THERMOPLASTIC POWDER COATINGS
Lasting protection for heavily used surfaces
Thanks to their versatile properties, thermoplastic powders for coating metal parts have become an integral part of everyday industrial applications. Virtually no other surface coating offers higher resistance against corrosion, chemicals, UV radiation and UV radiation – not to mention protection against environmental influences – than thermoplastic coatings.

Since its foundation in 1957, Schaetti AG has concentrated on the production of thermoplastic powders. From our roots as a powder supplier for bonding textiles, we have developed and produced customized coating solutions since 2009. This means that we have a wide range of products in our portfolio that can be aimed at different industries depending on customer requirements.

In our laboratories, we constantly develop and test new formulations that are used to ensure good value for money for our customers. Consultation and support are second nature to us – from the initial contact and development all the way through to the start of production for a new application.

This brochure details the areas of application where thermoplastic surface coatings are used and also introduces the products that you can expect from us. Please contact us if you have any questions. Our advisers will be happy to help.
Depending on the application, the requirements for a coating can vary greatly. In addition to anti-corrosion protection, surfaces also have to meet demands such as chemical resistance, electrical insulation, abrasion resistance and slippage. Customized solutions are often also in demand when it comes to meeting special requirements.

Together with the customer, Schaetti develops and manufactures thermoplastic coating powders for specific applications. The products on offer range from budget solutions based on polyethylene (PE) to polyester powders, all the way through to high-quality polyamide (PA).

**Thermoplastics for different applications**
The table below illustrates the properties of the respective thermoplastics and provides information on how they are processed:

| Coating            | Properties                                                                 | Anti-corrosion protection | Slippage | Abrasion resistance | Chemical resistance | UV and weathering resistance | Electrical insulation | Thermal resistance | Fluidized bed coating | Powder spray coating | Minicoating |
|--------------------|-----------------------------------------------------------------------------|---------------------------|----------|---------------------|---------------------|---------------------------|-----------------------|-------------------|---------------------|---------------------|-------------|-------------|
| LDPE, LLDPE        | Polyethylene                                                               | ✓                        | ✓        | ✓                   | ✓                   | ✓                         | ✓                     | LDPE 60 °C        | ✓                   | ✓                   | ✓           |             |
|                    | Maximum anti-corrosion protection, chemical resistance, good resistance to   |                           |          |                     |                     |                          |                       |                   |                     |                     |             |             |
|                    | scratches and impacts, electrical insulation. Good repair possibilities.     |                           |          |                     |                     |                          |                       |                   |                     |                     |             |             |
|                    | Temperature resistance from -30 °C to +70 °C. Inexpensive coating. One-layer |                           |          |                     |                     |                          |                       |                   |                     |                     |             |             |
| PES Polyester      | Innovative material with good mechanical properties, such as abrasion      | ✓                        | ✓        | ✓                   | ✓                   | ✓                         | ✓                     |                   | ✓                   | ✓                   | ✓           |             |
|                    | quality and excellent adhesion on metal without primer. High degree of     |                           |          |                     |                     |                          |                       |                   |                     |                     |             |             |
|                    | weathering resistance, very well suited to outdoor use.                    |                           |          |                     |                     |                          |                       |                   |                     |                     |             |             |
| PA Polyamide       | For demanding applications. Very good abrasion and glide quality, very      | ✓                        | ✓        | ✓                   | ✓                   | ✓                         | ✓                     |                   | ✓                   | ✓                   | ✓           |             |
|                    | good mechanical properties (hard, flexible), electrical insulation.        |                           |          |                     |                     |                          |                       |                   |                     |                     |             |             |

CUSTOMIZED SOLUTIONS FOR VIRTUALLY ANY COATING REQUIREMENT

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*Note: The table uses asterisks (*) to indicate the level of performance for each property. Higher number of asterisks indicates better performance.*
POLYETHYLENE APPLICATIONS

LDPE-based and LLDPE-based coating powders are characterized by high corrosion resistance, chemical resistance and good insulation qualities. When used with special finishing or additives, they have good UV and weathering resistance, which means they are also well suited to outdoor use. The melting point is between 110 °C and 125 °C.

Polyethylene-based Series 1 Schaetti Coat powders have been specially developed for the long-lasting protection of metal surfaces against moisture and chemicals; with additives, a good weathering resistance can also be achieved. They are typically used in industrial, building and garden applications.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Schaetti Coat 1110 LLDPE</th>
<th>Schaetti Coat 1210 LLDPE</th>
<th>Schaetti Coat 1500 LDPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Battery trays, industrial parts, metal containers</td>
<td>Battery racks, galvanized racks, components exposed to chemicals</td>
<td>Internal coating for fire extinguishers</td>
</tr>
</tbody>
</table>
| Properties                    | • Very good chemical resistance  
                                 • Maximum anti-corrosion protection  
                                 • Very good electrical insulation  
                                 • Good abrasion resistance  
                                 • Good impact resistance  
                                 • One-layer system, no primer necessary  
                                 • Very good adhesion  
                                 • Very good repair possibilities  
                                 • Decorative (paints) | • Very good chemical resistance  
                                 • Very good anti-corrosion protection  
                                 • Very good UV resistance  
                                 • Electrical insulation  
                                 • Good abrasion resistance  
                                 • Good impact resistance  
                                 • One-layer system  
                                 • Very good adhesion  
                                 • Very good repair possibilities  
                                 • Decorative (paints) | • Excellent anti-corrosion protection  
                                 • Very good protection against extinguishing agents and chemicals  
                                 • Electrical insulation  
                                 • Very good adhesion  
                                 • EN3 approval |

<table>
<thead>
<tr>
<th>Physical properties</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point (°C)</td>
<td>115 – 125</td>
<td>115 – 125</td>
<td>110 – 120</td>
</tr>
<tr>
<td>Hardness (Shore)</td>
<td>D56</td>
<td>D55</td>
<td>D52</td>
</tr>
<tr>
<td>Density (g/m²)</td>
<td>&lt; 1.0</td>
<td>&lt; 1.0</td>
<td>&lt; 1.0</td>
</tr>
<tr>
<td>Thickness (μm)</td>
<td>500 – 1000</td>
<td>400 – 600</td>
<td>400 – 600</td>
</tr>
<tr>
<td>Coating process</td>
<td>Fluidized bed coating</td>
<td>Fluidized bed coating</td>
<td>Rotolining, spray coating</td>
</tr>
</tbody>
</table>

We recommend alkaline degreasing, phosphatization or passivation for pre-treatment. Blast derusting significantly improves adhesion.
Polyester-based Series 3 Schaetti Coat powders are a cheaper alternative to polyamide applications. They have very high corrosion resistance, UV resistance and abrasion resistance. The coatings are resistant to temperatures of up to 90 °C at continuous loads, have electrical insulation and are resistant to weak acids and alkalis. Due to their very good adhesive properties, the use of a primer is not necessary. Series 3 Schaetti Coat powders are particularly suited to applications in industry, vehicle construction, water purification, outdoor furniture, small metal parts and applications with contact to foodstuffs.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Schaetti Coat 3820 MC</th>
<th>Schaetti Coat 3820 ES</th>
<th>Schaetti Coat 3825 DC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applications</strong></td>
<td>Car manufacturing, lingerie, electrical components, small parts</td>
<td>Wire goods, industrial parts, outdoor applications, coating of composite parts</td>
<td>Industrial parts, wire goods, water purification, vehicle construction, outdoor applications coating of composite parts</td>
</tr>
</tbody>
</table>
| **Properties** | • Very good anti-corrosion protection  
• Chemical resistance  
• Weathering resistance  
• High scratch and impact resistance  
• Electrical insulation  
• Suitable for use with foodstuffs | • Very good anti-corrosion protection  
• Chemical resistance  
• Weathering resistance  
• UV resistance  
• High scratch and impact resistance  
• Electrical insulation  
• Suitable for use with foodstuffs | • Very good anti-corrosion protection  
• Chemical resistance  
• Weathering resistance  
• UV resistance  
• High scratch and impact resistance  
• Electrical insulation  
• Suitable for use with foodstuffs |

**Physical properties**

<table>
<thead>
<tr>
<th>Melting point (°C)</th>
<th>165 – 175</th>
<th>165 – 175</th>
<th>165 – 175</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness (Shore)</td>
<td>D75</td>
<td>D75</td>
<td>D75</td>
</tr>
<tr>
<td>Density (g/m²)</td>
<td>1.3 – 1.4</td>
<td>1.3 – 1.4</td>
<td>1.3 – 1.4</td>
</tr>
</tbody>
</table>
| Colors              | Black, white  
Other colors on request | Black, white, gray  
Other colors on request | Black, white, gray  
Other colors on request |
| Thickness (μm)      | 150 – 250 | 100 – 250 | 250 – 500 |
| Coating process     | Minicoating | Electrostatic spray coating | Fluidized bed coating |

We recommend alkaline degreasing, phosphatization or passivation for pre-treatment. Blast derusting significantly improves adhesion.
POLYAMIDE APPLICATIONS

Polyamide-based Series 5 Schaetti Coat powders are suitable for coating highly stressed surfaces. They are characterized by good strength, stiffness, durability and mechanical flexibility. The surface coatings have good resistance against chemicals, abrasion and wear, and are virtually insusceptible to stress cracks.

Series 5 Schaetti Coat powders are typically used in housing and mold construction, insulating parts, electronic building elements, dishwasher racks, water purification, vehicle construction and lingerie.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Schaetti Coat 5820 MC</th>
<th>Schaetti Coat 5820 ES</th>
<th>Schaetti Coat 5825 DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Small parts for vehicle construction, electrical industry, lingerie</td>
<td>Industrial applications, vehicle construction, lingerie</td>
<td>Wire goods, vehicle construction, water purification, industrial parts</td>
</tr>
</tbody>
</table>
| Properties   | • High resistance against corrosion and chemicals  
• High strength, stiffness and durability  
• Very good mechanical properties, such as abrasion, wear and flexibility  
• Low water absorption | • High resistance against corrosion and chemicals  
• High strength, stiffness and durability  
• Very good mechanical properties, such as abrasion, wear and flexibility  
• Low water absorption | • High resistance against corrosion and chemicals  
• High strength, stiffness and durability  
• Very good mechanical properties, such as abrasion, wear and flexibility  
• Low water absorption |

Physical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Schaetti Coat 5820 MC</th>
<th>Schaetti Coat 5820 ES</th>
<th>Schaetti Coat 5825 DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point (°C)</td>
<td>182 – 192</td>
<td>182 – 192</td>
<td>182 – 192</td>
</tr>
<tr>
<td>Hardness (Shore)</td>
<td>D73</td>
<td>D73</td>
<td>D73</td>
</tr>
<tr>
<td>Density (g/m²)</td>
<td>1.05 – 1.15</td>
<td>1.05 – 1.15</td>
<td>1.05 – 1.15</td>
</tr>
<tr>
<td>Colors</td>
<td>Black, white</td>
<td>Black, white, gray</td>
<td>Neutral, white</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other colors on request</td>
<td>Other colors on request</td>
</tr>
<tr>
<td>Thickness (μm)</td>
<td>150 – 250</td>
<td>100 – 250</td>
<td>250 – 500</td>
</tr>
<tr>
<td>Coating process</td>
<td>Minicoating</td>
<td>Electrostatic spray coating</td>
<td>Fluidized bed coating</td>
</tr>
</tbody>
</table>

We recommend alkaline degreasing, phosphatization or passivation for pre-treatment. Blast derusting significantly improves adhesion.
The development of coating powders requires expertise in manufacturing and processing thermoplastics, not to mention a precise understanding of customer requirements. As a manufacturer of thermoplastics and a former machine builder, Schaetti combines high levels of processing expertise with wide-ranging specialist know-how in the development and production of customer-specific solutions. Our laboratory, sales and process technicians in Europe, the USA and Asia offer customers global support if they have any questions relating to the process.

**In development and production, we are committed to the respectful use of natural resources.**

- When developing new products, we ensure that they are environmentally compatible.
- Wherever possible, raw materials are extracted and processed on the continents where they are then used. Europe and the USA are supplied by the plant in Germany, while Asia is supplied by the plant in China.
- The plants in Germany and China are controlled using computer-aided systems that monitor the various types of consumption (electricity, nitrogen, throughput, temperature). These help to safeguard operations and also make an important contribution to reducing electricity consumption and to using natural resources economically.
- The Schaetti Group is committed to quality and maintaining international standards. The production plant in Shanghai has ISO 9001 certification, while the plant in Griessen has both ISO 14001 and DIN EN ISO 50001 certification.

As a thermoplastics specialist, the Schaetti Group has been a reliable supplier and partner for various customer requirements and industries since 1957. If you have any questions or want to find out more about the company and our coating solutions, please don’t hesitate to get in touch with us. We look forward to assisting you in implementing your coating applications.
SCHAETTI WORLDWIDE

- Locations
- Qualified sales agents

Locations:
- Switzerland, Zurich (headquarters)
- USA, Mooresville, NC
- Eastern Europe, Warsaw
- Turkey, Istanbul
- UK, Leicestershire
- Production Germany, Giessen
- South-East Asia, Singapore
- Production China, Shanghai
- Switzerland, Zurich (headquarters)