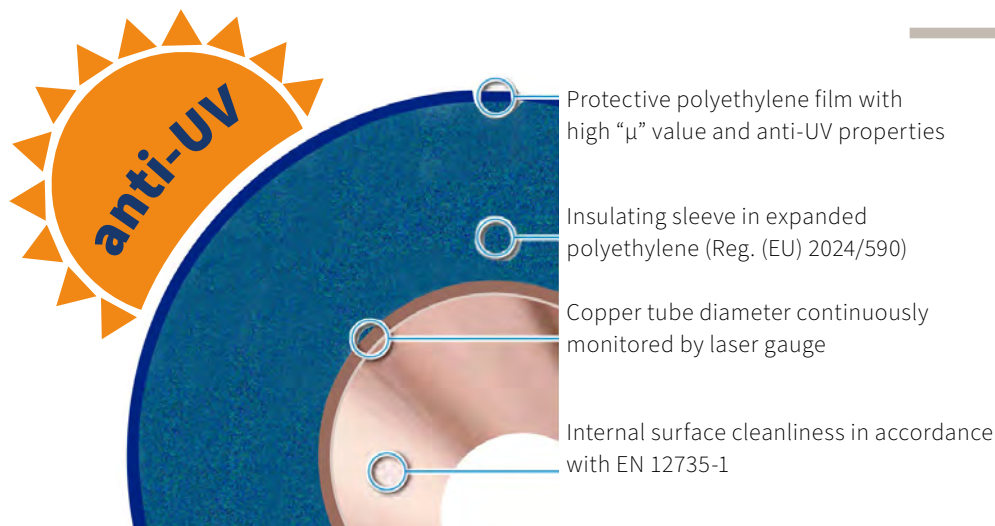


SMISOL Clim Aeterna[®]

INNOVATION AND SUSTAINABILITY
IN THE ACR SECTOR





FIELDS OF APPLICATION

- Air conditioning
- Transport of refrigerants (R290, R32...)

In compliance with and within the limits set by the applicable regulations

SMISOL Clim Aeterna® represents a significant step forward in the field of air-conditioning systems.

This copper tube, manufactured in accordance with the EN 12735-1 standard, stands out for its insulating coating in closed-cell expanded polyethylene with regular cells evenly distributed in compliance with EN 14114. Designed to ensure optimal performance, the insulating sleeve is made in compliance with European Regulation 2024/590.

This regulation requires the use of expanded insulating sleeves free from CFCs and HCFCs, chemical substances recognised as harmful to health and to the environment. The thickness of the sleeve is carefully sized to meet the different requirements of installations, while ensuring both safety and high performance.

SMISOL Clim Aeterna® is not only a high-performance product, but also aligns with current environmental sustainability standards. Its features are designed to promote recycling, energy saving and circularity, aspects increasingly demanded in the construction and installation sector. Thanks to the environmental declarations on the product's life cycle, users can clearly understand the product's environmental impact of the product they are going to install.

SMISOL Clim Aeterna® offers numerous competitive advantages. Its compliance with industry requirements facilitates participation in public tenders, ensuring that products are in line with construction product regulations. Furthermore, the focus on sustainability and environmental communication represents an important added value, contributing to an overall reduction of the environmental impact.

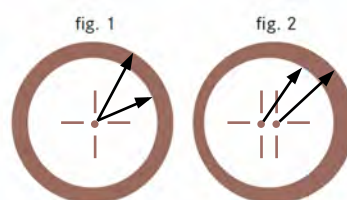
INTERNAL SURFACE OF THE TUBE

The internal surface of the copper tubes is bright, clean and free of moisture, an essential characteristic to ensure compatibility with downstream system components or another technically precise term and to facilitate brazing and connection operations.

During production, each coil is sealed at the ends to preserve the internal cleanliness until the moment of installation.

ECCENTRICITY

Low eccentricity ensures a regular wall thickness along the entire circumference of the tube. It is a fundamental parameter for flaring or swaging the tube end, as well as for greater safety of coupling with fittings.



INTERNAL CLEANLINESS

The internal cleanliness of copper tubes is a crucial aspect in ensuring the efficiency and safety of any system. A high level of cleanliness in the pipework not only prevents the build-up of contaminants and deposits, but also ensures the correct operation of the systems.

CIRCULAR CROSS-SECTION INSULATING SLEEVE

The circular cross-section insulating sleeve has been designed to fit the copper tube surface perfectly. This configuration ensures a larger contact area between the insulation and the tube, reducing the risk of voids that could compromise the effectiveness of the insulation. Good adhesion is crucial to prevent heat loss, condensation formation and to improve the overall efficiency of the system.



INSULATING COATING CHARACTERISTICS

- Thermal conductivity: $\lambda \leq 0.038 \text{ W/(m}\cdot\text{K)}$ at 40°C.
- Average water-vapour diffusion resistance factor “ μ ” > 40,000.
- Reaction to fire: BL-s1,d0 (EN 13501-1)
- Greater resistance to UV rays.
- Average coating density: 30 kg/m³
- Free from ammonia residues.
- Excellent resistance to external chemical agents.
- Free from CFCs and HCFCs (Reg. (EU) 2024/590).
- Halogen-free flame retardant.

The closed-cell expanded polyethylene coating, with an average water-vapour diffusion resistance factor “ μ ” greater than 40,000, is an advanced solution for the thermal insulation and protection of buildings and infrastructure. Insulating sleeves such as SMISOL Clim Aeterna® are designed taking into account European regulations, in particular Reg. (EU) 2024/590, which prohibits the use of CFCs and HCFCs, substances harmful both to human health and to the environment.

SMISOL Clim Aeterna® not only complies with environmental regulations, but also demonstrates a high reaction to fire as BL-s1,d0 according to the EN 13501-1 standard. These properties make the product suitable for use in contexts where safety is a fundamental priority.

The outer polyethylene film is designed to counteract the crystallisation process of polyethylene, a problem that can compromise the integrity of the material over time.

RESISTANCE TO SOLAR RADIATION

Tests carried out according to the ASTM G-155 standard, which simulates accelerated ageing conditions, confirm that SMISOL Clim Aeterna® is particularly suitable for areas with high annual solar radiation.

EPD DECLARATION

Within an increasingly stringent European regulatory framework, SMISOL Clim Aeterna® is a reliable, high-performance solution for air-conditioning systems in residential and commercial settings. The product is designed to guarantee high standards of safety, energy efficiency and durability, with performance proven over time even under conditions of exposure to solar radiation and ageing.

The Environmental Product Declaration (EPD), drawn up according to the ISO 14025 standard, provides objective and verified environmental data throughout the entire life cycle of the product, supporting sustainability-oriented design choices. The EPD is an increasingly required prerequisite in public and private tenders, in compliance with the Minimum Environmental Criteria (CAM), and contributes to obtaining environmental certifications such as LEED, BREEAM and WELL.

Thanks to the EPD certification, SMISOL Clim Aeterna® also offers a concrete advantage in regulatory, economic and fiscal terms making it an advanced and competitive technical solution.

TABLE: STANDARD PRODUCTION SIZES - COILED TUBES

Size OD x WT		Min. Guaranteed Coil Length	Min. Coating Thickness	Burst Pressure	ASTM Working Pressure	Water Content
(mm)	(inches)	(m)	(mm)	(MPa)	(MPa)	(l/m)
6,35 x 0,80	1/4"	50	6	56,54	14,14	0,018
6,35 x 1,00	1/4"	50	6	70,68	17,67	0,015
9,52 x 0,80	3/8"	50	8	37,71	9,43	0,049
9,52 x 1,00	3/8"	50	8	47,14	11,79	0,044
12,70 x 0,80	1/2"	50	10	28,27	7,07	0,097
12,70 x 1,00	1/2"	50	10	35,34	8,83	0,090
15,87 x 1,00	5/8"	25	10	28,28	7,07	0,151
19,05 x 1,00	3/4"	25	10	23,56	5,89	0,228
22,22 x 1,00	7/8"	25	10	20,20	5,05	0,321

OD = Outer Diameter WT = Wall Thickness



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In an increasingly stringent regulatory context, the search for products compliant with European standards becomes essential to ensure safety and energy efficiency.

SMISOL Clim Aeterna® is an innovative and sustainable solution. Its technical characteristics, compliance with environmental regulations and high-level reaction to fire make it an excellent product for residential and commercial applications. With performance proven against ageing and solar radiation, **SMISOL Clim Aeterna®** is a safe and responsible choice in the air-conditioning sector.

EPD DECLARATION

Environmental sustainability is taking on an increasingly central role in today's landscape, influencing the decisions of companies, consumers and designers. In this context, the **EPD (Environmental Product Declaration)** is important for several reasons.

In many countries, an EPD may also be required to comply with environmental regulations, as well as to access incentives and tax breaks. This legal and financial dimension makes the EPD not only a technical document, but also a competitive advantage for improving the quality of the services offered to the end consumer.

SMISOL Clim Aeterna® holds EPD certification, which provides objective and verified information on the environmental impacts of a product throughout its entire life cycle, from production to disposal.

Certificate EPD-IES-0025027 available at <https://www.environdec.com/library/epd25027>

This data is essential to understand how a product interacts with the environment and to make informed decisions during purchasing and design. The adoption of international standards, such as ISO 14025, ensures that the information is comparable and reliable, facilitating the choice of more sustainable solutions.



In particular, in the construction sector, a product with an EPD is often preferred in public and private tenders. Tenders increasingly require minimum environmental criteria (CAM), and holding an EPD can represent a significant competitive advantage. Furthermore, to obtain prestigious certifications such as LEED, BREEAM or WELL, the availability of an EPD declaration becomes an essential requirement.

