

TSM ThermoGUARD

LIQUID THERMAL INSULATION COATING

PRODUCT DESCRIPTION

TSM ThermoGUARD is a liquid thermal insulation coating based on acrylic polymers, enhanced with ultra-fine hollow ceramic spheres. It is designed for easy spray application and provides excellent thermal insulation as a thin, seamless coating.

The product effectively prevents condensation, corrosion and mold, reduces heat loss and improves thermal efficiency of buildings and industrial equipment.

TSM ThermoGUARD offers robust protection across a wide range of temperatures from -60°C to $+210^{\circ}\text{C}$, resists adverse weather conditions and UV radiation, and reduces maintenance needs by keeping surfaces dry and protected.

Ideal for both new constructions and restoration of historical facades.

KEY BENEFITS

- **Reduces** heat loss and thermal bridges
- **Prevents** condensation, corrosion and mold
- **Improves** indoor comfort and energy efficiency
- **Protects** against temperatures from -60°C to $+210^{\circ}\text{C}$
- **Resistant** to UV radiation and adverse weather
- **Lightweight**, seamless and elastic coating
- **Suitable** for complex shapes and hard-to-reach areas
- **Compatible** with new, plastered and historical surfaces
- **Fast and easy** application by spray
- **Reduces** labor costs and shortens project timelines

PHYSICAL & MECHANICAL PERFORMANCE

	Thermal Resistance (R)	1.13 m ² K/W
	Density (dry)	380 – 580 kg/m ³
	Density (liquid)	470 – 690 kg/m ³
	Water Vapor Permeability Coefficient	0.0014 mg/(m·h·Pa)
	Specific Heat Capacity	1.0 kJ/(kg·°C)
	Minimum Elongation at Break	8.0 %
	Minimum Elongation at Break (after 10 years of usage)	8.0 %
	Minimum Adhesion Strength (cohesion) at Break • Metal • Concrete • Wood	1.53 MPa 1.84 MPa 1.84 MPa
	Minimum Tensile Strength • After Application • After 10 Years of Usage	3.0 MPa 2.0 MPa
	Impact Strength	50 kg·cm
	Service Temperature Range	-60°C to +210°C
	Fire Classification	A1 (non-combustible)

ENVIRONMENTAL & INDOOR AIR QUALITY PERFORMANCE (CAM CERTIFIED)

	CAM Edilizia Italy (Par. 3.2.8 & 2.5.1)	COMPLIANT
	EU Taxonomy	COMPLIANT
	BREEAM International (Base Level) ⁽¹⁾	COMPLIANT
	French VOC Regulation	COMPLIANT
	Belgian VOC Regulation	COMPLIANT

INDOOR AIR QUALITY (28 DAYS)

TVOC (EN16516)	387 µg/m ³
TVOCMEQ	690 µg/m ³
TSVOC	< 5 µg/m ³
Formaldehyde	5 µg/m ³
Acetaldehyde	14 µg/m ³
Total Carcinogens	< 1 µg/m ³
CMR Substances (French Regulation)	Not Detected / Compliant

(1) Compliance with the limits alone does not entitle to use of BREEAM® label.

Source: CAM Assessment Report No. 428321 – Istituto Giordano – 12 May 2025

APPLICATION GUIDELINES

	Application Method	Spray application (recommended: Graco airless equipment) Brush application (for small areas and touch-up)
	Recommended Thickness	1 – 4 mm (do not exceed 1 mm in a single day)
	Consumption	1.4 L/m ² per 1 mm thickness (coverage may vary depending on surface)
	Drying / Curing Time	24 hours per 1 mm at +20°C and 50–60% RH (extended time at lower temperatures or higher humidity)
	Application Temperature	+5°C to +35°C
	Surface Preparation	Remove dust, corrosion and oils. Surfaces must be clean, dry and solid. Mix well and strain before application.

CERTIFICATIONS & COMPLIANCE

	CE Declaration of Performance	In accordance with applicable European standards
	TSUZ Testing	Tested according to relevant European and national standards
	CAM Certification (Istituto Giordano)	Compliant with Italian CAM Edilizia environmental criteria
	Fire Classification A1	Non-combustible according to EN 13501-1
	Environmental & Indoor Air Quality	Low VOC emissions – compliant with major European regulations (CAM, French, Belgian, EU Taxonomy, BREEAM)
	Durability & Protection	Resistant to UV, weather, corrosion and mold