Ceilcote® 222HT Flakeline

Novolac Vinyl Ester

PRODUCT DESCRIPTION

Ceilcote 222HT Flakeline is a glass flake filled novolac vinyl ester coating which exhibits excellent resistance to both aliphatic and aromatic ogranic solvents and to concentrated organic and inorganic acids.

It offers outstanding chemical resistance with quick turn around for service and also high temperature resistance.

INTENDED USES

Ceilcote 222HT Flakeline is primarily intended for the internal lining of chemical storage tanks and vessels where acidic chemicals or hot media are to be stored, such as in oil, gas and chemical processing, pulp and paper plants and for structural steelwork in environments where frequent contact with corrosive chemicals is likely to occur.

Ceilcote 222HT Flakeline may also be applied over suitable basecoats as part of other Ceilcote systems.

PRACTICAL INFORMATION FOR CEILCOTE 222HT FLAKELINE

Color	Grey, Off White
Gloss Level	Not applicable
Volume Solids	100% reactive
Typical Thickness	15-25 mils (375-625 microns) dry equivalent to 17.6-29.4 mils (441-735 microns) wet
Practical Coverage	68 sq.ft/US gallon at 20 mils d.f.t and 85% volume solids 1.70 m²/litre at 500 microns d.f.t and 85% volume solids (see Page 3 Product Characteristics)
Method of Application	Airless spray, Plural component airless spray

Drying Time

			Overcoating interval with self	
Temperature	**Touch Dry**	**Hard Dry**	*Minimum*	*Maximum*
50°F (10°C)	5 hours	24 hours	12 hours	7 days[1]
59°F (15°C)	4 hours	16 hours	8 hours	7 days[1]
77°F (25°C)	2 hours	4.5 hours	4 hours	7 days[1]
95°F (35°C)	90 minutes	3 hours	3 hours	7 days[1]

[1] When surface temperatures exceed 95ºF (35ºC) or are exposed to direct sunlight, overcoating should take place as soon as the coating may be walked on, in order to avoid intercoat adhesion issues.

REGULATORY DATA

Flash Point (Typical)	Part A 93°F (34°C); Part B 171°F (77°C); Mixed 90°F (32°C)	
Product Weight	10.6 lb/gal (1.27 kg/l)	
VOC	1.80 lb/gal (216 g/lt)	EPA Method 24
	115 g/kg	EU Solvent Emissions Directive (Council Directive 1999/13/EC)

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 paint application, all steel 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 Substrates

For immersion service or service in humid conditions or elevated temperatures, this product should be applied to surfaces which have been prepared by abrasive blast cleaning to Sa3 (ISO 8501-1:2007), SSPC SP5 or NACE #1. For dry environments, abrasive blast cleaning to Sa2½ (ISO 8501-1:2007), SSPC SP10 or NACE #2 will be suitable. A minimum surface profile of 3 mils (75 microns) is required.

Concrete Substrates

Ceilcote 222HT Flakeline is also suitable for application to concrete in certain conditions; please see Product Application Guidelines for further information.

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. **Do not mix more material than can be applied within the recommended pot life.**

Mix Ratio

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

Working Pot Life

50°F (10°C)	59°F (15°C)	77°F (25°C)	95°F (35°C)
90 minutes	50 minutes	50 minutes	20 minutes

Plural component airless spray	Suitable	See Application Guidelines for further information.
Airless Spray	Recommended	Tip Range 36-43 thou (0.91-1.09 mm) Total output fluid pressure at spray tip not less than 3000 psi (211 kg/cm²)
Air Spray (Conventional)	Suitable	Refer to Ceilcote Quick Reference Equipment Chart.
Brush	Suitable - Small areas only	Multiple coats may be required to achieve specified film thickness.

Thinner

DO NOT THIN

Cleaner

Ceilcote T-410 Solvent

Work Stoppages

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with T-410 Solvent. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units. Once units have been mixed, work should continue until all mixed material has been used.

Clean Up

Clean all equipment immediately after use with T-410 Solvent. 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 regualtions/legislation.

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PRODUCT CHARACTERISTICS

The detailed Application Guidelines for the relevant Ceilcote system should always be consulted prior to use.

Consult International Protective Coatings to confirm that the intended Ceilcote system is suitable for contact with the service conditions. Ceilcote 222HT Flakeline must be specified as a minimum of 2 coats at 500 microns (20 mils) per coat to give a total dry film thickness of not less than 1000 microns (40 mils) in order to achieve optimum performance.

Although Ceilcote 222HT Flakeline is 100% reactive, depending on the application conditions, the practical volume solids may be lower. International Protective Coatings suggest a value of 85% for estimating spreading rates, dry thickness and coverage.

Elevated storage temperatures reduce shelf life. Uncatalysed Ceilcote 222HT Flakeline is stable for 3 months from date of manufacture when stored below 77°F (25°C) in its original sealed containers. Ceilcote 222HT Flakeline should never be stored in direct sunlight. It is recommended that material temperatures be kept as low as possible via refrigeration if necessary in order to prolong shelf life and pot life during airless spray application. It is important to take into consideration that material temperatures will increase following mixing. A recommended storage temperature range is 46°F-66°F (8°C-19°C).

Surface temperature must always be a minimum of 5°F (3°C) above dew point.Ensure adequate ventilation is provided throughout application and curing. For all application steps, the surface temperature, air temperature and material temperature should be between 50ºF (10ºC) and 110ºF (43ºC) Do not apply when relative humidity exceeds 90% or when condensation is likely to occur. Dehumidification (DH), air conditioning and/or heating equipment may be necessary to control environmental conditions.

For multi-coat applications, exposure to low temperatures during, or immediately after application may result in incomplete cure and surface contamination that could jeopardise subsequent intercoat adhesion. When surface temperatures exceed 95ºF (35ºC) or are exposed to direct sunlight, overcoating should take place as soon as the coating may be walked on, in order to avoid intercoat adhesion issues.

Ceilcote 222HT Flakeline is not intended to be used as a cosmetic finish and color stability will not be achievable.

When working outside or in direct sunlight, concrete "gassing" or "breathing" may occur when the surface temperature is rising due to sunlight or increasing ambient temperature. This can cause bubbles or holes in the applied floor, lining or coating. When this problem occurs it is necessary to shade the surface from sunlight and/or apply the material in the cooler evening or at night so that initial cure can take place without air escaping from the concrete. Consult International Protective Coatings for more detailed recommendation.

Where the overcoating interval is exceeded, confirm recoatability by wiping with styrene monomer. If the surface becomes 'tacky', adhesion is acceptable. If not softened by styrene, the surface must be sweep blasted or mechanically abraded to provide a non-glossy, abraded surface. Primed surface must be dry and free of foreign matter at time of lining, coating or flooring application.

Time to Place in Service:

50°F (10°C)	48 hours
70°F (21°C)	24 hours
90°F (32°C)	16 hours

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 effect VOC values determined using EPA Method 24.

SYSTEMS COMPATIBILITY

Ceilcote 222HT Flakeline should be applied to correctly prepared substrates. However, it is suitable for application to the following primers:

Ceilcote 370HT Primer (for service conditions between 140ºF (60ºC) and 195ºF (90ºC))

Ceilcote 380 Primer (for service conditions up to 140ºF (60ºC))

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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
- Ceilcote 222HT Flakeline Application Guidelines
- Ceilcote Quick Reference Equipment Chart

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.
All work involving the application and use of this product should be performed in compliance with all relevant national Health, Safety and Environmental standards, regulations and legislation.
Proper ventilation must be provided during application and afterwards during curing (refer to product datasheets for typical curing times) to ensure safe limits and prevent fires and explosions. Forced extraction will be required in confined spaces. Ventilation and/or respiratory personal protective equipment (airfed hoods or appropriate cartridge masks) must be provided during application and curing. Take precautions to avoid skin and eye contact (overalls, gloves, goggles, masks, barrier cream, etc).
Before use, obtain, read and then follow the advice given on the Material Safety Data Sheets (Base and Curing Agent if two-pack) and the Health and Safety section of the Coatings Applications Procedures for this product.
In the event that 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.
The detailed safety measures are dependent on application methods and the work environment. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product and consult International Protective Coatings.

PACK SIZE

Unit Size	Part A		Part B	
	Vol	Pack	Vol	Pack
15 liter	14.71 liter	20 liter	0.29 liter	0.7 liter

For availability of other pack sizes contact International Protective Coatings

SHIPPING WEIGHT (TYPICAL)

Unit Size	Part A	Part B
15 liter	20.44 kg	0.39 kg

STORAGE

Shelf Life	3 months minimum at 77ºF (25°C).Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition. During storage and shipment, Ceilcote 222HT Flakeline initiator must not be exposed to temperatures exceeding 30°C (90°F). Refrigeration recommended. Best practice would be to hold Parts A and B in separate stores.

Disclaimer