

PRODUCT TECHNICAL STATEMENT

<i>Material, product or form of construction</i>	<i>DeSilvaLine by Pirmax ISO2</i>
<i>Issued by (company)</i>	<i>Integra Building Products</i>
<i>Reference number</i>	<i>DSL-202206</i>
<i>Version and date of issue</i>	<i>Approved 20221125</i>

PRODUCT DESCRIPTION

DeSilvaLine PIR (polyisocyanurate) is a modified polyurethane rigid foam board with reflective pure foil facer either side of the PIR core.

APPLICATION AND INTENDED USE

Soffit (Carpark Applications)

Wall Systems

Suspended Timber Floors

Suspended Concrete Floors

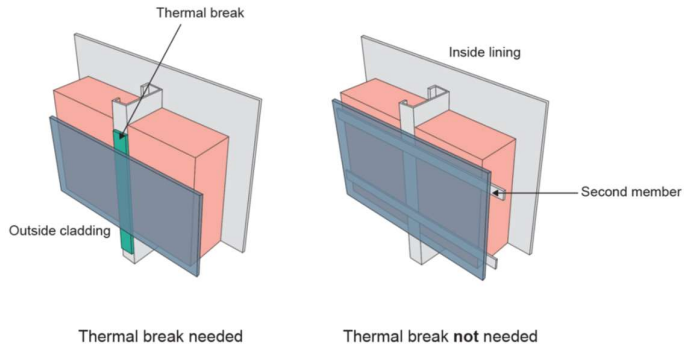
Ceiling Systems

*Roof Insulation below waterproofing - special approval is required from manufacturer.

COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE

Performance Requirement	Meeting the Requirement
Specification C1.10 – Fire Hazard Properties	Specification C1.10 Clause 7 for insulation materials. When tested to AS/NZS 1530.3 this product does not exceed the ‘Spread of Flame’ or ‘Smoke Developed’ indices of Specification C1.10 Clause 7. It may be used as an exposed wall or ceiling lining where specified by the NCC 2019 Volume 1, Specification C1.10 Clause 4. Achieves a Group Number 2 and SMOGRA _{RC} <100 m ² /s ² x 1000 for all thicknesses tested, in accordance with AS ISO 9705 and reported AS 5637.1.
J1.2 Thermal Construction General Insulation must comply with AS/NZS 4859.1 and <ul style="list-style-type: none"> be installed so that meets the following minimum requirements: 	Tested and documents verified for: DeSilvaLine by Pirmax Installation Instructions (minimum requirement) <ul style="list-style-type: none"> Abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like where the insulation must butt against the member; and Forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and Does not affect the safe or effective operation of a service or fitting. Reflective Insulation such as DeSilvaLine;

	<ul style="list-style-type: none"> • Do not use a Class 1-4 vapour barrier in Zones 4-8 on the outside of frame if there is bulk insulation such as Brownie or polyester like insulation in the frame. • Reflective insulation such as DeSilvaLine has an integrated Class 1 vapour barrier. The correct position in Climate Zone 4-8 is with a condensation risk analysis as approved by the certifier or designer, generally on the occupant side of the frame. • Reflective insulation such as DeSilvaLine can be used on the outside if the condensation risk analysis shows dewpoint is within the drainage cavity. • To maximise the reflective R-Value an airspace is required and be unventilated and • The reflective insulation closely fitted against any penetration, door or window opening; and • Taped together <p>Bulk insulation such as Brownie or Rockwool must be installed so that:</p> <ul style="list-style-type: none"> • It maintains its position and thickness, other than where it crosses roof battens, water pipes, electrical cabling or the like; and • In a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50mm
<p>J1.3 (d) – Roof and ceiling construction</p>	<p>A roof that</p> <ul style="list-style-type: none"> • Is required to achieve a minimum Total R-Value; and • has a metal sheet roofing fixed to metal purlins, metal rafters or metal battens; and • does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens • must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed between the metal sheet roofing and its supporting purlins, metal rafters or metal battens. R0.2 is not enough to minimise condensation risk. • The required added R-Value is calculated by the Total R-Value less the construction R-Value. The Total R-Value is specified within the Energy Efficiency Report and suitability of the material is not limited to fire requirements but directions from the designer and installer at the time of sale.
<p>J1.4 Roof Lights</p>	
<p>J1.5 (c) – Walls</p>	<p>A wall that –</p> <ul style="list-style-type: none"> • Is required to achieve a minimum Total R-Value; and • has a lightweight external cladding such as weatherboards, fibre-cement or metal sheeting fixed to a metal frame; and • does not have a wall lining or has a wall lining fixed directly to the same metal frame must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed between the metal sheet roofing and its supporting purlins, metal rafters or metal battens. The solution below is both R0.2 and non-combustible. • One option is to use the following is shown in the Handbook: Energy Efficiency NCC Volume One 2019, pg 75



The required added R-Value is calculated by the Total R-Value less the construction R-Value. The Total R-Value is specified within the Energy Efficiency Report and suitability of the material is not limited to fire requirements but directions from the designer and installer at the time of sale. Integra are not fire engineers and can not design a non-combustible wall. We can provide documentation for certifiers, designers and engineers to develop performance solutions.

J1.6 (a) – Floors

The following installation instructions are minimum requirements and guidance from the designer, engineer or certifier needs to be considered to achieve the design intent;

- insulated around the vertical edge of its perimeter with insulation having an R-Value of not less than 1.0 or
- floor above or below a carpark or a plant room –Must achieve the total R-Value specified in table J1.6
- a concrete slab-on-ground with an in-slab or in-screed heating or cooling system; or located in climate zone 8, must have insulation installed around the vertical edge of its perimeter.

DePolyLine 300 is a 300kPa water resistant (0.8% vol/vol) insulation that can be used on the slab edge or below a raft slab. Do not detail insulation below footings or pile caps.

DeSilvaLine 100kPa is a water resistant (0.1% vol/vol) insulation that can be used on the slab edge or below a raft slab. Do not detail insulation below footings or pile caps

Where the insulation is exposed above grade the insulation needs to be protected from UV light and physical damage.

Test Standard	Test Type	Report
AS/NZS 4859.1:2018	Thermal	CSIRO Report XC3715/R4a
ASTM E 408-71	Emissivity	AWTA Report 19-002613
AS/NZS 1530.3:1993	Fire (Indices)	AWTA Report 20-003292 – 40mm product
AS/NZS 1530.3:1993	Fire (Indices)	AWTA Report 20-005378 – 50mm core
AS/NZS 1530.3:1993	Fire (Indices)	AWTA Report 21-001447 - 50mm product
AS 5637.1:2015	Fire (Group Number)	BRANZ Report FI13054 – 60mm product
Engineering Assessment	NCC Vol 1 BCA 2019 Compliance	IGNIS Assessment IGNS-9192-101- R00 – All thicknesses

NOMINAL THICKNESS (mm)	DECLARED R-VALUE (m ² K/W)
25	R _d 1.05
30	R _d 1.30
40	R _d 1.90
50	R _d 2.35
60	R _d 2.85
70	R _d 3.30
75	R _d 3.55
80	R _d 4.00
90	R _d 4.50
95	R _d 4.75
100	R _d 5.00

Declare RED LIST	ISO ² is a Red List Free product ingredients are 100% disclosed to 100 ppm and do not contain any Red List chemicals. They have been shown to meet the Materials Petal requirements of the Living building Challenge and emissions testing criteria for Health + Happiness Petal.
	Products meet the requirements of the WELL Specification AE-ES-SPS-003 relating to WELL X11 Long Term Emission Control and WELL X12 Short Term Emission Control

LIMITATIONS OF USE

Aluminium foil faced materials conduct electricity. Ensure these materials or conductive fasteners used to anchor this product, are not in contact or near electrical wiring during installation, to avoid electrocution.

When installed on the cold side of the structure, the foil face may increase the risk of condensation within the compartment. Many factors can contribute to condensation risk, Pirmax highly recommends that designers consider the risks and take precaution to further reduce any condensation issues that may occur.

PART C1.9 – NON-COMBUSTIBLE BUILDING ELEMENTS

PIRmax ISO², when considered as a building element or component, is not suitable for use in Type A or B construction in an external wall, common wall or non-loadbearing internal walls where they are required to be fire-resisting. In accordance with Table C1.1, for Class 5,6,7 and 8 this excludes uses from those area of a rise of storey 3 or more. For Class 2,3 and 9, these same excluded uses are for a rise of storey 2 or more.

PART 3.10.5 – CONSTRUCTION IN A BUSHFIRE PRONE AREA

For construction in a bushfire prone area please seek technical support from Pirmax.

CONDITIONS OF USE

- Material is **not deemed** as non-combustible. A performance solution is required by qualified fire engineers and/or certifier to be considered in Type A and B buildings.
- Group number and SMOGRA_{RC} values only apply to NATA comparative testing. Installations require exposed cores not to be left exposed by taping or covering with a non-combustible material.
- Store in its original packaging in a cool, dry area, away from foodstuff. Ensure packages are adequately labelled, protected from physical damage, and sealed when not in use. Avoid packaging being stored under UV light (direct sunlight).
- The aluminium foil facing of the product should not come into contact with wet concrete, or alkaline materials

- Do not pressure clean or use mineral based cleaners on the facing product

INSTRUCTIONS FOR DESIGN, CONSTRUCTION OR INSTALLATION

PIRMAX ISO² PANEL is designed to be used in exposed wall or ceiling/soffit applications typically in commercial or multi-residential use, however, can be used in residential applications. The ISO² panel is designed to mechanically fixed into concrete or masonry substrates in accordance with the installation instructions.

MAINTENANCE INSTRUCTIONS

The core needs to be protected. If exposed use reinforced foil tape to cover exposed core.

SUPPORT

DeSilvaLine is a grading system that provides first line support as a reseller. The manufacturer Pirmax prefers end users to contact the reseller in the first instance for technical support.