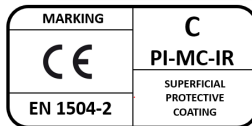


# COPER SOLAR FIBER FR

**WATERPROOFING, ELASTOMERIC, WATER-BASED FIBRE, SELF-EXTINGUISHING, WHITE REFLECTIVE WITH HIGH REFLECTIVITY AND THERMAL INSULATION**



## 1. PRODUCT DESCRIPTION

Waterproofing elastomeric fibre liquid membrane, reflective white and **self-extinguishing** based on modified acrylic copolymers in aqueous dispersion. After drying it forms an elastic and tenacious film that adheres perfectly to the artefacts on which it is applied; it is resistant to atmospheric agents and any micro-cracks that may form on the support. **COPER SOLAR FIBER FR** is odourless and non-flammable because it is solvent-free.

In addition, the formulation with special additives makes COPER SOLAR FIBER FR fire resistant with B<sub>ROOF(t2)</sub> classification and certification according to UNI EN 13501-5.

## 2. DESTINATION OF USE

**COPER SOLAR FIBER FR** is suitable for waterproofing roofs made of concrete structures and concrete or paved terraces, to protect them against damage caused by atmospheric agents.

**COPER SOLAR FIBER FR** has been specifically designed for use in COOL-ROOF systems, reflecting solar radiation and reducing the heat island phenomenon.

The product, applied as a finishing layer on waterproof systems, creates a highly reflective barrier from UV rays, lowers the surface temperature, thus ensuring good energy savings and prolonging the life of the waterproof layer.

It also improves the efficiency and performance of electricity generation systems made with photovoltaic panels.

It represents the ideal solution for roofs where photovoltaic systems will be installed with a **B<sub>ROOF(t2)</sub>** classification request based on the results of the roof exposure tests to external fire.

**COPER SOLAR FIBER FR**, in fact, passes the external fire resistance test according to UNI CEN/TS 1187 with **B<sub>ROOF(t2)</sub>** classification valid on all waterproofing systems thus created on combustible or non-combustible support with a density greater than 15 Kg/m<sup>3</sup>

<b>NON-REINFORCED SYSTEM</b> <b>COPER SOLAR FIBER FR</b>	<b>REINFORCED SYSTEM</b> <b>COPER SOLAR FIBER FR + POLY-RINFORZO PLUS</b>
1 <sup>st</sup> coat of COPER SOLAR FIBER FR	1 <sup>st</sup> coat of COPER SOLAR FIBER FR
2 <sup>nd</sup> coat of COPER SOLAR FIBER FR	Non-woven fabric carrier reinforced with glass threads <b>POLY-RINFORZO PLUS</b>
	2 <sup>nd</sup> coat of COPER SOLAR FIBER FR

It can also be used on fibre cement, wood, metal surfaces and polycarbonate.



### 3. CHEMICAL COMPOSITION

Aqueous dispersion based on modified and elastomerized acrylic copolymers, inert fillers, and special additives, which confer self-extinguishing properties.

### 4. METHOD OF APPLICATION

Mix carefully before use. It is recommended to apply the product at room temperature not lower than +5°C and when weather conditions of fog, rain and frost are not expected, avoiding extreme cold and heat even during the drying of the paint film. Before the application, make sure that the surfaces are clean, free of dirt and have a minimum slope (minimum 3%) to allow all the rainwater to drain away, which would otherwise cause, in stagnant areas, a softening of the liquid membrane film, compromising its adhesion to the support. The application must include at least two or more layers to give uniformity of colour to the waterproofing layer.

In case of particularly porous, dusty or crumbly surfaces, apply a coat of the specific water-based fixing **primer COPER FIX** (approximately **150 g/m<sup>2</sup>**) and wait for it to dry completely (approximately 2-3 hours depending on the weather conditions and the type of surface).

The application of the paint must include at least two **CROSSED** coats, to ensure uniformity of colour, covering power and effectiveness of the reflective and insulating power.

The product can be applied by brush, roller, traditional spray or airless.

As a first coat (by brush, roller or spray) apply **COPER SOLAR FIBER FR** diluted 5% with water, up to a maximum of 10%; the second coat requires a lower dilution and must be applied only on the film of the first dry coat, at least after 8-12 hours.

**COPER SOLAR FIBER FR** can be reinforced between one coat and the next with non-woven polyester fabric **POLY-RINFORZO**, thus increasing the mechanical characteristics of the new waterproofing. It is recommended to avoid spreading the product on new, recently applied bituminous surfaces, which could still release hydrocarbons and cause problems with the adhesion of the film on the membrane.

On new membranes **it is mandatory** to wait at least 6 months for the natural aging of the bituminous membrane, to allow the complete elimination of the emerging bituminous hydrocarbons; also in this case, before painting, it is advisable to wash with water and brush the surface to remove any residual dust. On bituminous membranes placed on insulating packages **it is mandatory** to insert the non-woven **POLY-RINFORZO** fabric carrier.

To obtain coverage classified as **B<sub>ROOF(t2)</sub>** proceed strictly as follows:

#### NON-REINFORCED SYSTEM

- 1) apply **COPER SOLAR FIBER FR** as a first coat diluted with approximately 5%, maximum 10% water,
- 2) apply the second coat as is or diluted to 5% and **crossed** only when the film of the first coat is completely dry, approximately after 8-12 hours

#### REINFORCED SYSTEM

- 1) apply **COPER SOLAR FIBER FR** as a first coat diluted with approximately 5%, maximum 10% water,
- 2) place the 70 g/m<sup>2</sup> POLY-RINFORZO PLUS carrier on the first coat while it is still fresh,
- 3) apply the second coat as is or diluted to 5% and **crossed** only when the film of the first coat is completely dry, approximately after 8-12 hours

**COPER SOLAR FIBER FR** cannot be considered a walkable covering: it can be walked on only in cases of occasional maintenance.

To maintain high reflectivity and therefore efficiency, periodic maintenance of the surfaces is recommended, with visual inspection and removal of dirt by hydro-washing.

**5. CONSUMPTION**

- **Function as a reflective waterproofing membrane**, applied on various types of substrates such as polymer-bitumen membranes, concrete, wood and other types of substrates.

Consumption depends on the nature and degree of porosity of the support and the thickness you want to obtain. Overall consumption in two or more coats is approximately **2.0 Kg/m<sup>2</sup>**, with the interposed non-woven **POLY-RINFORZO** carrier the total consumption is approximately **2.5 Kg/m<sup>2</sup>**.

- **Function as a protective and reflective finish on plain or mineral membranes.**

Consumption depends on the nature and degree of the type of membrane to be protected or decorated.

- approx. **0,500 kg/m<sup>2</sup>** total in two coats on plain membranes.
- approx. **0,900 kg/m<sup>2</sup>** total in two coats on mineral membranes.

- **Function to obtain the classified coverage B<sub>ROOF</sub>(t2) with the system AS IS**

– approx. **1,600 - 2,00 kg/m<sup>2</sup>** total in two or more coats based on the type of support, be careful not to exceed the quantity used for a single application

- **Function to obtain the classified coverage B<sub>ROOF</sub>(t2) with the system REINFORCED with POLY-RINFORZO PLUS**

– approx. **2,00 - 2,40 kg/m<sup>2</sup>** total in two or more coats based on the type of support, be careful not to exceed the quantity used for a single application.

**6. PRODUCT FEATURES****TECHNICAL SPECIFICATIONS**

Appearance		Thixotropic fluid paste
Colour		<b>Reflective white</b>
Dry residue at 130 °C	EN ISO 3251	67% ± 4%
Brookfield viscosity at 20°C (gir. 5, 10 rpm)	EN ISO 3219	24.000 cP ± 5.000
Specific weight at 20 °C	EN ISO 2811-1	1,40 kg/l ± 0,04
Shelf life in closed original drums		24 months

**WORKABILITY CHARACTERISTICS**

Consumption		See section 5 based on the chosen use
Drying time out of powder *		approx. 2 - 4 h
Drying time to the touch *		approx. 4 - 6 h
Waiting time in-between layers *		approx. 8 - 12 h
Waiting time for complete drying *		approx. 24 h
Application temperature		+5°C ÷ +35°C
<b>Reduction of surface temperature</b>	Internal Method	<b>approx. 35°C - 40 °C</b>
Application		Manual or spray

**PERFORMANCE CHARACTERISTICS UNI EN 1504-2:2005 – C COATINGS – PI MC IR**

CO <sub>2</sub> permeability	EN 1062-6	S <sub>D</sub> > 50 m
Water vapour permeability	EN ISO 7783	Class I - S <sub>D</sub> < 5 m
Capillary absorption and water permeability	EN 1062-3	w < 0,1 Kg/m <sup>2</sup> ·h <sup>0,5</sup>
Adhesion force for direct traction	EN 1542	≥ 1 N/mm <sup>2</sup>

**SOLAR REFLECTANCE MEASUREMENTS, THERMAL EMISSIVITY AND SOLAR REFLECTANCE INDEX**

Test report of Engineering Dep. Enzo Ferrari / EELab – Univ. di Modena e Reggio Emilia


<b>Solar Reflectance Index (SRI) ASTM E1980</b>	<b>Thermal Emissivity (E) ASTM C1371</b>	<b>Solar Reflectance (R) ASTM C1549</b>	<b>Surface Temperature (Ts)</b>
<b>97 %</b>	<b>0,92</b>	<b>0,78</b>	<b>45,6 °C</b>

**FIRE RESISTANCE CHARACTERISTICS**

External fire resistance	UNI EN 13501-5	<b>B<sub>ROOF</sub>(t2)</b>
<b>NON-REINFORCED SYSTEM</b>  Test and classification report N° 1901/22 Laboratory-issued t2i – LAB n° 0170 L	<i>Classification valid for the following non-reinforced system:</i> a) combustible or non-combustible support with a density greater than 15 Kg/m <sup>3</sup> b) first coat <b>COPER SOLAR FIBER FR</b> c) second coat <b>COPER SOLAR FIBER FR</b> <u>crossed</u>	
<b>REINFORCED SYSTEM</b>  Test and classification report N° 1903/22 Laboratory-issued t2i – LAB n° 0170 L	<i>Classification valid for the following reinforced system:</i> a) combustible or non-combustible support with a density greater than 15 Kg/m <sup>3</sup> b) first coat <b>COPER SOLAR FIBER FR</b> c) <u>place the carrier on the first coat of POLY-RINFORZO PLUS 70 g/m<sup>2</sup> while it is still fresh.</u> d) second coat <b>COPER SOLAR FIBER FR</b> <u>crossed</u>	


\*The times indicated may be more or less long, depending on the variation of the surface temperature of the support and the air.  
The values reported in the technical sheet were carried out at a controlled temperature of 23±2°C and relative humidity of 50±5%.

**MEASURES CERTIFICATION PROTOCOL REQUIREMENTS  
LEED V 4.1 BD+C**

<b>SS HEAT ISLAND EFFECT CREDIT: COVERINGS</b>  	Use roofing materials that have a Solar Reflectance Index (SRI) greater than or equal to the value shown in the table below for a minimum of 75% of the roof surface.								
	<table border="1"> <thead> <tr> <th>Type of covering</th> <th>Slope</th> <th>SRI</th> </tr> </thead> <tbody> <tr> <td>Low slope</td> <td>≤ 15%</td> <td>82%</td> </tr> <tr> <td>High slope</td> <td>&gt; 15%</td> <td>39%</td> </tr> </tbody> </table> <p><b>Roofs treated with COPER SOLAR FIBER FR have SRI &gt; 82%</b></p>	Type of covering	Slope	SRI	Low slope	≤ 15%	82%	High slope	> 15%
Type of covering	Slope	SRI							
Low slope	≤ 15%	82%							
High slope	> 15%	39%							

**CAM  
(Minimum Environmental Criteria)**

Applied by Italian Legislation in the field of Public Building (DM 23 June 2022 and subsequent amendments)

<b>CAM (Minimum Environmental Criteria)</b>  	Waterproof surfaces must include the use of highly reflective materials, with minimum SRI values, based on the slope of the roof.:								
	<table border="1"> <thead> <tr> <th>Type of covering</th> <th>Slope</th> <th>SRI</th> </tr> </thead> <tbody> <tr> <td>Low slope</td> <td>≤ 15%</td> <td>76%</td> </tr> <tr> <td>High slope</td> <td>&gt; 15%</td> <td>29%</td> </tr> </tbody> </table> <p><b>Roofs treated with COPER SOLAR FIBER FR have SRI &gt; 76%</b></p>	Type of covering	Slope	SRI	Low slope	≤ 15%	76%	High slope	> 15%
Type of covering	Slope	SRI							
Low slope	≤ 15%	76%							
High slope	> 15%	29%							



## ENERGY BUILDINGS PERFORMANCE

Rules on the minimum energy performance requirements of buildings and for the preparation of the APE (Energy Performance Certificate) in compliance with the inter-ministerial decree of 26 June 2015.

Waterproof surfaces must include the use of materials with high **Solar Reflectance (R)** reported in the table of technical characteristics, with a value not less than:

- **R= 0.65** in the case of **flat roofs**
- **R= 0.30** in the case of **pitched roofs**

**Roofs treated with SOLAR CERAMIC have R= 0.78**

### 7. WARNING AND RECOMENDATIONS

- **Mix well before use.**
- **The product fears frost.**
- Apply only on surfaces with regular rainwater flow (minimum 3%).
- On new membranes, **wait at least 6 months after laying** them before painting, to allow the hydrocarbons to emerge on the surface of the membrane. Otherwise, the adhesion of the coating film on the membrane could be compromised. If you intend to paint immediately, the membrane layer must be finished with slate or with TEX.
- Do not apply directly on membranes with PE film finish and glossy film but remove the finish by torching.
- Do not apply on very hot surfaces and on wet surfaces.
- Do not apply in high humidity or with danger of rain while the film is drying.
- **COPER SOLAR FIBER FR** cannot be considered a walkable covering.
- Do not use to waterproof structures, tanks or containers, inside which food products or liquids such as drinking water may be stored.
- Clean tools with hot water or common synthetic thinners or nitro.
- Store the packages at temperatures above +5°C, in dry places and away from heat sources.

### 8. SAFETY STANDARDS

See safety data sheet available on [www.copernit.it](http://www.copernit.it)

### 9. PACKAGING

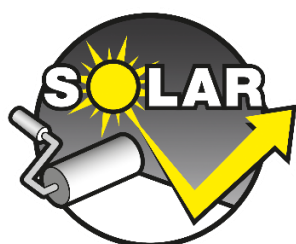
20 kg. plastic drums



**BROOF(t2)**



**B-FIRE**



MARKING	<b>C</b>
<b>CE</b>	<b>PI-MC-IR</b>
EN 1504-2	SUPERFICIAL PROTECTIVE COATING



*Technical Data Sheet Revision Status:*

Sheet Code	Revision	Date of issue or change	Replaces and cancels the previous one	
			Code	Date of issue
RE75050.000	CP00	10.06.2022		
	CP01	29.11.2022	CP00	10.06.2022
	CP02	10.02.2023	CP01	29.11.2022
	CP03	27.03.2023	CP02	10.02.2023
	CP04	25.10.2023	CP03	27.03.2023
	CP05	25.07.2024	CP04	25.10.2023
	CP06	20.03.2025	CP05	25.07.2024

The suggestions and technical information provided represent the best knowledge of Copernit S.p.A. regarding the properties and uses of the product. Considering the different situations of use of the products and the intervention of factors not dependent from us (supports, operating conditions, non-compliance with the instructions, etc.), it is not possible to assume responsibility for the results obtained. Before using the product, whoever intends to use it must establish whether it is suitable for the intended use and, in any case, assume all responsibility that may derive from its use.