



FULL SPEED AHEAD FOR POWDER COATINGS

Added Value
POLYFLEX®
Powder Coatings

POLYFLEX® powder coatings for rail vehicles and the transport sector

Millions of people are transported every day by rail. This requires materials that offer maximum safety and longevity. The POLYFLEX® powder coatings from KARL BUBENHOFER AG form a comprehensive, innovative and tried-and-tested product range.



KARL BUBENHOFER AG

RAIL VEHICLES WITH POLYFLEX® POWDER COATINGS

STADLER RAIL



© Stadler Rail

STADLER

vossloh
KIEPE

BOMBARDIER
the evolution of mobility

SIEMENS

 **ŠKODA**

VOSSLOH AG



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” RRX – THE PROJECT OF THE CENTURY

THE RHINE-RUHR EXPRESS (RRX) WITH POLYFLEX® POWDER COATINGS

The Rhine-Ruhr Express (RRX), considered the project of the century for the German Rhine and Ruhr metropolitan region, will relieve the ever-increasing traffic problems in the Rhine and Ruhr area from 2018. The special purpose associations involved in the new rail transport concept RRX commissioned Siemens to supply 82 Desiro HC electrical multiple units and deliver maintenance for a period of 32 years. The order equates to more than EUR 1.7 billion, making it the largest order secured by Siemens to-date in the area of regional rail transportation in Germany. KABE – KARL BUBENHOFER AG has been awarded the contract to supply the powder coating used for the various areas of application.





**POLYFLEX®
POWDER COATING –
AWARD-WINNING
QUALITY**

01

DECORATIVE FOR EXTERIOR AREAS

according to DBS 918 340 for substrates,
aluminium and steel

**POLYFLEX® PUR-151 SYSTEM
with anti-graffiti properties**

PUR-151 (uni colours)

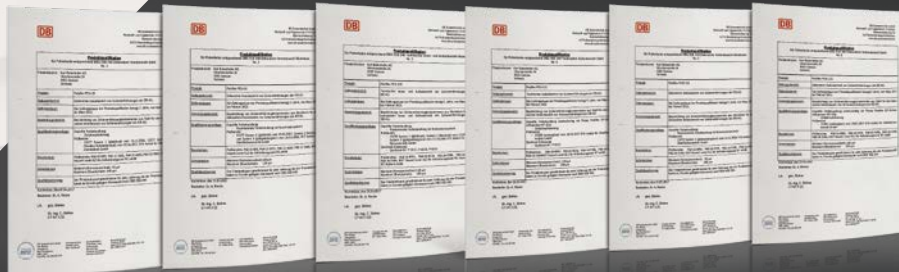
exterior smooth silk gloss
highly weather-resistant

PUR-151 Metallic (metallic colours)

exterior smooth silk gloss
highly weather-resistant



WE HAVE ALL
FIRE CERTIFICATIONS
AND APPROVALS.



HIGH MATERIAL AND POWDER COATING REQUIREMENTS

The strict quality requirements, such as those of Deutsche Bahn, demand extensive testing and certifications. A distinction is made between coating systems that are used in interior or exterior areas, for decorative or technical purposes and on aluminium or steel substrates. Depending on the area of application, different technical regulations must be fulfilled. **Our powder coatings have been tested in accordance with the new DBS (Deutsche Bahn standard) 918 340 quality standard.** We have also been awarded all fire certifications and approvals.

02

INTERIOR AREA, DECORATIVE
according to DBS 918 340 for substrates,
aluminium and steel

POLYFLEX® PES-20 POWER SYSTEM
with **anti-graffiti**-properties

PES-20 Power (uni colours)
interior smooth silk matt

PES-20 Power Pearl Metallic (metallic colours)
interior smooth silk matt

PES-20 Power (uni colours)
interior fine structure silk matt

PES-20 Power Pearl Metallic (metallic colours)
interior fine structure silk gloss

PES-20 Power (uni colours)
interior smooth silk gloss

PES-20 Power Pearl Metallic (metallic colours)
interior smooth silk gloss

03

INTERIOR AND EXTERIOR AREA, TECHNICAL APPLICATIONS
according to DBS 918 340 for substrates,
aluminium and steel

POLYFLEX® PES-135 SYSTEM

PES-135 (uni colours)
exterior smooth silk matt

PES-135 Pearl Metallic (metallic colours)
exterior smooth silk matt

PES-135-Q (uni colours)
exterior fine structure silk matt

PES-135 Q Pearl Metallic (metallic colours)
exterior fine structure silk matt

PES-135 (uni colours)
exterior smooth silk gloss

PES-135 Pearl Metallic (metallic colours)
exterior smooth silk gloss

POLYFLEX® STERIDUR II WITH SPECIAL PROTECTIVE FILM FINISH

One of the many areas of application for POLYFLEX® STERIDUR II is on handrails and handles on trains and buses, for example. The developed agent that is added to the powder coating, destroys harmful microbes thanks to its structure and reactivity, making POLYFLEX® STERIDUR II a unique and safe product. The effect of the additives is retained in the powder coating for many years, giving the coated surface a long-lasting protection.



EFFECTIVE 24 HOURS A DAY

Because of STERIDUR II's special composition, the protective film is integrated in the powder coating so that it cannot escape from the surface, thus providing a long-lasting effect.



FOR MAXIMUM HYGIENE

Surfaces with a special film protection prevent germ and bacteria transmission. The STERIDUR-coated surface II also minimises odours caused by bacteria.



POLYFLEX® STERIDUR II is used on furniture, appliances, ceiling and wall systems that are used in public and medical areas as well as areas that come into close contact with food. This includes for example, handrails, microwaves, sanitary systems and medical appliances etc. Essentially, POLYFLEX® STERIDUR II is suitable for all powder-coated surfaces that require effective protection against all kinds of microbes (fungi, bacteria, algae etc.).

POLYFLEX® STERIDUR II EFFICACY SPECTRUM

Gram-positive bacteria

- › Staphylococcus aureus (MRSA)
- › Enterococcus faecalis (VRE)
- › Bacillus subtilis
- › Streptococcus faecalis
- › Streptococcus pyogenes
- › Corynebacterium xerosis
- › Micrococcus luteus
- › Listeria monocytogenes
- › Listeria welshimeri

Gram-negative Bacteria

- › Escherichia coli (ESBL)
- › Enterobacter aerogenes
- › Legionella pneumophila
- › Pseudomonas aeruginosa
- › Salmonella enteritidis
- › Salmonella typhimurium
- › Klebsiella aeruginosa
- › Salmonella typhimurium
- › Vibrio parahaemolyticus

Mould and yeast fungus

- › Aspergillus niger
- › Penicillium funiculosum
- › Chaetomium globosum
- › Gliocladium virens
- › Aureobasidium pullulans
- › Cladosporium cladosporoides
- › Penicillium citrinum
- › Candida albicans
- › Saccharomyces cerevisiae

Algae

- › Chlorella pyrenoidosa
- › Scenedesmus quadricauda
- › Selenastrum capricornutum
- › Oocystis vulgaris
- › Skeletonema costatum

POLYFLEX® PES-20 POWER ANTIGRAFFITI

The innovative POLYFLEX® PES-20 Power enables powder coatings to be used in instances where maximum resistance to chemicals is required. As a result of its resistance to many cleaning agents, POLYFLEX® PES-20 Power can considerably extend the service life of a powder coating. It also has excellent anti-graffiti properties.



ANTI-GRAFFITI- PROPERTIES

POLYFLEX® PES-20 Power is proven to be resistant to a very wide range of different chemicals and has excellent anti-graffiti properties.

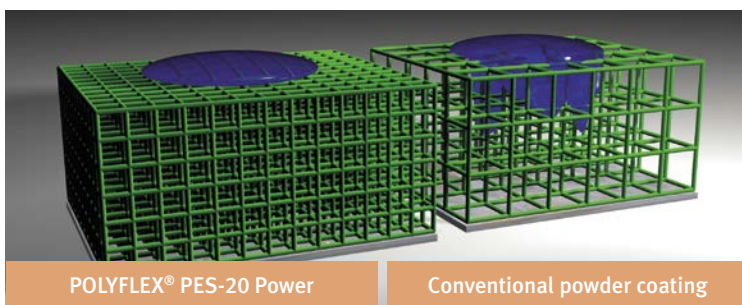
SIGNIFICANT IMPROVEMENT IN ABRASION AND SCOURING RESISTANCE

Thanks to the highly cross-linked surface, POLYFLEX® PES-20 Power has above-average resistance to abrasion and scouring. This reduces the risk of damage to the paint caused by scratches.

Thanks to its highly cross-linked film, POLYFLEX® PES20 Power makes it easier to use aggressive cleaning agents, for example for clean removal of spray-can paints. The high resistance to chemicals had to be proven using a great number of different test substances. The results achieved are better than those of conventional powder coatings. Unlike pure epoxy powders, POLYFLEX® PES-20 Power as a special mixed powder is extremely resistant to yellowing.

OUTSTANDING PROPERTIES

- ✓ Highly resistant to a wide range of commonly used chemicals and cleaning agents
- ✓ Resistant to yellowing for protecting against overfiring
- ✓ Anti-graffiti properties
- ✓ Highly resistant to abrasion and scouring
- ✓ Extremely resistant to chemicals
- ✓ Beautiful finish and good film flexibility



The new ROCKY MOUNTAINEER from Stadler Rail – KABE has been awarded the contract to supply the powder coating.



POLYFLEX® POWDER COATING – AWARD-WINNING QUALITY

The POLYFLEX® powder coatings from KARL BUBENHOFER AG form an extensive, innovative and proven range of powder coatings for the rail vehicle sector



- ✓ Our powder coatings have been tested by the IFO – Institut für Oberflächentechnik GmbH. Depending on the purpose for which they are used, they must meet different technical requirements. We have received the Deutsche Bahn product qualification for the following products:

- No. 1 PES-20 (PES-20 Power) decorative interior coating for steel substrates
- No. 2 PES-20 (PES-20 Power) decorative interior coating for aluminium substrates
- No. 3 PES-135 technical interior and exterior coating for aluminium substrates
- No. 4 PES-135 technical exterior coating for steel substrates
- No. 5 PUR-151 decorative exterior coating for aluminium substrates
- No. 6 PUR-151 decorative exterior coating for steel substrates



- ✓ POLYFLEX® powder coatings have all fire approvals; these were reviewed by Institut RST Rail System Testing GmbH. Based upon the test results achieved, the material meets requirement R1 with hazard level 3 (HL3).

- ✓ Our powder coatings are already used in a variety of rail vehicles by reputable producers. We are specialists in the rail sector with extensive experience.
- ✓ We offer our customers a wide range of plain, NCS, special and metallic colours for all applications and various substrates.
- ✓ Our special powder coatings with anti-graffiti properties and special protective films for surfaces can be used in many different ways.

Personal contact with our customers is important to us. Our competent employees are happy to hear your questions and suggestions, and offer you support.

Please call us or send your request via e-mail.



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