

CERAMIC POLYMER  
A CHESTERTON BRAND

THE  
**COATING**  
BRAND

NORSOK M-501 | COATINGS FOR OFFSHORE REQUIREMENTS





## CHESTERTON OFFERS RELIABLE CORROSION PROTECTION FOR HIGH-DEMANDING OFFSHORE AREAS

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 influence.

### OUR OFFSHORE COATINGS IN ACCORDANCE WITH *NORSOK M-501*

Regarding suitability of protective coatings for the offshore industry, the system classification *NORSOK M-501* is the most important standard for the assessment of product reliability. Our specific coatings feature extreme mechanical resistances and provide long-lasting corrosion protection at durable sea water and weather exposure also within the tidal and splash zone.

In this separate special catalogue, we describe detailed product information to our coating lines in accordance with *NORSOK M-501, Edition 6 - System 1 and System 7B*.

Our certified coating inspectors place 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.

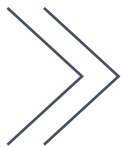


**CERAMIC POLYMER**  
A CHESTERTON BRAND



# SYSTEM 1

*NORSOK M-501, Edition 6*



Structural steel and exteriors of equipment, vessels piping and valves (un-insulated)

Operating temperature < 120 °C / 248 °F

### 3-LAYER-SYSTEM

PRODUCT	DFT (µm)
Ceramic-Polymer NK C5-1	100 µm
Ceramic-Polymer NK C5-2	120 µm
Ceramic-Polymer NK C5-3	100 µm
<b>TOTAL THICKNESS</b>	<b>320 µm</b>



# SYSTEM 7B

*NORSOK M-501, Edition 6*



Submerged carbon and stainless steel, including the splash zone

Operating temperature  $\leq 50\text{ }^{\circ}\text{C}$  /  $122\text{ }^{\circ}\text{F}$

## 2-LAYER-SYSTEM

PRODUCT	DFT ( $\mu\text{m}$ )
Proguard M-ST1	225 $\mu\text{m}$
Proguard M-ST2	225 $\mu\text{m}$
<b>TOTAL THICKNESS</b>	<b>450 <math>\mu\text{m}</math></b>



## PREPARATION AND FINISH

### SURFACE PRETREATMENT

To maximize performance and longevity proper surface preparation is recommended.

#### PRELIMINARY TREATMENT, STEEL UNTREATED:

The surface needs to be pretreated according ISO12944 part 4 § 6.2.3. Remove grease, oil, dirt etc. using an appropriate cleansing agent and a high pressure spraying pistol. Grit blasting to purity degree Sa 2½ in accordance with ISO 8501-1 to a roughness profile of R<sub>a</sub> 40-70 µm. After blasting remove all dust from the entire surface with compressed air which is free of moisture and grease. Apply first coating layer within 6 hours. In case the final coating layer is applied on the construction site, extra precautions need to be taken.

#### PRELIMINARY TREATMENT, HOT DIP GALVANISED SURFACE:

The surface needs to be pretreated according ISO12944 part 4 § 6.2.3.4.1 (sweep blast, with inert grit). Remove grease, oil, dirt etc. using an appropriate cleansing agent. Lightly blast the entire zinc surface with an inert blasting agent (grain size: 0.3-0.5 mm, blasting pressure: 2.0-2.5 bar, nozzle opening: 6 mm minimum). After blasting, the entire surface must have a uniform flat appearance. Depending on the zinc layer thickness, max. 5-10 µm of zinc can be removed. After blasting remove all dust from the entire surface with compressed air which is free of moisture and grease. Apply first coating layer within 2 hours.

#### TOUCH UP:

Touching up of damages or untreated parts at the construction site. Remove grease, oil, dirt etc. using an appropriate cleansing agent. Remove the rust from all mechanical damage with rotating steel wire brushes, sanding discs or steel wire brushes and coarse sandpaper to purity degree St3, in accordance with ISO 8501-1. Smooth the transition of cleansed parts to parts with intact coats of paint by sanding and scraping. After sanding, remove all dust from the entire surface with compressed air which is free of moisture and grease. Then touch up the object with the entire paint system, as described in this paint advice. Touch up light surface damages only with the product of the top coat, as described in the paint advice.

### APPLICATION



#### AIRLESS SPRAY / AIRMIX / AIRSPRAY

Our coatings are applied preferably by airless or airmix spray equipment. We give information regarding recommended nozzle diameter and flow pressure on our technical Product Data Sheets.



#### BRUSH OR ROLLER

Application by hand tools is possible for touch up purposes, repair or small areas; we gladly assist you.



**Ceramic-Polymer NK C5-1** is a 2-component zinc rich epoxy primer, which provides excellent corrosion protection in compliance with *NORSOK M-501*. This innovative product shows high mechanical strength without visibly cracking or common zinc rich primer related defects. Short curing times enables efficient treatment.



**APPLICATION RANGE**

External coating for

- Offshore and onshore constructions
- Tanks and vessels
- Tubes, pipes and valves
- All steel structures in contact with sea atmosphere

**TECHNICAL INFORMATION**

<b>Color</b>	Greenish grey
<b>Gloss</b>	Matt
<b>Volume solids</b>	± 58 volume %
<b>VOC</b>	≤ 395 gr/ltr.
<b>Zinc content</b>	89 w%
<b>Sea water resistance</b>	<i>NORSOK M-501, Edition 6, System 1</i>
<b>Saltspray</b>	> 1440 hours (Saltspray: ISO 9227-NSS / ASTM B 117)
<b>Corrosion Resistance</b> (TNO Electrochemical Impedance Spectroscopy)	$R_c 3.7 \cdot 10^9$ (21 days)
<b>Outdoor Exposure</b>	1.5 years (ISO 2810)
<b>Immersion</b>	2 days distilled water; 5 days sea water (ISO 2812-2/ 1 ASTM D543X)
<b>Adhesion</b>	4.2 MPa (ISO 4624) / 3.8 MPa (ASTM D4541)
<b>Density</b>	~ 2.30 g/cm <sup>3</sup> at 20 °C (68 °F)

**FEATURES AND BENEFITS**

- Extreme barrier properties
- Extreme corrosion resistance
- High build zinc rich primer, no mud cracking
- Excellent build-on on sharp edges
- Fast curing
- Highly flexible
- Temperature resistance up to 150 °C (302 °F) dry load
- Alternative for galvanising and zinc silicate
- Certified according to *NORSOK M-501, Edition 6, System 1* (non-splash zone)

**PACKAGING AND COVERAGE**

- 12.2 kg kit (11.2 kg Part A + 1 kg Part B)  
Theoretical coverage at a thickness of:  
60 µm: 51 m<sup>2</sup> | 125 µm: 24 m<sup>2</sup>
- 24.4 kg kit (22.4 kg Part A + 2 kg Part B)  
Theoretical coverage at a thickness of:  
60 µm: 102 m<sup>2</sup> | 125 µm: 49 m<sup>2</sup>



**APPLICATION DATA**

<b>Application methods</b>	Preferably by means of airless or airmix spray equipment. Brush application is only advised for touch up purposes.
Airless spray	Quantity: 0-5 vol. % / Nozzle: min 0.015" / Flow pressure: 140-160 bar
Airmix	Quantity: 0-5 vol. % / Nozzle: min 0.015" / Flow pressure: 70-100 bar
<b>Mixing ratio</b>	11.2 : 1 by weight / 4 : 1 by volume
<b>Mixing instructions</b>	Mix Part A and Part B intensively, preferably using a mechanical mixing device. The temperature of the mixed product should at least be 15 °C (59 °F) during application.
<b>Potlife</b>	6 hours at 20 °C (68 °F) material temperature - waiting time under continuous pressure may reduce pot life!
<b>Thinner</b>	The paint can be applied without thinning when using airless spray equipment. The necessary amount of the <b>Ceramic-Polymer NK C5-1 Thinner</b> depends on used equipment, application method and temperature of the mixed product. The Thinner should also be used to clean and flush equipment immediately after application.
<b>Application</b>	One coat. Standard DFT 60-125 µm, depends on specification.

**CURING TIMES**

Substrate temperature	Dust free	Manageable	Recoatable
10 °C (50 °F)	45 min	6 hrs.	6 hrs.
20 °C (68 °F)	25 min	3 hrs.	3 hrs.

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



**Ceramic-Polymer NK C5-2** is a special 2-component epoxy coating, reinforced with micaceous iron ore. It provides excellent corrosion protection in compliance with *NORSOK M-501*, extreme sealing properties and mechanical strength. This product can be applied as a primer or coating on steel structures in aggressive atmospherical environments.



**APPLICATION RANGE**

- External coating for
- Offshore and onshore constructions
  - Tanks and vessels
  - Tubes, pipes and valves
  - All steel structures in contact with sea atmosphere

**TECHNICAL INFORMATION**

Color	Standard mio colors
Gloss	Silky gloss
Volume solids	± 70 volume %
VOC	≤ 250 gr/ltr.
Sea water resistance	<i>NORSOK M-501, Edition 6, System 1</i>
Saltspray	4200 hours ( <i>NORSOK M-501 / ISO 20340</i> )
Corrosion Resistance	$R_c 3.7 \cdot 10^9$ (21 days) (TNO Electrochemical Impedance Spectroscopy)
Outdoor Exposure	5 years ( <i>ISO 2810</i> )
Immersion	28 days distilled water; 7 days sea water; 14 days HCl (10w%); 28 days NaOH (10w%); 28 days mineral oil ( <i>ISO 2812-2/ 1 ASTM D543X</i> )
Adhesion	15.4 MPa ( <i>ISO 4624</i> ) / 13.1 MPa ( <i>ASTM D4541</i> )
Density	~ 1.60 g/cm <sup>3</sup> at 20 °C (68 °F)

**FEATURES AND BENEFITS**

- Extreme adhesion
- Extreme barrier properties
- Extreme corrosion resistance
- Excellent flexibility
- Excellent build-on on sharp edges
- Temperature resistance up to 150 °C (302 °F) dry load
- Certified according to *NORSOK M-501, Edition 6, System 1* (non-splash zone)

**PACKAGING AND COVERAGE**

- 8.1 kg kit (7.3 kg Part A + 0.8 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 45 m<sup>2</sup> | 160 µm: 22 m<sup>2</sup>
- 32.35 kg kit (29.05 kg Part A + 3.3 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 180 m<sup>2</sup> | 160 µm: 87 m<sup>2</sup>



**APPLICATION DATA**

Application methods	Preferably by means of airless or airmix spray equipment. When using brushes, a different film thickness and possibly inferior flow will be achieved.
Airless spray	Thinner: n/a / Quantity: 0 vol. % / Nozzle: min 0.015" / Flow pressure: 140-160 bar / DFT: 80-160 µm
Airmix	Thinner: n/a / Quantity: 0 vol. % / Nozzle: min 0.015" / Flow pressure: 70-100 bar / DFT: 80-160 µm
Brush - Roller	Thinner: Ceramic-Polymer NK C5-2 Thinner / Quantity: 0-5 vol. % / DFT: 80 µm
Airspray	Thinner: Ceramic-Polymer NK C5-2 Thinner / Quantity: 0-5 vol. % Nozzle: 2.0-2.5 mm / Flow pressure: 3-4 bar / DFT: 80-160 µm
Mixing ratio	8.80 : 1 by weight / 5 : 1 by volume
Mixing instructions	Mix Part A and Part B intensively, preferably using a mechanical mixing device. The temperature of the mixed product should at least be 10°C (50 °F) during application.
Potlife	4 hours at 20 °C (68 °F) material temperature - waiting time under continuous pressure may reduce pot life!
Thinner	The paint can be applied without thinning when using airless spray equipment (18-23 °C (64-73 °F)). The necessary amount of the <b>Ceramic-Polymer NK C5-2 Thinner</b> depends on used equipment, application method and temperature of the mixed product. The Thinner should also be used to clean and flush equipment immediately after application.
Dry film thickness	One coat. Standard: 80-160 µm, depends on application process and specification.

**CURING TIMES**

Substrate temperature	Dust free	Manageable	Recoatable
10 °C (50 °F)	3 hrs.	24 hrs.	16 hrs.
20 °C (68 °F)	2 hrs.	16 hrs.	8 hrs.

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



**Ceramic-Polymer NK C5-3** is a high-quality 2-component polyester reinforced polyurethane coating with excellent anti corrosive properties. This Top coat provides excellent color stability and mechanical strength. Suitable as DTM coating for all kinds of application in aggressive atmospherical and industrial environments (in compliance with *NORSOK M-501*).



**APPLICATION RANGE**

External coating for

- Offshore and onshore constructions
- Tanks and vessels
- Tubes, pipes and valves
- All steel structures in contact with sea atmosphere

**TECHNICAL INFORMATION**

<b>Color</b>	Standard colors (RAL, NCS) Note: To achieve best opacity of topcoat some colours need a special shade of primer. Please ask our technical service for advice.
<b>Gloss</b>	Semi gloss
<b>Volume solids</b>	± 63 volume %
<b>VOC</b>	≤ 340 gr/ltr.
<b>Sea water resistance</b>	<i>NORSOK M-501, Edition 6, System 1</i>
<b>Density</b>	~ 1.40 g/cm <sup>3</sup> at 20 °C (68 °F)

**FEATURES AND BENEFITS**

- Extreme color retention
- Extreme mechanical strength
- Temperature resistance up to 120 °C (248 °F) dry load
- Certified according to *NORSOK M-501, Edition 6, System 1* (non-splash zone)

**PACKAGING AND COVERAGE**

- 6.8 kg kit (5.55 kg Part A + 1.25 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 38 m<sup>2</sup> | 100 µm: 31 m<sup>2</sup>
- 27.2 kg kit (22.2 kg Part A + 5 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 151 m<sup>2</sup> | 100 µm: 122 m<sup>2</sup>



**APPLICATION DATA**

<b>Application methods</b>	Preferably by means of airless or airmix spray equipment. When using brushes, a different film thickness and possibly inferior flow will be achieved.
Airless spray	Thinner: Ceramic-Polymer NK C5-3 Thinner / Quantity: 0-5 vol. % / Nozzle: 0.013-0.015" / Flow pressure: 140-200 bar / DFT: 80-100 µm
Airmix	Thinner: Ceramic-Polymer NK C5-3 Thinner / Quantity: 0 vol. % / Nozzle: 0.013-0.015" / Flow pressure: 70-100 bar / DFT: 80-100 µm
Brush - Roller	Thinner: Ceramic-Polymer NK C5-3 Thinner / Quantity: 0-5 vol. % / DFT: 80 µm
Airspray	Thinner: Ceramic-Polymer NK C5-3 Thinner / Quantity: 0-5 vol. % Nozzle: 2.0-2.5 mm / Flow pressure: 3-4 bar / DFT: 80-100 µm
<b>Mixing ratio</b>	4.44 : 1 by weight / 3 : 1 by volume
<b>Mixing instructions</b>	Mix Part A and Part B intensively, preferably using a mechanical mixing device. The temperature of the mixed product should at least be 10 °C (50 °F) during application.
<b>Potlife</b>	2 hours at 20 °C (68 °F) material temperature - waiting time under continuous pressure may reduce pot life!
<b>Thinner</b>	The paint can be applied with various spray equipment. The necessary amount of <b>Ceramic-Polymer NK C5-3 Thinner</b> depends on used equipment, application method and temperature of the mixed product. The Thinner should also be used to clean and flush equipment immediately after application.
<b>Dry film thickness</b>	Standard: 80-100 µm (depends on application process)

**CURING TIMES**

Substrate temperature	Dust free	Manageable	Recoatable
10 °C (50 °F)	4 hrs.	18 hrs.	16 hrs.
20 °C (68 °F)	1.5 hrs.	10 hrs.	8 hrs.

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

**Proguard M-ST1** is a 2-component anti corrosive aluminum mastic primer/coating, based on special epoxy resins and a modified phenalkamine curing agent. Application possible at high relative humidity, resistant to abrasion, chemical impact and water immersion (in compliance with *NORSOK M-501*).

**APPLICATION RANGE**

External coating for

- Offshore and onshore constructions
- Splash zones
- Tubes, pipes and valves
- All steel structures in contact with sea water (immersed)

**TECHNICAL INFORMATION**

<b>Color</b>	Aluminum
<b>Gloss</b>	Eggshell gloss
<b>Volume solids</b>	± 82 volume %
<b>VOC</b>	≤ 160 gr/ltr.
<b>Sea water resistance</b>	<i>NORSOK M-501, Edition 6, System 7B</i>
<b>Saltspray</b>	>5500 hours (ISO 9227-NSS / ASTM B 117)
<b>Corrosion Resistance</b> (TNO Electrochemical Impedance Spectroscopy)	$R_c 1.30 \cdot 10^9, n=0.98$ (21 days)
<b>Adhesion</b>	13.0 MPa (ISO 4624) / 11.0 MPa (ASTM D4541)
<b>Density</b>	~ 1.40 g/cm <sup>3</sup> at 20 °C (68 °F)



**FEATURES AND BENEFITS**

- High solid
- Immersion qualified
- Splash zone resistant
- Abrasion resistant
- Excellent mechanical properties
- Good curing at low temperatures to 5 °C (41 °F)
- Temperature resistance up to 200 °C (392 °C) dry load
- ISO 12944: Corrosivity classes C5-I, C5-M, IM-1, IM-2, IM-3
- Certified according to *NORSOK M-501, Edition 6, System 7B*

**PACKAGING AND COVERAGE**

- 13.6 kg kit (5.85 kg Part A + 7.75 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 97 m<sup>2</sup> | 250 µm: 31 m<sup>2</sup>
- 27.2 kg kit (11.7 kg Part A + 15.5 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 194 m<sup>2</sup> | 250 µm: 63 m<sup>2</sup>



**APPLICATION DATA**

<b>Application methods</b>	Preferably by means of airless or airmix spray equipment. When using brushes, a different film thickness and possibly inferior flow will be achieved.
Airless spray	Thinner: n.a. / Quantity: 0 vol. % / Nozzle: 0.015-0.017" / Flow pressure: 150-175 bar / DFT: 80-250 µm
Airmix	Thinner: Proguard M-ST1 Thinner / Quantity: 5-10 vol. % / Nozzle: 0.015-0.017" / Flow pressure: 70-100 bar / DFT: 80-250 µm
Brush - Roller	Thinner: Proguard M-ST1 Thinner / Quantity: 0-5 vol. % / DFT: 80 µm
Airspray	Thinner: Proguard M-ST1 Thinner / Quantity: 5-10 vol. % Nozzle: 2.0-3.0 mm / Flow pressure: 3-4 bar / DFT: 80-250 µm
<b>Mixing ratio</b>	0.75 : 1 by weight / 1 : 1 by volume
<b>Mixing instructions</b>	Mix Part A and Part B intensively, preferably using a mechanical mixing device. The temperature of the mixed product should at least be 5 °C (41 °F) during application.
<b>Potlife</b>	4 hours at 20 °C (68 °F) material temperature - waiting time under continuous pressure may reduce pot life!
<b>Thinner</b>	The paint can be applied without thinning when using airless spray equipment (18-23 °C (64-73 °F)). The eventual necessary amount of <b>Proguard M-ST1 Thinner</b> depends on used equipment, application method and temperature of the mixed product. The Thinner should also be used to clean and flush equipment immediately after application.
<b>Dry film thickness</b>	Standard: 80-250 µm (depends on application process)

**CURING TIMES**

Substrate temperature	Dust free	Manageable	Recoatable
10 °C (50 °F)	6 hrs.	30 hrs.	16 hrs.
20 °C (68 °F)	4 hrs.	16 hrs.	8 hrs.

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



**Proguard M-ST2** is a 2-component anti corrosive coating, based on special epoxy resins and a modified phenalkamine curing agent. Application possible at high relative humidity, resistant to abrasion, chemical impact and water immersion (in compliance with *NORSOK M-501*).



**APPLICATION RANGE**

- External coating for
- Offshore and onshore constructions
  - Splash zones
  - Tubes, pipes and valves
  - All steel structures in contact with sea water (immersed)

**TECHNICAL INFORMATION**

<b>Color</b>	Grey (mio color M2807)
<b>Gloss</b>	Eggshell gloss
<b>Volume solids</b>	± 82 volume %
<b>VOC</b>	≤ 160 gr/ltr.
<b>Sea water resistance</b>	<i>NORSOK M-501, Edition 6, System 7B</i>
<b>Saltspray</b>	>5500 hours (ISO 9227-NSS / ASTM B 117)
<b>Corrosion Resistance</b> (TNO Electrochemical Impedance Spectroscopy)	$R_c 1.30 \cdot 10^9, n=0.98$ (21 days)
<b>Adhesion</b>	13.0 MPa (ISO 4624) / 11.0 MPa (ASTM D4541)
<b>Density</b>	~ 1.60 g/cm <sup>3</sup> at 20 °C (68 °F)

**FEATURES AND BENEFITS**

- High solid
- Immersion qualified
- Splash zone resistant
- Abrasion resistant
- Excellent mechanical properties
- Good curing at low temperatures to 5 °C (41 °F)
- Temperature resistance up to 200 °C (392 °C) dry load
- ISO 12944: Corrosivity classes C5-I, C5-M, IM-1, IM-2, IM-3
- Certified according to *NORSOK M-501, Edition 6, System 7B*

**PACKAGING AND COVERAGE**

- 15.7 kg kit (7.8 kg Part A + 8 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 98 m<sup>2</sup> | 250 µm: 32 m<sup>2</sup>
- 31.4 kg kit (15.4 Part A + 16 kg Part B)  
Theoretical coverage at a thickness of:  
80 µm: 196 m<sup>2</sup> | 250 µm: 64 m<sup>2</sup>



**APPLICATION DATA**

<b>Application methods</b>	Preferably by means of airless or airmix spray equipment. When using brushes, a different film thickness and possibly inferior flow will be achieved.
Airless spray	Thinner: n.a. / Quantity: 0 vol. % / Nozzle: 0.015-0.017" / Flow pressure: 150-175 bar / DFT: 80-250 µm
Airmix	Thinner: Proguard M-ST2 Thinner / Quantity: 5-10 vol. % / Nozzle: 0.015-0.017" / Flow pressure: 70-100 bar / DFT: 80-250 µm
Brush - Roller	Thinner: Proguard M-ST2 Thinner / Quantity: 0-5 vol. % / DFT: 80 µm
Airspray	Thinner: Proguard M-ST2 Thinner / Quantity: 5-10 vol. % Nozzle: 2.0-3.0 mm / Flow pressure: 3-4 bar / DFT: 80-250 µm
<b>Mixing ratio</b>	0.96 : 1 by weight / 1 : 1 by volume
<b>Mixing instructions</b>	Mix Part A and Part B intensively, preferably using a mechanical mixing device. The temperature of the mixed product should at least be 5 °C (41 °F) during application.
<b>Potlife</b>	4-5 hours at 20 °C (68 °F) material temperature - waiting time under continuous pressure may reduce pot life!
<b>Thinner</b>	The paint can be applied without thinning when using airless spray equipment (18-23 °C (64-73 °F)). The eventual necessary amount of <b>Proguard M-ST2 Thinner</b> depends on used equipment, application method and temperature of the mixed product. The Thinner should also be used to clean and flush equipment immediately after application.
<b>Dry film thickness</b>	Standard: 80-250 µm (depends on application process)

**CURING TIMES**

Substrate temperature	Dust free	Manageable	Recoatable
10 °C (50 °F)	6 hrs.	30 hrs.	16 hrs.
20 °C (68 °F)	4 hrs.	16 hrs.	8 hrs.

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



**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](mailto:roedinghausen@chesterton.com) | Web: [www.ceramic-polymer.de](http://www.ceramic-polymer.de)