



Thermaguard™ TIC 180

High Performance Liquid Insulation

Technical Data Sheet rev 07.16

Product description

Thermaguard™ TIC 180 is a water based, single component, Thermal Insulation Coating (TIC), formulated to provide a seamless weather resistant insulation film which can improve energy efficiency, prevent Corrosion Under Insulation (CUI) occurring, reduce condensation build up & provide personal protection according to ISO 13732-1.

The insulation coating acts as a thermal barrier, protecting interior temperatures against cold, warm & humid weather conditions. Can be easily implemented into an inspection program due to the elimination of external cladding therefore, offering a maintenance friendly insulation coating system.

Intended applications

Can be applied over suitably primed carbon steel or direct to stainless & aluminum substrates. Such applications include, petrochemical, chemical plants, offshore, power, refining, and generic processing; pipework, steamlines, pressure vessels, stacks, chimneys, tanks, heat exchangers, storage facilities, commercial constructions, roofing etc.

Technical information

Product chemistry

A water based, single component, ceramic filled acrylic.

Colour

White

Specific gravity

Approx. 0.61 g/ml

Theoretical spreading rate

0.80 m²/l at 1000µm DFT

Typical film thickness

1000µm DFT per coat

Volume solids

80%± 2%

VOC

Approx. <5 g/l

Thermal conductivity (λ)

0.05 W m⁻¹ K⁻¹

Temperature resistance

180°C

Application methods

Airless and brush





Surface preparation

Intended for steels, both carbon & stainless & aluminum substrates. Substrates must be clean, dry and free from any contamination. All oil, dirt, grease, dust, foreign material and loose rust must be removed prior to coating.

Primed carbon steel

Duraprime ST; Abrasive blast clean to Sa 2½ (ISO 8501-1:2007) or SSPC-SP10. The resulting surface profile (R_z) should be 30 -50µm. All sharp edges & rough welds should be rounded off. Followed by application of Thermaguard™ TIC 180 in accordance with the technical specification.

Duraprime ST has surface tolerance to maintenance work applications to tight adhering rusted surfaces; remove all loose adhering rust & rust scale and follow St 2/3 surface preparation. Followed by application of Thermaguard™ TIC 180 in accordance with the technical specification.

Stainless steel

Abrasive sweep clean using a non-metallic & chloride free abrasive (aluminum oxide or garnet). The resulting surface profile (R_z) should be 30 -50µm. All sharp edges & rough welds should be rounded off.

Substrate temperature & conditions

Substrate temperature should remain between 10 to 50°C and remain 3°C above the dew point and relative humidity should remain 35 - 85% during application.

System specifications

Thermaguard™ TIC 180 in a 2 coat application for insulation & personal protection factors.

Carbon steel, ambient spray (10 to 50°C) application:

- Duraprime ST: 100 - 250µm DFT
- Thermaguard™ TIC 180: 500 - 1000µm DFT
- Thermaguard™ TIC 180: 500 - 1000µm DFT

Application of Thermaguard™ TIC 180 by airless is the recommended application method when applied over primed carbon steel or abrasively swept stainless steel (R_z>30µm). Application by brush should only be done during small areas (>1 sqm) or in maintenance & repair.



Stainless steel, ambient spray (10 to 50°C) application:

- Thermaguard™ TIC 180: 500 - 1000µm DFT
- Thermaguard™ TIC 180: 500 - 1000µm DFT

If coloured finishes are required whether for safety recognition or aesthetical purposes, Aquaseal Acrylic TS can be used, please see technical data sheet for further information regarding this product.

Application

Airless

Pump: 30:1 or higher

Tip size: 0.021 – 0.023 inch

Pressure: 2031psi / <140 bar

Hose diameter: >1/2 inch

Thinning:
None

Airspray (conventional)

Not recommended

Brush/roller

Thinning:
None

Mixing

Thermaguard™ TIC180 is a single component product. The material should always be mixed using a mechanical agitation in slow speed using a plastic paddle.

Reactivity

Thermaguard™ TIC 180 is a self-cross-linking acrylic polymer coating. The lid should be kept on when not in use to prevent skinning.

Reducer

None

Clean up

Water, discard waste in accordance with local environmental regulations.

Packaging

20 litre pails



Coating & curing schedule

Spreading rate information

DFT	Theoretical spreading rate
500	1.60m ² /l
1000	0.80m ² /l

Film thickness information

DFT/WFT	Minimum (µm)	Maximum (µm)
Dry film thickness	500	1000
Wet film thickness	625	1250

Drying & recoating information

Temperature (°C)	Touch dry	Overcoating time	Dry to handle
10	6 hours	24 - 32 hours	36 hours
23	3 hours	16 - 24 hours	24 hours
38	1 hour	8 - 16 hours	16 hours
130	N/A	20 minutes	N/A

Notes: drying times can vary upon different environmental conditions. Coating should be applied within the information supplied to ensure drying & overcoating times are not affected. Unlimited overcoat time even after exposure to elevated temperatures.

Additional information

Safety precautions

This product is for use only by professional applicators in accordance with information in this Technical Data Sheet (TDS) and the applicable Material Safety Data Sheet (MSDS). Refer to the product MSDS before using this material. All usage of this product must be kept in compliance with local, health, safety & environmental conditions & regulations.

Storage & shelf life

Material should be stored in a dry, shaded environment away from heat & ignition sources. Do not allow material to freeze. Shelf life is minimum 12 months at 23°C.

Important

The information of the product displayed herein is to the best knowledge of Performance Polymers. All testing has been under strict laboratory conditions which Performance Polymers believes to be reliable; therefore, onsite performance can vary with application in different conditions. Additionally, Performance Polymers has no control of external factors e.g. substrate quality of preparation or any other factors which can hinder affect the performance of this product. The information in this TDS is not to be extensive; any use without confirmation from Performance Polymers is doing so at their own risk. Any deviation of performance on site isn't liable to Performance Polymers. The performance of this product carries no warranty. The documentation of this product should be thoroughly read before use.