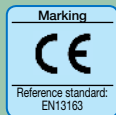


ISOLONDULA

PREFABRICATED THERMAL INSULATION PANELS
TO TREAT OLD ROOFS IN ASBESTOS CEMENT SHEETS,
MADE OF CORRUGATED
PRE-SHAPED SELF-EXTINGUISHING EXPANDED POLYSTYRENE
COUPLED WITH WATERPROOFING MEMBRANE



GRANTS *LEED* CREDITS

CHARACTERISTICS				ENVIRONMENTAL						MODALITÀ D'IMPIEGO	
THERMAL INSULATION	ACOUSTIC INSULATION	WATERPROOF	REAZIONE AL FUOCO	ECO GREEN	ASBESTOS FREE	TAR FREE	CHLORINE FREE	RECYCLABLE	NON DANGEROUS WASTE	EXHAUSTED OIL FREE	APPLICAZIONE CON FISSAGGIO MECCANICO

1 PROBLEM



Rendering asbestos cement covering sheets harmless is becoming more and more important for environmental reasons because of the dangers posed by the continuous dispersion of asbestos fibres into the environment.

One of the treatment methods set forth in Ministerial Decree of 06/09/94, law 257/92, includes the "Confinement (over-coverage) of the sheets. To avoid the risk of dispersion of the asbestos fibres, PSE pre-shaped panels are applied, which perfectly coincide with the profile of the asbestos cement sheets. These will be previously treated with an encapsulating coating according to the applicable legislation.

2 SOLUTION

ISOLONDULA is a pre-shaped trapezoidal sheeting panel with lateral rabbets made of self-extinguishing sintered expanded polystyrene coupled hot to a 2 mm thick waterproofing membrane in elastoplastomer polymer-distilled bitumen, reinforced with rot-proof glass fibre with side and head overlaps. The flame can thus be used on the top surface without burning the insulator.

The panel is shaped to measure in order to match the profile of the asbestos roof and obtain a flat surface on any design.

Sintered expanded polystyrene is an

inexpensive insulation product that has been tested for years on roofs; it is prefabricated by joining it with the waterproof membrane, reducing its sensitivity to the heat of the flame used to lay the waterproof covering, saving on insulation and laying costs.

ISOLONDULA is a thermal insulator that also reduces the sound of rain or hail under the asbestos sheet.

APPLICATION FIELDS

ISOLONDULA is used to repair and restore old fibre cement roofs and asbestos cement sheets without having to demolish them. This entirely avoids the costs related to their transport to landfills and the purchase and installation of their replacements. Shapes other than the ones normally produced can be supplied upon request.

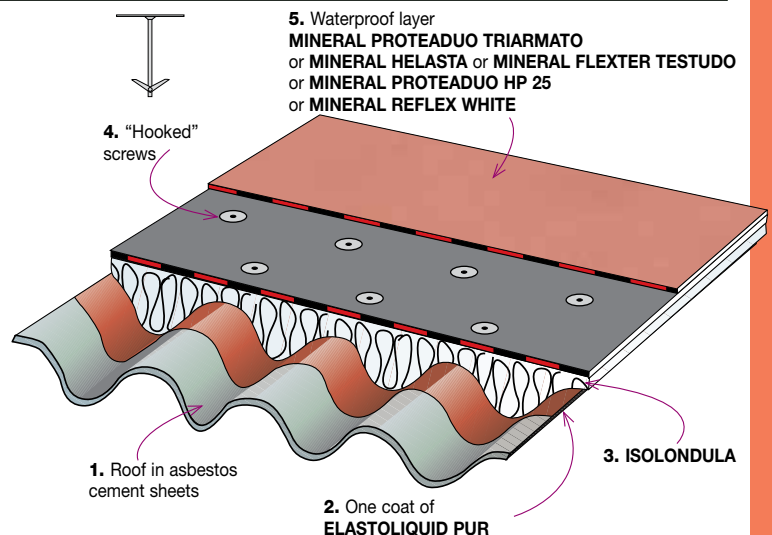
In this case, in order to plan production, the values indicated in the scheme at the back of the sheet must be provided.

METHOD OF USE

ASBESTOS CEMENT SURFACES: Types of operation according to standard UNI10686 of March 1998, Appendix 2, with the Decree of 27 August 1999, regulatory amplification of Law no. 257 of 27 March 1992.
C • Encapsulating treatment on the exposed surface of asbestos cement sheets (type C: not exposed) to support confinement operations with an average thickness of μm 200.

Laying of a coloured water base coat ELASTOLIQUID PUR, consuming about 500 g/m².

The surface to be treated must be sufficiently regular, with sheets without ruptures and in general in such conditions to withstand the laying of the new panels, which must be well joined with the overlapping selvages according to the maximum sloping line. The panels are stabilised to the existing structure through nailing by using special "hooked" screws for the fibre cement support. The bolts will be fitted at the head with a 70 mm diameter washer. The number of nails per m² will depend on the state of the support and the exposure to wind. In any case at least 4 nails per m² must be arranged. A distilled bitumen-polymer waterproofing membrane reinforced with polyester non-woven fabric is used, preferably of the slated type with EC marking for single layer applications, across the overlaps of the layer below with 10 cm overlaps.



TECHNICAL CHARACTERISTICS

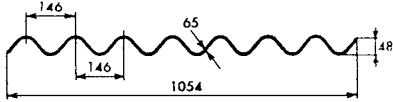
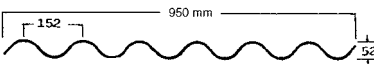
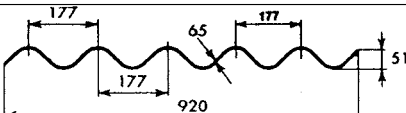
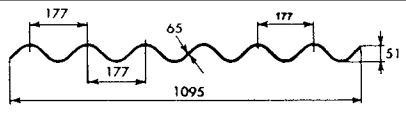
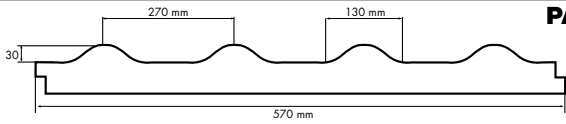
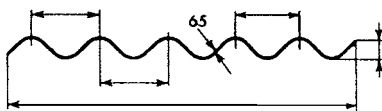
	Regulation	ISOLONDULA PSE 80		ISOLONDULA PSE 120	
Intended use		- for all uses -		- for all uses -	
Designation code	EN 13163	EPS-EN 13163-T(2)-L(3)-W(3)-S(5)-P(30)-DS(N)5-BS125-CS(10)80		EPS-EN 13163-T(2)-L(3)-W(3)-S(5)-P(10)-DS(N)5-BS170-CS(10)120	
Compression strength 10% compression	EN 826	≥80 KPa [CS(10)80]		≥120 KPa [CS(10)120]	
Dimensional stability 48 h at 23°C at 90% R.H.	EN 1604	±0.5% [DS(N)5]		±0.5% [DS(N)5]	
Bending strength	EN 12089	≥125 KPa [BS125]		≥170 KPa [BS170]	
Perpendicular tensile strength of faces		-		-	
Thermal conductivity λ	EN 12667	0.037 W/mK		0.035W/mK	
Thickness T(1) (mm)		55	65	55	65
Thermal resistance R _D (m²K/W)					
- Sheet euro 146/48		1.17	1.56	1.34	1.65
- Sheet euro 152/52		1.18	1.46	1.25	1.55
- Sheet euro 177/51		1.02	1.26	1.08	1.33
Specific heat		1 200 J/kgK		1 200 J/kgK	
Long term water absorption by immersion	EN 12087	<5%		<5%	
Water vapour transmission	EN 12086	μ = 30÷70		μ = 30÷70	
Reaction to fire	EN 13501-1	Euroclass E _{d2}		Euroclass E _{d2}	

Specific characteristics of the polymer-distilled bitumen membrane

Impermeability	EN 1928-B	60 kPa	60 kPa
Permeability to vapour	EN 1931	μ = 20,000	μ = 20,000
Thermal conductivity		0.2 W/mK	0.2 W/mK
Type		V2	V2
Thermal capacity (KJ/K·m²)		2.60	2.60

Acoustic insulation index. Acoustic absorption index. Impact noise transmission index. Durability of reaction to fire, thermal resistance, compression resistance. **NPD**

TYPE MEASUREMENTS OF THE FIBRE CEMENT SHEETS FOR THE SUPPLY OF ISOLONDULA PANELS

1 Most common fibre cement sheets with standardised production	EURO SHEET 146/48/7 7 waves 	PANEL MEASUREMENT 103x100xth. average USEFUL SURFACE 101x100xth. average
	EURO SHEET 152/52/6 6 waves 	PANEL MEASUREMENT 90.5x100xth. average USEFUL SURFACE 88x100xth. average
	EURO SHEET 177/51/5 5 waves 	PANEL MEASUREMENT 88.5x100xth. average USEFUL SURFACE 85x100xth. average
	EURO SHEET 177/51/6 6 waves 	PANEL MEASUREMENT 105x100xth. average USEFUL SURFACE 102.5x100xth. average
2 Romanella type sheets	SHEET ROMANELLA n. 4 waves 	PANEL MEASUREMENT 109x100xth. total USEFUL SURFACE 107x100xth. total
3 For the fibre cement sheets not included in the example, the data must be filled as indicated to the side		waves no. _____

The sheets described above are produced with sintered expanded polystyrene classified by EN13163 as type 80 and 120.



ANIT associates

The data in this publication is the result of laboratory tests or observations on site and this does not guarantee the repeatability of the results in equivalent systems.

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 <p style="text-align: center;">Construction Systems and Products</p> <p>Via G. Rossini, 22 - 37060 Castel D'Azzano (VR) - Italy - C.P.67 T. +39 045 8546201 - F. +39 045 518390</p>	<p>Internet: www.index-spa.com Informazioni Tecniche Commerciali tecom@indexspa.it Amministrazione e Segreteria index@indexspa.it Index Export Dept. index.export@indexspa.it</p>				
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The figures shown are average indicative figures relevant to current production and may be changed or updated by INDEX at any time without previous warning. The advice and technical information provided, is what results from our best knowledge regarding the properties and the use of the product. Considering