

SELECTION & SPECIFICATION DATA

Generic Type	Fireproof dry-spray mortar, made up of rock wool, perlite and cement as a hydraulic binder. Fire resistant, with thermal insulation properties and good sound absorption, for passive fire protection.
Description	Fireproof rock wool for the passive fire protection of steel, concrete, concrete sheet composite slab structural elements, fire compartmentation and firestop strips. Fire resistance of up to 4 hours depending on the construction system.
Features	<ul style="list-style-type: none"> • CE Marked & ETA 18/0456 • Formulated with rock wool and light high performance fillers providing a very low density system. • Non-combustible. • Very low thermal conductivity for the thermal improvement of the protected structure. • Very good sound absorption and reduction of airborne noise. • Asbestos-free – Complies with regulations 2003/18/EC and RD 396/2006. Does not contain toxic components or pathogenic elements. • Good adhesion on different substrates. • Low protection thicknesses. Saving on transport and labour. • Wide range of fire solutions.
Color	Greyish white - greenish grey
Finish	Textured Can be smoothed.
Primer	PERLIWOOL can be applied on bare steel and on primed steel, and it is compatible with two-component epoxy anti-corrosive primers, as stated on its CE marking. For application on other substrates such as galvanised steel, concrete and masonry, no prior priming or bonding bridge is required. PERLIWOOL does not promote or prevent corrosion. Although it has a PH 12 value, it does not facilitate corrosion. For further information, contact Carboline Technical Service.
Application Thickness	Maximum thickness per coat of 15 mm.
Theoretical Coverage Rates	3 ± 15% kg/m ² /cm (máquina CONTINUA) ¹ ¹ Valor medio obtenido en condiciones de laboratorio.
Limitations	It is not designed for exteriors beyond the normal construction phases and timescales. It must not be exposed to the rain or water leakage. It is not recommended as a refractory mortar or where normal operating temperatures exceed 90°C.
Topcoats	Generally not necessary. Allows a large number of finishes - rough, smooth or with a mortar surface hardener. To select the coating that is most suitable for the work environment, contact the Carboline Technical Service department.

SUBSTRATES & SURFACE PREPARATION

General	Before application, all substrates must be clean and free from loose particles, dirt, oil, grease, condensation, rust or any other substance that may affect adhesion. For applications on plaster or metal sheet, the use of a bonding bridge is recommended. For substrates with vibrations or impacts, we recommend the use of ribbed mesh or simple twist mesh within the sprayed PERLIWOOL coating.
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SUBSTRATES & SURFACE PREPARATION

Concrete	<p>PERLIWOOL puede aplicarse directamente sobre hormigón y elementos cerámicos sin necesidad de imprimación ni promotor de adherencia. Asegúrese de que el soporte está limpio, sin de partículas sueltas, pinturas decorativas, suciedad, grasa o condensaciones que puedan afectar a la adherencia. Si existen dudas sobre el estado del sustrato o tiene un revestimiento antiguo, se recomienda el uso de una malla metálica antes de la aplicación del mortero. Contacte con el Servicio Técnico de Carboline para más información.</p>
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PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	Results
Adhesion	>0.04N/mm ² (in accordance with EGOLF EA/05)
Apparent Density	285 ± 5 kg/m ³
Asbestos	Does not contain
Flexural Strength	>0.4 N/mm ² (in accordance with EN 1015-11)
Hardened Density	300 kg/m ³
Reaction to Fire	A1 (in accordance with EN13501-1)
Resistance to Compression	>0.4 N/mm ² (in accordance with EN 1015-11)
Sound Absorption	a _w =1.00 (in accordance with UNE-EN-ISO 354) NRC <1.0 (in accordance with ASTM C423-09a and 50mm thickness)
Thermal Conductivity	0.078 W/m.K (UNE-EN 12667:2002)
VOC Emission	<0.035mg/m ³ (in accordance with EN16516)

MIXING & THINNING

Mixer	<p>1. Dry spraying machine. Use a mineral fibre mortar spraying mixer, suitable for gravity, blade, screw or roller machine types. Or machines for blowing mineral fibre or cellulose flocks. With a capacity of at least 200 litres. Contact Carboline Technical Service for recommendations.</p>
Mixing	<p>Hydration and mixing of these mortars in water occurs at the nozzle and simultaneously. And the use of clean drinking water. The specific machines for the spraying of these types of mortars have a more powerful blowing system, and the use of blowing accessories is advisable to ensure better adhesion to the substrate. The hopper, spray nozzles and hoses must be kept clean and free from any spilled material that could cause difficulties during spraying. Adjusting the feed water supply is recommended for flow rates that vary between 600 and 680 l/hour, which approximately corresponds to a range of 18 - 19 litres of water for each bag of product. The flow rate regulation may be different to that indicated, depending on the substrate on which it is applied, the weather conditions, the height and distance to the substrate and, above all, the experience and expertise of the applicator.</p>
Density	<p>To obtain information and recommendations on how to obtain adequate density and performance, contact Carboline Technical Service.</p>

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Pump	This material can be pumped by means of a wide range of gravity, blade, screw or roller pumps: TURBISOL 164/2 VEGATEC model JD-SI-01 MIXER– model # Card Mix 60 MIXER– model # Card Mix 40
Ball Valves	Ball valves must be fitted on at least one end of the spray hose to facilitate cleaning. Water inlet valve and mortar inlet valve needed.
Hose Length	Utilice manguera flexible de poliuretano reforzada con una espiral de PVC rígida y antiestática. La manguera debe ser específica para el equipo utilizado. Para equipos monofásicos de 220 V con ventilación, se aconseja un máximo de 10 m, mientras que para equipos trifásicos de 380 V y sistemas de compresores volumétricos tipo Roots, se pueden utilizar hasta 200 m de manguera para pulverización.
Nozzle/Gun	Diámetros de 50 a 60 mm en función del acabado deseado. Se recomienda un diámetro menor para perfiles pequeños. Se puede utilizar la boquilla de pulverización externa a la tubería y boquillas de pulverización interna en la tubería de transporte de agua.
Orifice Size and Shields	Longitud mínima de 600 mm y diámetro interior mínimo de 25 mm. Con válvula de bola de cierre de material y válvula de cierre de aire.
Compressor	Specific spraying machines: A mortar feeding system using blades or helical screws. Blowing systems using a fan, turbine or Roots blower. Specific blowing machines: Mortar feeding system using blades, worm screws or gravity systems. Blowing systems using fans or turbines.
Air Line	Utilice una línea con un diámetro interior de 16 mm. Manguera con una presión de rotura mínima de 7 bar (100 psi).
Spray Lance	Longitud máxima de 600 mm y diámetro interior mínimo de 25 mm, con válvula de cierre de material y válvula de cierre de aire.

APPLICATION PROCEDURES

General	<p>For the spraying of porous surfaces, prior wetting of the substrate to be protected is recommended. Start the equipment in accordance with the manufacturer's instructions and open the water valve in order to start spraying. The material should be applied perpendicularly to the substrate to be sprayed, with spray passes of approximately 10 to 15 mm, applied from top to bottom in vertical applications, such as walls, metal profiles or concrete columns.</p> <p>Thicknesses of 50 mm can be applied in 2 or 3 coats, with an advisable time of 10-25 minutes left between coats so excess water is removed. For these thicknesses, an adhesion promoter with metal mesh must be applied. It is recommended that the first pass should not exceed a thickness of 15 to 20 mm, so excess water is removed.</p> <p>Once the application is finished, it is advisable to wet the mortar with water. Contact Carboline Technical Service if further information is required.</p>
Finishing	Normally the sprayed finish has a rustic, rough texture. A smooth finish can be given by moulding and smoothing the substrate in the wet state. And an END LIQUID finish can be applied, in order to harden the mortar finish and increase the strength of the substrate.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	5°C (41°F)	5°C (41°F)	5°C (41°F)	0%
Maximum	38°C (100°F)	52°C (126°F)	43°C (109°F)	90%

The air and ambient temperatures must be maintained 24 hours before, during and after the application. Gypsum-based mortars are sensitive to water and therefore must be adequately protected. For additional recommendations, contact Carboline Technical Service.

CURING SCHEDULE

Surface Temp.	Dry to Recoat
25°C (77°F)	25 Minutes

The overcoat application times are for guidance only and could vary depending on the ambient conditions and air currents. In enclosed areas with little ventilation (basements, confined spaces, etc.), for the mortar to dry properly, it is recommended that the RH does not exceed 60% and there is adequate ventilation, which means at least 4 complete changes of air per hour until the material is dry (or for at least 2 weeks after the end of the application).

CLEANUP & SAFETY

Cleanup	Obudowe, mikser i weze należy czyszcic woda pitna. Przez weze należy przepuszczac gabki lub duza ilosc wody, aby usunac z nich wszelkie pozostalosci materialu. Nadmiar mokrej zaprawy należy oczyszcic czysta woda pitna. Sucha zaprawa moze wymagac zeszkobania w celu jej usuniecia.
Safety	Należy przestrzegac wszystkich srodków ostroznosci opisanych w karcie charakterystyki zaprawy. Zaleca sie stosowanie srodków ochrony osobistej, w tym kombinezonu, rekawic i ochrony oczu.
Overspray	Adjacent surfaces should be protected against damage and splashing. Sprayed fireproof materials can be difficult to remove from surfaces and can damage architectural finishes.
Ventilation	In enclosed areas, ventilation must be no less than 4 complete air exchanges per hour until the material is dry.

TESTING / CERTIFICATION / LISTING

Fire Resistance	Resistencia al fuego conforme a las normas EN realizada en laboratorios acreditados: Protección de estructuras metálicas (EN 13381-4) Vigas y pilares abiertos y perfiles tubulares hasta R240 Protección de estructuras de hormigón (EN 13381-3) Vigas, pilares, losas macizas, muros y forjados hasta REI 240 Protección de forjados mixtos de hormigón y acero (EN 13381-5) Protección de losas compuestas hasta REI 180 Protección de forjados de vigas de madera con ladrillo cerámico hueco según EN 1365-2 Grado de protección contra incendios hasta REI 120 Protección de elementos estructurales de madera según EN 13381-7/ UNE EN 1363-1 Comienzo de la carbonización tch= 64' Velocidad de carbonización B2= 0,4 mm/min Compartimentación vertical conforme a la norma EN 1364-1 Clasificación al fuego EI 180
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TESTING / CERTIFICATION / LISTING

Reaction to Fire	<p>Reacción al fuego conforme a las normas EN realizadas en laboratorios acreditados: Bandas cortafuegos según EN 1363-1 "Ensayo de resistencia al fuego para franjas cortafuegos entre medianera/tejado. Resistencia al fuego hasta EI 120" Reacción al fuego (Clasificado según EN13501-1) Clasificación A1</p>
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Sound Absorption

Grubosc (mm)	a_w	NRC	CLASS
30	0.8	0.9	B
50	1	1	A

Ensayo de absorción acústica realizado en laboratorios acreditados:

a_w : Coeficiente de absorción acústica según UNE-EN-ISO 354

NRC: Coeficiente de reducción de ruido según ASTM C423-09a

PACKAGING, HANDLING & STORAGE

Shelf Life	12 months
Shipping Weight (Approximate)	25kg/bag (30 bags/pallet)
Storage	<p>Store indoors and in dry environments between 0°C and 50°C. Material must be kept dry or clumping of material may occur.</p>
Packaging	25kg/bag (30 bags/pallet)

WARRANTY

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