

## TECHNICAL DATA SHEET

### THERMAL INSULATION LIQUID COATING

#### PRODUCT DESCRIPTION:

**LIQUID THERMAL INSULATION** - is a liquid ceramic coating with thermal and waterproofing properties. A microceramic filler, integrated into a mixture of acrylic copolymers. It is used as an antifungal, anti-corrosive, thermal insulation coating for interior and exterior walls, heating, sewage and water supply systems, window frames, cisterns and tanks. The insulating properties of this material are based on the vacuum's ability to maintain the desired temperature, limiting the ingress of cooled or heated air particles from the outside. The basis of LIQUID THERMAL INSULATION are millions of vacuum hollow particles, which, when applied and dried, form a tight membrane. Particle diameter from 20 to 120 microns.



Liquid thermal insulation as a result of polymerisation becomes a permanent covering, reducing heat loss up to 40%, it is impervious to water, and at the same time allows the surface to breathe freely. Vapor permeability, thanks to which there is an intensive air exchange, additionally saves 7-9% of heat and protects against the development of fungi, mould, corrosion and other negative effects of the environment. The material can expand by a quarter without interfering with the adhesion to the surface. One square meter of the coating can withstand up to 380 ml of water per hour and dry quite quickly after a rainfall.

LIQUID THERMAL INSULATION is used as a finishing agent for thermal insulation on walls, floors, facades, external insulation and the internal insulation of attics, insulation of houses, production buildings, rooms for various purposes, as well as in industry and the transportation industry.

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### **ADVANTAGES of LIQUID THERMAL INSULATION:**

- ✓ • dew point - minimises the effects of condensation
- ✓ Operating temperature between -50°C and + 150°C
- ✓ Computational  $\lambda$  0.0025-0.003 WmK
- ✓ Anti - corrosion protection
- ✓ Non-flammable - flammability class B1
- ✓ High adhesion
- ✓ Vapor permeable
- ✓ Protects against moisture
- ✓ Ecological
- ✓ Water-based - no explosion hazard during application and storage
- ✓ Increases safety of tanks against overheating and explosion
- ✓ Antistatic qualities
- ✓ Protection against mould and fungi
- ✓ Protects against weather conditions
- ✓ Increases sound insulation - min. 10%
- ✓ Absorbs vibrations
- ✓ Increases energy efficiency
- ✓ Reduces energy consumption costs
- ✓ Highly durable
- ✓ Increases displacement in sea transportation
- ✓ Harmless to health
- ✓ No waste (high insulation savings)
- ✓ Application does not harm insects

### **SUITABILITY**

- ✓ in the construction industry for thermal and acoustic insulation of walls, ceilings, floors, structural elements of buildings and structures as well as technical infrastructure (central heating, hot water, water and sewage, gas systems) inside and outside buildings;
- ✓ construction and modernisation of machines, production lines, means of transport - to protect the internal surfaces of vehicle bodies, including rail, sea and road transportation bodies, as thermal insulation protection against corrosion, condensation and absorption of vibrations and sound during operation;
- ✓ in the energy industry for thermal insulation of pipelines inside and outside buildings, insulation of machines and devices inside;

**CAN BE APPLIED TO:** concrete, ceramics (brick, brick-block and other building materials), plasterboard, wood, plastics, for granite and marble, stainless steel.

**DRYING TIME:** The applied layer, up to a thickness of 1mm, dries within 3 and up to 24 hours. The drying time of the applied layer with thickness of 1mm at the temperature of + 20°C and relative humidity of up to 60% - 3 hours. Full curing depends on the ambient temperature, humidity, ventilation and the thickness of the applied layer and lasts from 0.5 up to max. 24 hours. Force drying is not recommended.

**TYPE OF MATERIAL:** water-based, non-toxic, non-flammable (wet and dry).



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**COLOR:** light grey / beige / white wet and dry. Also available in various colours on request. Non-standard base colours are subject to price negotiation.

**HEALTH AND SAFETY:** the compound is non-toxic and non-flammable. Dry coating waste can be disposed of as no risk. Please see the separate safety data sheet.

**STORAGE:** Shelf life: 12 months. After the durability period, it is subject to re-inspection. Should be protected from frost throughout the entire storage period. Should be stored between 5 ° C and 25 ° C. and protected from sunlight. Containers should be tightly closed. Open or partially filled containers - scum formation may occur. In such a case, the top layer should be removed before use. It is recommended to cover the remaining amount in the bucket, to protect it from air access and water evaporation from the bucket. Do not allow the fluid to freeze!

**LAYER COVERAGE:** The intended coverage is approximately 1L per 1m<sup>2</sup> with a single layer of between 0.8 and 1.2mm thickness (wet layer). The coverage depends on the requirements of the surface, the structure and the expected insulation parameters. The maximum recommended thickness: four layers of approx. 4mm (4L / m<sup>2</sup>).

**COATING REPAIRS:** if the coating gets mechanically damaged, repair the surface by rubbing the surface with sandpaper, prime the surface with a deep primer, apply a fresh layer and allow it to dry and fully harden.

### SPECIFICATION:

The physical state	Liquid
Colour	Light beige, light grey, white
Smell	Faint
Boiling point, initial boiling point and boiling range	approx. 100°C.
Flash point	Not applicable
Decomposition temperature	Not applicable
Density or relative density	0.45 - 0.55 g / cm <sup>3</sup>

KEY FEATURES	EFFICIENCY	HARMONISED STANDARD
Reaction to fire - according to Euroclass	Reaction to fire: B-s1, d0	EN 1504-2:2004
Pull-off adhesion test results (concrete, brick, steel)	Average: 1.6 N / mm <sup>2</sup> (cohesive fracture at the base)	
Water vapour permeability	9.4 g / m <sup>2</sup> xd	
Capillary absorption and water permeability	Average: 0.20 kg / (m <sup>2</sup> x h <sup>0.5</sup> )	
Hygienic Certificate	The product was positively assessed in terms of hygiene	
Density	0.45 - 0.55 g / cm <sup>3</sup>	
Operating temperatures	from -50 ° C to + 150 ° C	

**REMOVAL:** the wet layer can be easily removed with water or with a pressure hose. After drying, the coating is difficult to remove from surfaces and tools.

**CLEANING:** Clean rollers, guns and other equipment with water immediately after use.

**PACKAGING:** Plastic buckets with a capacity of 20 L

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**APPLICATION INFORMATION AND RECOMMENDATIONS:** for detailed instructions see application instructions and use a wet film gauge to ensure minimum and maximum wet film thickness is achieved. Before use, the contents of the container should be thoroughly mixed at medium speed until a homogeneous consistency is obtained. Before use, the surface must be primed with a deeply penetrating primer (in case of building materials), and in the case of application on steel, thoroughly remove the signs of rust mechanically and degrease the surface. LIQUID THERMAL INSULATION can be then applied to the cleaned surface with a brush, a roller or a paint gun. It is allowed to add water in an amount not exceeding 100ml per 1 litre of the preparation.

The minimum wet film thickness is 0.8mm, the maximum is 1.2mm [wet film]. Do not apply in wet or frosty conditions (apply at an air temperature of +5 to + 35°C), protect against rainfall until it is completely dry and avoid applying when rainfall is predicted within 24 hours. The drying time of the applied layer with a layer thickness of up to 1mm at a temperature of + 20°C and a relative humidity of up to 60% - 3 hours.

### **SPRAY APPLICATION**

- Preparation for application: tools for spray painting should be thoroughly rinsed with clean water. They must be completely clean;
- The surface should be clean from dirt, primed / degreased;
- Apply with a spray gun to obtain a minimum thickness of 0.8mm and a maximum of 1.2mm [wet film];
- When applying with an air spray gun, the mass should be diluted with water up to 10% of the total mass of the material;
- The application should be carried out in circular movements and subsequent layers should be applied after the previous layer has dried and cured completely. The film applied by spraying will be more homogeneous.



Recommended equipment for spray painting

- large areas: GRACO RTX 5500 PX or similar with the same technical parameters;
- architectural details, pipelines, machines: GRACO FAST FINISH PRO and GRACO PISTOLET FASTFINISH HOPER GUN or similar with the same technical parameters.

**AVERAGE USAGE: 0.8-1.0L / 1m<sup>2</sup>**

### **PERSONAL PROTECTION / HEALTH & SAFETY**

During application, it is recommended to use a protective mask, protective gloves (prevention of e.g. an allergic reaction), protective glasses (in particular when applying with a pressure gun), painting suit to avoid stains on shoes and clothes, hearing protection, headphones when using a compressor during spray painting.

### **PRECAUTIONS:**

Observe the recommendations given in the safety data sheet. This data sheet does not contain information on the safety of the product. Before using the product, read the safety data sheet and the labels on the packaging in order to obtain information about the safe use and health and physical hazards. Dispose of in accordance with applicable legislation. Keep out of the reach of children. Notes for the client: The above information is accurate and to the best of our knowledge, based on reliable research and practical experience. The specified properties are provided for guidance only and do not constitute guaranteed product properties. The customer should test the product for specific

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applications to be sure that it has the expected properties and provides the required operational performance.

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