



ALTERNATE  
CORROSION  
PREVENTION  
SYSTEMS

# Alter- Therm™ 650 CUI

## Product Data Sheet

### Selection and Specification Data

#### Generic Type

Pure Inorganic ceramic polymer (inert multi-polymeric matrix)

#### Product Description

Allter-Therm™ 650 CUI is a high performance single-component pure inorganic coating, designed to protect carbon- and stainless steel substrates under insulation where an excellent wet/dry cycling resistance at elevated temperature is required. The coating complies to the NACE SP0198-2017 classification, inert multi-polymer matrix coatings for corrosion under insulation (CUI) in both cryogenic and elevated temperature applications, is fully ambient curing and can withstand temperatures from -196°C up to 650°C. Application examples are insulated piping, process vessels, storage tanks, heat exchangers, stacks, ductwork, steam pipes and other equipment in various industries such as in petrochemical facilities, chemical plants, Offshore, power plants, refineries etc.

#### Features

- Outstanding dry/wet cycling resistance
- Single component, easy to use coating
- Complies to NACE SP0198-2017 (CS-6 and SS-5 systems)
- Self-priming on carbon-and stainless steel substrates
- Service tolerant and UV resistant
- Prevents stress corrosion cracking (SCC) of stainless steels
- Service temperature from -196 up to 650°C
- Can be applied on hot substrates (up to max. 260°)
- Can be applied with Airless, conventional spray and brush&roller
- Can be used for in shop (OEM) as well maintenance applications
- No need for heat curing

Color	Finish	Primer
Light and dark grey	Eggshell	Self-priming for insulated services or IOZ for atmospheric services
Dry Film Thickness	Volume Solids	Theoretical Coverage Rate
125-150micron per coat. Two coats are recommended for maximum system performance. Minimum DFT per coat is 50micron. Maximum DFT per coat is 150micron. Maximum system dry film thickness 300micron.	64% ±2%	5.12m <sup>2</sup> /l at 125micron DFT. 4.26m <sup>2</sup> /l at 150micron DFT.
VOC	Temperature Resistance	Topcoats
342g/l	-196 up to 650°C	None

## Substrate and Surface Preparation

### General

Remove all dirt, grease, mill scale, loose rust and any other contaminants that can reduce adhesion according to SSPC-SP1 solvent cleaning, followed by the recommended substrate preparation as listed below.

### Insulated or atmospheric exposed carbon steel

For maximum system performance, abrasive blasting according to Sa2½ with a 30-50micron (Rz) surface profile. For maintenance or when blasting is no option, SSPC-SP11 with a minimum 25micron (Rz) surface profile may be an alternative.

### Insulated or atmospheric exposed stainless steel

For maximum system performance, abrasive blasting according to SSPC-SP16 with a 30-50micron (Rz) surface profile, using a non-metallic inert abrasive media such as aluminum oxide or garnet. For maintenance or when blasting is no option, SSPC-SP11 with a minimum 25micron (Rz) surface profile may be an alternative.

## Mixing and Thinning

### Mixing

Use low speed mechanical mixing equipment until a uniform consistency is reached. Keep the material mixed or regularly agitated during spraying. The material is reactive with moisture. Keep covered to prevent skinning.

## Thinning

	10-60 °C	60-150 °C	150-260 °C
<b>Airless:</b>	2-5% Thinner 21	5-10% Thinner 21	
<b>Conventional spray:</b>	4-8% Thinner 100	6-10% Thinner 100	8-12% Thinner 100
<b>Brush/roller:</b>		0-10% Thinner 200	8-12% Thinner 200

## Application Equipment

### General

The following information can be used as a guideline to apply the coating system. Site conditions may require modifications in spray pressure and tip sizes.

Conventional spray	Airless spray	Brush and roller
Pressure pot equipped with dual regulators, a 3/8" ID material hose, a 1.8-2.2mm. fluid tip and 2.1 bar (30psi) fluid pressure.	A minimum 30:1 pump ratio, with a minimum 3/8" ID material hose, and 0.015-0.023" tip size. Remove all filters.	Use a natural bristle brush and apply the material in full strokes. Avoid rebrushing. If rolled, use a short nap roller with solvent resistant core. Avoid rerolling.

## Application Conditions

**Note:** This material requires the substrate temperature to be 3°C above the dew point

Condition	Material	Surface	Ambient	Rel. Humidity
Minimum	13°C	10°C	10°C	35%
Maximum	32°C	260°C	50°C	85%

## Curing Schedule

**Note:** Drying times can vary upon different environmental conditions. Material should be applied within the supplied parameters to ensure drying and recoat times are respected. Material is fully curing under ambient conditions and does **not** require heating to obtain its mechanical and corrosion protective properties. This material has an unlimited recoat time, even after exposure at elevated temperatures.

Temperature	Touch dry	Dry to recoat	Dry to handle
10°C	6 hours	24 hours	36 hours
23°C	2 hours	6 hours	24 hours
38°C	1 hour	4 hour	16 hour
130°C	N/A	15 minutes	N/A

## Cleanup and Safety Information

Cleanup	Safety
Use Thinner 21	This material is for professional use only. Please observe the precautionary information on the safety data sheets (SDS) and label on the containers before using this material. Use of this material must be kept in compliance with local health, safety and environmental conditions and regulations.

## Packaging, Handling and Storage

Shelf life	Storage temperature and humidity	Storage	Shipping weight	Flash point (ISO 1523)
Minimum 12 months at 23°C	4 - 50°C 85%	Material should be stored indoors, well ventilated and away from sources of heat and ignition.	10 litres (19.1 kg)	30°C

**DATE: 14-01-2020**

**DISCLAIMER:** *Allter Coatings warrants that the product(s) represented within conform(s) to its/their chemical and physical description and is appropriate for the use as stated on the respective technical data sheet when used in compliance with Allter Coatings written instructions. Since many installation factors are beyond the control of Allter Coatings the user is obligated to determine the suitability of the products for the intended use and assume all risks and liabilities in connection herewith. Allter Coatings liability is stated in the standard terms and conditions of sale. Allter Coatings makes no other warranty either expressed or implied. All information contained in the respective technical data sheet(s) should be used as a guide and is subject to change without notice. This document supersedes all previous revisions. Please see revision date on the left. Allter® is a registered trademark.*