

Novolac Vinyl Ester

PRODUCT DESCRIPTION

Ceilcote 222HB Flakeline is a glass flake filled novolac vinyl ester high build lining for use on steel and concrete substrates.

Ceilcote 222HB Flakeline has excellent resistance to organic and inorganic acid solutions and many aliphatic solvents. The coating system can achieve a dry film thickness of up to 1350 microns (54 mils) in a single coat. The intent is to eliminate one application step where similar coating systems require two separate applications. Ceilcote 222HB Flakeline can be applied on concrete and metal surfaces with proper surface preparation.

INTENDED USES

Designed for use on FGD duct linings, tanks, trenches and pits, vaults and dykes, secondary containment and floors.

Ceilcote 222HB Flakeline offers the following features:

- Excellent chemical resistance
- Glass flake filled for excellent permeation resistance
- High film build to reduce application steps, minimises intercoat contamination

Consult International Protective Coatings representative for product suitability.

PRACTICAL INFORMATION FOR CEILCOTE 222HB FLAKELINE

Colour	Grey, Off White
Gloss Level	Not applicable
Volume Solids	93% ± 2%
Typical Thickness	750-1350 microns (30-54 mils) dry equivalent to 806-1452 microns (32.2-58.1 mils) wet
Theoretical Coverage	0.90 m ² /litre at 1000 microns d.f.t and stated volume solids 37 sq.ft/US gallon at 40 mils d.f.t and stated volume solids
Practical Coverage	Allow appropriate loss factors. Coverage will vary according to individual systems and the configuration of the surface to be coated; consult the relevant Application Guidelines and specification for further information.
Method of Application	Airless Spray, Brush

Drying Time

Temperature	Touch Dry	Hard Dry	Overcoating Interval with recommended topcoats	
			Minimum	Maximum
10°C (50°F)	1.5 hours	4 hours	4 hours	7 days ¹
25°C (77°F)	1 hour	2 hours	2 hours	7 days ¹
40°C (104°F)	15 minutes	15 minutes	60 minutes	3 days ¹

¹ Surface must be re-coated within 4 hours in direct sunlight.

REGULATORY DATA

Flash Point (Typical) Part A 31°C (88°F); Part B 56°C (133°F); Mixed 31°C (88°F)

Product Weight 1.38 kg/l (11.5 lb/gal)

VOC 2.26 lb/gal (271 g/l) EPA Method 24

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 or intermittent splash and spillage conditions, abrasive blast to “White Metal” in accordance with SSPC SP5, NACE 1 or ISO 8503-1 Sa3. A minimum surface profile of 75 microns (3 mils) is required. If a holding primer is required for Ceilcote 222HB Flakeline, then only use Ceilcote 370HT or Ceilcote 380 Primer at 50 - 125 microns (2-5 mils) as advised.

Concrete Substrates

Concrete should be well cured prior to coating. The concrete surface should be dry and pass the plastic sheet test (ASTM D4263). All surfaces should be clean, dry and free from curing compounds, release agents, trowelling compounds, surface hardeners, efflorescence, grease, oil, dirt, old coatings and loose or disintegrating concrete. All concrete surfaces must also be abrasive blast cleaned to provide a roughened surface and remove laitance. The surface tensile strength (ASTM 4541) as prepared should be at least 2MPa (300 psi). Surfaces must be primed using Ceilcote 380 Primer at 50 - 125microns wet film thickness (2 -5mils). Consult the Ceilcote 222HB Flakeline Application Guidelines for more details regarding surface preparation.

APPLICATION

Mixing	Material is supplied in two containers as a unit. Complete units should be stored, mixed and applied in accordance with the Ceilcote 222HB Flakeline Application Guidelines.	
Mix Ratio	1 litre Part A : 15ml Part B (1 gallon Part A : 2oz Part B)	
Working Pot Life	10°C (50°F) 90 minutes	25°C (77°F) 40°C (104°F) 45 minutes 5 minutes
Airless Spray	Recommended	Tip Range 0.89-1.09 mm (35-43 thou) Total output fluid pressure at spray tip not less than 155 kg/cm ² (2204 p.s.i.)
Air Spray (Pressure Pot)	Not suitable	
Air Spray (Conventional)	Not suitable	
Brush	Suitable - small areas only	
Roller	Not suitable	
Thinner	DO NOT THIN	
Cleaner	Ceilcote T-410 Solvent (or MEK)	
Work Stoppages	Do not allow material to remain on equipment. Thoroughly clean 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.	
Clean Up	Clean all equipment immediately after use with T-410 Solvent. Frequency of cleaning will depend upon amount applied, 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

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

This datasheet provides general guidance on the use of Ceilcote 222HB Flakeline. Specific project requirements will be dependent upon the service end use and operating conditions. Always consult International Protective Coatings to confirm that Ceilcote 222HB Flakeline is suitable for contact with the product to be stored.

The detailed project coating specification provided by International Protective Coatings must be followed at all times.

The Ceilcote 222HB Flakeline application shall be conducted by the Applicator Company using employees trained in the appropriate application procedures. It is strongly advised that both supervisory and application personnel on site shall have attended a Ceilcote Applicator Training Program.

Elevated storage temperatures reduce shelf life. Uncatalysed Ceilcote 222HB Flakeline is stable for 3 months from date of manufacture when stored below 25°C (77°F) in its original sealed containers. Ceilcote 222HB 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 8°C-19°C (46°F-66°F).

Ceilcote 222HB Flakeline is recommended to be applied by airless spray; application by brush, may require multiple coats and is suggested for small area or areas where spraying is not an option. Surface texture and uniformity will vary with brush application.

Ceilcote 222HB Flakeline can be specified as a single coat application at 750 to 1350 microns (30 to 54 mils) DFT per coat in order to achieve optimum performance. This product must **not** be thinned as the use of thinners may severely inhibit the curing mechanism of the coating.

Surface temperature must always be a minimum of 3°C (5°F) above dew point. The relative humidity during application and curing should not exceed 80%. This product will not cure adequately below 10°C (50°F). For maximum performance ambient curing temperatures should be above 10°C (50°F). Dehumidification (DH) air conditioning and/or heating equipment may be necessary to control environmental conditions. Do not apply if substrate temperature is more than 43°C (110°F). If temperature drops below 10°C (50°F) for short durations, consult International Protective Coatings representative.

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. When surface temperatures exceed 43°C (110°F), or when exposed to direct sunlight, Ceilcote 222HB Flakeline should be overcoated as soon as hard dry to avoid intercoat adhesion problems. Surfaces should be topcoated within 4 hours when exposed to direct sunlight. See Application Guidelines for further details.

Maximum continuous dry temperature resistance for Ceilcote 222HB Flakeline is 204°C (400°F). Consult International Protective Coatings for temperature limits for specific end use requirements. Ceilcote 222HB Flakeline is not intended to be used as a cosmetic finish and colour stability will not be achievable.

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 colour 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

Ceilcote 222HB Flakeline is designed to be used in combination with a number of Ceilcote primers, linings or coatings. Please consult the specification and Application Guidelines.

The following optional Primers are recommended for Ceilcote 222HB Flakeline:

Ceilcote 370HT Primer Ceilcote 380 Primer

The following optional Undercoats are recommended for Ceilcote 222HB Flakeline:

Ceilcote 180 Flakeline Ceilcote 222MR Flakeline
 Ceilcote 74 Lining Ceilcote 6650 Ceilcrete
 CeilLine Saturant

The following optional topcoats are recommended for Ceilcote 222HB Flakeline:

Ceilcote 222GF Flakeline Ceilcote 222LSE Flakeline
 Ceilcote 282AR Flakeline Ceilcote 282 Flakeline TC

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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
- Ceilcote Technical Bulletins

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 International Protective Coatings for further advice.

PACK SIZE	Unit Size	Part A		Part B	
		Vol	Pack	Vol	Pack
	4 US gal	4 US gal	5 US gal	0.1 US gal	0.13 US gal
	25 US gal	25 US gal	30 US gal	0.57 US gal	1 US gal
For availability of other pack sizes, contact International Protective Coatings.					
SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A		Part B	
	4 US gal	49.3 lb		0.8 lb	
	25 US gal	326.2 lb		5.8 lb	
STORAGE	Shelf Life	6 months at 20°C (68°F). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.			

Important Note

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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