MINERAL
Fiber Solutions

MINERAL FIBER SOLUTIONS, S.L.

T +34 932 552 830
mineralfsol@mineralfsol.com

MINERALFSOL.COM

TECHNICAL DATASHEET

PERLIWOOL©

ROCK WOOL MORTAR FOR PASSIVE FIRE PROTECTION

PERLIWOOL© is a new concept in dry-base spray-on mortars, composed of mineral wool and perlite with cement as the sole hydraulic binding agent, used mainly for the fire protection of construction elements.
In addition to being a specially-designed product for fire protection, **PERLIWOOL**© also has outstanding thermal and sound insulation properties.
PERLIWOOL© also prevents the formation of water condensation.
PERLIWOOL© does not contain gypsum, plaster or lime in its composition, nor does it include any toxic ingredients.
PERLIWOOL© has a rough appearance and a monolithic texture, once applied.Different finishes may be achieved through light smoothing with a float or roller, and a coat of suitable paint may be applied in order to create different shades for decorative effects, if required.
It is sprayed on directly using an air gun, with a dry process spraying machine, onto the elements to be protected. This, along with its excellent adhesion properties, means that the coating adapts perfectly to the element being protected without cracks or fissures, resulting in a continuous and elastic coating without joins.
Thanks to its small grain size and the absence of any imperfections in the mixture (small stones from the mineral wool), **PERLIWOOL**© may be used in spraying equipment without a grinding system or with the largest nozzle size open. This makes spraying faster and more efficient.

SCOPE OF APPLICATION:

PERLIWOOL© is intended to be used for covering structural elements and compartmentalising buildings for fire protection, with the aim of maintaining the stability and resistance of the structural elements until the fire is extinguished and/or the building has been evacuated.

APPLICATION

The mortar is applied via dry process using pneumatic spraying equipment.

Surface preparation. The substrate must be dry and free from grease, dust and dirt. When this does not provide sufficient assurance of adhesion, a mesh or bridging piece should be added before spraying.

Mesh. The use of mesh is only recommended for applying mortar over timber or over concrete (in some cases).It is also recommended for use on beam flanges with a width greater than 500 mm.

Spraying. A water pump working pressure of 3 bar is recommended.Spray onto clean surfaces until the required thickness is obtained. The coating must be applied in 10-15 mm passes until the maximum coating thickness of 50 mm is reached.

Finishing. Rough-finish mortar. Can be smoothed if necessary.

STORAGE AND SAFETY

PERLIWOOL© material is ready for use up to one year after manufacture. It must be kept sealed and dry.

PERLIWOOL©

TECHNICAL SPECIFICATIONS

- Protects steel from the effects of corrosion. (Basic pH value: 12).
- Does not contain gypsum, plaster or lime. Does not contain any toxic ingredients or pathogens and is asbestos-free.
- Its physical characteristics prevent the formation of condensation.
- Density: 300 kg/m^3.
- Reaction to fire rating: A1.
- Flexural strength: 0.4 N/mm^2.
- Compressive strength: 0.4 N/mm^2.
- Coefficient of thermal conductivity: 0.078 W/mhK.
- Material adhesion: 0.019 N/mm^2.
- Sound absorption (30 mm): SAA = 0.89
  NRC = 0.90
  α_W = 0.80 (H) Class B
- Sound absorption (50 mm): SAA = 0.97
  NRC = 1.00
  α_W = 1.00 (H) Class A
- Weighted sound reduction: 48.6 dBA.*
- Packaging: 25 kg bags.
- Minimum practical thickness: 10 mm.
- Cure type: Drying.
- Initial set: between 12 and 24 hours, depending on ambient conditions and humidity level.
- Typical substrates: Steel structures, galvanised metal veneers, expanded metal mesh, concrete, brick, fibre cement, etc.
- Testing of a large quantity of solutions in an accredited laboratory.

* Values in situ for a wall composed of 12.5 cm ceramic brick plus spray-on application of PERLIWOOL© with an average thickness of 50 mm.

PERLIWOOL©

TYPE-APPROVAL AND CERTIFICATION

PERLIWOOL© mortar has been tested to various harmonised European standards to ascertain its **fire resistance** in different systems.

- Metal structure in accordance with EN 13381-4
  System classified up to R 240
- Concrete structure in accordance with EN 13381-3
  System classified up to REI 240
- Timber structure in accordance with FprEN 13381-7
  System classified β_2 (mm/min) = 0.4
- Vertical sectioning in accordance with EN 1364-1
  System classified EI 180
- Firebreak strip in accordance with EN 1363-1 and "Covered partition assembly strip fire resistance" protocol.
  System classified up to EI 120

Acoustic test

- Acoustic sound absorption in accordance with UNE-EN ISO 354

  α_W=0.80 For 30 mm thickness
  α_W =1 For 50 mm thickness

- Acoustic sound absorption in accordance with ASTM C423-09 a

  NRC=0.90 For 30 mm thickness
  NRC=1 For 50 mm thickness

Thermal conductivity test

Thermal conductivity in accordance with UNE-EN 12667

LEED and **GREEN certification**

PERLIWOOL© has the LEED v2009, LEED v4 and GREEN technical datasheet released by the Green Building Council of Spain.

PASSIVE FIRE PROTECTION

TEST SUMMARY TABLE

DESCRIPTION OF TEST	ACCREDITED LABORATORY/TECHNICAL REPORT NO.	TEST STANDARD	THICKNESS OF PERLIWOOL© REQUIRED	CLASSIFICATION OBTAINED FROM TESTING
STEEL STRUCTURE	18/15079-496 M2 / APPLUS	UNE - ENV 13381-4	ACCORDING TO STRUCTURAL PROFILE MASS	FROM R - 30 TO R - 240
CONCRETE STRUCTURE - CONCRETE SLABS	09/32300329 / APPLUS	UNE - ENV 13381-3	GLOBAL TEST AND TABLE OF EQUIVALENT THICKNESSES.	FROM REI 30 TO REI 240
CONCRETE STRUCTURE - CONCRETE SLABS	17/15079-2364 / APPLUS	UNE - ENV 13381-3	GLOBAL TEST AND TABLE OF EQUIVALENT THICKNESSES.	FROM REI 30 TO REI 240
CONCRETE STRUCTURE - BEAMS AND PILLARS	09/32300328 / APPLUS	UNE - ENV 13381-3	GLOBAL TEST AND TABLE OF EQUIVALENT THICKNESSES. .	FROM R 30 TO R 240
CONCRETE / PROFILED STEEL SHEET MIXED ELEMENTS	19/19582-1987 / APPLUS	UNE - EN 13381-5	GLOBAL TEST AND TABLE OF EQUIVALENT THICKNESSES.	FROM R 30 TO R 180 AND EQUIVALENT THICKNESS OF CONCRETE
TIMBER STRUCTURE	19/19582-836 / APPLUS	FprEN 13381-7	38 mm	β_2 (mm/min) = 0.4
VERTICAL SECTIONING EI-180	16/12863-1708 / APPLUS	UNE - EN 13501-2 + A1	57 mm	EI 180
FIRE BELT BARRIER SYSTEM (ROOF FIREBREAK WITH RIBBED MESH)	16/10606-697 / APPLUS	UNE - EN 1363-1 / RSCIEI FIRE SAFETY PROTOCOL	30 mm	EI 60
FIRE BELT BARRIER SYSTEM (ROOF FIREBREAK WITH RIBBED MESH)	16/10606-697 / APPLUS	UNE - EN 1363-1 / RSCIEI FIRE SAFETY PROTOCOL	33 mm	EI 90
FIRE BELT BARRIER SYSTEM (ROOF FIREBREAK WITH RIBBED MESH)	15/10329-2308 / APPLUS	UNE - EN 1363-1 / RSCIEI FIRE SAFETY PROTOCOL	56.8 mm	EI 120