



keep dry

Ready to use, UV resistant, colored, elastoplastic waterproofing membrane with superior ponding water resistance



HIGH PERFORMANCE
COPOLYMER



keep dry



Product description

KEEP DRY is an innovative, versatile, waterproofing solution derived from the proprietary HPC (High Performance Copolymer) Technology.

It makes for highly mechanically resistant waterproofing featuring excellent bond strength to a variety of substrates. The product is one component, solvent based, ready to use, available in different colors. Thanks to its state-of-the-art elastoplastic copolymer and its viscosity, KEEP DRY is easily conformable to irregularly shaped substrates.

The product provides extreme cold flexibility and can withstand temperatures down to -40°C (-40°F).

The HPC copolymer is specifically engineered to resist UV radiation with no need for additional protective coatings. Its superior resistance to standing water makes KEEP DRY also suitable for flat (zero slope) surfaces.



HPC technological innovation

The HPC Copolymer, which KEEP DRY is based on, makes it an actual waterproofing paste. The product viscosity differentiates its application from that of other liquid solutions: the roller is supposed to "go along" with the product and help spread it evenly. If needed, KEEP DRY can be diluted from 5% up to maximum 20% with the specific ICODIL SX solvent.

Unlike moisture-triggered polymers, HPC is unaffected by ambient humidity and KEEP DRY can be safely applied even with relative humidity above 85% with reasonable drying time. Furthermore, once opened the packaging can be easily resealed and the product reused within the expiration date, providing it is properly stored.

**INNOVATIVE
ELASTOPLASTIC
COPOLYMER BASED ON
THE HPC**

Uses

KEEP DRY is CE marked in accordance with European Standard EN 1504-2 "Products and systems for the protection and repair of concrete structures" and complies with the following Principles: "PI" Protection against Ingress – "MC" Moisture Control – "IR" Increasing Resistivity.

KEEP DRY is recommended for the waterproofing of concrete substrates such as roof slabs, flat and sloped roofs, fiber cement panels. It is also suitable for application to sheet metal and as external protective coating for metal tanks.





In addition, it may be used to repair and renovate old bitumen roofing felts (whether smooth-surfaced or self-protected) without removal. KEEP DRY provides certified protection from carbonation, a major cause of reinforced concrete degradation, thus extending the service life of buildings. It bonds to polycarbonate and single-ply synthetic membranes. It allows re-waterproofing tiled substrates without tile removal. Also suitable for roof gardens, green roofs, planter boxes, fountains and pools.



Features / Benefits

- Waterproof.
- Anti carbonation: protects reinforced concrete from degradation.
- One component, ready to use, easy to apply.
- Opened packaging can be resealed and stored for further use.
- May be applied even below freezing, down to -5 °C (23 °F)
- In the specific white color it provides enhanced solar heat protection, which helps save on energy costs.
- High UV resistance: no topcoat required.
- Not subject to "alligator" cracking when applied to bitumen roofing felts.
- Recommended also for low-slope and flat roofs thanks to its superior resistance to ponding water.
- Cold applied: no open flames nor thermal welding required.
- Reduced dirt pick-up.
- Resistant to light rain and washout in one hour from application (at +8 °C and R.H. < 80%)



Carbonation induced corrosion of reinforced concrete

The increasing atmospheric contamination entails a serious risk of reinforced concrete decay, since the presence of polluting substances leads to degradation by carbonation.

Carbonation is the reaction of carbon dioxide (CO₂) with the calcium hydroxide contained in the cement paste: $\text{Ca(OH)}_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$. Carbonation usually occurs already within the first decade of service life of reinforced concrete structures that have not been duly protected.

The production of calcium carbonate lowers the pH to below 9, thus inhibiting rebar "passivation": the protective oxide layer surrounding reinforcing steel breaks down and corrosion becomes possible as a result of the combined effect of water and oxygen.

The Harmonized Norm UNI EN 1504-2 requires the use of a waterproofing layer to prevent penetration of CO₂ within the structure, both during its initial service life and after renovation. Thanks to the advanced features of its HPC Copolymer, KEEP DRY combines exceptional waterproofing properties and very low carbon dioxide permeability: then it can be used as a protective layer for reinforced concrete structures and bridge decks against both water and CO₂ ingress.

The minimum value of CO₂ permeability required by the standard (S_d >50 m) is achieved with a coverage of 200 gr/sqm of KEEP DRY, resulting in a dry film thickness of approximately 90 microns. That is enough to generate an effective CO₂ barrier.



**PROTECTION OF
REINFORCED CONCRETE
FROM CARBONATION**

PRODUCT PERFORMANCES

ACCORDING TO HARMONIZED STANDARD EN 1504-2:2004

TEST METHOD	ESSENTIAL CHARACTERISTIC	REQUIREMENT
EN 1062-6	Permeability to CO ₂	S _D > 50m
EN ISO 7783-1-2	Water vapor permeability	CLASS II (5 < S _D < 50m)
EN 1062-3	Capillary absorption and water permeability	w < 0.1 Kg/m ² · h ^{0.5}
EN 1542	Bond strength by pull off test	≥ 0.8 MPa
EN 13687-1	Freeze-thaw cycling with de-icing salt immersion	≥ 0.8 MPa
EN 13687-2	Thunder-shower cycling (thermal shock)	≥ 0.8 MPa
EN 1062-11:2002	Exposure to artificial atmospheric agents	No visible defects
EN 1062-7	Crack bridging properties	Class A5 (-20 °C)
EN 13501-1	Reaction to fire	Euroclass E
	Dangerous substances	see MSDS

Highly reflective waterproofing

What is a "COOL ROOF"?

The term refers to roofs that have the ability to improve energy efficiency by reflecting solar heat, thus minimizing air-conditioning energy consumption and subsequent polluting emissions (CO₂, SO₂, NOx and heavy metals, among others). Such solutions increase indoor thermal comfort and help save on energy costs.

In fact, a dark, "non-cool" roof entails bigger heat absorption and heat transfer to the premises situated underneath, which results in an uncomfortable living environment and high cooling energy costs.

Furthermore, the heat absorbed by the various elements of a roofing system contributes to the so-called "urban heat island" effect, i.e. the temperature gap between urban and rural areas.

Highly solar reflective waterproofing is conducive to limiting greenhouse gas emissions and to mitigating heat buildup and heat islands.

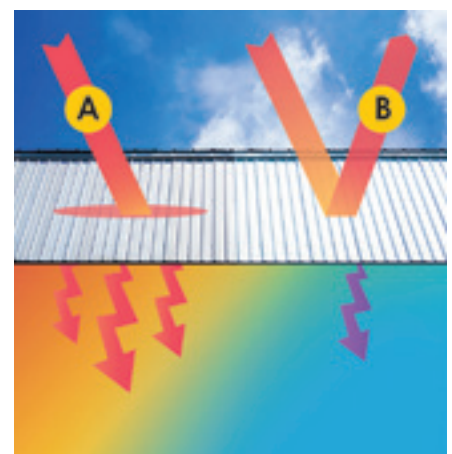
The three main features that qualify a "cool roof" are:

- **Solar Reflectance or "Albedo"** is the ability to reflect sunlight, or more specifically a measure of the reflected portion out of the total solar radiation in the spectrum of thermal energy (IR) and visible light (VIS). It is dimensionless and measured on a scale from 0 to 1, or in percentage.
- **Thermal Emittance or "Emissivity"** is the ability to release absorbed heat back into the atmosphere. It is also expressed either as a decimal fraction between 0 and 1, or a percentage.
- **SRI (Solar Reflectance Index)** incorporates both Solar Reflectance and Thermal Emittance in a single value and in different conditions, and measures the roof's ability to reject solar heat.

KEEP DRY (in White color) combines the advantages of cool roofs with the waterproofing performance resulting from the use of the HPC Copolymer. Therefore, the structures KEEP DRY is applied to become both thermally protected and impervious to water.

Benefits of using KEEP DRY (color White):

- **Improved living comfort**
- **Energy cost saving** as a result of reduced cooling needs
- **Structures protected throughout their cross section** both from the risk of water ingress and from thermal-shock induced expansion and shrinkage
- **Improved solar roof efficiency** thanks to the solar light reflection and to a lower roof temperature



Caution

- Allow new concrete to cure fully and avoid applying KEEP DRY to substrates that are either moist or subject to rising damp and/or evaporative flows. If needed, install the specific EXIT AIR vent pipes.
- When applying to bitumen roofing felts, ensure that the substrate is properly aged, in any case not less than 6 months.
- Bitumen residues may affect the bonding and the appearance of KEEP DRY.
- Stir before using and apply at temperatures between -5 °C and +35 °C (23 °F/ 95 °F). Avoid applying during the hotter part of the day and onto overly sunlit substrates, both before and during application.
- Do not apply if rain is expected.
- If KEEP DRY is intended to remain permanently immersed, inquire about the type and aggressiveness of the liquids it will be in contact with. The use of the ICOROOF PUR coating provides additional chemical resistance against possible aggressive agents.
- The appearance of the finished product may vary depending on the application method.
- Tools may be cleaned with white spirit or with the specific ICODIL SX solvent.



**SUPERIOR PONDING
WATER RESISTANCE,
EVEN COMPLETELY
IMMERSED**

Surface preparation

Clean surface thoroughly and remove dust, loose material or non-adhering particles, grease, oil and anything that may affect proper adhesion. Substrates must be cured, dry, sound, solid and not exposed to rising damp or evaporative flows.

All joints must be treated appropriately: seal control and isolation joints with the ICOJOINT MS sealant cartridge.

- **Concrete substrates:** prime with a coat of KEEP DRY diluted with 50% ICODIL SX at a rate of approximately 250-300 gr/sqm.
- **Metal substrates:** remove oxidized spots and apply ICOPOX PM 102 passivator at a rate of 150 gr/sqm. Apply KEEP DRY direct with no primer if the substrate is rust free.
- **Old bitumen roofing felts:** apply KEEP DRY direct with no primer to smooth-surfaced felts, as long as the same are properly aged (at least 6 months). In order to prevent possible oil bleeding, ICOBLOK may be used as a primer at a rate of approx. 180 gr/sqm (see relevant TDS on icobit.com). Ensure that overlaps and upstands are fully bonded. Roofing felts that tend to delaminate or creep also need to be repaired beforehand. Slated bitumen must be primed with a coat of KEEP DRY diluted with 50% ICODIL SX at a rate of approximately 250-300 gr/sqm.
- **Timber substrates:** remove dust and splinters. Surface must be sound and dimensionally stable. Sand the surface of previously treated timber. Prime with a coat of KEEP DRY diluted with 50% ICODIL SX at a rate of approximately 250-300 gr/sqm (exact coverage according to substrate absorption rate). Always reinforce KEEP DRY with the ICOARM TNT ROLL nonwoven geotextile between first and second coat.



- **Polycarbonate boards:** remove dust and loose material. Sand lightly before applying KEEP DRY.

- **Single-ply membranes:** clean surface and check thoroughly the condition of welding, overlaps and upstands. Apply KEEP DRY direct with no primer to TPO/EPDM.

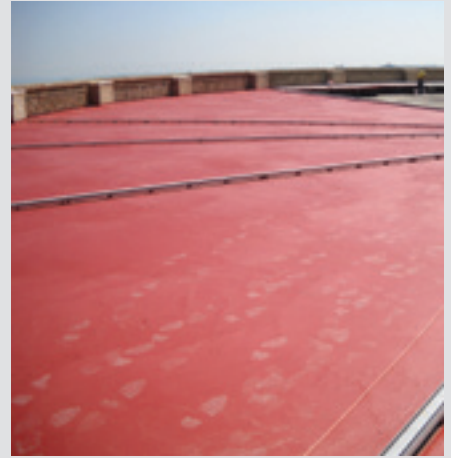
PVC must be primed with a coat of KEEP DRY diluted with 50% ICODIL SX at a rate of approximately 200 gr/sqm.

It is advisable to always carry out preliminary adhesion tests on a small inconspicuous area to ensure full compatibility with the substrate.

In the case of PVC membranes, given their diversity, the adhesion test is required. Please contact our Technical Service for guidance.

- **Existing tiles:** check the grouts, remove and restore non-adhering tile portions. Prime with ICOFORCE at a rate of 300 gr/sqm.

- **Green roofs:** concrete substrates intended for use as green roofs/roof gardens should be dusted and possibly leveled with a smoothing mortar (in case of very rough finish, gravel nests and/or surface voids). Prime with a coat of KEEP DRY diluted with 50% ICODIL SX at a rate of approximately 250-300 gr/sqm.



Application instructions

KEEP DRY is by its very nature a versatile product. Once the substrate has been accurately prepared as per above and the primer (if needed) has properly dried, apply KEEP DRY as is.

For new waterproofing apply two or more coats at an overall rate of no less than 2 kg/sqm.

For low film thickness reduce coverage to 400-500 gr/sqm per coat.

If used as anti-carbonation for reinforced concrete structures, the minimum coverage is 200 gr/sqm.

Areas that are potentially subject to mechanical strain should be reinforced with the 100-gr/sqm ICOARM TNT ROLL nonwoven fleece.

For green roofs, use the specific KEEP DRY AR root resistant version. Suitable drain layers should be laid before placing loose soil.

Always reinforce KEEP DRY with ICOARM TNT ROLL when re-waterproofing single-ply synthetic membranes. Lay the fabric on the first coat while wet, then apply the second coat after curing.

KEEP DRY may be applied by airless spray as well as by enamel roller or brush.

**APPLICATION
TEMPERATURE STARTING
FROM -5°C, SERVICE
TEMPERATURE FROM
-40°C UP TO +90°C**



TECHNICAL DATA

PRODUCT FEATURE	MEASURE	UNIT
Type of product	one component, solvent based	
Appearance	viscous liquid	
Density	1.15 (± 0.05)	kg/lt
Solid content	57 (± 1)	%
Recoat time (23 °C, 50% R.H., breezy)	minimum 1	hr
Drying time (23 °C, 50% R.H., breezy)	minimum 8	hrs
Full curing (23 °C, 50% R.H., breezy)	48	hrs
Waiting time to achieve optimal performance	1	week
Tensile elongation	400	%
Cold flexibility	-40	°C
Service temperature	-40 / +90	°C
Spread rate per coat	1	kg/sqm
Number of coats (minimum)	2	No.
Dry film thickness (2 kg/sqm)	approx. 0.9	mm
Shelf life	18	months

Safety measures

See MSDS

Storage

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

Colors



Olive gray (RAL 7002)



Brown red/Tomato red (RAL ≈ 3011/3013)



Cream white (RAL 9010)

Please e-mail us at: assistenza@icobititalia.com
Our technical service will address your requests. Ensure that the TDS is up to date: the latest version can be viewed and downloaded at icobit.com

The manufacturer reserves the right to amend the product specifications without notice. The above performances were measured according to the standards in force at the time of issue and represent the average results of our tests. Although highly reliable, they do not constitute a binding commitment nor liability for Icobit Italia S.r.l. The purchaser and the end consumer acknowledge responsibility for the product suitability to the intended use.



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PACKAGING



APPLICATION METHODS



BRUSH



SQUEEGEE



ROLLER



AIRLESS SPRAY

KEEP DRY EN 1219