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a.b.e.® Construction Chemicals

abe.® Rustopak Top Coat

ACTIVE RUST INHIBITIVE SEALANT FOR METAL AND CONCRETE

DESCRIPTION

abe.® Rustopak Top Coat is a low VOC, active rust inhibitive sealant, for use as a single coat direct to metal (DTM) that does not have to be rust free. Tightly adhered rust on structural steel must be without contaminants like oil, grease, salt, etc.

abe.® Rustopak Top Coat can also be applied to concrete that must be without contaminants like oil, grease, salt, etc. It is a single component, specifically compounded system, bound together with a calcium sulfonated alkyd in an aliphatic hydrocarbon. It is also applied as a top coat over **abe.® Rustopak Red Penetrant Sealant** to offer UV protection, film build and colour.

USES

abe.® Rustopak Top Coat is used in the following areas:

- Top coat to **abe.® Rustopak Red Penetrant Sealant**
- **abe.® Rustopak Top Coat** can be applied directly to metal (DTM) if the metal is clean and free of corrosion deposits
- Structural steel work
- Gantry cranes
- Bolts and nuts
- Bridges
- Concrete foundations and plinths
- Transmission towers
- Metal roofs
- All steelwork in harbours and railway stations
- **a.b.e.®** inspected and approved manufacturing facilities having aggressive chemical fallout
- **a.b.e.®** inspected and approved steel structures and supporting equipment bases in chemical environments
- Metal cross-bracing where the galvanised sections have been abraded off, back to back angles and rockers
- Ship yard builders/maintenance for large and small vessels
- Mining industry above ground

ADVANTAGES

- Excellent durability offering an economic lifespan
- Excellent corrosion resistance
- Excellent hydrophobic properties
- No under-creep corrosion
- Easy to apply by brush, roller or airless spray
- Can be applied over tight rust or firmly adherent coatings
- Extremely good wetting properties
- Cost effectiveness compared to frequent and continual maintenance or replacement costs of equipment
- Maximum service temperature is 230 °C when the product is fully cured and totally dry.
- Application temperature ranges from -17 °C to a maximum of 53 °C.

TYPICAL PROPERTIES

Viscosity	90 – 120 KU @ 25 °C
Density	1.29 kg/litre
% Solids m/m	76 ± 2.0
% Solids v/v	60 ± 2.0
WFT	300 to 375 microns (µm)
DFT	214 to 2125 microns (µm)
Speed rate: Theoretical	3.33 m ² to 2.66 m ²
Flash Point	40.5 °C
Gloss 60°	Low
VOC	318 g/litre
Sag Resistance	6 hours @ 25 °C
Maximum over-coating time	750 microns (µm) DFT as determined by ASTM Standard
*Drying Time @ 25 °C @ 50% RH @ 175 microns DFT	Dust free 2 – 6 hours
(*subject to environment, wind, sun, exposure, etc.)	Firm 20 – 48 hours
Thinning if required (mineral turpentine)	10% by volume

PERFORMANCE CHARACTERISTICS

System Tested	Steel blasted to SSPC-SP10, 1 Coat of abe.® Rustopak Top Coat (M3) @ 200 microns DFT.	
Cyclic Weathering – ASTM D5894 – 4 cycles or 5000 hours		
Rusting	ASTM D610	Rating 10
Blistering	ASTM D714	Rating 10
Undercutting	ASTM D1654	Rating 10
Salt Fog Resistance - ASTM B117 – 1500 hours		
Rusting	ASTM D610	Rating 10
Blistering	ASTM D714	Rating 10
Undercutting	ASTM D1654	Rating 10
Pencil Hardness Test: ASTM D3363 – 5B		
Flexibility: ASTM D522 - Passes 180° bend, 3.2 mm mandrel		

SURFACE PREPARATION

Surface preparation standards are: SSPC SP-1, SSPC SP-2, SSPC SP-3, SSPC SP-6, SSPC SP-7, SSPC SP-12 or SSPC SP-14 (or Equivalent NACE STANDARD). See definitions on last page.

Direct to steel:

All surfaces are to be clean, sound, dry and free of all loose friable material including, oil, salts, grease to be removed accordance with SSPC-SP1 SOLVENT CLEANING.

All loose rust, rust scale, and old non-adherent paint must be removed in accordance with SSPC-SP2, SSPC SP-3, SSPC-SP-6, SSPC SP-7, SSPC SP-12 or SSPC-SP14 or (equivalent NACE Standards).

In areas with extremely heavy pack rust a commercial blasted in accordance with SSPC-SP6 may be necessary.

Final wash down process: Dissolve **abe.®Rustopak Cleaner** at a ratio of 23 ml (30 grams) to 5 litres of potable water and thoroughly spray the entire surface to be treated, followed by a further thorough rinsing of the surface with clean potable water and allow to dry.

Top coat to **abe.®Rustopak Red Penetrant Sealant:**

All surfaces are to be clean, sound, dry and free of dust, dirt and debris.

APPLICATION

The recommended application method for **abe.®Rustopak Top Coat** is a single application system applied at 175 to 450 microns (µm) WFT or as specified by DFT requirements.

Airless Spray: 30:1 Graco Bulldog with 9.5 mm ID high pressure line and a Graco Silver Gun with a 0.43 to 0.53 mm spray tip.

Note: Brush or roller application is recommended for jointed areas and ease of application.

May be applied to surfaces and in ambient temperatures down to minus 17.7 °C provided there is no visible condensation or ice present.

The material temperature prior to being applied must be elevated to achieve a workable viscosity. This temperature may be higher than the minimum recommendations of 1.6 °C to 7.2 °C based on equipment, desired working times and ambient conditions.

Ambient temperatures must remain at least 3 °C above Dew Point and rising during application.

Material should not be applied when the relative humidity exceeds 90% or the substrate temperature is higher than 53 °C.

Surface particle reading must be between 1-3.

Maximum surface salt must be less than 70 mg/m².

COVERAGE - Approximately

4.3 to 4.7 m²/litre at 127 micron DFT. 1.0 m²/litre @ 570 micron WFT.

Adjacent concrete plinths etc. may absorb more product due to its porosity therefore requiring more product to coat the surface.

Application rates may vary subject to surface profile, irregularities and absorption rates.

COLOURS

White, Grey, Aluminium and Black. Other colours available on special request, project specific.

HANDLING AND STORAGE

abe.®Rustopak Top Coat has a shelf life of 12 months from date of manufacture if kept in a dry cool place in the original sealed packaging and under cover. In more extreme conditions this period might be shortened. Do not expose open drums to heat, flame, sparks, static electricity or other sources of ignition; it may combust. The product may be stored at temperatures down to -17 °C.

CLEANING OF EQUIPMENT

Tools, brushes and mixing equipment should be cleaned with mineral turpentine immediately after use and before material has set.

PROTECTION ON COMPLETION

Ensure the **abe.®Rustopak Top Coat** is suitably protected from the elements until it has cured.

HEALTH & SAFETY

Keep out of reach of children. Avoid contact with skin and eyes. Wear appropriate protective equipment and clothing. Product safety information required for safe use is not included. Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The safety data sheet is available from your local **a.b.e.® Construction Chemicals** sales representative.

PACKAGING

abe.®Rustopak Top Coat is supplied in containers of:

1 litre

5 litre

20 litre

IMPORTANT NOTE

This data sheet is issued as a guide to the use of the product(s) concerned. Whilst **a.b.e.® Construction Chemicals** endeavours to ensure that any advice, recommendation, specification or information is accurate and correct, the company cannot – because **a.b.e.®** has no direct or continuous control over where and how **a.b.e.®** products are applied – accept any liability either directly or indirectly arising from the use of **a.b.e.®** products, whether or not in accordance with any advice, specification, recommendation or information given by the company.

FURTHER INFORMATION

Where other products are to be used in conjunction with this material, the relevant technical data sheets should be consulted to determine total requirements. **a.b.e.® Construction Chemicals** has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.

CLEANING STANDARDS AND DEFINITION

Solvent Cleaning SSPC-SP1 Definition:

Solvents such as water, mineral spirits, xylol, toluol etc., are used to remove solvent soluble foreign matter from the surface of ferrous metals. Rags and solvents must be replenished frequently to avoid spreading the contaminant rather than removing it. Low pressure (1500 - 4000 psi) high volume (3 - 5 gal/min.) water washing with appropriate cleaning chemicals is a recognized "solvent cleaning" method. All surfaces should be cleaned per this specification prior to using hand tools or blast equipment.

Hand Tool Cleaning SSPC-SP2 (SSI-St3) Definition:

A mechanical method of surface preparation involving wire brushing, scraping, chipping and sanding. Not the most desirable method of surface preparation, but can be used for mild exposure conditions. Optimum performances of protective coatings should not be expected when hand tool cleaning is employed.

Power Tool Cleaning SSPC-SP3 (SSI-St3) Definition:

A mechanical method of surface preparation widely used in industry and involving the use of power sanders or wire brushes, power chipping hammers, abrasive grinding wheels, needle guns etc. Although usually more effective than hand tool cleaning, it is not considered adequate for use under severe exposure conditions or for immersion applications.

White Metal Blasting SSPC-SP5 (SSI-Sa3), or NACE #1 Definition:

The removal of all visible rust, mill scale, paint and contaminants, leaving the metal uniformly white or grey in appearance. This is the ultimate in blast cleaning. Use where maximum performance of protective coatings is necessary due to exceptionally severe conditions such as constant immersion in water or liquid chemicals.

Commercial Blast SSPC-SP6 (SSI-Sa2), or NACE #3 Definition:

All oil, grease, dirt, rust scale and foreign matter are completely removed from the surface and all rust, mill scale and old paint are completely removed by abrasive blasting except for slight shadows, streaks or discolorations caused by rust stain, mill scale oxides or slight, tight residues of paint or coating that remain. If the surface is pitted, slight residue of rust or paint may be found in the bottom of pits; at least two-thirds of each square inch of surface area shall be free of all visible residues and the remainder shall be limited to the light residues mentioned above.

Brush Off Blast SSPC-SP7 (SSI-Sa1), or NACE #4 Definition:

A method in which all oil, grease, dirt, rust scale, loose mill scale, loose rust and loose paint or coatings are removed completely. Tight mill scale and tightly-adhered rust, paint and coatings are permitted to remain. However all mill scale and rust must have been exposed to the abrasive blast pattern sufficiently to expose numerous flecks of the underlying metal fairly uniformly distributed over the entire surface.

Brush Off Blast SSPC-SP10 (SSI-Sa2 ½), or NACE #2 Definition:

In this method, all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter have been completely removed from the surface by abrasive blasting, except for very light shadows, very slight streaks or slight discolorations caused by rust stain, mill scale oxides or slight, tight residues of paint or coating. At least 95% of each square inch of surface area shall be free of all visible residues, and the remainder shall be limited to the light discolorations mentioned above. From a practical standpoint, this is probably the best quality surface preparation that can be expected to today for existing plant facility maintenance work.

Power Tool Cleaning to Bare Metal SSPC-SP11 Definition:

Utilizing same equipment as Power Tool Cleaning to remove all visible coatings and contaminants to bare metal substrate.

Aluminium Definition:

Remove water soluble dirt and chemicals with water and detergent; solvent soluble contaminants with solvent. Rinse, allow to dry, then power or hand abrade to remove the thin film of aluminium oxide. Moderate exposures require only one or two topcoats. Avoid using lead pigmented primers and topcoats. Exposure to corrosive chemicals calls for an epoxy primer followed by an appropriate topcoat for the environment.

Brass, Bronze, Copper, Lead, Terne Definition:

Remove contaminants with a combination of water, detergents and solvents (same as aluminium). Allow the metal to dry, then power or hand abrade to remove oxides. Conventional oil and alkyd base primers or finishes may be used.

Galvanized Metal Definition:

Clean same as aluminium and brass etc, or allow to weather for six months. Caution: Be sure the manufacturer of the galvanized metal has used a paintable "white rust" preventative. Conventional coatings containing oil or alkyd resins must not be used. Specify only special primers made for use on galvanized metal. In severe Type A environments, or in areas of high humidity or continuous condensation, brush blasting is recommended to assure maximum system adhesion and performance.

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