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VERAPRIME METAL

AVERA PRIM METAL is a one component high quality steel primer, based on moisture cured urea, zinc and MIO.

DESCRIPTION

AVREAPRIM METAL is the steel primer par excellence, integrating zinc and MIO (Micaceous Iron Oxide), for the durable protection of constructions against rust and/or corrosion undercutting. It combines also extreme abrasion and impact resistance, high chemical resistance, and selective accidental galvanization with elasticity (± 30 %). It outperforms inorganic zinc. primers and is more surface tolerant than epoxy primers. AVERAPRIM METAL is applied under most meteorological conditions and tolerates damp surfaces. Minimal surface preparation is required. It's the ideal primer for pitted steel or complex geometry and is especially effective for spot prime applications. AVERAPRIM METAL is a 1 component coating, based on specific aromatic poly-isocyanates, reacting with water, even atmospheric moisture, to form MCU (Moisture Cured Urea). It's ready for use and applicable by brush, roll or spray. To assure maximum lifetime, a topcoat is added in function of the specific requirements (see also "Typical System Build-up").

SAFETY & PRECAUTION

- Do not breathe dust/fume/gas/mist/vapor/spray
- In case of improper ventilation wear respiratory protection
- Wear protective gloves/clothing and eye & face protection
- **If in eyes**: Rinse cautiously with water for several minutes, Remove contact lenses, if present & easy to do. Continue rinse.
- **If on skin or Hair**: - Take off immediately all contaminated clothing. Rinse skin with water & shower

HOW TO USE IT

- Cleaning in general Clean with steam, water (e.g., with sodium triphosphate) and/ or solvent, to remove all contaminants (e.g., oil, grease, lubricants, mud). When dry, blasting and/or power tooling. Blast DAB (Dry Abrasive Blast) or WAB (Wet Abrasive Blast) with hard angular grit or UHP (Ultra High-Pressure Water Jet). In the two latter cases, additional degreasing may be required. Next vacuum clean to dustfree and prime immediately.
- New carbon steel and cast-iron DAB or WAB to Sa 2 (for non-immersion or atmospheric service) or Sa 2,5 (for immersion or severe service) to remove mill scale and rust. Profile: angular, type "fine (G)", depth (Rz) 25–60 µm.
- Old carbon steel Brush to St 3 to remove loose flakes (mill scale, rust, old paint, etc.). DAB or WAB to Sa 2,5 (or UHP to WJ 2). Profile: angular, type "fine (G)", depth (Rz) 25–60 µm
- Carbon steel with old paint layer Overcoat: When old layer meets minimum requirements (e.g., good state and adhesion, compatible). Brush to St 2 (to remove loose rust, mill scale and old paint) and sweep blast to a sound adhered edge. Recoat: Else, remove old layer completely by brushing to St 3 and/or DAB or WAB to Sa 2,5 (or UHP to WJ 2) Profile: angular, type "fine (G)", depth (Rz) 25–60 µm.
- New galvanized or metalized a. Mechanical damaged areas, due to transport, drilling, cutting, or welding, have to be cleaned to St 2 or 3. b. Topcoat needed: Lightly sweep blast or chemically etch, to remove zinc salts and weathered profile. Remark: in this case a special primer is preferred.
- Old, galvanized Water cleaning (HP WC) > 50 MPa (500 bar). Extra brushing to St 3 on very corroded areas.

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ADVANTAGES

- MCU (Moisture Cured Urea) - 1C (1 component): no additives, no pot life. - Applied independent of the weather; –12 to +50 °C, 15 to 99 % air humidity, no dew point restrictions. - Tolerant to damp surface (no condensation and/or ice crystals). - Applicable on hydro blasted surfaces. - Fast curing. - No induction time needed prior to application. - No maximum overcoat time limit. - No short- or long-term cracking, even in DFT up to 300 µm. - Excellent abrasion resistance. - High chemical resistance (e.g., salts and chlorides). - Strong adhesion to various, well prepared, substrates: ferrous alloys (e.g., steel) other metals (e.g., aluminum) and alloys, most old coatings, No application restrictions & Long lifetime

- Laminated, inert MIO (Micaceous Iron Oxide) flakes - Strong diffusion barrier effect. - Reinforce the coating film and reduce distortion. - Shielding effect against e.g., UV degradation. - Stronger, more resistant: very long lifetime.

- Optimal zinc primer - Zinc particles stay in solution once agitated. - Best possible weathering of zinc type coatings when used as a stand-alone coating (galvanization effect). - No formation of zinc salts. - Outstanding corrosion resistance. - Most performant galvanization effect

- Rapid (re)utilization - Tack free after ± ½ hour, overcoat able ± 4 hours, fully cured after ± 7 days (under standard conditions). - No maximum overcoat time (on clean surface). - With accelerator overcoat able after ± ½ hour, fully cured after ± 5 days (under standard conditions). - With accelerator application of a fully cured three-coat system possible within 1 day. - Reduced overall project delivery time: 40–50 %. - Minimal production stop

ATTRIBUTE

- Double protection - Barrier protection: The resin rich coating has excellent mechanical, chemical and thermal resistance. The zinc particles are encapsulated and do not form zinc salts. - Cathodic protection: When the coating is locally damaged, the nearby zinc particles become exposed and will react, resulting in a cathodic protection of the spot.

- Quadruple economics - AVERAPRIM METAL gives at the same time “passive” barrier protection and “active” cathodic protection. - The lifetime of AVERAPRIM METAL is ≥ Hot-Dip (hot dip galvanized) 10 to 50 years. - Duplex system: with an appropriate topcoat, the lifetime increases up to 2,5 times! - Maintenance of steel constructions without dismantling.

- Flash rust - Flash rust is acceptable: transformed in iron hydroxide, it forms the electric connection for the required cathodic protection. - No intensive chemical preparation such as pickling, passivation, phosphatizing, etc. - Brush to St 2–3 or blast to Sa 2 to remove all forms of corrosion (loose rust) and contamination, such as oil, grease, and mud.

- Excellent adhesion to steel and top layer - Contrary to Hot-Dip, AVERAPRIM METAL is sufficiently elastic to remain intact during deformation of steel. - It is shrink-free and doesn’t crash or peel. - A compatible topcoat will not loose and/or peel.

- Repair galvanization or metallization - New Hot-Dip can be touched up with AVERAPRIM METAL to repair the cathodic protection. - Topcoat can easily be applied. - Old Hot-Dip can be revamped without dismantling the construction, 2 times transported and rebuild

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ADVANATGES

- Easy and quick application - Minimal surface preparation (abrasive or hydro blast, hand or power tools). - Tolerates flash rusting. - 1-c (1- component): no pot life limits, no mixing errors. - Applied by brush, roll or standard spray pistol. - Theoretical consumption 100 µm DFT is ± 380 g/m². - Wide DFT tolerance; up to 300 µm. - Good flow into pittings. - Increased sprayer productivity: 25–30 %. - Reduced equipment-cleaning time: 15–20 %. - Fast carefree installation.
- Hygienic and secure - Inert. - Smooth surface guarantees compliant cleaning. - Classified for Potable Water Systems. - VOC compliant, environmentally compatible. - The safe steel primer for all industries

CHEMICAL RESISTANCE

AVERAPRIM METAL passed the salt spray test of 10.000 hours and the enforced aging test of 5.000 hours without any problem. It's resistant against all kinds of chemicals up to high temperatures. Some examples:

Outdoors's atmosphere	Excellent
Soft water	Excellent up to 85 °C
Sea water	Excellent
Acids	Excellent down to pH 4
Bases	Excellent up to pH 10

For strong acids, bases and/or solvents, a highly resistant top layer can be applied.

PROPERTIES

Liquid, under standard conditions	
Density	± 2,5 kg/dm³
Volume solids	± 70%
DFT (dry) (1 layer)	50 to 300 mu
WFT (wet) (1 layer)	75 to 450 mu
Coverage per 10 mu DFT (theoretical)	± 38 g/m² (15 ml/m²)
Practically (e.g. + 40 % spray	± 53 g/m² (21 ml/m²)
Viscosity (20°C)	± 1.100 mPa.s
VOC (Volatile Organic Comp.)	< 260 gr/l
Standard colour	Grey

Cured, under standard conditions	
Density	± 3,2 kg/dm³
Zinc content (weight)	60 to 75%
Temperature resistance	-40 to +150°C
Adhesion to steel	Very high (> 7,5 MPa)
Elongation at break	Excellent (± 30%)
Flexibility (Mandrell Bend)	Excellent (allows deformations, without blistering or pealing)
Abrasion resistance (Taber)	Very high (< 30mg)
Impact resistance	Excellent
Conductivity	Excellent
Cathodic Protection	Excellent
Lifetime Duplex System	Hot-Dip duplex system

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PRODUCT PREPARATION

- AVERAPRIM METAL is a 1 component system and ready for use. Product temperature must be 3°C above the dew point before opening and agitating. Just before application, homogenize the canister of AVERAPRIM METAL by mixing it ± 1 minute with a low-speed hand mixer (± 200 rpm). Do NOT agitate after mixing. Do NOT add non-prescribed additives. Do NOT allow moisture into can (e.g., sweat).
- Thinning Standard not required.

If necessary, add up to 2,2 % weight (6 % volume) Thinner and mix well (e.g., for viscosity change due to aging or moderate exposure to moisture during transport and/or storage).

- Acceleration Standard not required. For faster overcoat, under standard conditions, add up to 1,2 % weight (3,4 % volume) AVREAPRIM METAL ACCELERATOR and mix well (see “Curing time” table). Do NOT accelerate for application on damp surface

PACKING

AVREAPRIM METAL: 28,5 kg metal canister

AVEAPRIM METAL ACCELERATOR: 4,5 kg metal canister

STORAGE

The shelf life is 12 months under standard conditions: in dry well-ventilated place, between 5°C and 35°C, away from source of heat or ignition, strong acids, bases, oxidizing (and reducing) agents and direct sunlight. Keep cans well sealed. Product rest: add ± 3 mm thinner solvent float over product (prevents moisture intrusion) and reseal the can.

APPLICATION

- Conditions during application

Application possible when surface temperature is from -12°C to +50°C and air humidity from 15 to 99 %. No dew point restrictions. The surface may be damp but preferably visible dry (≤ 16% moisture, free from condensate and/or ice crystals)

- Application in general

AVREAPRIM METAL can be applied, making use of: - Paint brush: with natural hair - Paint roll: with short hair or mohair - Spray pistol: - Airless: nozzle with Ø of 380 to 530 µm (15 to 21 mil) and pressure of 160 to 190 hPa (bar). - Gravity cup: nozzle with Ø of 1,8 to 2,2 mm (71 to 87 mil) and pressure of ± 4 hPa (bar). - Compressed air barrel: nozzle with Ø of 1,4 to 1,8 mm (55 to 71 mil) and pressure of ± 3 hPa (bar). Spraying in the approved professional manner (e.g., fluent alternating 2-D movements, spray angle of 40 to 80°). Avoid excessive dry film thickness (> 300 µm), because it will require longer cure times and may cause poor adhesion, cracking, and/or gas entrapment and require remedy. Apply the primer immediately after the surface preparation. A standard application, on a well-conditioned surface, consists of 1 layer of ± 100 µm (dry). Considering the solids content, 5% spillage etc., the anticipated theoretical consumption is ± 380 g/m² (± 2,7 m²/kg).

- Topcoat AVREAPRIM METAL is used with compatible topcoat. - Minimum overcoat time: 3–6 hours (20-60 minutes with AVREAPRIM METAL ACCELERATOR), depending on ventilation, temperature, and humidity. - Maximum overcoat time: non (on clean surfaces). - Compatibility test always required.
- Cleaning equipment Clean the equipment before and after the application, with Thinner, MEK or xylene.

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