



1st DIVISION



2nd DIVISION

technical specification **12**



REFURBISHMENT OF ASBESTOS CEMENT AND METAL ROOF SHEETING & CLADDING

Among the various problems which affect buildings, the refurbishment of asbestos cement or metal sheeting - both industrial and domestic - represents an ever expanding sector. The traditional solution has been to replace the sheeting. This leads on into many problem areas, not least of which is the high cost of disposing of asbestos sheeting. It also means that

work carried on under the roof being replaced will need to be suspended, with the resultant loss of production. The necessity to find more rapid and economical solutions has driven designers and technicians to consider and research new materials and technology capable of resolving the above-mentioned problems. INDEX S.p.A. offers INSOLUNDULA

and ISOLGRECA - products which allow thermal insulation and waterproofing of corrugated asbestos cement or metal sheeting in one operation.

The costly responsibility of transporting waste material to disposal sites and the acquisition and application of replacement material are all completely avoided.

inde»»» **complete systems**

ASBESTOS CEMENT REFURBISHMENT (ISOLONDULA SYSTEM)

Problem



Asbestos cement roofing on buildings has often become severely degraded due to natural ageing.

Prolonged exposure to atmospheric agents in fact causes increased wear and tear, especially on the outside of the roofing. Careful investigation has demonstrated how cement fibres, used as reinforcement in corrugated cement sheets, tend with ageing to free themselves and spread into the atmosphere.

This mineral is extremely injurious to health and it has been calculated that sufficient waste sites do not exist to contain the noxious toxic waste which would result from the demolition of existing asbestos cement roofs.

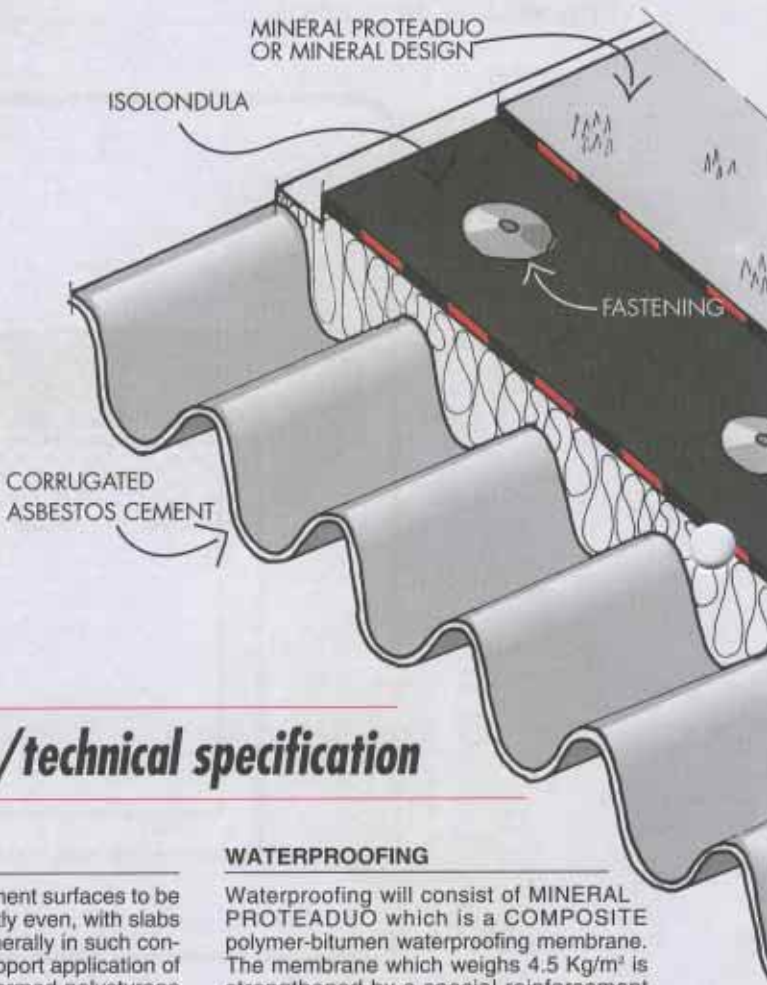
The necessity therefore arises to operate in such a way as to prevent as far as is possible the demolition of asbestos cement clad buildings and the subsequent dispersion of the asbestos fibres into the air.

It must also be taken into consideration that the removal of the roof elements may cause serious difficulties for the activities being carried on underneath.

If the refurbishment operation also includes the improvement of the thermal insulation, the INDEX system offers a rapid and safe solution which avoids the removal of the asbestos cement sheets by using the product ISOLONDULA which in one unique application allows encapsulation, thermal insulation and waterproofing of the refurbished roof.

Concerning on site organisation it is suggested:

- **Before starting work** - Notification should be given to the local Health and Safety office regarding carrying out work on asbestos cement products.
- **During application** - Prepare all the necessary safety precautions to safeguard operatives.



Solution/technical specification

PRELIMINARY WORK

Corrugated asbestos cement surfaces to be treated must be sufficiently even, with slabs free from breaks and generally in such condition as to be able to support application of the ISOLONDULA pre-formed polystyrene panels.

VAPOUR BARRIER

In particular thermohygrometric situations, with high relative humidity (stables, pigsties, etc.) a sheet of polyethylene of 100 μ thickness will be laid. The sheet is dry laid on the asbestos cement corrugations and positioned to follow the undulations of the sheet profile as the ISOLONDULA is fixed.

THERMAL INSULATION

Thermal insulation is carried out using a high density expanded polystyrene panel coupled with an elastoplastomeric polymer-bitumen membrane 2 mm thick reinforced with a rotproof glass fibre matt. The panel is manufactured to allow a selvedge on two sides which gives an overlap of approximately 50 mm; this protects the thermal insulation from the flame at the time when the weathering or cap sheet is applied fully bonded.

The ISOLONDULA panels will be fastened to the existing structure by using a fixing consisting of either a rivet through the existing sheeting or self-taping screws, which have a 90 mm diameter washer, fixed into the purlin. The number of fixings per m^2 will depend on the surface condition and wind exposure. However, at least four fasteners per m^2 should be anticipated.

WATERPROOFING

Waterproofing will consist of MINERAL PROTEADUO which is a COMPOSITE polymer-bitumen waterproofing membrane. The membrane which weighs 4.5 Kg/m^2 is strengthened by a special reinforcement composed of three layers - a glass fibre matt composite between two layers of non woven polyester fabric. This is impregnated with SBS bitumen. The lower face of the membrane is also SBS bitumen.

The compound of this layer contains distilled bitumen and thermoplastic rubber which has elongation to break of 2000% and cold flexibility down to $-25^{\circ}C$. The elastoplastomeric mix which is on the upper face of the sheet contains distilled bitumen, atactic polypropylene and polyolefinic elastomers which are self-protected by mineral chippings. The material, with laps of 100 mm, is fully flame bonded onto the ISOLONDULA membrane.

(For complete MINERAL PROTEADUO characteristics, the reader is asked to consult the relative technical sheet).

ALTERNATIVE

The waterproofing will be made using MINERAL DESIGN - this is an elastoplastomeric polymer-bitumen waterproofing membrane. The membrane which weighs 4.5 kg/m^2 is strengthened by a special reinforcement composed of three layers - a glass fibre matt composite between two layers of non woven polyester fabric.

(For complete MINERAL DESIGN characteristics the reader is asked to consult the relative technical sheet).

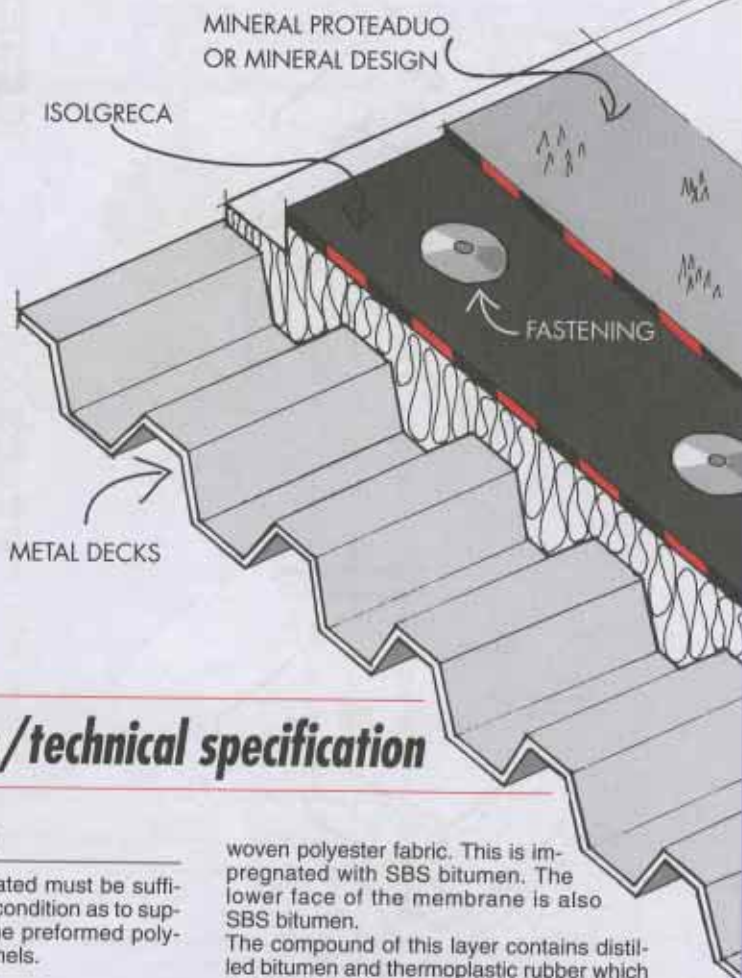
For refurbishment which does not include thermal insulation the reader is advised to refer to

REFURBISHMENT OF METAL SHEETING (ISOLGRECA SYSTEM)

1 Problem



Degradation caused by corrosion which is found on metal sheet roofs and which may lead, in the most serious cases, to the substitution of the roofing elements, coupled with existing thermal insulation and acoustic improvement expectations, is a problem which can be resolved with ISOLGRECA. INDEX S.p.A. provides a rapid, safe solution using the product ISOLGRECA which in one unique operation encapsulates, thermally insulates and waterproofs the existing metal roofing.



2 Solution/technical specification

PRELIMINARY WORK

Metal surfaces to be treated must be sufficiently even and in such condition as to support the application of the preformed polystyrene ISOLGRECA panels.

THERMAL INSULATION

Acoustic thermal insulation is carried out using a high density expanded polystyrene panel coupled with a 2 mm thick elastoplastic polymer-bitumen membrane reinforced with a rot-proof glass fibre matt. The panel is manufactured on two sides in such a way as to allow an overlap selvedge of membrane of approx. 50 mm which protects the insulation from the flame at the time when the protective cap sheet is applied fully bonded.

The panels, called ISOLGRECA, will be fastened to the existing structure by using a fixing consisting of special self-taping screws, which have a 90 mm washer, fixed into the purlin.

The number of fixings per m^2 will depend on the surface condition and wind exposure. However, at least four fasteners per m^2 should be anticipated.

(Consult Index Technical Specification n. 6).

WATERPROOFING

Waterproofing will consist of MINERAL PROTEADUO which is a COMPOSITE polymer-bitumen waterproofing membrane. The membrane which weighs 4.5 kg/m^2 is strengthened by a special reinforcement composed of three layers - a glass fibre matt composite between two layers of non-

woven polyester fabric. This is impregnated with SBS bitumen. The lower face of the membrane is also SBS bitumen.

The compound of this layer contains distilled bitumen and thermoplastic rubber which has elongation to break of 2000% and cold flexibility down to -25°C . The elastoplastic mix which is on the upper face of the sheet contains distilled bitumen, atactic polypropylene and polyolefinic elastomers which are self-protected by mineral chip-pings.

The material, with laps of 100 mm, is fully flame bonded onto the ISOLGRECA membrane.

(For complete MINERAL PROTEADUO characteristics, the reader is asked to consult the relative technical sheet).

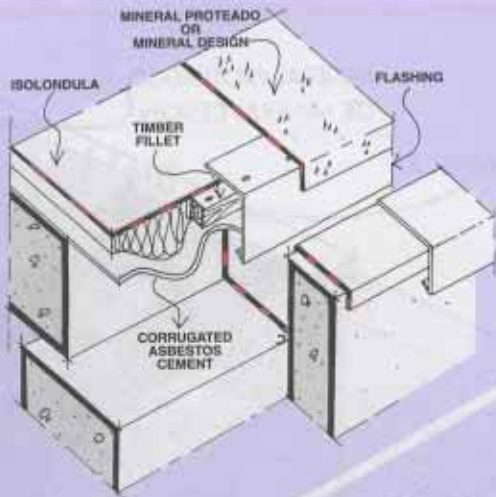
ALTERNATIVE

The waterproofing will be made using MINERAL DESIGN. This is an elastoplastic polymer-bitumen waterproofing membrane. The membrane which weighs 4.5 kg/m^2 is strengthened by a special reinforcement composed of three layers - a glass fibre matt composite between two layers of non woven polyester fabric.

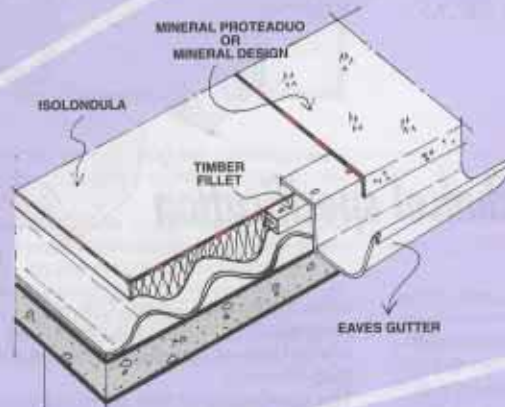
(For complete MINERAL DESIGN characteristics, the reader is asked to consult the relative technical sheet).



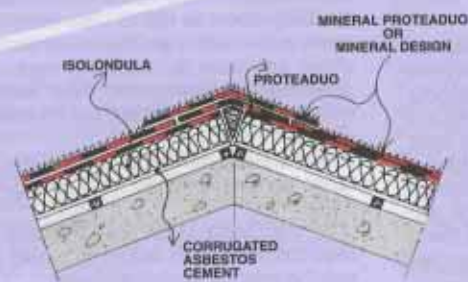
TECHNICAL DETAILS



**PERIMETER
DETAIL WITH
SECRET
EAVES
GUTTER**



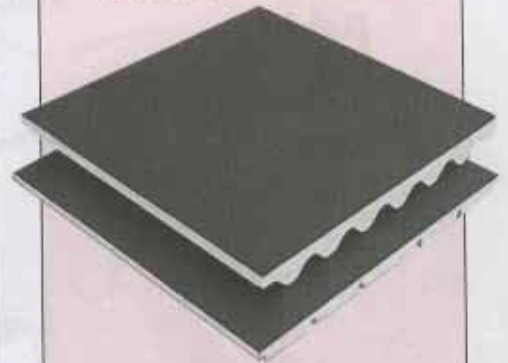
**PERIMETER
DETAIL
WITH METAL
EAVES
GUTTER**



**RIDGE
DETAIL**

THE PRODUCTS

ISOLONDULA - ISOLGRECA



For complete information on the products consult the technical sheets.

MINERAL DESIGN & MINERAL PROTEADUO



For complete information on the products consult the technical sheets.

FASTENERS

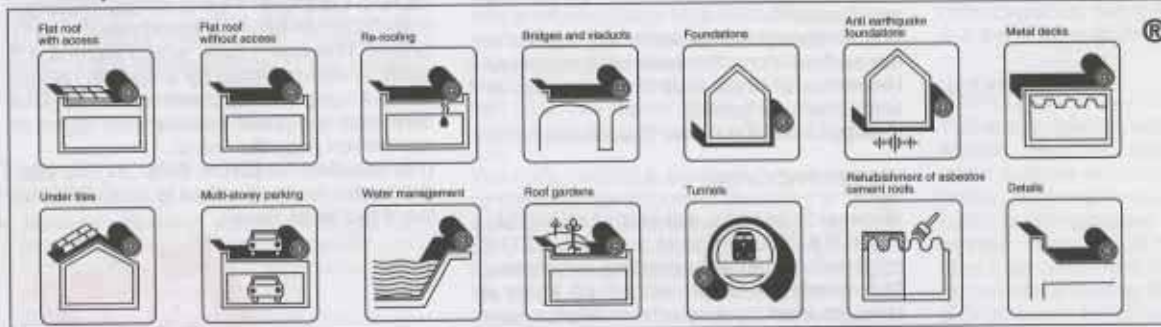


in expanding plastic for ISOLONDULA



in metal self tapping screws for ISOLGRECA

INDEX production is strengthened by exclusive manufacturing systems covered by industrial patents.



Company with certified quality system



1st DIVISION:
POWDER BITUMES,
WATERPROOFING
MEMBRANES



2nd DIVISION:
THERMAL INSULATION
IN ROOFS AND FRAMES
COMBINED WITH A
POWDER BITUMEN
MEMBRANE



3rd DIVISION:
PRODUCTS FOR REFINISHMENT
OF ASBESTOS CEMENT SHEETS,
PRIMER, LIQUID WATERPROOFING,
PAINT, BITUMINOUS MASTICS
FOR INSULATING FRAMES, SEALANTS



4th DIVISION:

1st LINE: BONDING AGENTS FOR TILES, NATURAL STONE AND WOOD
2nd LINE: DAMP-PROOFING PLASTERS AND FINISHES FOR THE RESTORATION AND IMPROVEMENT OF HISTORICAL AND MODERN BUILDINGS
3rd LINE: WATERPROOFING CEMENTS, SHRINK-RESISTANT MORTARS AND PROTECTIVE COATINGS FOR CONCRETE AND MASONRY