

**FreiLacke**



# System coating solutions for rail vehicles

Certified solutions of the highest quality.





## Applied solutions.

System coatings for optimum results.

### System solutions in accordance with SNCF norms and DB standard:

- Product qualification according to NF F 19-477 and DBS 918300 and DBS 918340
- Fire protection in accordance with EN 45545-2
- For technical components
- For decorative exterior coatings with graffiti protection and excellent repair capability
- Consulting and training of system coating users in planning and processing

...from one source



System coating for best results – and that includes the product mix. **FreiLacke** is the specialist when it comes to system coatings and system coating expertise. Both terms have been heavily influenced by the work of the long-established company from Black Forest in Germany.

We develop and produce all conventional coating systems under one roof. This means we can offer our customers not only all the important coating technologies but can also match them regarding coating structure and finish - to optimum effect.

**The advantages:** Best material properties, consistent colour results (even with varying products and coating types) and the needs-based configuration of individual coatings – and all from a single source.

**GSB**  
INTERNATIONAL

**QUALICOAT**

Produkt	Anwendung	Vorbereitung	Eigenschaften
...	...	...	...

Produkt	Anwendung	Vorbereitung	Eigenschaften
...	...	...	...



# Applied solutions.

Application solutions from one source.

## High performance coating systems

The strict quality requirements of the national railways and the train manufacturers require certified coating systems of the highest quality.

**FreiLacke** offers diverse and certified system coating solutions in the areas of powder coatings, liquid coatings and composites for exterior and interior. All solutions are produced from one source, perfectly matched to each other and ensure ideal processing and the highest quality.

Our powder coatings fulfil the SNCF requirements according to NF F 19-477 and the German Railway Standard (DBS) 918 340 and our liquid coatings fulfil the DBS 918 300 quality standard. We also have fire test certificates available in accordance with the European standard EN 45545-2.



- Powder coatings
- Liquid coatings
- Electrodeposition coatings
- Composites



## Exterior coatings Anti-graffiti



## Special solutions/Special coatings



Technical coatings



Interior coatings Anti-graffiti

## Exterior coatings Anti-graffiti

- For the decorative exterior coating of vehicle bodies and components
- Liquid and powder coatings matched as system coatings
- Optimum weather resistance and gloss retention in all climates
- Excellent graffiti protection and ability to remove it
- Excellent resistance against standard cleaning and graffiti-removing agents
- Perfect pictogram and decorative film adhesion despite anti-graffiti properties of the coating film
- Proven powder and liquid coating repair solution with qualified coating systems
- Robust paint application process to insure constant quality
- Consulting and training of system coating users in planning and processing as well as smart and spot repair

Coating Type	Substrate	Component	Article Code
Powder	Aluminium/Steel	Components for outdoor use	PZ6 / PZ49 + PZ6
Liquid	All Substrates	Components for indoor and outdoor use	ER1923 + DC1983 / ER1923 + DL1110 + DC1983
Liquid hydro	All Substrates	Components for outdoor use	ER1923 + DW11 system

## Interior coatings Anti-graffiti

- For the decorative interior coating of vehicle bodies and components
- Liquid and powder coatings as system coatings matching colour tone, gloss level and surface structures
- Excellent graffiti protection and ability to remove it
- Excellent resistance against standard cleaning and graffiti-removing agents
- Perfect pictogram and decorative film adhesion despite anti-graffiti properties of the coating film
- Proven powder and liquid coating repair solution with qualified coating systems
- Robust paint application process to insure constant quality
- Consulting and training of system coating users in planning and processing as well as smart and spot repair

Coating Type	Substrate	Component	Article Code
Powder	Aluminium	Interior Ceiling/Interior Panelling/Handrails	PZ5 / PZ1
Powder	Steel	Interior Ceiling/Interior Panelling/Handrails	PZ1
Powder	Aluminium	Interior Panelling	PZ 12 (structured)
Powder	Aluminium	Desk Panels	PZ1 or PZ1 + KO1853
Powder	Aluminium/Stainless Steel	Foot Pedestal	PZ5 / PZ1
Powder	Steel/Stainless Steel	Foot Pedestal	PZ71 + PZ1
Powder	Aluminium	Seats	PZ5 / PZ1
Liquid	All Substrates	Interior ceiling/Interior panelling/Interior components	ER1923 + DC1983
Liquid	All Substrates	Components for indoor and outdoor use	ER1923 + DC1983 / ER1923 + DL1110 + DC1983





## Technical coatings

- For the technical exterior coating of components for all climates
- Liquid and powder coatings matched as system coatings
- Outstanding corrosion protection and systems for special requirements relating to heavy-duty corrosion protection
- Resistant to standing water and prolonged effects of cleaning agents
- Stone chip protection
- Proven powder and liquid coating repair solution with qualified coating systems
- Robust manufacture for results of optimum quality
- Consulting and training of system coating users in planning and processing

Coating Type	Substrate	Component	Article Code
Powder	Aluminium	Underfloor components, Roof Container	PZ1
Powder	Steel/Stainless steel	Underfloor components, Roof Container	PZ71 + PZ1
Liquid	All Substrates	Bogies/Underfloor components/Subfloors	ER1923 + ER1972
Liquid	Steel	Bogies/Underfloor components/Subfloors (for heavy-duty corrosion protection C5M)	ER1943 + ER1972
Liquid	All Substrates	Components for indoors and outdoors	ER1923 + DC1983 / ER1923 + DL1110 + DC1983
Liquid	All Substrates	Bogies/Underfloor components/Subfloors	DL1201
Liquid hydro	All Substrates	Exterior components	ER1923 + DW1593
Liquid hydro	Steel	Wheel sets	KP1631L + DW1593

## Special solutions/Special coatings

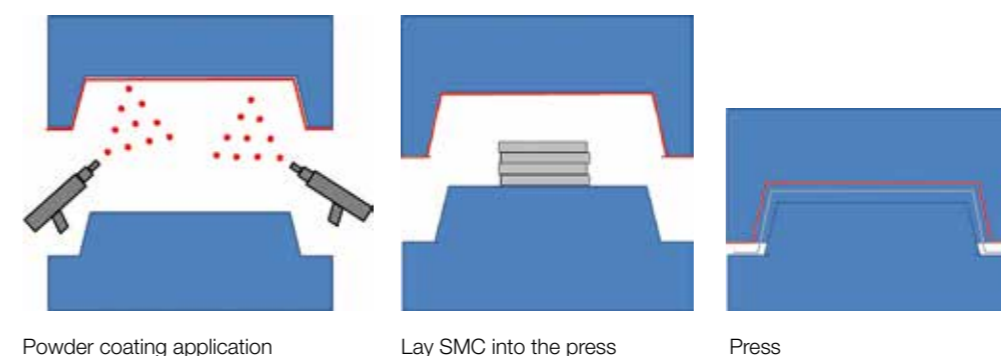
- Scratch-resistant surfaces for interior coatings for high wear resistance.
- Impact resistance for sensitive underbody areas and train axles in accordance with EN 13261, class 1 and NFF 19-223
- Gel coats and resins for fibre composite materials with fire protection in accordance with EN 45545-2
- Styrene-free and solvent-free fibre composite material – systems in accordance with EN 45545-2
- Consulting and training of system coating users in planning and processing

Coating Type	Substrate	Component	Article Code
Powder + liquid	Steel	Handrails (high scratch resistance)	PZ71 + PZ1 + KO1853
Powder + Liquid	Aluminium/Stainless steel	Handrails (high scratch resistance)	PZ1 + KO1853
Liquid hydro	Aluminium/Steel	Impact resistance for axles and underbody	KP1631L DW1594URU712
Fibre composite	-	Interior and exterior components	BD7764X + BD7240X
Fibre composite	-	Interior and exterior components (styrene-free and solvent-free)	PM1005A

### PIMC - Powder InMould Coating SMC/BMC powder coating in the pressing tool

The powder coating of SMC/BMC can be easily integrated in the pressing process. The powder coating is sprayed into the pressing mould manually or automatically. The highly reactive coating hardens in a few seconds so the SMC/BMC can be laid in immediately and pressed. The cycle time is only depending on the powder coating application time (depending on the component, approx. 30 sec.).

After pressing, the finished, coated component can be demoulded as usual. The typical fibre marking is completely levelled out by the PIMC process, the parts are given a highly resistant and very homogeneous surface.



## Our solutions at a glance.

Coating Type	Installation Location	Function	Substrate	Component	Surface	Gloss	Number of Layers	Article Code	Railway certification DBS / SNCF	Fire protection EN 45545-2	Repair Solution
Powder + liquid	Interior/Exterior	Decorative	Steel	Handrails (high scratch resistance)	Smooth	All gloss levels	3	PZ71 + PZ1 + KO1853	+ / -	Yes	DC1983
Powder + Liquid	Interior/Exterior	Decorative	Aluminium/Stainless steel	Handrails (high scratch resistance)	Smooth	All gloss levels	2	PZ1 + KO1853	+ / -	Yes	DC1983
Powder	Exterior	Technical	Aluminium	Underfloor components, Roof Container	Smooth	Matt, silky gloss or special setting	1	PZ1	+ / +	Yes	DC1983
Powder	Exterior	Technical	Steel/Stainless steel	Underfloor components, Roof Container	Smooth	Matt, silky gloss or special setting	2	PZ71 + PZ1	+ / +	Yes	DC1983
Powder	Interior	Decorative	Aluminium	Interior Ceiling/Interior Panelling/Handrails	Smooth	Matt, silky gloss or special setting	1	PZ5 / PZ1	+ / +	Yes	DC1983
Powder	Interior	Decorative	Steel	Interior Ceiling/Interior Panelling/Handrails	Smooth	Matt, silky gloss or special setting	1	PZ1	+ / +	Yes	DC1983
Powder	Interior	Decorative	Aluminium	Interior Panelling	Structured	Matt, satin matt Satin gloss	1	PZ1	+ / +	Yes	DC1979 or DC1983
Powder	Interior	Decorative	Aluminium	Desk Panels	Smooth	Matt or dull matt	1 2	PZ1 + KO1853	+ / +	Yes	DC1983 or UR1929
Powder	Interior	Decorative	Aluminium/Stainless steel	Foot Pedestal	Smooth	Matt, silky gloss or special setting	1	PZ5 / PZ1	+ / +	Yes	DC1983
Powder	Interior	Decorative	Steel/Stainless steel	Foot Pedestal	Smooth	Matt, silky gloss or special setting	2	PZ71 + PZ1	+ / +	Yes	DC1983
Powder	Interior	Decorative	Aluminium	Seats	Smooth	Matt, silky gloss or special setting	1	PZ5 / PZ1	+ / +	Yes	DC1983
Powder	Exterior	Decorative	Aluminium/Steel	Components for outdoor use	Smooth	Satin gloss up to high gloss	1 2	PZ6 or PZ49 + PZ6	+ / +	Yes	DC1983
Liquid	Exterior	Technical	All Substrates	Bogies/Underfloor components/Subfloors	Smooth	Matt, satin matt, satin gloss	2	ER1923 + ER1972	+ / + (Sheet 40)	Yes	By itself
Liquid	Exterior	Technical	Steel	Bogies/Underfloor components/Subfloors (for heavy-duty corrosion protection C5M)	Smooth	Matt, satin matt, satin gloss	2	ER1943 + ER1972	-	Yes	By itself
Liquid	Indoor	Decorative	All Substrates	Interior ceiling/Interior panelling/Interior components	Smooth/ Structured	Matt to glossy	2	ER1923 + DC1983	+ / + (Sheet 38)	Yes	By itself
Liquid	Interior/Exterior	Decorative/ Technical	All Substrates	Components for indoors and outdoors	Smooth	Matt to high gloss	2/3	ER1923 + DC1983 / ER1923 + DL1110 + DC1983	+ / + (Sheet 34)	Yes	By itself
Liquid	Exterior	Technical	All Substrates	Bogies/Underfloor components/Subfloors	Smooth	Satin gloss	1	DL1201	+ / + (Sheet 40)	Yes	By itself
Liquid hydro	Exterior	Decorative	All Substrates	Components for outdoors	Smooth	High gloss	3/4	ER1923 + DW11 system	+ / + (Sheet 39)	In progress	DC1983 + DW11 Clearcoat
Liquid hydro	Exterior	Technical	All Substrates	Exterior components	Smooth	Satin matt	2	ER1923 + DW1593	+ / - (Sheet 9)	Yes	By itself
Liquid hydro	Exterior	Technical	Aluminium/Steel	Impact resistance for axes and underbodies	Smooth	matt	2	KP1631L DW1594URU712	in progress	in progress	By itself
Liquid hydro	Exterior	Technical	Steel	Wheel sets	Smooth	Satin matt	2	KP1631L + DW1593	+ / -	Yes	By itself
Fibre composite	Interior/Exterior	Technical	-	Interior and exterior components	Smooth	-	2	BD7764X + BD7240X	-	in progress	By itself
Fibre composite	Interior/Exterior	Decorative/ Technical	-	Interior and exterior components (styrene-free and solvent-free)	Smooth/ Structured	All gloss levels	1	PM1005A	-	Yes	DC1983



- Räder  
Wheels
- Fahrzeugbau  
Vehicle construction
- Maschinen- und Apparatebau  
Mechanical engineering
- Lohnbeschichter  
Job coaters
- Funktionsmöbel und Lagertechnik  
Functional furniture and storage technology
- Bau und Sanitär  
Construction and sanitary



## Headquarters

**FreiLacke** | Emil Frei GmbH & Co. KG  
Am Bahnhof 6  
78199 Bräunlingen/Döggingen  
Germany

Phone +49 7707 151-0  
Fax +49 7707 151-238

info@freilacke.de  
www.freilacke.com