

# DSP 1M

## Ceramic modified inorganic Zinc Silicate Preconstruction Primer

### Product Data/ Application Instructions

- Ceramic modified weldable preconstruction and shop primer
- Excellent application characteristics by automatic spray equipment.
- Excellent corrosion resistance at 15 µm dry film thickness.
- Outstanding weld ability
- Excellent heat resistance minimizing weld burn-back
- Can be used with a wide range of topcoats
- Suitable for Electro Print Marking

#### Typical Uses

DSP 1M is used as weldable preconstruction or shop primer on blast cleaned surfaces in automatic shop priming plants to protect steel during transport, storage and production.

DSP 1M is a two component inorganic zinc silicate preconstruction primer consisting of a liquid and a zinc powder paste.

DSP 1M is designed for use with advanced welding technology. Automatic or manual welding will show minimum burnback from edge or cut or weld. DSP 1M permits faster cutting with minimal pit. Compatible with almost all types of organic topcoats, also compatible with Dimetcote 9 for structural steel systems.

#### Approvals and Certificates

DSP 1M meets the requirements of DVS-0501 as tested at the German Schweisstechnische Lehr- und Versuchsanstalt in Duisburg.

DSP1M is approved as weldable primer for application on blast cleaned steel plates and sections by Det Norske Veritas.

DSP1M is approved by Germanischer Lloyd as overweldable Shopprimer.

Testing at the Newcastle Occupational Health Agency has shown that no toxic gases are formed in concentrations above the threshold limit values during welding.

DSP1M is approved as prefabrication primer by Lloyds Register for use in ships.

#### Reduced Health Risk

- By using zinc paste in the DSP 1M formulation the exposure to dry zinc dust in the air during mixing of both components is eliminated.

- By the low zinc content in the dry DSP 1M film the health risk during welding and burning is reduced.

- DSP 1M is free from chrome, cadmium or lead additives.

#### Physical Data

|  |  |    |
|--|--|----|
| Finish .....   | matt   |    |
| Colour .....   | bluish grey  |    |
| Substrate .....  | abrasive blasted steel                                 |    |
| Components .....   | 2  |    |
| Curing mechanism .....                                     | solvent release and reaction with atmospheric moisture |    |
| VOC**  |  |    |
| EC SED 1999/13/EC .....                                    | 456 g/kg (652 g/l)                                     |    |
| UK PG6/23(92) Appendix 3 .....                             | 620 g/l (5.2 lbs/gal)                                  |    |
| Dry film thickness .....                                   | 15 - 20 µm per coat                                    |    |
| Number of coats .....                                      | 1  |    |
| Calculated coverage .....                                  | 18 m <sup>2</sup> /l at 15 µm                          |    |
| Allow for application losses, surface irregularities, etc. |  |    |
| Application methods .....                                  | automatic spray equipment                              |    |
| Potlife (at 20°C/68°F) .....                               | 24 hours   |    |
| Potlife is dependent on temperature and quantities mixed.  |  |    |
| Drying times at 15 µm, 20°C/68°F and 50-90% RH             |  |    |
| dry to touch .....   | 1-2 minute   |    |
| dry to handle .....  | 2-5 minutes  |    |
| dry to topcoat .....                                       | 16 hours   |    |
| Induction time .....                                       | not applicable   |    |
| Mixing ratio (by volume)                                   |  |    |
| liquid .....   | 1 part   |    |
| paste .....  | 1 part   |    |
| Specific gravity .....                                     | 1.43 kg/l (mixed product)                              |    |
| Thinner/cleaner .....                                      | Amercoat 13  |    |
| Flash points (Closed Cup).....                             | °C   | °F |
| liquid .....   | 12   | 54 |
| paste .....  | 6  | 43 |
| Amercoat 13 .....  | 12   | 54 |

\* VOC figures are quoted according to both the EC directive 1999/13/EC which are theoretically calculated figures and the UK PG6/23(92) Appendix 3 which are practically determined figures.

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## Application Data Summary

Like all high-performance coatings, DSP 1M must be applied as recommended to obtain the maximum protection for which this coating is formulated.

## Surface Preparation

DRY ABRASIVE BLASTING- Prepare steel in accordance with ISO 8501-1, Sa 2½.

NOTE: Blast to achieve a 25 to 50 µm (1 - 2 mils) anchor profile as measured with a Perthometer or similar equipment. Rougher profiles are acceptable but require increased film thickness for equivalent protection. Remove abrasive residue or dust from surface. Apply the Dimetcote Steel Primer 1M in the continuation of wheel blasting as soon as possible to avoid rusting or other contamination.

## Application Equipment

DSP 1M is typically applied by automatic spray equipment in preconstruction and shop priming plants. Manual application is also possible.

The following equipment is listed as a guide and suitable equipment from other manufacturers may be used. Adjustments of pressures and change of tip size may be needed to achieve the proper spray characteristics.

AIRLESS SPRAY - Standard airless spray equipment such as Graco Hydra Spray or others with a fluid tip with a 0.41 - 0.46 mm (0.016 - 0.018 inch) orifice or larger.

MIXER - Use a power mixer powered by an air motor or an explosion proof electric motor.

## Repair

Rusted areas must be repaired in accordance with the general paint specification: wire brushing or spot blasting may be specified. Touching up with Dimetcote 1M or another suitable primer, shall take place depending on the final coating system. See product literature for these primers for selection according to topcoat compatibility.

## Topcoating

DSP 1M can be used with many topcoats. Suitable topcoats are zinc primers, epoxies, coaltar epoxies and other non saponifying topcoats. For specific recommendations, contact your PPG representative.

## Application Data

|  |                     |             |
|--|---------------------|-------------|
| Environmental Conditions (during application and drying) |                     |             |
| Air temperature .....                                    | 5 to 40°C           | 41 to 104°F |
| Surface temperature .....                                | 0 to 55°C           | 32 to 99°F  |
|  | for manual spray    |             |
| .....  | 30 to 55°C          | 86 to 99°F  |
|  | for automatic spray |             |
| Material temperature.....                                | 5 to 40°C           | 41 to 86°F  |

Relative humidity..... 40-95%

Surface temperature must be at least 3°C/5°F above dew point to prevent moisture condensation on the surface.  
Never apply coatings under adverse environmental conditions.  
Ensure good ventilation in confined areas to assist evaporation and elimination of solvents.

Drying Times (at 15 µm (0.6 mils) dft and RH 40-95%)  
°C/°F 20/68 30/86

|                               |    |   |
|-------------------------------|----|---|
| dry to touch (minutes) .....  | 2  | 1 |
| dry to handle (minutes) ..... | 5  | 3 |
| dry to topcoat (hours).....   | 16 | 8 |

NOTE: Drying times are dependent on air and steel temperature, applied film thickness, ventilation and other environmental conditions. Times are proportionally shorter at higher temperature and longer at lower temperatures. Prior to recoating ensure the surface is clean.

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## Application Procedure

Dimetcote Steel Primer 1M is packaged in the proper mixing proportions of paste and liquid.

1. Flush all equipment with recommended cleaner to remove any moisture that may be present. Moisture can cause hardening of Dimetcote Steel Primer 1M in equipment.
2. Stir separately the liquid and paste component using an explosion proof power mixer. Gradually stir the liquid into the paste, and continue stirring until the mixture is well dispersed and free of lumps.
3. Strain material through 250 µm (60 mesh) screen to prevent possible clogging of equipment.
4. Thinning is normally not required. Thin only for workability with recommended thinner when a rough film of dry spray is obtained because of fast solvent evaporation during hot weather, high wind or high temperature of substrate. Use not more than approximately 10 volume % of Amercoat 13 thinner.
5. Keep containers loosely covered until ready to use to prevent skinning or gelling due to moisture in air. Skins should be skimmed off the top and the material strained through 250 µm (60 mesh) screen to remove any remaining pieces of skin. Discard gelled material. In case of work interruptions of several hours, the coating material remaining in spray equipment, hoses and gun should be removed using a solvent flush. When left uncleaned, resumption of the work may be hindered by zinc sedimentation in tips and filters.
6. Adjust spray equipment to apply an even wet coat with minimum overspray.
7. Continue slow stirring during application to maintain uniformity of material.
8. Apply in even parallel passes overlapping each pass 50%.
9. When dry through, check film thickness with a non-destructive dry film thickness gauge. Recoat before cured if greater thickness is required. As a weldable preconstruction primer recommended dry film thickness is 15 - 20 µm (0.6 - 0.8 mils).
10. Random pinholes, holidays and small damaged or bare areas can be touched up by brush when film is dry to touch. Larger areas should be resprayed.
11. Prevent contact with water until the freshly applied coating is at least dry to touch.
12. In confined areas ventilate with clean air during application and drying until all solvents are removed. Temperature and relative humidity of the ventilating air must be such that moisture will not condensate on the surface.
13. Clean equipment with recommended cleaner immediately after use or at least at the end of each working day or shift. Clean spray guns more often during hot weather. When left in equipment Dimetcote Steel Primer 1M will harden and plug spray equipment.

## Shipping Data

|                    |   |
|--------------------|---|
| Packaging          |   |
| liquid .....       | 5 l/1.3 gal (4.5 kg) in 5 l jerrycan  |
| paste .....        | 5 l/1.3 gal (9.9 kg) in 20 l can  |
| Shipping weight    |   |
| liquid .....       | approx. 5 kg  |
| paste .....        | approx. 12 kg   |
| Shelf life         |   |
| liquid/paste ..... | 6 months from shipment date when stored indoors in unopened, original containers at 5 to 40°C (41-104°F). |

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## Caution

The Dimetcote Steel Primer 1M liquid and paste are highly flammable. Both liquid and paste may cause skin and eye irritation. Keep away from heat and open flame. Keep container closed. Use with adequate ventilation. Avoid prolonged breathing of vapour. Avoid contact with skin or eyes. Do not take internally. In case of contact, immediately flush skin with plenty of water; for eyes, flush with plenty of water for at least 15 minutes and get medical attention. If used in confined areas, observe the following precautions to prevent hazards of fire or explosion or damage to health:

1. Circulate adequate fresh air continuously during application and drying;
2. Use fresh air masks and explosion proof equipment;
3. Prohibit all flames, sparks, welding and smoking.

## Safety

Since improper use and handling can be hazardous to health and cause of fire or explosion, safety precautions included with Product Data/Application Instruction and Material Safety Data Sheet must be observed during all storage, handling, use and drying periods.

## Warranty

PPG warrants its products to be free from defects in material and workmanship. PPG's sole obligations and Buyer's exclusive remedy in connection with the products shall be limited, at PPG's option, to either replacement of products not conforming this warranty or credit to Buyer's account in the invoiced amount of the non-conforming products. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

**PPG makes no other warranties concerning the product. No other warranties, whether express, implied or statutory, such as warranties of merchantability or fitness particular purpose, shall apply. In no event shall PPG be liable for consequential or incidental damages.**

Any recommendations or suggestion relating to the use of the products made by PPG, whether in its technical literature, or response to specific enquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyer's having requisite skill and know-how in the industry, and therefore it is Buyer to satisfy itself of the suitability of the products for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. Variation in environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results.

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To avoid any confusion that may arise through translation into other languages, the English version of the Product Data/Application Instructions will be the governing literature and must be referred to in case of deviations with product literature in other languages.

## Condition of Sale

All our transactions are subject to our Terms and Conditions of Sale.

