EDILTECO®
group

®PROTHERM light

a complete range of plasters for
the passive fire protection

PROTHERM light
Fireproofing Division

PASSIVE FIRE PROTECTION OF STRUCTURES

What is **PROTHERM** light®

The long lasting experience of Edilteco as world manufacturer of lightweight and thermo-insulating mortars has led to the development of the new PROTHERM light® products range to be used for the passive fire protection of the buildings. Our purpose is always the same: to develop products and building equipments for the wellness and safety of the people. The PROTHERM light® range provides to professionals all the fireproofing equipments for the fire protection of the buildings such as airports, petrochemical industries, hospitals, schools, tunnels, skyscrapers and residential complex.
This range is the result of the constant technological development, aimed to save human lives and to protect the infrastructural assets.

PROTHERM light®
A complete range of plasters for fire protection.

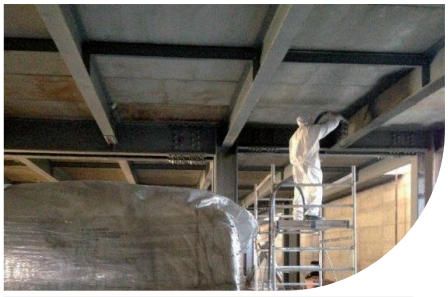
FOR THE FIRE PROTECTION OF **INDUSTRIES' BUILDINGS, AIRPORTS, HOSPITALS, SCHOOLS, MALLS, UNDERGROUND PARKINGS, TUNNELS ...**

PROTHERM light® HAS BEEN CHOSEN FOR
EDILTECO REFERENCES

MULTIPLEX CINEMA - TORINO - ITALY

HOSPITAL - GRAVEDONA (CO) - ITALY

"CIRCONVALLAZIONE NORD" TUNNEL LINING - ROME - ITALY



AIRPORT - BARI - ITALY

ENPAM - ROME - ITALY

POST OFFICE - CATANIA - ITALY

CINECITTÀ - ROME - ITALY

ST. THERESA VILLA - BAGHERIA (PA) - ITALY

MASERATI FACTORY - MODENA - ITALY

PROTHERM LIGHT®

THE MOST VERSATILE AND CERTIFICATED PLASTER FOR FIRE PROTECTION ON THE MARKET

Lightweight premixed thermal insulating plaster based on virgin EPS beads, water bindings and special additives for mechanical application.

- Available colours: grey and white.
- Fireproofing protective system, specifically designed to improve the passive fire resistance of structural elements made of steel, brick, normal and pre-stressed reinforced concrete and on buildings for civil and industrial uses both internally and externally.
- For indoor and outdoor use.
- It does not contain fibres.

CE

UPDATED according to the EUROPEAN REGULATION ENV 13381

PROTHERM LIGHT® Plaster for the passive fire protection of structures			
TECHNICAL CHARACTERISTICS	**VALUE**	**M.U.**	**REGULATION**
Available colour	grey white	-	-
Mass (dry)	350	kg/m^3	-
Compressive strength	0,97	N/mm^2	UNI EN ISO 12390-3
Flexural strength	0,35	N/mm^2	UNI EN ISO 12390-5
Thermal conductivity λ_D	0,079	W/mK	UNI EN 12667
Fire reactivity	A1	-	UNI EN 13501-1
Packaging	18	kg/bag	-

APPLICATION	
Laying surface	According to the classification report
Minimum and maximum thicknesses	According to the classification report
Weight and yield	~ 3,0 kg/m^2 for 1 cm of thickness / each bag ~ 6 m^2 for 1 cm of thickness
Drying	On the surface: 24 hours at 20 °C with normal ventilation

When **PROTHERM LIGHT®** is exposed to fire, the heat is absorbed by the product and the polystyrene beads sublimate without flame and smoke emission. This creates a structure composed of the cement binder and the empty cells left by the sublimated polystyrene beads. Therefore the plaster changes its physical characteristics and becomes a layer of material with high temperature resistance. This advantage can be added to that resulting from the crystallized water loss and to the thickness of the material. The photos show the plaster before and after exposure to flame and heat; it can be noted how the beads are replaced by the void cells.

PROTHERM LIGHT® is safe to apply without the need for special equipment.
It is widely recommended to read the application manual before utilization.

See the technical data sheets and application manuals.

PROTHERM LIGHT®

Once applied it looks like a normal fire protection plaster but it has the following significant differences:

· It has a low density of 350 kg/m^3 (dry).
· It can be rendered, smoothed and painted; any top finishing is possible.
· It has good impact and mechanical resistance characteristics (compressive strength of 0,97 N/mm^2).
· It is resistant to the atmospheric agents. It can be applied also outdoor on wet supports.
· It is stable over time.
· It has high thermal insulating properties (λ_D = 0,079 W/mK).
· It has quick drying times.

FIRE RESISTANCE

European Regulation for protective coverings

The publication of the European harmonized standards has introduced precise instructions regarding the way to verify and determine the fire resistance performances of the structural elements of any building which is subjected to the control of the Fire Department. With reference to the insulating plasters used to increase the fire resistance performances of the structural elements, the approval through experimental European regulations of EN 13381 series listed in the A.3.2 table of the A attachment is strictly required.

DETERMINING THE CONTRIBUTION OF STRUCTURAL ELEMENTS TO THE FIRE RESISTANCE	REFERENT REGULATION
Horizontal protective membranes	CEN/TS 13381-1
Vertical protective membranes	ENV 13381-2
Protection applied to concrete elements	ENV 13381-3
Protection applied to steel elements	EN 13381-4
Protection applied to steel/concrete composite elements	ENV 13381-5
Protection applied to columns with cavity filled with concrete	EN 13381-6
Protection applied to wooden elements	ENV 13381-7
Reactive protective applied to steel elements	EN 13381-8

These standards provide for an experimentation campaign with standardized procedures performed on defined typologies treated with different thicknesses of insulating plaster. The numerical data analysis versus time of exposure to fire allows translation of the data into a classification report (Assessment).
This document is available to the designer and contains a performance chart that according to the typology of building and the type of fire protection will indicate the necessary thicknesses to apply. As a result of the same proofs the thermo physical parameters of the products for performing analytical assessments, to replace the values tabulated in the technical regulations repealed.

PROTHERM LIGHT® AVAILABLE ASSESSMENT

APPLICATION	REGULATION	ASSESSMENT REPORT N°
Concrete	UNI ENV 13381-3	CSI1895FR - CSI1896FR
Steel	UNI ENV 13381-4	CSI1784FR
Corrugated Sheet + Concrete	UNI ENV 13381-5	13_02603-1-a

The assessment for the correct sizing of the thicknesses of PROTHERM LIGHT® on structural elements of steel, reinforced concrete, mixed steel/concrete and concrete are available by our technical department.

AVIKOTE AV-650®

EXCLUSIVE DISTRIBUTION ON THE EUROPEAN MARKET

Lightweight cement-based plaster for the fire protection from hydrocarbons. Avikote AV-650® is a portland cement-based, spray and/or trowel-applied plaster. Only the addition of water at the job site is required for application.
It can be applied in petrochemical, chemical, oil, refining and process gas sites and it has been tested for external use.

by ARABIAN VERMICULITE INDUSTRIES

FEATURES AND BENEFITS

- **Fire tested:** Tested in accordance with Underwriters Laboratories, Inc. UL-1709, ASTM E119 (UL-263) and BS 476 (Part 20). Tested to OTI 95 634 at Health & Safety Laboratory UK for Jet-Fire. Investigated by UL for exterior use. Evaluated for protection under NPD and BS 476 (Part 20) Appendix D Hydrocarbon Fires. Additional Testing done at TNO Holland for the use on the ceilings of Transport Tunnels when exposed to RWS Fire Curve.
- **Durability:** Avikote AV-650® has been tested for Bond Strength, Compressive Strength, Hardness, and other properties in accordance with API guidelines (Publication 2218) and ASTM test procedures.
- **Equipment versatility:** Avikote AV-650® may be applied by a wide range of pumping equipments - Mono, Rotor Stator, Piston or Hydraulic. Also, Avikote AV-650® may be used with paddle mixers and some continuous mixers.
- **Economical:** Avikote AV-650® can get to very high thicknesses. In different layers and it allows for greater applicator efficiency. This reduces time on the job site and the labor required for application compared to other products.

COATING REQUIREMENT

Steel Coating: Avikote AV-650® does not promote the corrosion of steel. For the use in wet or corrosive environments, a corrosion inhibitive and non alkali sensitive coating should be applied to the steel prior to the application of the fireproofing material. Contact AVI representative for recommendations on these coatings. **Fireproofing Sealer:** the use of latex, polyurethane or epoxy topcoat will enhance the surface characteristics of Avikote AV-650®.

APPLICATION AND PERFORMANCE CHARACTERISTICS

Avikote AV-650® fireproofing material shall not be used if it contains partially set, frozen or caked material. Avikote AV-650® shall have a minimum average dry, in-place density of 640 kg/m^3 (40 pcf). Avikote AV-650® is formulated to be mixed with water at the job site.

Avikote AV-650® is applied directly to the steel in different layer using standard plastering equipment or continuous mixer/pump units. A spray gun with a properly sized nozzle with spray shield, and air pressure at the nozzle of approximately 140 kN/m^2 (20 psi) will provide the correct bonding, density and appearance.

TECHNICAL CHARACTERISTICS	VALUE (MINIMUM)	TEST METHODS
Dry density	640 kg/m^3 (40 pcf)	ASTM E 605
Bond strength	593 kN/m^2 (12.412 psf)	ASTM E 736
Compressive strength	3.780 kN/m^2 (550 psi)	ASTM E 761
Hardness (Shore D)	42	ASTM D 2240
Air erosion	0 g/m^2 (0 g/ft^2)	ASTM E 859
Yield / Bag	1,39 m^2 to 25 mm	Theoretical maximum
Packaging	22,2 kg	Polyethylene lined kraft bag
Corrosion	Does not promote corrosion of steel	ASTM E 937
Thermal conductivity λ_D	0,28 W/mK (1,195 Btu-in/Hr Ft^2 °F)	ASTM C 518
Color	Grey	-

EDILTECO,
AN INTERNATIONAL SUCCESS

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360° Insulation

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YouTube Consult our technical and application videos on the **Edilteco YouTube Channel . www.youtube.com/user/EDILTECOvideo**

EDILTECO® group

Edilteco is associated with:

ENTE NAZIONALE CONPAVIPER

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

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