Intertherm® 751CSA

Heat Resistant Cold Spray Aluminum

PRODUCT DESCRIPTION

A two component, high build, high temperature resistant 'cold spray' applied coating, based on inorganic copolymer technology and pigmented with metallic aluminum flake.

Intertherm 751CSA is a novel high performance coating that is applied using standard application equipment and cures effectively at ambient temperatures. Capable of providing corrosion protection to steel in both atmospheric service and under thermal insulation operating in thermal cyclical conditions between -321°F (-196°C) and 1202ºF (650ºC) without the need for additional heat curing, prior to being placed in service.

INTENDED USES

Intertherm 751CSA has been specifically designed to provide a corrosion resistant barrier when used to protect steelwork beneath thermal insulation in areas subjected to wet and dry cycling.

Typically applied direct to metal, as a one or two coat system, Intertherm 751CSA is particularly effective in maintenance situations when used to mitigate the damaging effects of corrosion under insulation (CUI).

Intertherm 751CSA affords excellent resistance to 'thermal shock' experienced during rapid temperature cycling, and provides effective protection to steelwork operating under cyclic conditions.

Suitable for application to hot surfaces operating in high temperature service up to 302°F (150°C).

Ideally suited for use in the chemical process, offshore productions, petrochemical and power industries, especially refineries and process units, pipe work, chimneys, vessels, flare stacks, exhausts, furnaces, exteriors of reactors, power plants, vents and other structures. Significant volumes of insulated and uninsulated steelwork can be coated with a single specification, thereby reducing complexity and smoothing the progress of maintenance schedules etc.

PRACTICAL INFORMATION FOR INTERTHERM 751CSA

Color	Aluminum
Gloss Level	Not applicable
Volume Solids	61%
Typical Thickness	4-8 mils (100-200 microns) dry equivalent to 6.6-13.1 mils (164-328 microns) wet
Theoretical Coverage	140 sq.ft/US gallon at 7 mils d.f.t and stated volume solids 3.49 m²/liter at 175 microns d.f.t and stated volume solids
Practical Coverage	Allow appropriate loss factors
Method of Application	Airless Spray, Air Spray, Brush, Roller

Drying Time

			Overcoating Interval with recommended topcoats	
Temperature	**Touch Dry**	**Hard Dry**	*Minimum*	*Maximum*
41°F (5°C)	2 hours	18 hours	36 hours	Not applicable[1]
59°F (15°C)	90 minutes	12 hours	24 hours	Not applicable[1]
77°F (25°C)	60 minutes	10 hours	16 hours	Not applicable[1]
104°F (40°C)	30 minutes	8 hours	12 hours	Not applicable[1]

[1] For overcoating intervals with topcoats, refer to International Protective Coatings.

REGULATORY DATA

Flash Point (Typical)	Part A 90°F (32°C); Part B 72°F (22°C); Mixed 77°F (25°C)	
Product Weight	10.7 lb/gal (1.28 kg/l)	
VOC	3.50 lb/gal (420 g/lt)	EPA Method 24
	332 g/kg	EU Solvent Emissions Directive (Council Directive 1999/13/EC)
	405 g/lt (3.37 lb/US Gal)	Chinese National Standard GB23985

See Product Characteristics section for further details

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SURFACE PREPARATION

All surfaces to be coated should be clean, dry and free from contamination. Prior to application, all surfaces should be assessed and treated in accordance with ISO 8504:2000

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

Steel

Optimum corrosion and temperature resistance will be achieved where steel substrates are abrasive blast cleaned to a minimum of Sa2½ (ISO 8501-1:2007) or SSPC-SP6. If oxidation has occurred between blasting and application of Intertherm 751CSA the surface should be re-blasted to the specified visual standard. Surface defects revealed by the blast cleaning process should be ground, filled, or treated in the appropriate manner. A sharp, angular surface profile of 50 microns (2 mils) is recommended.

Power Tool Cleaning (Small Areas Only)

Dependent on the service conditions Intertherm 751CSA can be applied over power tool cleaned surfaces prepared to a minimum of SSPC-SP11 with an irregular 1.6 mil (40 micron) profile. Note, all scale must be removed and all areas which cannot be prepared adequately should be spot blasted to a minimum standard of Sa2½ (ISO 8501-1:2007) or SSPC-SP6. Please consult International Protective Coatings for the latest technical advice regarding this situation prior to commencing application of the coating.

Ultra High Pressure Hydroblasting/Abrasive Wet Blasting

Consult the Intertherm 751CSA Application Guidelines for more details regarding surface preparation.

Stainless Steel

Ensure surface is clean, dry and free from metal corrosion products prior to application. Light sweep with nonmetallic and chloride free abrasive (e.g. aluminum oxide or garnet) to obtain anchor profile of approximately 2 mils (50 microns).

APPLICATION

Mixing

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.
(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

Mix Ratio

54 part(s) : 1 part(s) by volume

Working Pot Life

41°F (5°C)	59°F (15°C)	77°F (25°C)	104°F (40°C)
2 hours	2 hours	90 minutes	60 minutes

Airless Spray	Suitable	Tip Range 15-19 thou (0.38-0.48 mm) Total output fluid pressure at spray tip not less than 2005 psi (141 kg/cm²)
Air Spray (Pressure Pot)	Recommended	Gun DeVilbiss MBC or JGA Air Cap 704 or 765 Fluid Tip E
Air Spray (Conventional)	Recommended	Use suitable proprietary equipment.
Brush	Suitable	Typically 1.6-3.0 mils (40-75 microns) can be achieved
Roller	Suitable	Typically 2.0-4.0 mils (50-100 microns) can be achieved
Thinner	International GTA007	Thinning is not normally required. Consult the local representative for advice during application in extreme conditions. Do not thin more than allowed by local environmental legislation.
Cleaner	International GTA007	

Work Stoppages

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA007. Once units of material have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

Clean Up

Clean all equipment immediately after use with International GTA007. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.

All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.

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PRODUCT CHARACTERISTICS

To ensure the correct specification for your project, please contact International Protective Coatings for advice.

The detailed Intertherm 751CSA Application Guidelines should be consulted prior to use.

Intertherm 751CSA is recommended for use with steelwork undergoing wet and dry cycling or situationsof continuous intimate contact with thermal insulation operating at in-service temperatures ranging fromambient up to 400ºC (752ºF).

For operating temperatures between 400°C (752°F) and 650°C (1202°F) please consult International Protective Coatings for further information.

Intertherm 751CSA is typically applied direct to correctly prepared steelwork as a two coat system at 4 mils (100 microns) per coat to give a total coating system dry film thickness of 8 mils (200 microns). Applications at thicknesses up to 8 mils (200 microns) in a single coat are also possible. The maximum applied total dry film thickness should be less than 14 mils (350 microns) at all times.

In order to ensure good anti-corrosive performance, it is important to achieve a minimum system dry film thickness of 6 mils (150 microns), which in practice should equate to a minimum specification of 7 mils (175 microns).

When applying Intertherm 751CSA by brush or roller, it may be necessary to apply multiple coats to achieve the total specified system dry film thickness.

Intertherm 751CSA can be applied to 'hot' substrates with surface temperatures up to 302°F (150°C), making the product particularly suitable for use during periodic maintenance shutdown periods with no need for additional heat curing, prior to being placed in service. Please refer to the Intertherm 751CSA Application Guidelines for more detailed information.

Where multi-coat systems are to be used, optimum intercoat adhesion is best achieved by keeping the overcoating interval as short as possible.

Intertherm 751CSA reacts with atmospheric moisture, and as such when in the can should remain covered at all times. Failure to keep tin covered will result in skinning of unused material and loss of pot life.

When applying Intertherm 751CSA in confined spaces, ensure adequate ventilation.

Surface temperature must always be a minimum of 5°F (3°C) above dew point.

In common with many products containing leafing aluminum pigmentation Intertherm 751CSA may be prone to developing a “polished” appearance in areas of minor mechanical damages etc. However, this phenomenon is merely aesthetic, and is not detrimental to the anti-corrosive performance of the product.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in color and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

SYSTEMS COMPATIBILITY

Intertherm 751CSA will normally be applied direct to metal, and is not normally overcoated with any product other than itself when used under thermal insulation.

Overcoating of Intertherm 751CSA for color identification purposes may be possible. Please consult International Protective Coatings for the latest technical advice.

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ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage
- Intertherm 751CSA Application Guidelines

Individual copies of these information sections are available upon request.

SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Safety Data Sheet and the container(s), and should not be used without reference to the Safety Data Sheet (SDS).

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult AkzoNobel for further advice.

PACK SIZE

Unit Size	Part A		Part B	
	Vol	Pack	Vol	Pack
1 US gal	0.98 US gal	1 US gal	0.02 US gal	0.06 US gal
3.74 liter	3.67 liter	5 liter	0.07 liter	0.12 liter

For availability of other pack sizes, contact AkzoNobel.

SHIPPING WEIGHT (TYPICAL)

Unit Size	Part A	Part B
1 US gal	10.8 lb	0.3 lb
3.74 liter	5.54 kg	0.1 kg

STORAGE

Shelf Life: 12 months (Part A) and 18 months (Part B) minimum at 77°F (25°C). Store in dry, shaded conditions away from sources of heat and ignition.

Disclaimer

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local representative that this data sheet is current prior to using the product.

This Technical Data Sheet is available on our website at www.international-marine.com or www.international-pc.com, and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.

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