icobit

icoper®

MULTIUSO

General purpose, ready to use, acrylic, seamless waterproofing membrane in water dispersion. Colored, walkable, UV and ponding-water resistant, suitable for any substrate.

icobit.com

PONDING WATER RESISTANT

CE EN 14891 | CE 14891 DM01 | CE EN 1504-2 | EN 1504-2 (C) PI-MC-IR

icoper multiuso

CERTIFIED PRODUCT
EMISSIONS INTO INDOOR AIR
A+

ENCAPSULANT TYPE A-B-C-D

BROOF (t1) (t2) (t4)

PONDING WATER RESISTANT

UV Resistant

Hail Resistant

Undertile waterproofing

ICOPER MULTIUSO is the original, ready to use, colored, seamless waterproofing membrane recommended for protecting buildings from rainwater damage.
Thanks to its highly versatile polymeric matrix, ICOPER MULTIUSO is suitable for waterproofing numerous substrates such as flat and sloped roofs, concrete slabs, fiber cement sheeting, old built-up bitumen roofing, tiles, sheet metal and metal substrates in general.
The resulting membrane is seamless and effective even on irregularly shaped substrates, unlike traditional bitumen-polymer membranes.
ICOPER MULTIUSO is a water-based, solvent-free chemical compound rated A+ in terms of VOC content.
Once cured, it possesses extremely high UV resistance and is therefore suitable for exposed waterproofing.

Uses

ICOPER MULTIUSO is recommended for waterproofing flat and sloped roofs or complex shapes, whether in new construction or renovation. It is also intended for waterproofing newly built or existing terraces and balconies.
It can be used to repair and renovate old bitumen roofing membranes without removal (both smooth-surfaced and mineral-surfaced) and to protect and waterproof metal substrates, fiber cement sheets and timber structures.
It is approved as an asbestos encapsulant in Procedures A-B-C-D pursuant to the Law Decree of the Italian Ministry of Health for asbestos remediation of 06/09/1994.
In addition, ICOPER MULTIUSO can be used to protect and waterproof terraces, balconies, retaining and foundation walls, gutters, ledges, eaves, chimneys, facades, PU-foam insulated roofs and, in the specific ICOPER MULTIUSO AR root-resistant version, planter boxes, green roofs and roof gardens.

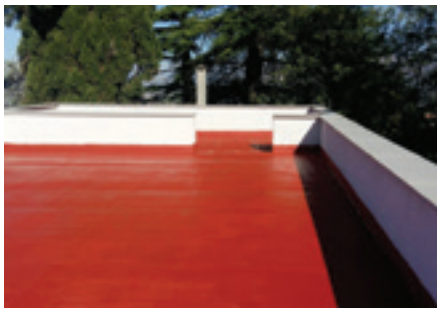
Features / Benefits

- Recommended for low-slope and flat roofs thanks to its ponding water resistance.
- Suitable for undertile waterproofing of terraces and balconies.
- 400% Tensile Elongation.
- Crack bridging ability at low temperature.
- Walkable for ordinary maintenance.
- Anti-carbonation to protect reinforced concrete.
- Certified BROOF (t1) (t2) (t4) in accordance with EN 13501-5.
- One component, ready to use, quick, safe and easy to apply.
- VOC content rated A+ (very low emissions).
- Contributes to obtaining LEED® credits.
- Asbestos cement encapsulant in Procedures A-B-C-D.
- Excellent UV resistance: no topcoat required.
- Appropriate resistance to industrial and marine environments.
- Opened packaging can be resealed and stored for further use.
- Hail resistant.

Surface preparation

• Clean thoroughly and remove dust, loose material or non-adhering particles, grease, oil, formwork release agents and any contaminant that may affect proper adhesion.
• Substrate must be cured, clean, dry, sound, solid and not exposed to rising damp, negative hydrostatic pressure or evaporative flows.
• Joints and substrate cracks must be treated appropriately as per industry standards: control and isolation joints, floor-to-wall as well as any vertical transitions must be sealed with ICOJOINT MS silane modified polymer or with the self-adhesive sealing ICOARM BUTYL TAPE.
• Check for proper operation of rainwater drains and roofing details in accordance with Norm EN 12056.

- **Concrete**: Make sure surface finish is appropriate and suitable to accommodate waterproofing. Allow newly placed concrete to cure fully.
New substrates must be primed with a coat of ICOPER diluted with 50% water applied at a rate of approximately 300 gr/m^2.
Existing concrete or porous substrates, once the surface has been cleaned and repaired, must be treated with the one-component ICOFISS bonding primer at a rate of approximately 250 gr/m^2.
- **Bitumen**: Clean thoroughly and remove peeled-off protective paints. Check for proper bonding to the substrate, especially in the upstands and seams that must be torched down if not in full adhesion. Built-up roofs that tend to delaminate or creep need to be repaired by removing the affected area and patching it with a portion of fresh bitumen membrane.
Prime smooth membranes with ICOFISS applied by brush or roller at a rate of 100 gr/m^2.
Mineral-surfaced membranes must be primed with a coat of ICOPER diluted with 50% water applied at a rate of approximately 300 gr/m^2.
Given the tensions and expansions that may occur on bitumen substrates, it is recommended to reinforce the waterproofing layer with the ICOARM TNT ROLL nonwoven geotextile embedded between first and second coat.
- **Metal**: Remove oxidized spots and apply ICOPOX PM 102 rust inhibiting primer at a rate of 150 gr/m^2.
No priming is required on rust-free, painted metal substrates.
Seal all overlaps, fixing points and waterproofing details with the self-adhesive ICOARM BUTYL TAPE placed over the seams.



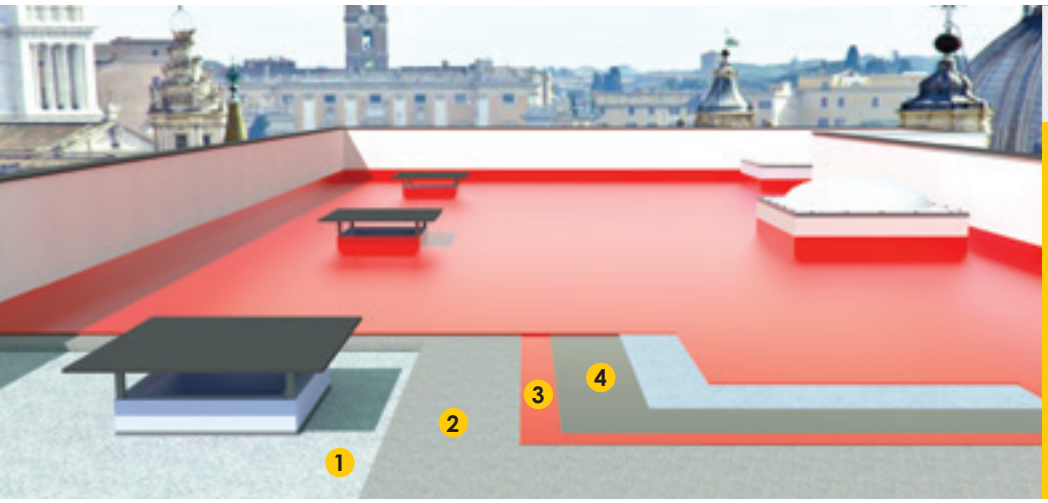
- **Tiles:** Check the condition of tile grout, remove and replace any loose or missing tile portions.
Consider possible need for the specific EXIT AIR vent pipes.
Treat with ICOFORCE bonding primer at a rate of 300 gr/m².
- **Timber:** Remove dust, splinters and flaking paint. Substrate must be sound and dimensionally stable. Sand accurately if surface is varnished.
Treat with ICOFISS bonding primer (coverage dependent on substrate absorption). Always reinforce with the ICOARM TNT ROLL nonwoven geotextile embedded between first and second coat.
- **Asbestos abatement:** Clean thoroughly and remove moss, lichens and vegetation. Prime friable or chalking surfaces with ICOFISS binding agent at a rate of 250 gr/m².

Application instructions

Once the substrate has been accurately prepared and the primer has properly dried, apply two or more coats of ICOPER MULTIUSO at an overall rate of not less than 2 kg/m² using a roller, brush or airless spray machine (see relevant box). The use of contrasting colors for successive coats helps making sure that a correct spread rate is achieved. Allow to cure before applying the next coat.
The areas that are potentially subject to extra mechanical strain should be reinforced with the ICOARM non-woven fabric. In the case of undertile waterproofing (e.g. balconies, terraces, bathrooms, showers, etc.) use the ICOARM reinforcement and a "C2 TE S1" tile adhesive (such as TOPFLEX) in compliance with European Standard EN 12004. The waterproofing must be turned up and terminated at least 10 cm on any adjacent vertical surfaces. See the relevant paragraph for Asbestos Encapsulation. Tools can be cleaned with water while product is fresh or with nitro thinners once hardened.

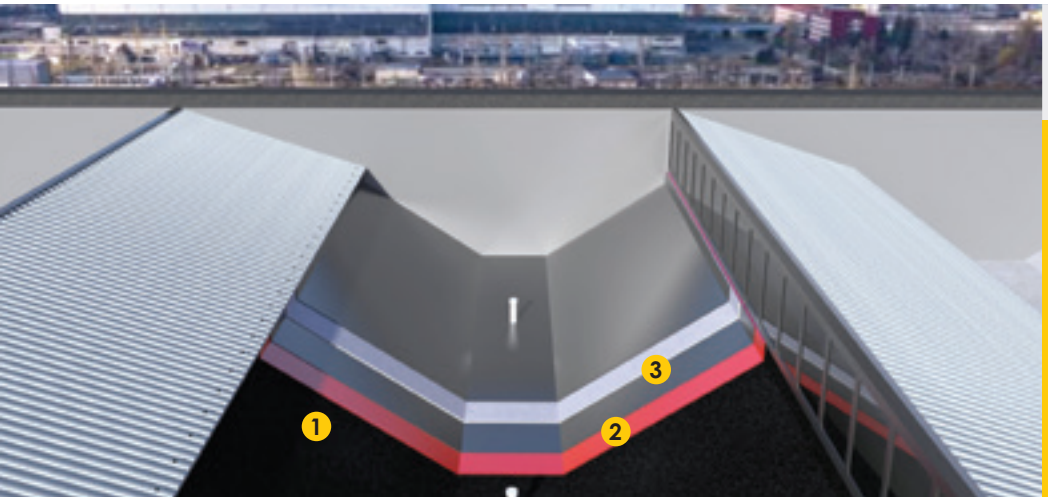
FOCUS ON AIRLESS

Airless machines allow spraying ICOPER MULTIUSO. Piston and diaphragm machines exist that draw the spraying medium directly from its original container via means of a suction hose. These machines do not need air as driving propellant but use the pressure generated by an internal pump to push the product through the hose and into the spraying gun. Airless application allows to ensure speedy coverage: 800-1000 m² (2 operators/ 8 h).



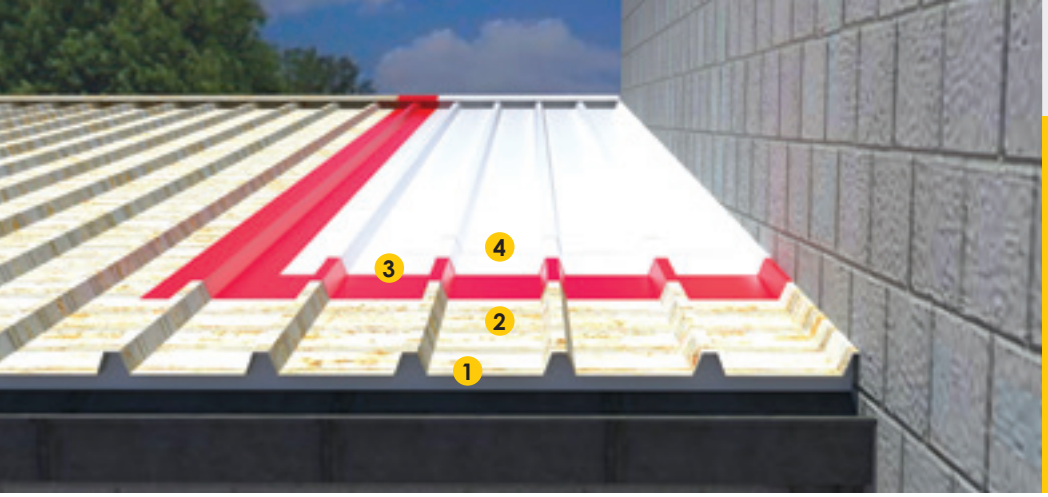
Flat roof

BUILD UP
1) Load carrying element: roof slab
2) Slope layer: reinforced concrete screed
3) Primer: ICOPER MULTIUSO diluted with water
4) Waterproofing: ICOPER MULTIUSO in two coats (reinforced with ICOARM TNT - *where appropriate*)



Weathered built-up roof

BUILD UP
1) Old waterproofing layer: built-up bitumen roofing membrane
2) Primer: ICOFISS
3) New fully adhered waterproofing: ICOPER MULTIUSO in two coats reinforced with ICOARM TNT



Corrugated sheet metal

BUILD UP
1) Load carrying element: steel beams
2) Substrate : insulated metal panels
3) Rust inhibiting layer: ICOPOX PM 102
4) Waterproofing: ICOPER MULTIUSO

Weathered tiled terraces and balconies

BUILD UP
1) Bonding layer: existing stoneware tiles
2) Primer: ICOFORCE
3) Waterproofing: ICOPER MULTIUSO in two coats (reinforced with ICOARM TNT - *where appropriate*)

Precautions

• Apply at temperatures between +5°C and +35°C *(41°F/95°F)*. Avoid applying during the hotter part of the day and to substrates excessively exposed to sunlight, both before and during application.
• Do not apply in case of rain, fog, dew, or if such weather conditions are imminent or expected during the curing period.
• Allow newly placed concrete to cure fully. Avoid applying ICOPER MULTIUSO to substrates that are moist or subject to rising damp and/or evaporative flows. If needed, install the specific EXIT AIR vent pipes and use the ICOBLOK primer for damp substrates.
• To waterproof green roofs use the specific ICOPER AR root resistant version. Appropriate drainage and separation layers must be provided before placing loose soil.
• If a non-woven fabric is required, ensure that the same is properly saturated in order to minimize the risk of delamination.
• Ensure that the upstands are fully bonded to sound, finished substrates and renders.
• Please contact our Technical Support before applying ICOPER MULTIUSO to lightweight screeds or to substrates that have been previously treated with unexposed waterproofing systems (below screed, undertile, etc.).
• Temperatures and moisture affect drying/curing time. The latter may become considerably longer if the product is applied close to its minimum allowed temperature.
• The use of ICOROOF PUR protective coating (see TDS) ensures additional chemical resistance and thus a longer life expectancy to waterproofing carried out in very aggressive conditions, such as industrial and marine environments.

CONCRETE PROTECTION

Carbonation-induced corrosion of reinforced concrete

The increasing atmospheric contamination poses a serious risk of decay to reinforced concrete, since the presence of polluting substances leads to premature concrete degradation by carbonation.
Carbonation is the reaction of the carbon dioxide contained in the atmosphere (CO_2) with the calcium hydroxide contained in the cement paste: $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$.
Carbonation usually occurs already within the first decade of service life of reinforced concrete structures that have not been duly protected.
The ensuing production of calcium carbonate lowers the pH to below 9, thus inhibiting the previously existing rebar "passivation": the protective oxide layer that has been surrounding reinforcing steel begins to break down entailing corrosion processes as a result of the combined effect of water and oxygen.

Harmonized Standard UNI EN 1504-2 calls for the use of a waterproofing layer to prevent CO_2 penetration, both during the structure's initial service life and after renovation.
The minimum CO_2 permeability required by the standard is S_D >50 m.

ICOPER MULTIUSO features excellent waterproofing properties and very low carbon dioxide permeability: therefore, it can be used as a safeguard against both water and CO_2 ingress into reinforced concrete structures and bridge decks.

PREVENTING CARBONATION-INDUCED CORROSION OF REINFORCED CONCRETE

PRODUCT PERFORMANCES		
HARMONIZED STANDARD EN 1504-2:2004		
TEST METHODS	**ESSENTIAL CHARACTERISTICS**	**REQUIREMENTS**
EN 1062-6	Permeability to CO_2	S_D > 50m
EN ISO 7783-1-2	Water vapor permeability	CLASS I (S_D < 5m)
EN 1062-3	Capillary absorption and water permeability	w < 0.1 $Kg/m^2 \cdot h^{0,5}$
EN 1542	Bond strength by pull off test	≥ 0.8 MPa
EN 13687-3	Freeze-thaw cycling without de-icing salt immersion	≥ 0.8 MPa
EN 1062-11:2002	Exposure to artificial atmospheric agents	No visible defects
EN 1062-7	Crack bridging properties	class A5(-5°C)
EN 13501-1	Reaction to fire	Euroclass E

FOCUS

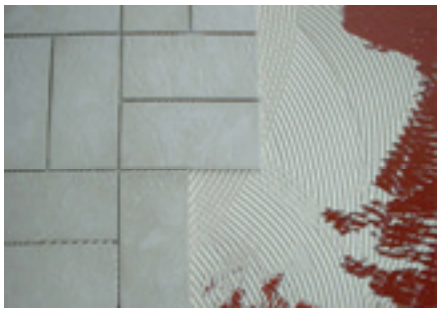
CRACK BRIDGING ABILITY

Concrete cracking

Cracking inevitably occurs in concrete as a result of its poor tensile strength. Visible damages (macro cracks) and invisible ones (micro cracks) originate from static and dynamic external causes, moisture-related expansion and contraction, creep, shrinkage, settlement and differential thermal expansion. Those are critical factors in the **durability** of a building.
Therefore, it becomes crucial to protect cracked surfaces from water ingress.

What's Crack Bridging?

The term indicates the **ability** of an elastic waterproofing system or membrane to withstand without damage the appearance of cracks in the substrate, thus remaining impervious to water. This property is of paramount importance in the case of **undertile waterproofing** where, given the composite build-up, the membrane must prove both deformable and waterproof.



ICOPER MULTIUSO meets Harmonized Standard EN 14891: it protects terraces and balconies from water ingress and prevents crack bridging even in unfavorable weather conditions.

PRODUCT PERFORMANCES	
HARMONIZED STANDARD EN 14891:2012	
ESSENTIAL CHARACTERISTICS	REQUIREMENTS
Initial tensile adhesion strength	≥ 0.5 MPa
Tensile adhesion strength after heat ageing	≥ 0.5 MPa
Tensile adhesion strength after water immersion	≥ 0.5 MPa
Tensile adhesion strength after contact with lime water	≥ 0.5 MPa
Tensile adhesion strength after freeze-thaw cycles	≥ 0.5 MPa
Water impermeability	No penetration
Crack bridging ability in standard conditions	≥ 0.75 mm
Crack bridging ability at low temperature (-5°C)	≥ 0.75 mm

EXTERNAL FIRE PERFORMANCE OF ROOFS

Broof rating and solar roofs

When it comes to fire safety, roofs and roof terraces are the most vulnerable areas of a building due to both rising flames and the fact that roofing materials may fuel the fire.
In addition to internal factors, a fire can also be caused by external factors, such as windblown cinder from neighboring building fires or electrical faults in solar systems and related wiring.

The Broof certification carried out using the test methods (t1), (t2), (t3), (t4), in accordance with EN 13501-5, provides the specific fire performance rating for roofs and roof coverings exposed to external fire.
Roofs lacking an external fire performance assessment (Froof) can achieve that thanks to the use of specific waterproofing systems that allow obtaining a Broof classification recognized within the European Economic Area.

ICOPER MULTIUSO is classified Broof (t1), (t2), (t4) in accordance with European Standard EN 13501-5 "Fire classification of construction products and building elements – Part 5: Classification using data from external fire exposure to roofs tests".

Local regulations in several countries require such performance for all roofs, and especially when a photovoltaic (PV) system is installed.
In brief, when the roofing and/or cladding elements are not incombustible (Class 0 and Class 1) or when a fire resistant layer cannot be interposed between the solar panels and the supporting surface, a specific fire spread risk assessment is required for a PV system to be installed: roofs that are rated Broof (t2), (t3), (t4) are considered appropriate for the installation of Class-2 solar panels or equivalent.

ICOPER MULTIUSO ASSIGNS Broof CLASS TO ROOFS AND ROOF COVERINGS

The use of ICOPER MULTIUSO, classified Broof (t2) (t4), allows roofs to obtain the fire performance required for installing a photovoltaic system.

FOCUS

HAIL RESISTANCE

Hail is a form of precipitation composed of spherical lumps of ice, known as hailstones, which can damage property, crops, and even cause bodily harm. Hail can cause significant damage to roofs and to the overlying waterproofing systems due to their poor resistance to dynamic puncture.
Like most weather events, hail is measured and categorized. For such purpose a Hailstorm Intensity Scale was developed in 1986 by Jonathan Webb, member of the UK's Tornado and Storm Research Organization (Torro), a research body specializing in severe convective weather.
The Torro Scale is a 0-10 scale that classifies hailstorms according to their impact; the latter is proportional to the hailstone size and expected fall speed. The scale begins at "no damage" and ends at "catastrophic damage"

ICOPER MULTIUSO conveys to the roofing system a hail resistance up to H7 on the Torro Scale, in accordance with EN 13583:2012 "Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of hail resistance".

PRODUCT PERFORMANCES

EN 13583:2012		
Substrate type	**Impact Speed**	**Torro Scale intensity**
Rigid	≥ 41 m/s	H4 – H7
Flexible	≥ 41 m/s	H4 – H7

TORRO SCALE

SIZE CODE	DIAMETER (mm)	IMPACT SPEED (m/s)	APPROXIMATE SIZE DESCRIPTION	INTENSITY
1	5 – 10 mm	13.31 – 18.82	Pea	H0 – H2
2	11 – 15 mm	19.74 – 23.05	Bean, Hazelnut, Mothball	H0 – H3
3	16 – 20 mm	23.81 – 26.62	Small grape, Cherry, Small marble	H1 – H4
4	21 – 30 mm	27.28 – 32.61	Large grape, Walnut, Large marble	H2 – H5
5	31 – 45 mm	33.14 – 39.93	Pigeon egg, Chestnut, Ping pong or golf ball	H3 – H6
6	46 – 60 mm	40.37 – 46.11	Chicken egg, Small peach or apple, billiard ball	H4 – H7
7	61 – 80 mm	46.49 – 53.25	Ostrich egg, Medium-sized orange, Large peach or apple, Tennis ball, Baseball	H5 – H8
8	81 – 100 mm	53.58 – 59.53	Large orange, Grapefruit, Softball	H6 – H9
9	101 – 125 mm	59.83 – 66.56	Melon	H7 – H10
10	> 125	> 66.56	Coconut	H8 – H10

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ENVIRONMENTAL SAFEGUARDS

LEED Certification

LEED (Leadership in Energy and Environmental Design) is the most widely used green building rating system in the world. Conceived by the USGBC (U.S. Green Building Council), it provides a framework for healthy, highly efficient and cost-saving green buildings.
It is a globally recognized "voluntary" certification system for sustainable architecture.
LEED is applicable to existing buildings and new construction intended for any use (residential, commercial, healthcare, offices, schools, etc.) and is available for all building scales (interior spaces, buildings, homes, cities, communities) and all building phases (new construction, interior fit outs, operations and maintenance, core and shell).
Projects pursuing LEED certification are awarded points for green building strategies across several categories. Based on the final score, a project achieves one of four LEED rating levels: Certified, Silver, Gold or Platinum.
Building products and materials are an essential part of the process, as they allow to achieve credits.

icobit is partner of GBC Italia

Icobit contributes significantly to achieving LEED certification especially through the use of products of the Icoper Line, which are eligible for earning points across different credit categories of the LEED v4 Manual.

CREDIT	POINTS
SS - Heat Island Reduction	up to 2 points
EQ - Low-Emitting Materials	up to 3 points

VOC Emissions into indoor air

The following must be complied with in order to meet one of the prerequisites for construction works provided for in EU Regulation No. 305/2011 on Construction Products (former Council Directive 89/106/EEC), and namely Requirement No. 3. – HYGIENE, HEALTH and ENVIRONMENT –: "The construction works must be designed and built in such a way that they will, throughout their life cycle, not be a threat to the hygiene or health and safety of workers, occupants or neighbors, nor have an exceedingly high impact […] on the environmental quality or on the climate […], in particular as a result of any of the following: […]
(b) the emissions of dangerous substances, volatile organic compounds (VOC), greenhouse gases or dangerous particles into indoor or outdoor air; […]"
The level of emissions into indoor air of volatile substances posing an inhalation toxicity hazard is rated on a scale from A+ (very low emissions) to C (high emissions).

CERTIFIED PRODUCT
EMISSIONS INTO INDOOR AIR
A+
A+ A B C
Best class of emissions of hazardous volatile substances according to EN ISO 16000-9

Thanks to its VOC-free formulation, the Icoper Line possesses the lowest emission level (A+), which ensures safety and complies with Requirement No. 3. (Hygiene, Health and Environment) of CPR 305/2011.

FOCUS

ASBESTOS CEMENT ENCAPSULATION

Asbestos abatement with ICOPER MULTIUSO

Asbestos is a hazardous mineral that was previously favored as a construction and manufacturing material thanks to its remarkable strength and durability. Later phased out, it was eventually banned in the 90's due to the high health hazard caused by exposure to asbestos fibers, resulting in the potential development of serious illness and often leading to death.
Before such date, however, asbestos was used extensively in the building industry thanks to its fire resistance and thermal acoustic insulation properties. For example, it was used as an alternative to metal sheeting, for wall soundproofing, chimneys, downspouts, roofs and roof coverings of prefabricated units and industrial sheds, etc.
The remediation of buildings containing asbestos is among the most demanding in the field of building and structure renovation and decontamination.
Asbestos abatement is essentially the process of mitigating the risk of asbestos fibers being released into the air and creating a hazardous environment. While this often entails removing Asbestos-Containing Materials (ACMs) entirely from the structure or property, it could also mean encasing or encapsulating the materials to ensure the fibers are comprehensively sealed in and prevented from being released. Encapsulation is carried out with liquid products that have penetrating and/or surface film-forming properties.
Such operation offers the following advantages versus removal of an ACM:

- reduces the cost and time of the procedure
- reduces the risk for the operators
- reduces environmental risks

ICOPER MULTIUSO FOR ASBESTOS ABATEMENT

Asbestos cement encapsulation using the ICOPER MULTIUSO system
According to the regulations in force in most countries, ACMs like roofing boards or chimneys can be safely coated with specific, colored, liquid applied formulations such as ICOPER MULTIUSO.
Depending on the case, the encapsulating coating can be either of the following:

ASBESTOS CEMENT ENCAPSULATION USING THE ICOPER SYSTEM

Type	Procedure	Thickness and coverage
type A – external, exposed, subject to weather effects	penetrating primer: ICOFISS first coat: ICOPER MULTIUSO second coat: ICOPER MULTIUSO *Note: coats must be in contrasting colors*	average total thickness: 300 µm minimum rate: 700 gr/m^2
type B – internal, exposed	penetrating primer: ICOPER MULTIUSO diluted with water first coat: ICOPER MULTIUSO second coat: ICOPER MULTIUSO *Note: coats must be in contrasting colors*	average total thickness: 250 µm minimum rate: 600 gr/m^2
type C – unexposed, subsidiary to confinement	penetrating primer: ICOFISS first coat: ICOPER MULTIUSO second coat: ICOPER MULTIUSO *Note: coats must be in contrasting colors*	average total thickness: 200 µm minimum rate: 500 gr/m^2
type D – ancillary, subsidiary to removal	penetrating primer: ICOPER MULTIUSO diluted with water	average total thickness: 35 µm minimum rate: 80 gr/m^2

TECHNICAL DATA

PRODUCT FEATURE	MEASURE	UNIT
Type of product	one component, water based	
Density	1.42	g/ml
Solid content	71 (± 2%)	%
Service temperature	-20 to +90 *(-4 to +194)*	°C *(°F)*
Waiting time between coats (+23°C, 50% R.H., breezy)	minimum 3	hours
Curing time (23°C - 50% R.H. - breezy)	minimum 24	hours
Tensile elongation at break (7 days, +23°C, 50% R.H.)	400	%
Tensile strength (7 days, +23°C, 50% R.H.)	2.0	MPa
Tensile elongation at break (7 days, +23°C, 50% R.H.) reinforced with ICOARM TNT	50	%
Tensile strength (7 days, +23°C, 50% R.H.) reinforced with ICOARM TNT	5.0	MPa
Artificial aging	pass	
Water impermeability	no penetration	
Number of coats	minimum 2	n°
Spread rate per coat	1.0	Kg/m^2
Dry film thickness (2.2 Kg/m^2)	1.0 (± 0.1)	mm
Shelf life	18	months

Safety measures

See SDS

Storage

Store in a dry, well-ventilated place at temperatures above freezing.

Colors

Red	White	Brick Red
Gray	Black	Green

Please contact our technical support at:
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PACKAGING

APPLICATION METHODS

BRUSH

ROLLER

AIRLESS SPRAY

ICOPER MULTIUSO ES 0224