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a.b.e.® Construction Chemicals

# abe.® Rustopak Red Penetrant Sealant

## RED, LOW VOC – RUST PENETRANT SEALANT FOR METAL AND CONCRETE

### DESCRIPTION

**abe.® Rustopak Red Penetrant Sealant** is a low VOC penetrating liquid used in conjunction with **abe.® Rustopak Top Coat**. It is a single component, specifically compounded system, bound together with a calcium sulfonated alkyd in an aliphatic hydrocarbon.

### USES

**abe.® Rustopak Red Penetrant Sealant** is used in the following areas:

- Beneath the **abe.® Rustopak Top Coat**
- Structural steel work
- Bolts and nuts
- Bridges & gantry cranes
- Concrete foundations and plinths
- Transmission towers
- Metal roofs
- All steelwork in harbours and railway stations
- Manufacturing facilities having aggressive chemical fallout
- 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 and below ground

### ADVANTAGES

- Excellent durability offering an economic lifespan
- Excellent corrosion resistance
- Easy to apply by brush, roller or spray
- Excellent penetration into inaccessible jointed areas, mounting bolts, crevices, etc.
- Extremely good wetting properties
- Cost effectiveness compared with old frequent continual maintenance or element replacement costs

### TYPICAL PROPERTIES

Colour	Red
Viscosity	50 – 70 KU @ 25 °C
Density	1.039 kg/litre
% Solids m/m	59 ± 2.0
% Solids v/v	45 ± 2.0
WFT	50 to 100 microns
DFT	25 to 50 microns

Flash Point	40.5 °C
Gloss 60°	Semi - gloss
VOC	408 g/litre
Minimum overcoating time	6 hours @ 25 °C
Maximum overcoating time	12 hours

### PERFORMANCE CHARACTERISTICS

System Tested	Steel blasted to SSPC-SP10, 1 Coat of <b>abe.® Rustopak Penetrant Sealant</b> (M3) @ 50 microns DFT. Top-Coated with 1 Coat of <b>abe.® Rustopak Top Coat Grey</b> (M3) @ 127 microns DFT.
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### 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

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.*

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 from the joint seam areas by SSPC-SP2 HAND TOOL CLEANING or SSPC-SP3 POWER TOOL CLEANING. In areas with extremely heavy pack rust a commercial blaster in accordance with SSPC-SP6 may be necessary.

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.

## APPLICATION

This low viscosity penetrating coating is intended for use as a penetrating sealer for rockers, jointed or bolted areas of steel structures, which suffer from pack rust.

The air and surface temperature shall be over -17.7 °C but less than 54 °C and the weather conditions shall be such that the coated areas shall not be subjected to rain or water contact for a 6 hour period after application. Allow at least 6 hours cure time at 25 °C before topcoating. The joint area may seem tacky or oily after a 6 hour cure but can be topcoated. At lower temperatures extend the cure time an additional 6 to 12 hours.

Always confirm intercoat adhesion when topcoating a sealed area if there is any questions about temperature, moisture or cure of the **abe.®Rustopak Red Penetrant Sealant**.

Mix the coating thoroughly by hand to a uniform consistency using a suitable paint stirrer or flat paddle, not a round bar. Do not thin.

Apply by spray or brush. If the coating runs or sags, smooth out runs with a brush. Excess coating and moisture will exit from the lower edge of the joint.

Because of the porous nature of the rust layer and the inaccessibility of the area inside the joint, wet film thickness measurements should not be taken but relative thickness determined by applying a given amount of material in a defined area.

Deposit enough **abe.®Rustopak Red Penetrant Sealant** to thoroughly wet the joint seams. Coat the upper edge of all seams first, working down the sides of the joint from the top to the bottom, propelling the material into the joint. Moisture will be displaced from the joint and should be allowed to exit freely from the bottom of the joint area.

**NOTE:** Joint geometries vary widely and it is not the intent of this specification to address the application of each joint type. The applicator must evaluate individual joint geometries to determine the best method of applying **abe.®Rustopak Red Penetrant Sealant** to achieve optimal joint coverage using the basic principles listed above.

## EQUIPMENT

This coating can be sprayed, brushed or rolled. A "HUDSON TYPE SPRAYER" with a wand is the preferred method of spraying this material although it can be sprayed with airless equipment at low pressure or be applied by brush or rollers. If brushing or rolling, do not over brush or roll, as this will limit film build. Brush or roll from the top of the joint down.

## COVERAGE - APPROXIMATELY

9 m<sup>2</sup>/litre to obtain a DFT of 50 microns on steel (111 microns 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.

## HANDLING AND STORAGE

**abe.®Rustopak Red Penetrant Sealant** 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 to heat, flame, sparks, static electricity or other sources of ignition; it may explode.

## 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 Red Penetrant Sealant** 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 Red Penetrant Sealant** (also available in clear) , supplied in containers of:

1 litre (code: 120 09 001)

5 litre (code: 120 09 005)

20 litre (code: 120 09 020)

400 ml (Spray can - clear only) (code: 120 08 400)

## 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.



Typical Hudson Type Sprayer

## 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 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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