

BARRIERfoc ECOplus

Fireproof and ecological mortar for the passive fire protection of steel, concrete, composite concrete-steel sheet slab structural elements, fire compartmentation and fire stop partitions. Fire resistance of up to 4 hours depending on the construction system.



SPECIFICATIONS AND CHARACTERISTICS

Generic type	Gypsum based fire resistant mortar with thermal insulation properties for passive fire protection.
Characteristics	<ul style="list-style-type: none">• Formulation with lightweight high-performance fillers.• Non-combustible.• Can be sprayed by discontinuous machine to improve its performance by 15%.• Asbestos free - Complies with regulations 2003/18/EC.• Good adhesion on different substrates.• Light and low abrasion with the use of spraying equipment. Saving on consumables.• Low protection thicknesses. Saving on transport and labour.• Wide range of fire solutions.
Colour	Antique white
Finish	Rough. Can be smoothed
Primer	BARRIERfoc ECOplus can be applied on bare steel and on primed steel, and it is compatible with different primer families 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. Contact the IRIS Coatings technical service for further information. BARRIERfoc ECOplus does not promote or prevent corrosion.
Protection thickness	Maximum thickness per coat of 30 mm
Limits	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.
Finish	Generally not necessary. In highly corrosive atmospheres, consult the IRIS Coatings Technical Service for the selection of the most appropriate coating for the service environment.

SUBSTRATES AND SURFACE PREPARATION

General

Before application, all the substrates must be clean and free of loose particles, dirt, oil, grease, condensation or any other substance that may affect the adhesion. Contact the IRIS Coatings technical service for further information.

Galvanised steel

BARRIERfoc ECOplus can be directly applied to galvanised steel without the need for priming or an adhesion promoter. Ensure that the substrate is clean, free of loose particles, dirt, grease, condensation or salts that could affect the adhesion. Contact the IRIS Coatings technical service for further information.

Concrete / ceramic structures

BARRIERfoc ECOplus can be directly applied to concrete without the need for priming or an adhesion promoter. Ensure that the substrate is clean, free of loose particles, decorative paints, dirt, grease or condensation that could affect the adhesion. If there are doubts about the condition of the substrate or it has an old coating, the use of a metal mesh prior to the application of the mortar is recommended. Application of a mesh is also recommended for round columns. Contact the IRIS Coatings technical service for further information.

Primed / bare metal structure

If the steel structure is not primed, it must be cleaned using an abrasive material to an Sa 2 ½ grade of cleanliness in accordance with ISO 8501 or an equivalent treatment. If it is primed, this must be clean, free of loose particles, dirt, grease or condensation that could affect the adhesion. Furthermore, it must be ensured that the existing primer is compatible with the BARRIERfoc ECOplus mortar, in accordance with the CE marking. Mesh is not required in any case, although its use is recommended on beam flanges wider than 500 mm, on columns with only one sprayed face and profiles subject to high deformations. Contact the IRIS Coatings technical service for further information.

TECHNICAL SPECIFICATIONS

CHARACTERISTICS	VALUE
Apparent density	350 ± 15% Kg/m ³
Hardened density	≥480 ± kg/m ³ (DISCONTINUOUS machine) ¹ 550 ± 15% kg/m ³ (CONTINUOUS machine) ²
Performance	3.5 ± 15% kg/m ² /cm (DISCONTINUOUS machine) ¹ 4.1 ± 15% kg/m ² /cm (CONTINUOUS machine) ²
Adhesion	≥ 0.1 MPa (in accordance with EGOLF SM/5)
Resistance to compression	≥ 0.2 MPa
Flexural strength	≥ 0.2 MPa
Reaction to fire	A1 (in accordance with EN 13501-1)
Thermal conductivity	0.087 W/mK
Sound absorption	α _w =0.2 (In accordance with UNE-EN-ISO 354 and 20 mm thickness) NRC=0.2 (In accordance with ASTM C423 and 20 mm thickness)
VOC emission	<0.035 mg/m ³ (in accordance with EN 16516)
Asbestos	Does not contain asbestos

¹ Average value obtained under laboratory conditions, with a mixing speed of 60 rpm for 90 seconds. If any of these parameters are changed, both the final density and the performance could vary. Lower density at higher speed, and higher density with a shorter mixing time.

² Average value obtained under laboratory conditions.

MIXING

Machine	<ol style="list-style-type: none"> DISCONTINUOUS. Use a gypsum mortar mixer or similar with a capacity of at least 100 litres and capable of rotating at 60 rpm with rubber-tipped blades that wipe the sides of the hopper. CONTINUOUS. Contact the IRIS Coatings technical service for recommendations. Densities may vary when using this type of mixing equipment.
Mixing	Always mix with clean drinking water. The mixer should be kept clean and free of any previously mixed material which could cause premature setting of the product. A 2 bag mix with discontinuous machines is recommended. The mixing time should be approximately 1.5 minutes when mixing at 60 rpm. Use 15.3 ± 1.7 litres of water per 17 kg bag. First add water to the hopper with the blades stopped. With the mixer on, add mortar to the water and start to mix.
Usage time	1 hour at 20°C, the higher the temperature the shorter the usage time. These times are for guidance and can vary depending on the ambient humidity and air currents. The useful life of the material ends when it hardens and becomes unusable.
Density	To obtain information and recommendations on how to obtain adequate density and performance, contact the sales or technical Department of IRIS Coatings.

CHARACTERISTICS OF THE APPLICATION EQUIPMENT

The general guidelines for this mortar's application equipment are set out below. The conditions of the working location may require modifications to these guidelines in order to achieve the desired results.

Pump	<p>This material may be pumped with a wide range of piston, rotor, stator and compressor pumps designed for pumping cement and plaster materials, including:</p> <ul style="list-style-type: none">- PFT model # ZP 3 L Multimix (Discontinuous)- Putzmeister model # S5EV (Discontinuous)- Wall Goe model # JP70-L. (Discontinuous)- Putzmeister model # MP25 (Continuous)- PFT model # G4 Smart (Continuous)- Essick model # FM9/FM5E (Continuous)- Hy-Flex model # HZ-30E (Continuous)
Ball valve	Ball valves must be fitted on at least one end of the spray hose to facilitate cleaning.
Hose	Use a flexible spray hose of between 5 and 10 m in length and at least 25 mm inner diameter. Working pressure at least 30 bar.
Spray lance	Minimum length of 600 mm and minimum inner diameter of 25 mm. With material shut-off ball valve and air shut-off valve.
Nozzle	From 10 to 16 mm depending on the desired finish.
Compressor	The pump compressor must be capable of maintaining a minimum of 2 bar (30 psi) and from 250 to 300 l/min at the nozzle.
Air line	Use a line with an inner diameter of 10 mm. Hose with a minimum burst pressure of 7 bar (100 psi).

APPLICATION PROCEDURE

General	<p>Thicknesses of 30 mm or less can be applied in one pass. When additional coats are required to reach the specified thickness, it is recommended to apply the subsequent coats once the previous coat has started to set. If the previous coat has set and is dry, wet the surface with water before applying additional coats.</p> <p>Contact the IRIS Coatings technical service if further information is required.</p>
Finish	Normally the finish is a sprayed texture.

APPLICATION CONDITIONS

CONDITION	MATERIAL	SUBSTRATE	ENVIRONMENT	HUMIDITY
Minimum	5 °C	3 °C	3 °C	0%
Maximum	38 °C	52 °C	43 °C	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 the Perlita y Vermiculita, S.L.U. technical department.

CURING TIME

General	New coat application time
25 °C	2 hours

The new coat application times are for guidance 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).

CLEANLINESS AND SAFETY

Cleaning	The case, mixer and the hoses should be cleaned with drinking water. Pass sponges or plenty of water through the hoses to remove any material residue that remains in them. Excess wet sprayed mortar should be cleaned with clean drinking water. Dry sprayed mortar may require scraping off to remove it.
Safety	Follow all the safety precautions described in the safety data sheet for the mortar. The use of personal protective equipment is recommended, including overalls, gloves and eye protection.
Excess	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.

TESTS / CERTIFICATIONS

Fire resistance and reaction to fire

Fire resistance in accordance with EN standards carried out in accredited laboratories:

Protection of metal structures (EN 13381-4)

Open beams and columns and tubular profiles up to R240

Protection of concrete structures (EN 13381-3)

Beams, columns, solid slabs, walls and floor slabs up to REI 240

Protection of concrete-sheet steel composite slabs (EN 13381-5)

Protection of composite slabs up to REI 180

Non-load bearing walls (EN 1364-1)

Vertical compartmentation wall with EI 120 classification

Reaction to fire in accordance with EN standards carried out in accredited laboratories:

Reaction to fire (classified in accordance with EN 13501-1)

Classification A1

Environmental certifications

EPD - Environmental Product Declaration Cradle to Cradle (C2C) Certification
VOC content and emission (EN 16516) LEED Compliance (VOC emission)

PACKAGING, HANDLING AND STORAGE

Expiry

12 months

Packaging (approximate)

17 kg/bag (42 bags/pallet)

Storage

Store indoors and in dry environments between 0°C and 50°C.
The material must be kept dry or may become lumpy.

WARRANTY

To the best of our knowledge, the technical data contained in this document is true and accurate at the time of publication and may be subject to change without prior notice. The user must contact IRIS Coatings to verify the accuracy before specifying and ordering. No guarantee of accuracy is given or assumed. We guarantee that our products comply with IRIS Coatings's quality control. We take no responsibility for the protection, performance, injury or damage resulting from its use. IRIS Coatings's only obligation, where applicable, is to replace or refund the purchase price of the Perlita y Vermiculita products shown to be defective. IRIS Coatings will not be responsible for any loss or damage. **IRIS COATINGS DOES NOT OFFER ANY OTHER WARRANTY OF ANY TYPE, EXPRESS OR IMPLICIT, STATUTORY, BY APPLICATION OF THE LAW, OR OTHERWISE, INCLUDING MARKETABILITY AND SUITABILITY FOR A PARTICULAR PURPOSE.** All the commercial brands previously mentioned are the property of IRIS Coatings, unless stated otherwise.

For further information, please contact our sales department