Certificate Holder
- Any address of a location where a certified product is produced or manufactured.

The Certificate Holder shall notify the Product Certification Body in writing of any intended change, modification, or alteration to any of the following:

- The certified building method or product
- The method of its production or manufacture
- The Product Quality Plan prepared in respect of the certified building method or product
- The application or installation instructions for the certified building method or product
- Any documentation relating to the use and maintenance of the certified building method or product.

If the Certificate Holder has any reason to suspect that the certified building method or product does not comply with the Building Code, the Certificate Holder shall notify the Product Certification Body in writing of the reason for that suspicion.

If the Certificate Holder or the Product Certification Body finds that a certified building method or product that has been released on the market does not comply with the Building Code, the Certificate Holder shall disclose that fact in a published disclosure statement in a form that is acceptable to the Product Certification Body and to MBIE. If the Certificate is suspended or revoked, the Certificate Holder:

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- · Shall notify all customers to whom the building method or product is regularly supplied; and,
- Immediately cease using the Certificate, the mark of conformity, and any reference to the number of this Certificate.

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