

Hempatherm IC system

Aerogel insulation coating system for process insulation and energy conservation

Product description

Hempatherm IC 175 and Hempatherm IC 170 are water-based insulation coatings used together in a coating system to provide process insulation and energy conservation. Based on aerogel technology and a special acrylic resin blend, the coating system offers best-in-class thermal conductivity suitable for a wide range of end-use applications, including replacement of conventional insulation for specific temperature ranges.

Conventional insulation is prone to water ingress and retention, suffering a performance drop-in service because wet insulation has a higher thermal conductivity than dry insulation. The Hempatherm IC system forms a seamless and hydrophobic layer that is able to resist water retention. It thereby maintains reliable and consistent insulation performance throughout its service life, as recognised in API-583 Recommended Practice for Corrosion under Insulation and Fireproofing.

The high film build capability (up to 5mm DFT per coat) of Hempatherm IC 175 enables a thick layer to be completed quickly, allowing comparable thermal efficiencies versus conventional insulation in many applications. Hempatherm IC 170 provides a protective sealer layer to improve the weathering resistance of the system. Both products cure to a flexible layer with superior impact resistance to that of conventional insulation metal jacketing, resisting cracking and withstand thermal cycling.

Typical applications

The Hempatherm IC system can be used on external surfaces of process pipework, pressure vessels, valves and other equipment to provide thermal insulation for a wide range of applications, including energy conservation, process insulation and condensation control. The product can be used for service temperatures ranging from -25°C (-13°F) to 177°C (350°F). It can be used as an alternative to conventional insulation materials/jacketing, in both heated and cold service.



Typical applications use areas

- ✓ Process piping
- ✓ Pressure vessels
- ✓ Storage tanks
- ✓ Ovens and food processing equipment
- ✓ Heat exchangers and dryers
- ✓ Pressurised storage spheres

Typical properties

Characteristics	Benefits
Low thermal conductivity	Specialised aerogel particles provide efficient insulation properties which allows direct replacement of conventional insulation materials for process control, condensation control, and energy conservation
High film build per coat	Allows a thick layer to be completed quickly so that the coating can be used for insulation replacement where other insulation coatings are not feasible
Flexible, seamless surface	Eliminates the likelihood of water penetration and retention; and hence reduces the risk of corrosion under insulation
Sustained thermal insulation performance	Seamless hydrophobic system resists water ingress and retention compared to conventional insulation materials. Ensures thermal efficiency is maintained throughout its service life
Ease of installation	No cutting or shaping required. Reduces accidents associated with cutting of insulation and handling of cut metal jacketing. Fast drying to enable fast project completion
Reduced maintenance cost over service life compared to alternatives	Easy to inspect and maintain when required as no jacketing needed

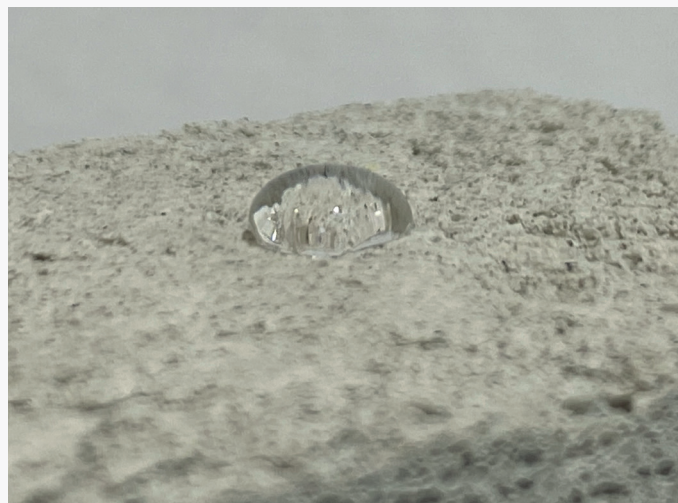
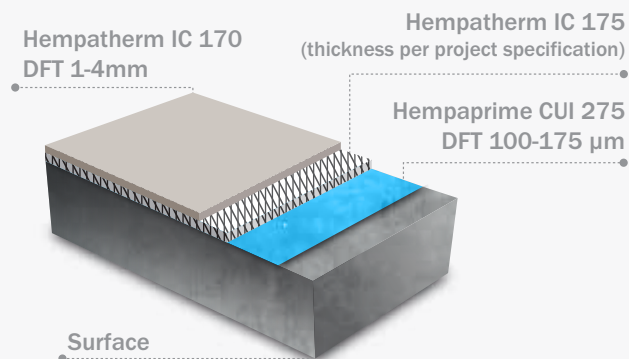
Physical constants

	Hempatherm IC 175	Hempatherm IC 170
Colour	White 10000 / Grey 17700	White 10000 / Grey 17380
Number of components	2	1
Volume solids, %	67	76
Density, g/cm ³	< 0,4	< 0,8
Flash point, °C	> 100	> 100
VOC g/L	0	0
Minimum application temperature, °C	10	10
Min/max dry film thickness, mm	2-5*	1-2.5
Min/max wet film thickness, mm	2-5*	1.3-3.3
ASTM E84 fire rating	Class A	Class A

*Hempatherm IC 175 applied thickness remains the same after drying; the DFT is the same as WFT.

The physical constants stated are nominal data according to the Hempel Group's approved formulas. They are subjected to normal manufacturing tolerances. This product should be used with reference to technical specifications.

Typical specification



More information available upon request

If more detailed information is required please contact your local Hempel sales representative.

The Hempatherm insulation coating system specification is dependent on project requirement; multiple options and tailor-made solution may be available. For more information, please contact Hempel.

This product should not be used without reference to Product Data Sheet (PDS), Safety Data Sheet (SDS), Thermal Analysis Report, and Application Guide.

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