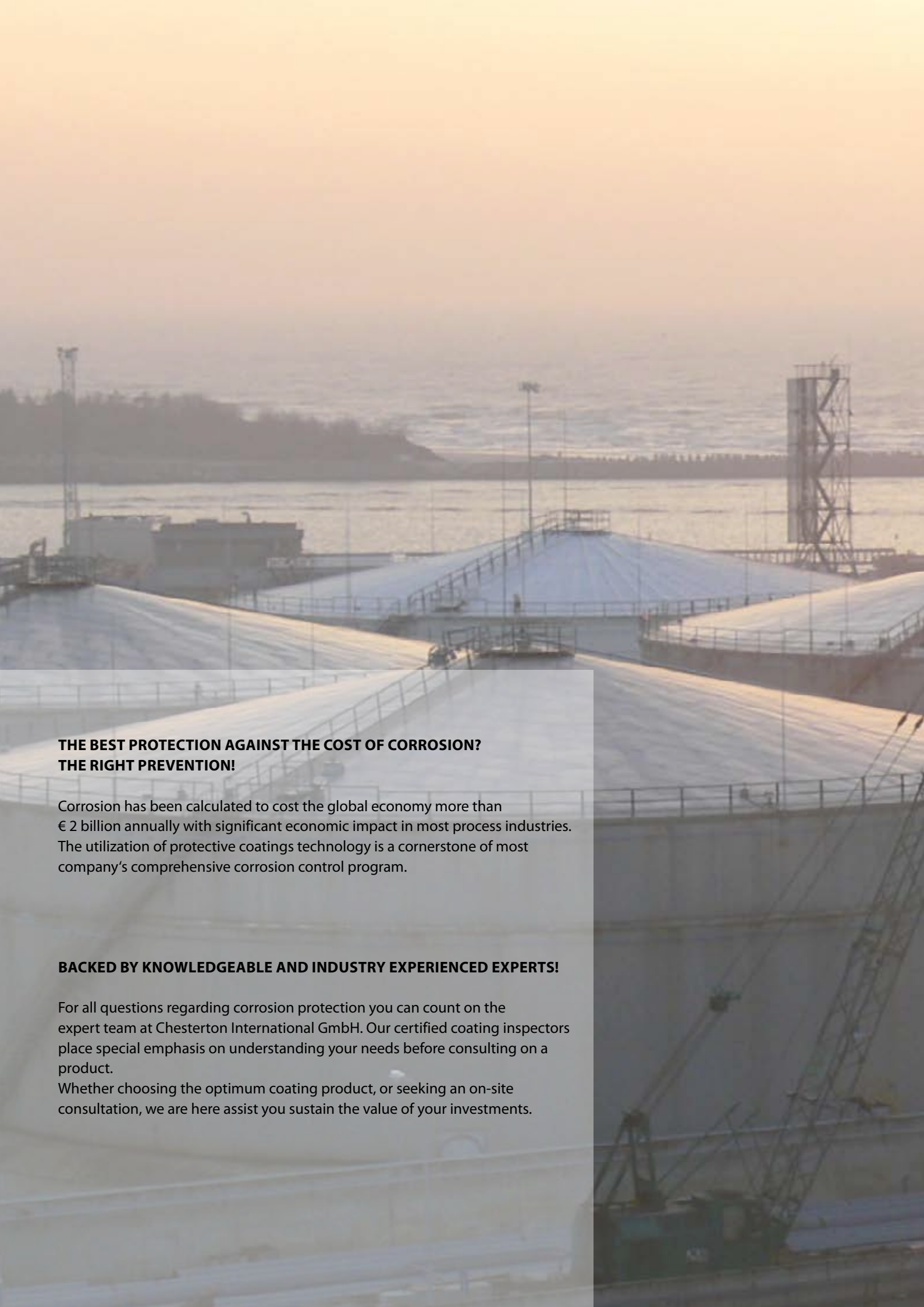


CERAMIC POLYMER
A CHESTERTON BRAND

THE
COATING
BRAND

COATINGS FOR HIGHEST REQUIREMENTS



**THE BEST PROTECTION AGAINST THE COST OF CORROSION?
THE RIGHT PREVENTION!**

Corrosion has been calculated to cost the global economy more than € 2 billion annually with significant economic impact in most process industries. The utilization of protective coatings technology is a cornerstone of most company's comprehensive corrosion control program.

BACKED BY KNOWLEDGEABLE AND INDUSTRY EXPERIENCED EXPERTS!

For all questions regarding corrosion protection you can count on the expert team at Chesterton International GmbH. Our certified coating inspectors place special emphasis on understanding your needs before consulting on a product.

Whether choosing the optimum coating product, or seeking an on-site consultation, we are here assist you sustain the value of your investments.

**THE GOAL OF CHESTERTON INTERNATIONAL IS
TO REDUCE YOUR COST OF CORROSION**

For 20 years, Chesterton International GmbH has manufactured protective coatings with performance and ease of use foremost in mind. By incorporating micro particle reinforcements and advanced thermoset polymer technology we are able to provide outstanding corrosion protection and resistance to delamination under aggressive chemical and elevated temperature exposures.

Our solvent-free protective coatings are safe and easy to use and are suitable for atmospheric and immersion exposures.



CERAMIC POLYMER
A CHESTERTON BRAND

PRODUCT PROPERTIES AND RESISTANCES

| | CP-Synthofloor Beta 8016 | CP-Synthofloor 8010 | Ceramic-Polymer STP-EP (all versions) | Ceramic-Polymer SF/LF | Proguard CN 100 iso | Proguard CN 200 | Proguard CN-1M (all versions) | Proguard CN-OC (all versions) | Ceramic-Polymer KTW1 | Ceramic-Polymer XRC | Proguard 169 (37) |
|---|---|---|---|---|---|--|---|---|---|---|---|
| External coating | - | - | ✓ | ✓ | ✓ | - | - | - | - | ✓ | ✓ |
| Internal coating | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| Substrate: Steel | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | stainless steel | ✓ | ✓ | ✓ |
| Substrate: Concrete, cementitious substrates (*Primer necessary) | Primer | Primer | ✓* | ✓* | ✓* | ✓* | ✓* | - | ✓* | ✓* | - |
| Application methods | | | | | | | | | | | |
|  Airless spraying |  |  |  |  |  |  |  |  |  |  |  |
|  Hand tools: Brush, roll, squeegee |  |  |  |  |  |  |  |  |  |  |  |
|  Cartridge application | | |  | | | |  |  | | | |
| Offshore, sea water | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | ✓ |
| UV resistance, weather resistance | - | - | - | - | - | - | - | - | - | - | ✓ |
| Drinking water | - | - | - | - | - | - | - | - | ✓ | - | - |
| Mild chemical application | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | - |
| Chemicals (please consult us!) | ✓ | ✓ | - | - | - | ✓ | ✓ | ✓ | - | ✓ | - |
| Mild and moderate abrasion | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| Severe abrasion | - | - | ✓ | - | - | - | ✓ | ✓ | | ✓ | - |
| Volume solids | Approx. 100 % | Approx. 100 % | Approx. 100 % | Approx. 100 % | 100 % | 100 % | 98 % (±1 %) | 98 % (±1 %) | 100 % | 98 % (±1 %) | 57 % |
| Temperature resistance - wet service | - | - | 100 °C | 80 °C | 140 °C | 130 °C | 130 °C | 130 °C | 60 °C | 130 °C | - |
| Temperature resistance - dry service | - | - | 120 °C | 90 °C | 170 °C | 150 °C | 150 °C | 150 °C | - | 150 °C | 120 °C |
| Adhesive strength (*bending tensile strength) | *30 MPa | *30 MPa | 37 MPa | 34 MPa | > 27 MPa | > 27 MPa | 41 MPa | 41 MPa | > 20 MPa | 38 MPa | - |
| Abrasion resistance (ASTM D4060) | - | - | 53 mg | 58 mg | 80 mg | 65 mg | 48 mg | 48 mg | 90 mg | 15 mg | - |
| Optional: electrostatic dissipative properties | | | | | | ✓ | | | | | |
| Test - Cathodic disbondment | | | | ✓ | ✓ | ✓ | | | | | |
| Test - Drinking water suitability (KTW) | | | | | | | | | ✓ | | |
| Test - Growth of microorganisms (DVGW-W270) | | | | ✓ | | | | | ✓ | | |
| ISO 20340 - Offshorekonstruktionen | | | | ✓ | ✓ | ✓ | | | | | |
| ISO 12944-2, Categories C5-M and IM1-3 - aggressive and saline atmosphere, long-term protection > 15 years | | | ✓ | ✓ | | ✓ | | | | | ✓ |
| Optional: BAW approval Im 1 - for fresh and inland water | | | | ✓ | | | | | | | |
| Salt spray test DIN EN ISO 9227:2006-10 | | | | 10.000 h | | 10.000 h | | | | | |
| Autoclave test with explosive decompressions (natural gas, 100 bar, 100 °C (212 °F)) | | | | | | ✓ | | | | | |
| Thermo-Shock Test (30 min. 180 °C (356 °F) + 30 min. 0 °C (32 °F) - 1000 cycles) | | | | | ✓ | | | | | | |
| Diluted acids | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Concentrated acids | | | | | | ✓ | ✓ | ✓ | | ✓ | |

The above listed product properties could differ from actual achievements through specific application parameters. Please get in contact with technical services of Chesterton International GmbH to select the optimum coating product for your scope of application.

| | |
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On the following pages you find these buttons.

With a click you can download the **PDS** (Product Datasheet) and the **SDS** (Safety Datasheets) of each Product.

Please visit our website www.ceramic-polymer.de for more product information.

PRODUCT ADVANTAGES AND FIELDS OF APPLICATION

EXTENSIVE PRODUCT RANGE FOR ULTIMATE COATING SOLUTIONS

To extend the service life of **Tanks, Vessels & Pipelines** effectively, protective coatings have to be suitable for a variety of service conditions. Our products are used by satisfied customers for:

- Storage tanks for crude oil, hydrocarbons, chemicals
- Vessels for drinking water
- Special tanks for urea, bio oils
- Biogas fermenters, bunker silos
- Production vessels and pressure tanks of all kinds
- Waste water ponds
- Swimming pool filters
- Gravel filters, sand filters, solid containers, tipping containers



Marine Constructions & Offshore Installations: Marine and offshore environments are some of the most demanding service conditions with UV, chlorides, erosion, corrosion combining to degrade structures and process equipment. Chesterton International GmbH provides solvent-free protection systems, tested in accordance with ISO 20340. The relevant corrosivity categories for the offshore industry (DIN EN ISO 12944-2 – classes C5-M and IM1-3) are also completely satisfied by our high-performance portfolio.

- Bridges, steel constructions for hydraulic engineering
- Pipelines and tubing
- Ship components and offshore platforms
- Sheet piles and harbor facilities



Our coatings for **Concrete Protection** can rebuild and protect damaged and new structures from chemical and erosive attack. In the range of "secondary containment" our products achieve a safe barrier against aggressive chemicals.

- Wastewater plants
- Sumps, oil and petrol separators
- Biogas fermenters
- Drip pans, tank pits



PRODUCT ADVANTAGES

- Highest corrosion protection
- Outstanding adhesion
- Extreme abrasion resistance
- High resistance to impact
- High bending flexibility
- Excellent chemical and thermal resistance
- Direct application on metal, fiber reinforced composites and mineral substrates
- High savings on application costs
- Simple use
- Extreme Durability
- Solvent-free

PREPARATION AND FINISH

SURFACE PRETREATMENT

To maximize performance and longevity proper surface preparation is recommended.

At a minimum all surfaces to be coated should be clean, dry and free from contamination. Prior to application, all metal surfaces should be assessed and treated in accordance with ISO 8504:2000. Remove weld spatter and smooth weld seams and sharp edges. Oil or grease should be removed according to SSPC-SP1 solvent cleaning.

STEEL SUBSTRATES:

To ensure best adhesion results the surfaces should be prepared by abrasive blast cleaning to minimum SA 2.5 (ISO 8501-1:2007) or SSPC-SP10. An average surface roughness of R_a 75 – 100 µm is required. Contact Chesterton International GmbH for further information.

The coating system must be applied before oxidation of the steel occurs. If oxidation does occur the entire oxidized area should be re-blasted to the standard specified above. Surface defects revealed by the blast cleaning process should be ground, filled or treated in the appropriate manner.

MINERAL SUBSTRATES:

Due to concrete's alkaline nature and porous surface it can easily absorb and react with acidic compounds leading to chemical leaching. All contaminated concrete shall be removed. When in doubt core sample testing may be required. Sound concrete shall have a tensile pull value of >1.5 MPa.

You will get detailed information with our Product Data Sheets and Application Instructions. We can also develop a Quality Assurance and Inspection Plan for your application, which you can follow step by step. Our Coating Inspectors will gladly consult you directly on site.

OTHER SUBSTRATES SUCH AS ALUMINUM, STAINLESS STEEL AND PLASTICS:

Please contact us. We gladly explain you the application of our products on special substrates. You can find specific coating systems for stainless steel substrates in this brochure.



APPLICATION



AIRLESS SPRAYING:

Our coatings are applied by airless spraying. Usually, no pre-heating of our products is required. We give information regarding recommended airless pump, gear ratio, nozzle diameter, hose length and material temperature on our technical Product Data Sheets.



BRUSH, ROLL OR SQUEEGEE:

Application by hand tools is possible for repairs, small areas or for pre-coating of welded joints, we gladly assist you. Our primers for concrete substrates are generally applied with a roll or squeegee. In case of using our products as smooth filler, a tooth comb has to be employed.

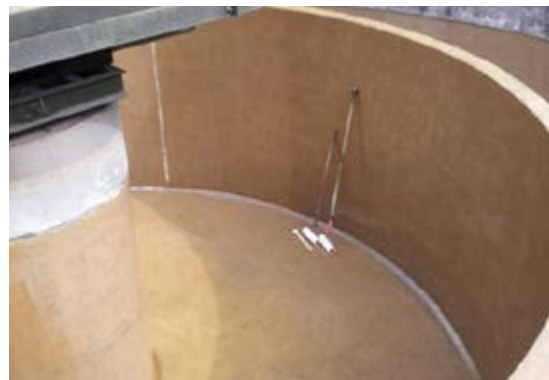


CARTRIDGE SYSTEMS:

An optimum solution for the fast and effective protection of areas, which are difficult to access, repairs or small projects. For this kind of application, selected coating products are available. We gladly consult you about this easy and costefficient way of long-term protection.

PRODUCT DATASHEET CP-SYNTHOFLOOR BETA 8016

CP-Synthofloor BETA 8016 is a 2-component special epoxy resin - medium viscosity, colorless. The product is suitable as a primer / key coat on cementitious surfaces.



Reference report for this project...

FEATURES AND BENEFITS

- Very high chemical resistance
- Very high mechanical resistance
- Good adhesion properties and wetting characteristics
- Medium viscosity
- Will discolour if exposed to UV
- Inert and harmless once cured

PACKAGING AND COVERAGE

- 30 kg-pails (25 kg Part A + 5 kg Part B)
Theoretical coverage: 60 – 75 m²



RESISTANCE

- Water/sewage
- Alkalis
- Mineral oil
- Saline solutions
- Diluted acids
- Lubricants and fuels
- Dry temperature max. 80 °C (176 °F)
- Wet temperature short-term max. 60 °C (140 °F)



TECHNICAL DATA

| | |
|--|---|
| Color | Colorless |
| Volume solids | Approx. 100 % |
| Viscosity | Approx. 650 mPa·s ± 150 (23 °C (73 °F)) |
| Compressive strength (DIN EN ISO 604) | 60 – 90 MPa (depending on filler ratio) |
| Tensile strength (DIN EN ISO 178) | 30 MPa |
| Water absorption | < 1.5 % |
| First contact with water | After 24 hours (23 °C (73 °F)) |
| Density | Approx. 1.50 g/cm ³ |

APPLICATION DATA

| | |
|----------------------------------|--|
| Application by airless spraying | Possible, please contact Chesterton International GmbH for specific application advice. |
| Application by roll or squeegee | Typical application method with hand tools. |
| Mixing ratio | 5 : 1 by weight |
| Substrate temperature | Minimum 10 °C (50 °F) up to maximum 30 °C (86 °F) |
| Material temperature | 15 °C (59 °F) – 25 °C (77 °F) |
| Maximum relative humidity of air | At 10 °C (50 °F): 75 % (dew point + 3 °C (37 °F)) At > 23 °C (73 °F): 85 % (dew point + 3 °C (37 °F)) |
| Potlife | Approx. 50 minutes at 15 °C (59 °F)/ 40 minutes at 23 °C (73 °F)/ 20 minutes at 30 °C (86 °F) material temperature - waiting time under continuous pressure may reduce potlife! |
| Theoretical consumption | 0.4 – 0.5 kg/m ² as primer, always sprinkle with clean, dry quartz sand 0.4 – 0.8 mm (approx. 0.5 kg/m ²) |

CURING TIMES

| Substrate temperature | Foot traffic | Mechanical resistance | Chemical resistance | Duration between applications (if sprinkled with quartz sand, the duration will increase) | |
|-----------------------|--------------|-----------------------|---------------------|--|---------|
| | | | | Minimum | Maximum |
| 10 °C (50 °F) | 24 hrs | 72 hrs | 7 days | 24 hrs | 36 hrs |
| 23 °C (73 °F) | 16 hrs | 48 hrs | 5 days | 12 hrs | 24 hrs |
| 30 °C (86 °F) | 12 hrs | 24 hrs | 4 days | 6 hrs | 24 hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

CP-Synthofloor 8010 is a 2-component special epoxy resin, medium viscosity, colorless, unfilled. The product is for damp concrete surfaces, "green" concrete and concrete surfaces where rising damp is expected. It is suitable as primer and key coat.



RESISTANCE

- Water/sewage
- Alkalis
- Mineral oil
- Saline solutions
- Diluted acids
- Lubricants and fuels (incl. aviation fuel)
- Mastic asphalt up to +250 °C (482 °F)
- Rising damp



TECHNICAL DATA

| | |
|---------------------------------------|---|
| Color | Clear |
| Volume solids | Approx. 100 % |
| Viscosity | Approx. 700 mPa·s ± 100 (23 °C (73 °F)) |
| Compressive strength (DIN EN ISO 604) | 60–90 MPa (depending on filler ratio) |
| Tensile strength (DIN EN ISO 178) | > 30 MPa |
| Water absorption | < 1.0 % |
| Shore D-hardness (DIN EN ISO868) | > 80 |
| Glass transition temperature | > 50 °C |
| First contact with water | After 24 hours (23 °C (73 °F)) |
| Density | Approx. 1.10 g/cm ³ |

Reference report for this project...

FEATURES AND BENEFITS

- Very deep penetration
- Fast curing
- Excellent adhesion between the substrate and subsequent coats
- Resistant to thermal deterioration
- Thermal resistant
- Very high mechanical resistance
- Resistant to mastic asphalt up to +250 °C (482 °F)
- Inert and harmless once cured

PACKAGING AND COVERAGE

- 25 kg-pails (18.12 kg Part A + 6.88 kg Part B)
Theoretical coverage: 50–62 m²
- 200 kg-barrel and 1000 kg-container available on request



APPLICATION DATA

| | |
|----------------------------------|--|
| Application by airless spraying | Possible, please contact Chesterton International GmbH for specific application advice. |
| Application by roll or squeegee | Typical application method with hand tools. |
| Mixing ratio | 2,63 : 1 by weight |
| Substrate temperature | Minimum 8 °C (46 °F) up to maximum 30 °C (86 °F) |
| Material temperature | 15 °C (59 °F) – 25 °C (77 °F) |
| Maximum relative humidity of air | At 8 °C (46 °F): 75 % (dew point + 3 °C (37 °F)) At > 23 °C (73 °F): 85 % (dew point + 3 °C (37 °F)) |
| Potlife | Approx. 35 minutes at 15 °C (59 °F) / 25 minutes at 23 °C (73 °F) / 15 minutes at 30 °C (86 °F) material temperature - waiting time under continuous pressure may reduce potlife! |
| Theoretical consumption | 400–500 g/m ² with intermediate broadcasting with dry quartz sand Ø 0,4–0,8 mm (ca. 0,5 kg/m ²). We recommend to apply 2 coats. |

CURING TIMES

| Substrate temperature | Foot traffic | Mechanical resistance | Chemical resistance | Duration between applications (if sprinkled with quartz sand, the duration will increase) | |
|-----------------------|--------------|-----------------------|---------------------|--|---------|
| | | | | Minimum | Maximum |
| 8 °C (46 °F) | 24 hrs | 48 hrs | 5 days | 16 hrs | 36 hrs |
| 23 °C (73 °F) | 12 hrs | 16 hrs | 3 days | 6 hrs | 24 hrs |
| 30 °C (86 °F) | 6 hrs | 12 hrs | 2 days | 3 hrs | 12 hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET CERAMIC-POLYMER STP-EP

Ceramic-Polymer STP-EP is a surface tolerant two pack ceramic composite epoxy coating providing outstanding corrosion protection to a variety of metal, fiberglass, reinforced plastic and concrete substrates. **Ceramic-Polymer STP-EP** is a thin-film, high-solid coating material.



Reference report for this project...

APPLICATION RANGE

- Internal and external coating for
 - Steel structures
 - Tanks and pipelines
 - Offshore and onshore constructions



TECHNICAL INFORMATION

| | |
|---------------------|--|
| Color | RAL tones, preferable gray tones |
| Surface | Satin |
| Volume Solids | Approx. 100 % |
| Chemical resistance | Excellent |
| Abrasion resistance | 53 mg loss (ASTM D4060) |
| Adhesion | 37 MPa (5,366 psi) on steel (ASTM D4541) |
| Density | Approx. 1.50 g/cm ³ |

FEATURES AND BENEFITS

- High chemical resistance
- Excellent abrasion resistance
- Surface tolerance
- 100 % resistance against all kinds of hydrocarbons
- 100 % resistance against sea water
- High temperature resistance up to 120 °C (248 °F) (dependent on medium)
- High-solid content

PACKAGING AND COVERAGE

- 19.98 kg kits (16.65 kg Part A + 3.33 kg Part B)
- Theoretical coverage at a thickness of:
100 µm: 132 m² | 200 µm: 66 m²



APPLICATION DATA

| | |
|---------------------------------|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size 0,015 – 0,019", Hose length max. 15 m, Spray hose diameter ½"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 5 : 1 by weight / 3 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 30 minutes at 20 °C (68 °F) / 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 15 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Minimum coating thickness 100 µm; sagging limit per layer: 200 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying | |
|-----------------------|-------------|---------------------|-------------------------|---------|
| | | | Minimum | Maximum |
| 20 °C (68 °F) | 24 hrs | 7 days | 5 hrs | 36 hrs |
| 30 °C (86 °F) | 18 hrs | 5 days | 3 hrs | 24 hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET CERAMIC-POLYMER STP-EP-HV

Ceramic-Polymer STP-EP-HV is a surface tolerant two pack ceramic composite epoxy coating providing outstanding corrosion protection to a variety of metal, fiberglass, reinforced plastic and concrete substrates. Due to a special hardener system the product provides high viscosity ("hv"-version).



APPLICATION RANGE

- Internal and external coating for
 - Vessels and process tanks
 - Storage tanks for hydrocarbons
 - Tubes and pipelines
 - Offshore and onshore constructions
 - External applications of all kinds



TECHNICAL INFORMATION

| | |
|---------------------|---|
| Color | RAL colors, preferable gray tones |
| Surface | Satin |
| Volume solids | Approx. 100 % |
| Flexural Strength | 57 MPa (8,267 psi) according to ASTM D790 |
| Chemical resistance | Excellent |
| Abrasion resistance | 53 mg loss (ASTM D4060) |
| Adhesion | 37 MPa (5,366 psi) on steel (ASTM D4541) |
| Density | Approx. 1.50 g/cm ³ |

FEATURES AND BENEFITS

- High chemical resistance
- Excellent abrasion resistance
- Surface tolerance
- Temperature resistance up to 120 °C (248 °F) (dependent on medium)
- 100 % resistance against all kinds of hydrocarbons
- 100 % resistance against sea water
- High-sold content

PACKAGING AND COVERAGE

- 19.98 kg kits (16.65 kg Part A + 3.33 kg Part B)
Theoretical coverage at a thickness of:
250 µm: 52 m² | 500 µm: 26 m²



APPLICATION DATA

| | |
|---------------------------------|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size 0.017 – 0.020", Hose length max. 15m, Spray hose diameter min. ½"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 5 : 1 by weight / 3 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | ≥ 25 minutes at 20 °C (68 °F) / 20 minutes at 25 °C (77 °F) / 15 minutes at 30 °C (86 °F) / 10 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Minimum coating thickness 150 µm; sagging limit per layer: 1000 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying | |
|-----------------------|-------------|---------------------|-------------------------|---------|
| | | | Minimum | Maximum |
| 20 °C (68 °F) | 24 hrs | 7 days | 5 hrs | 36 hrs |
| 30 °C (86 °F) | 18 hrs | 5 days | 3 hrs | 24 hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET CERAMIC-POLYMER SF/LF

Ceramic-Polymer SF/LF is a two pack ceramic composite epoxy coating providing excellent abrasion and corrosion protection to a wide variety of substrates in aggressive environments.



Reference report for this project...

APPLICATION RANGE

- Internal and external coating for
 - On- and Offshore facilities and splash zones
 - Tubing and pipelines
 - Waste water ponds



TECHNICAL INFORMATION

| | |
|----------------------|---|
| Color | RAL colors |
| Gloss | Satin |
| Volume solids | Approx. 100 % |
| Flexibility | Excellent |
| Sea water resistance | > 6,000 hours sea water immersion test, ISO 20340 |
| Corrosion resistance | > 10,000 hours salt spray (ISO 7253) |
| Chemical resistance | Very good |
| Abrasion resistance | 58 mg loss (ASTM D4060) |
| Adhesion | 34 MPa (4,931 psi) on steel (ASTM D4541) |
| Density | Approx. 1.54 g/cm ³ |

FEATURES AND BENEFITS

- High-solid content
- 1-layer-system
- Approval for DVGW-W270 – growth of microorganisms (bio film)
- ISO 20340 (Performance requirements for protective paint systems for offshore and related structures)
- Optional:
BAW-Approval Im1 = Ceramic-Polymer SF/LF-SW

PACKAGING AND COVERAGE

- 16 kg kits (12 kg Part A + 4 kg Part B)
Theoretical coverage at a thickness of:
300 µm: 35 m² | 1000 µm: 10 m²
- 30 kg-Gebinde (22.5 kg Part A + 7.5 kg Part B)
Theoretical coverage at a thickness of:
300 µm: 65 m² | 1000 µm: 20 m²



APPLICATION DATA

| | |
|---------------------------------|--|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size: 0.019 – 0.026", Hose length max. 20m, Spray hose diameter max. 3/4"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 3 : 1 by weight / 1.97 : 1 by volume |
| Mixing time | Component A: Stirrup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 40 minutes at 20 °C (68 °F) / 30 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 15 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Minimum coating thickness 300 µm; sagging limit per layer: 1000 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying | |
|-----------------------|-------------|---------------------|-------------------------|---------|
| | | | Minimum | Maximum |
| 20 °C (68 °F) | 48 hrs | 9 days | 10 hrs | 48 hrs |
| 30 °C (86 °F) | 24 hrs | 6 days | 6 hrs | 24 hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

Proguard CN 100 iso is a two pack special composite coating containing micro-ceramic particles reinforcement, based on an ultra-modern Novolac-resin base, providing chemical resistance, corrosion and abrasion protection to a wide variety of substrates in extremely aggressive environments at elevated temperatures.



Reference report for this project...

APPLICATION RANGE

- Internal and external coating for
 - Process vessels and storage tanks with extreme temperature changes
 - Storage tanks for crude oil, hydrocarbons, chemicals
 - Special tanks for urea, bio oils
 - Pressure vessels of all kinds
 - Pipelines for oil & gas



TECHNICAL INFORMATION

| | |
|----------------------|--|
| Color | Light Gray, Dark Gray |
| Gloss | Satin |
| Volume Solids | 100 % |
| Flexibility | Excellent |
| Seawater resistance | ISO 20340 |
| Corrosion resistance | > 10,000 hours salt spray (ISO 7253) |
| Chemical resistance | Excellent |
| Abrasion resistance | 80 mg (ASTM D4060) |
| Adhesion | > 27 MPa (3,916 psi) according to ISO 4624 |
| Density | Approx. 1.19 g/cm ³ |

FEATURES AND BENEFITS

- Solvent-free
- Extreme isolation properties
- Excellent temperature resistance up to 170 °C (338 °F) (dependent on medium)
- Excellent chemical resistance
- 1-layer-system
- ISO 20340 (Performance requirements for protective paint systems for offshore and related structures)

PACKAGING AND COVERAGE

- 15 kg kits (13.5 kg Part A + 1.5 kg Part B)
Theoretical coverage at a thickness of:
500 µm: 25 m² | 1000 µm: 12.6 m²



APPLICATION DATA

| | |
|---------------------------------|--|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar tip size: 0.023 – 0.029"; hose length max. 20 m; spray hose diameter max. ¾"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio by weight | 9 : 1 by weight / 7,5 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 30 minutes at 20 °C (68 °F) / 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 10 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Minimum coating thickness 500 µm, sagging limit per layer: 1000 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying | |
|-----------------------|-------------|---------------------|-------------------------|---------|
| | | | Minimum | Maximum |
| 20 °C (68 °F) | 24 hrs | 7 days | 10 hrs | 24 hrs |
| 30 °C (86 °F) | 18 hrs | 7 days | 6 hrs | 12 hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET **PROGUARD CN 200**

Proguard CN 200 is a two pack special composite coating containing micro-ceramic particles, based on an ultra-modern Novolac-resin base, providing chemical resistance, corrosion and abrasion protection to a wide variety of substrates in extremely aggressive environments at elevated temperatures.



Reference report for this project...

APPLICATION RANGE

- Internal coating for
 - Different substrates such as metals, plastics, GFK, CFK and concrete
 - Storage tanks for crude oil, hydrocarbons, chemicals
 - Special tanks for urea, bio oils
 - Biogas fermenter
 - Process vessels, pressure vessels of all kinds
 - Pipelines for oil & gas



TECHNICAL INFORMATION

| | |
|----------------------|--|
| Color | Diverse colors |
| Gloss | Satin |
| Volume solids | 100 % |
| Sea water resistance | ISO 20340 |
| Corrosion resistance | > 10,000 hours salt spray (ISO 7253) |
| Solvent resistance | Excellent, see resistance list |
| Chemical resistance | Excellent, see resistance list |
| Abrasion resistance | < 65 mg loss (ASTM D4060) |
| Adhesion | > 27 MPa (3,916 psi) according to ISO 4624 |
| Density | Approx. 1.64 g/cm ³ |

FEATURES AND BENEFITS

- Excellent chemical resistance
- Temperature resistance up to 150 °C (302 °F) (dependent on medium)
- High abrasion resistance
- 1-layer-system
- Short curing times
- Solvent-free
- ISO 20340 (Performance requirements for protective paint systems for offshore and related structures)
- Optional: antistatic property = Proguard CN 200 a.s.

PACKAGING AND COVERAGE

- 16.5 kg-Gebinde (15 kg Part A + 1.5 kg Part B)
Theoretical coverage at a thickness of:
500 µm: 20 m² | 1000 µm: 10 m²



APPLICATION DATA

| | |
|---------------------------------|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size: 0.019–0.026", hose length max. 20 m, spray hose diameter max. 3/4"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 10 : 1 by weight / 6.1 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 30 minutes at 20 °C (68 °F) / 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 10 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Minimum coating thickness 400 µm; sagging limit per layer: 1000 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying | |
|-----------------------|-------------|---------------------|-------------------------|---------|
| | | | Minimum | Maximum |
| 20 °C (68 °F) | 24 hrs | 7 days | 10 hrs | 96 hrs |
| 30 °C (86 °F) | 18 hrs | 3 days | 7 hrs | 72 hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET PROGUARD CN-1M-V12/V15 H3

Proguard CN-1M is a temperature and chemical high-resistant 2-pack special composite coating containing silanized high-tech-micro-particle reinforcement, based on an ultra-modern hybridized epoxy-novolac-resin base.



Reference report for this project...

APPLICATION RANGE

- Internal coating for
 - Storage tanks for crude oil, hydrocarbons, chemicals
 - Special tanks for urea, bio oils
 - Biogas fermenters
 - Process vessels
 - Pipelines for oil & gas



TECHNICAL INFORMATION

| | |
|----------------------------|---|
| Color | Anthracite |
| Gloss | Satin |
| Volume Solids | 98 % (± 1 %) |
| Flexural Strength | 44 MPa (6,382 psi) according to ASTM D790 |
| Chemical resistance | Excellent |
| Abrasion resistance | 48 mg (ASTM D4060) |
| Adhesion | 41 MPa (5,947 psi) on carbon steel (ASTM D4541) |
| Density | Approx. 1.3 g/cm ³ |

FEATURES AND BENEFITS

- Excellent chemical resistance
- High corrosion and abrasion protection to a wide variety of substrates
- Temperature resistance up to 150 °C (302 °F) (dependent on medium)
- 1-layer-system
- High-solid content
- Test series for internal coating on concrete according to DIN EN 858-1

PACKAGING AND COVERAGE

- CN-1M-V12 H3 – low viscosity:
12.5 kg kits (10 kg Part A + 2.5 kg Part B)
Theoretical coverage at a thickness of:
100 µm: 96 m² | 350 µm: 27 m²
- CN-1M-V15 H3 – high viscosity:
12.5 kg kits (10 kg Part A + 2.5 kg Part B)
Theoretical coverage at a thickness of:
250 µm: 38 m² | 600 µm: 16 m²



APPLICATION DATA

| | |
|--|--|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size: 0.015 – 0.023"; hose length max. 15 m, spray hose diameter min. ½"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 4 : 1 by weight / 3.28 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 30 minutes at 20 °C (68 °F) / 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 15 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Application of multiple layers must be wet-on-wet! For CN-1M-V12 H3 – low viscosity: Minimum coating thickness 100 µm, sagging limit per layer: 350 µm. For CN-1M-V15 H3 – high viscosity: Minimum coating thickness 250 µm, sagging limit per layer: 600 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying |
|-----------------------|-------------|---------------------|-------------------------|
| 20 °C (68 °F) | 24 hrs | 7 days | only wet-on-wet! |
| 30 °C (86 °F) | 18 hrs | 3 days | only wet-on-wet! |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET **PROGUARD CN-1M-V12/V15 K3**

Proguard CN-1M is a temperature and chemical high-resistant 2-pack special composite coating containing silanized high-tech-micro-particle reinforcement, based on an ultra-modern hybridized epoxy-novolac-resin base.



Reference report for this project...

APPLICATION RANGE

- Internal coating for
 - Storage tanks for crude oil, hydrocarbons, chemicals
 - Special tanks for urea, bio oils
 - Biogas fermenters
 - Process vessels
 - Pipelines for oil & gas



TECHNICAL INFORMATION

| | |
|----------------------------|---|
| Color | Anthracite |
| Gloss | Satin |
| Volume Solids | 98 % (±1 %) |
| Flexural Strength | 52 MPa (7,542 psi) according to ASTM D790 |
| Chemical resistance | Excellent |
| Abrasion resistance | 49 mg (ASTM D4060) |
| Adhesion | 36 MPa (5,221 psi) on carbon steel (ASTM D4541) |
| Density | Approx. 1.3 g/cm ³ |

FEATURES AND BENEFITS

- Excellent chemical resistance
- High corrosion and abrasion protection to a wide variety of substrates
- Temperature resistance up to 150 °C (302 °F) (dependent on medium)
- 1-layer-system
- High-solid content

PACKAGING AND COVERAGE

- CN-1M-V12 K3 – low viscosity:
13.33 kg kits (10 kg Part A + 3.33 kg Part B)
Theoretical coverage at a thickness of:
80 µm: 121 m² | 200 µm: 49 m²
- CN-1M-V15 K3 – high viscosity:
13.33 kg kits (10 kg Part A + 3.33 kg Part B)
Theoretical coverage at a thickness of:
250 µm: 40 m² | 400 µm: 25 m²



APPLICATION DATA

| | |
|--|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size: 0.015 – 0.023", hose length max. 15 m, spray hose diameter min. ½"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 3 : 1 by weight / 2.36 : 1 by volume |
| Mixing time | Component A: Stirrup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 30 minutes at 20 °C (68 °F) / 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 15 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Application of multiple layers must be wet-on-wet! For CN-1M-V12 K3 – low viscosity: Minimum coating thickness 80 µm, sagging limit per layer: 200 µm. For CN-1M-V15 K3 – high viscosity: Minimum coating thickness 250 µm, sagging limit per layer: 400 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying |
|-----------------------|-------------|---------------------|-------------------------|
| 20 °C (68 °F) | 24 hrs | 7 days | only wet-on-wet! |
| 30 °C (86 °F) | 18 hrs | 3 days | only wet-on-wet! |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET PROGUARD CN-OC-V12/V15 H3

Proguard CN-OC is a temperature and chemical high-resistant 2- pack special composite coating containing silanized high-tech-micro-particle reinforcement, based on an ultra-modern hybridized epoxy-novolac-resin base specifically designed for stainless steel substrates.



Reference report for this project...

APPLICATION RANGE

- Internal coating for
 - Storage tanks for crude oil, hydrocarbons, chemicals
 - Special tanks for urea, bio oils
 - Process vessels
 - Pipelines for oil & gas
 - Biogas fermenters
 - Especially for stainless steel, aluminum and zinc coated surfaces



TECHNICAL INFORMATION

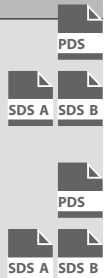
| | |
|---------------------|---|
| Color | Anthracite |
| Gloss | Satin |
| Volume Solids | 98 % (±1 %) |
| Flexural Strength | 44 MPa (6,382 psi) according to ASTM D790 |
| Chemical resistance | Excellent |
| Abrasion resistance | 48 mg (ASTM D4060) |
| Adhesion | 41 MPa (5,947 psi) on carbon steel (ASTM D4541) |
| Density | Approx. 1.3 g/m ³ |

FEATURES AND BENEFITS

- Excellent chemical resistance
- High corrosion and abrasion protection to stainless steel substrates
- Temperature resistance up to 150 °C (302 °F) (dependent on medium)
- Excellent adhesion on stainless steel
- 1-layer-system
- High-solid content

PACKAGING AND COVERAGE

- CN-OC-V12 H3 – low viscosity:
12.5 kg kits (10 kg Part A + 2.5 kg Part B)
Theoretical coverage at a thickness of:
100 µm: 96 m² | 350 µm: 27 m²
- CN-OC-V15 H3 – high viscosity:
12.5 kg kits (10 kg Part A + 2.5 kg Part B)
Theoretical coverage at a thickness of:
250 µm: 38 m² | 600 µm: 16 m²



APPLICATION DATA

| | |
|---------------------------------|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size: 0.015 – 0.023", hose length max. 15 m, spray hose diameter min. ½"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 4 : 1 by weight / 3.28 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 30 minutes at 20 °C (68 °F) / 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 15 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Application of multiple layers must be wet-on-wet! For CN-OC-V12 H3 – low viscosity: Minimum coating thickness 100 µm, sagging limit per layer: 350 µm For CN-OC-V15 H3 – high viscosity: Minimum coating thickness 250 µm, sagging limit per layer: 600 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying |
|-----------------------|-------------|---------------------|-------------------------|
| 20 °C (68 °F) | 24 hrs | 7 days | only wet-on-wet! |
| 30 °C (86 °F) | 18 hrs | 3 days | only wet-on-wet! |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET PROGUARD CN-OC-V12/V15 K3

Proguard CN-OC is a temperature and chemical high-resistant 2- pack special composite coating containing silanized high-tech-micro-particle reinforcement, based on an ultra-modern hybridized epoxy-novolac-resin base specifically designed for stainless steel substrates.



Reference report for this project...

APPLICATION RANGE

- Internal coating for
 - Storage tanks for crude oil, hydrocarbons, chemicals
 - Special tanks for urea, bio oils
 - Process vessels
 - Pipelines for oil & gas
 - Biogas fermenters
 - Especially for stainless steel, aluminum and zinc coated surfaces



TECHNICAL INFORMATION

| | |
|---------------------|---|
| Color | Anthracite |
| Gloss | Satin |
| Volume Solids | 98 % (±1 %) |
| Flexural Strength | 52 MPa (7,542 psi) according to ASTM D790 |
| Chemical resistance | Excellent |
| Abrasion resistance | 49 mg (ASTM D4060) |
| Adhesion | 36 MPa (5,221 psi) on carbon steel (ASTM D4541) |
| Density | Approx. 1.3 g/cm ³ |

FEATURES AND BENEFITS

- Excellent chemical resistance
- High corrosion and abrasion protection to stainless steel substrates
- Temperature resistance up to 150 °C (302 °F) (dependent on medium)
- Excellent adhesion on stainless steel
- 1-layer-system
- High-solid content

PACKAGING AND COVERAGE

- CN-OC-V12 K3 – low viscosity:
13.33 kg kits (10 kg Part A + 3.33 kg Part B)
Theoretical coverage at a thickness of:
80 µm: 121 m² | 200 µm: 49 m²
- CN-OC-V15 K3 – high viscosity:
13.33 kg kits (10 kg Part A + 3.33 kg Part B)
Theoretical coverage at a thickness of:
250 µm: 40 m² | 400 µm: 25 m²



APPLICATION DATA

| | |
|---------------------------------|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size: 0.015 – 0.023"; hose length max. 15 m, spray hose diameter min. ½"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 3 : 1 by weight / 2.36 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed > 100 rpm |
| Potlife | 30 minutes at 20 °C (68 °F) / 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 15 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Application of multiple layers must be wet-on-wet! For CN-OC-V12 K3 – low viscosity: Minimum coating thickness 80 µm, sagging limit per layer: 200 µm. For CN-OC-V15 K3 – high viscosity: Minimum coating thickness 250 µm, sagging limit per layer: 400 µm at 20 °C (68 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Chemical resistance | Recoat Airless spraying |
|-----------------------|-------------|---------------------|-------------------------|
| 20 °C (68 °F) | 24 hrs | 7 days | only wet-on-wet! |
| 30 °C (86 °F) | 18 hrs | 3 days | only wet-on-wet! |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

Ceramic-Polymer KTW-1 is a 2- pack special composite coating containing silanized high-tech-micro-particle reinforcement, based on an ultra-modern A-resin and hardener base especially designed for drinking water applications.



Reference report for this project...

APPLICATION RANGE

- Internal coating for
 - Storage tanks
 - Filter tanks e. g. sand filters
 - Pipelines
 - Further drinking water applications



FEATURES AND BENEFITS

- High corrosion and abrasion protection to a wide variety of substrates
- 1-layer-system
- Solvent-free
- Test series according to DVGW-W270
- Drinking water test series according to the UBA Coating-Guideline for 23 °C (73 °F) and 60 °C (140 °F)

TECHNICAL INFORMATION

| | |
|---------------|--|
| Color | Black |
| Surface | Satin |
| Volume Solids | 100% |
| Adhesion | Excellent; >20 MPa (2,901 psi) on carbon steel according to ISO 4624 |
| Density | Approx. 1.25 g/cm ³ |

PACKAGING AND COVERAGE

- 15 kg kits (12 kg Part A + 3 kg Part B)
Theoretical coverage at a thickness of:
400 µm: 30 m² | 800 µm: 15 m²



APPLICATION DATA

| | |
|---------------------------------|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size: 0.015 – 0.023"; Hose length max. 15 m; Spray hose diameter max. ½"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 4 : 1 by weight / 3 : 1 by volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 25 minutes at 20 °C (68 °F) / 20 minutes at 25 °C (77 °F) / 12 minutes at 30 °C (86 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 25 °C (77 °F) recommended. - lower spray temperatures may cause an orange peel effect on the coating surface! |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | 1 coat. Minimum coating thickness 400 µm; sagging limit per layer: 800 µm at 25 °C (77 °F) material temperature. |

CURING TIMES

| Substrate temperature | Fully cured | Resistant to media | Recoat Airless spraying |
|-----------------------|-------------|--------------------|-------------------------|
| 20 °C (68 °F) | 48 hrs | 7 days | only wet-on-wet! |
| 30 °C (86 °F) | 24 hrs | 5 days | only wet-on-wet! |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET CERAMIC-POLYMER XRC

Ceramic-Polymer XRC is a temperature and chemical high-resistant 2-pack special SIC composite coating containing silanized high-tech-micro-particle reinforcement, based on an ultra-modern hybridized epoxy-novolac-resin base. This system provides an excellent surface protection on a variety of substrates in extremely aggressive environments.



APPLICATION RANGE

- Internal and external coating for
 - Sleeves
 - Rollers for paper, plastic and printing industry
 - Production vessels and plants
 - Gravel filters, sand filters, solid containers



TECHNICAL INFORMATION

| | |
|---------------------|---|
| Color | Anthracite |
| Gloss | Satin |
| Volume solids | 98 % (±1 %) |
| Flexural Strength | 54 MPa (7,832 psi) according to ASTM D790 |
| Chemical resistance | Excellent |
| Abrasion resistance | 15 mg (ASTM D4060) |
| Adhesion | 38 MPa (5,511 psi) on carbon steel (ASTM D4541) |
| Density | Approx. 1.5 g/cm ³ |

FEATURES AND BENEFITS

- Outstanding abrasion resistance
- Extrem high degree of cut resistance
- Excellent chemical resistance
- Temperature resistance up to 150°C (302 °F) (dependent on medium)
- Machinable after curing
- High-solids content

PACKAGING AND COVERAGE

- 12.5 kg kits (10 kg Part A + 2.5 kg Part B)
Theoretical coverage at a thickness of:
250 µm: 33 m² | 600 µm: 14 m²



APPLICATION DATA

| | |
|---------------------------------|---|
| Application by airless spraying | Airless pump, gear ratio 1 : 68 or higher, inlet pressure > 6 bar, tip size 0.021 – 0.026", Hose length max. 15 m, Spray hose diameter max. ¾"; We recommend the removal of the high-pressure filter and the direct suction of the material without use of a siphon tube. |
| Application by brush/roller | Recommended for small areas, repairs or to precoat edges. To obtain the required layer thickness, additional coating passes (wet-on-wet) may be necessary. |
| Mixing ratio | 4 : 1 by weight / 3.3 : 1 per volume |
| Mixing time | Component A: Stirup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 25 minutes at 25 °C (77 °F) / 20 minutes at 30 °C (86 °F) / 15 minutes at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Mimumum 25 °C (77 °F) recommended. |
| Cleaner | Do not use thinners. We recommend to use Proguard cleaners to clean and flush equipment. |
| Number of coats | One or multiple coats, depending on specification. Application of multiple layers must be wet-on-wet! Minimum coating thickness 250 µm; Sagging limit per layer: 600 µm at 25 °C (68 °F) material temperature. Extended layer thickness dependent on application method, please consult us! |
| Machine processing | After full curing mechanical grinding is possible. |

AUSHÄRTUNGSZEITEN

| Substrate temperature | Fully cured | Machinable | Chemically resistant | Recoat Airless spraying |
|-----------------------|-------------|------------|----------------------|-------------------------|
| 20 °C (68 °F) | 24 hrs | 3 days | 7 days | only wet-on-wet! |
| 30 °C (86 °F) | 18 hrs | 2 days | 3 days | only wet-on-wet! |

After drying by heat the material should be cooled down to room temperature before the next processing (grinding) starts.

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

PRODUCT DATASHEET **PROGUARD 169 (37)**

Proguard 169 (37) is a 2-component highly-crosslinked polyurethane topcoat with outstanding color stability and excellent physical properties. The glossy, nonporous surface is long-term resistant against UV-radiation and weathering.



Reference report for this project...

APPLICATION RANGE

- External coating for
- Steel structures
 - Tanks and pipelines
 - Bridges
 - Automotive, Railway
 - On and offshore facilities
 - Applications under environmental influences

**FEATURES AND BENEFITS**

- Extreme UV-stability and weather resistance
- Temperature resistance up to 120 °C (248 °F) dry heat
(at temperatures above 100 °C light and bright colors may become yellow)
- One coat, fast curing
- ISO 12944-2 / classification Im1-3 & C5

TECHNICAL INFORMATION

| | |
|---------------------|---|
| Color | RAL, NCS |
| Surface | Gloss |
| Volume Solids | Approx. 57 % |
| Flash Point | > 25 °C (77 °F) |
| Chemical resistance | According to 12944-2 C5-M |
| UV-stability | Excellent |
| Density | Approx. 1.25 g/cm ³ (dependent on color) |

PACKAGING AND COVERAGE

- 11.5 kg kits (9 kg Part A + 2.5 kg Part B)
Theoretical coverage at a thickness (dry-DFT) of:
40 µm: 144 m² | 120 µm: 44 m²

**APPLICATION DATA**

| | |
|----------------------|--|
| Application methods | All spray methods. Brush + roll for repair only. |
| Mixing ratio | 3.6 : 1 by weight / 3.03 : 1 by volume |
| Mixing time | Component A: Stirrup intensively by mechanical means Components A+B: Mix up homogeneous. Mixer speed >100 rpm |
| Potlife | 3 hours at 20 °C (68 °F) / 2,5 hours at 25 °C (77 °F) / 2 hours at 30 °C (86 °F) / 1 hour at 40 °C (104 °F) material temperature - waiting time under continuous pressure may reduce pot life! |
| Material spray temp. | Minimum 20 °C (68 °F) recommended. |
| Thinner | Proguard 169 - Thinner recommended. |
| Filters | Check to ensure that filters are clean. |
| Number of coats | One coat. Minimum layer thickness 40 µm (dry-DFT); sagging limit 120 µm (dry-DFT) at 20 °C material temperature. Opacity depends on color. With light colors a second layer (wet-on-wet) may be necessary. |

CURING TIMES

| Substrate temperature | Dust-dry | Tack free | Cured | Recoat Airless spraying (wet-on-wet) | |
|-----------------------|----------|-----------|--------|--------------------------------------|---------|
| | | | | Minimum | Maximum |
| 20 °C (68 °F) | 1 hrs | 8 hrs | 96 hrs | 48 hrs | - hrs |
| 30 °C (86 °F) | 0.75 hrs | 5 hrs | 48 hrs | 36 hrs | - hrs |

All above values are approximate and may be used as a guideline for specifications. Consumptions vary according to conditions.

REFERENCES AND UND PRODUCT INNOVATIONS

Ceramic Polymer GmbH solutions can be seen in a broad range of industries.

To see the range of case studies where our products have been successfully used click on the images below.

► Internal coating of pipelines for high-temperature crude oil (80 °C)



► UV-resistant coating for Germany's longest whitewater course at the "Tropical Islands"



► Refurbishment of a buffer tank in a sewage plant



► Internal coating of slug catcher pipelines for the extraction of natural gas



► Ceramic-Polymer KTW-1 passed test series according to DVGW-W270 and warm water up to 60 °C



► Internal coating of cooling water intake risers for extensive FLNG-Project in Australia



► Coating of storage room for aggressive bio-waste with Proguard CN-1M!



► Skid-proof and A-1 chemical resistant - PROGUARD CN-1M for a maritime oil jetty on Jurong Island / Singapore



If you would like additional information or have any questions please feel free to contact our corrosion consultants. Our corrosion protection experts will provide you competent and focused consultancy!

► Coating of a wash tunnel of "German Railways" – resistant against acidic detergent



► External coating of risers and injection pipes for oil platforms in China



► Internal coating of storage tanks for methanol



► Internal coating of gravil filters and activated carbon filter tanks



► Our offshore coatings ensure the functionality of energy plants



► Refurbishment of swimming pool filter achieves a reduction of fresh water consumption of nearly 50 %



► Internal coating of substitution tanks for biogas feeding systems



► Durable corrosion protection and weathering resistance for extensive sheet pile construction (1.800 sqm)



CORROSION PROTECTION MADE EASY! HIGH-QUALITY CARTRIDGE SYSTEMS



For select products we have adopted the Sulzer Mixpac technology packaging, to simplify small surface area applications.

COST SAVINGS

- Low Invest – cost-efficient solution for a wide range of small applications
- Shorter working times, no need of extensive mixing procedure
- Prevention of mixing failures
- No loss of material, no cured residues in the package

SIMPLE APPLICATION

- Automatic mixing allows exact mixing ratio
- Even application, low spray losses
- Cold application possible (20 °C (68 °F)), without preheating
- Portability - lightweight, portable dispenser for versatile use

HIGH-QUALITY COMPONENTS

- Solid MIXPAC™ cartridge of Sulzer Chemtech Technology
- Patented cartridge seal
- Spray mixer tried and tested QUADRO™ mixing technology
- Clean resealable after use, remaining material usable for at least 6 months

Suitable dispenser of the company Sulzer are available from us.

We offer 2 different types for the fast, clean and economic application of 2-component coatings:

MANUAL DISPENSER

MixCoat™ Manual System is a lightweight, manual dispenser, which is excellently suited for repair purposes of all kinds. The applied coating is easy to distribute by conventional hand tools e. g. spatula.



For the protection of welds and edges an appropriate mixing tip with brush is additionally available.

SPRAY DISPENSER

MixCoat™ Spray is a lightweight spray dispenser. This device requires only a pressurized air connection (compressor, 7 bar, 250 l/min). Due to the low weight exact spraying over a long period is possible. Moreover, the dispenser can be operated with one hand.



For the completion of this system the Hybrid-Flex-System can also be purchased. The dispenser is put on easily with a belt; the flexible hose (1.5 m or 3 m) with the attached spray nozzle provides a proper coating result. This combination is the ideal solution for spray coating of small surfaces or areas which are difficult to access.

PRODUCTS FOR CARTRIDGE APPLICATION

STP-EP-HV Cartridge is a 2-Component-Ceramic-Composite-Epoxy-Coating with a high surface tolerance.

FEATURES

- Surface tolerant
- Resistant against hydrocarbons
- Resistant against sea water
- Excellent abrasion resistance
- High temperature stability (long-term up to 120 °C (248 °F))
- High-solid content
- Recommended layer thickness > 200 µm
- sagging limit for vertical surfaces: 500 µm



SALES UNIT

- 1.5 kg Cartridge – 1000 ml volume of matched mixing ratio
- Theoretical coverage approx. 1.5 m² at a thickness of 500 µm

COLOR

- Gray

CN-1M Cartridge is a 2-Component-Special-Internal-Coating containing silanized high-tech-micro-particle reinforcement.

FEATURES

- Excellent chemical resistance
- High temperature stability (long-term up to 150 °C (302 °F))
- High abrasion resistance
- High adhesion on steel and concrete
- High-solid content
- 1-layer-system
- Recommended layer thickness > 250 µm
- sagging limit for vertical surfaces: 600 µm



SALES UNIT

- 1.2 kg Cartridge – 1000 ml volume of matched mixing ratio
- Theoretical coverage approx. 2 m² at a layer thickness of 400 µm

COLOR

- Black

CN-OC Cartridge is a 2-Component-Special-Internal-Coating for stainless steel substrates containing silanized high-tech-micro-particle reinforcement.

FEATURES

- Especially for stainless steel, aluminum and zinc coated surfaces
- Excellent chemical resistance
- High temperature stability (long-term up to 150 °C (302 °F))
- High abrasion resistance
- Outstanding adhesion
- High-solid content
- 1-layer-system
- Recommended layer thickness > 250 µm
- sagging limit for vertical surfaces: 600 µm



SALES UNIT

- 1.2 kg Cartridge – 1000 ml volume of matched mixing ratio
- Theoretical coverage approx. 2 m² at a layer thickness of 400 µm

COLOR

- Black



Chesterton International GmbH Betriebsstätte Rödinghausen | Daimlerring 9 | DE-32289 Rödinghausen | Germany

Phone: +49 (0)5223 - 96 276-0 | Fax: +49 (0)5223 - 96 276-17 | Email: roedinghausen@chesterton.com | Web: www.ceramic-polymer.de