GUIDELINE FOR SELECTING THE PROPER COATING SYSTEM

COATING SYSTEMS

STANDARD COATING FOR EXTERNAL APPLICATION
25 µm POLYESTER [SP 25]

Corrosion resistance: R_C 3 3 according DIN EN 10169:2022-06
UV resistance: R_{UV} 2 according DIN EN 10169:2022-06
Temperature load: -20 to 80 °C

The well-proven polyester coating is a modern and efficient coating system. Various applications can be accomplished with polyester coating due to its high flexibility concerning colouration. This system has good resistance to corrosion and weathering under normal conditions for industrial usage in areas of Central Europe and is therefore the most applied coating system.

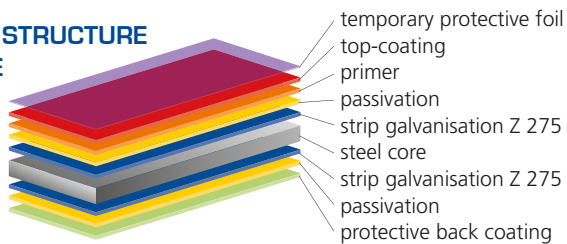### STANDARD COATING FOR INTERNAL APPLICATION
15 µm POLYESTER [SP 15 (DU)]

Corrosion resistance: R_C 2 according DIN EN 10169:2022-06
Temperature load: -20 to 80 °C

This polyester thin coating (standard colour similar to MC 9002) is fit for rooms in industrial applications with normal indoor climate and normal indoor humidity.
However a consistent shade of colour cannot be guaranteed due to the thickness of the coating.

COATING FOR EXTERNAL APPLICATION WITH HIGH UV-RESISTANCE
25 µm OR 35 µm POLYVINYLIDENFLUORID [PVDF 25/35]

Corrosion resistance: R_C 3 (25) according DIN EN 10169:2022-06
Corrosion resistance: R_C 4 (35) according DIN EN 10169:2022-06
UV resistance: R_{UV} 4 according DIN EN 10169:2022-06
Temperature load: -20 to 110 °C

This coating has high resistance to UV radiation and weathering conditions as well as a strong formability. It is particularly apt for high requirements on colouration and colour durability. Furthermore, it has proven its value in areas with difficult climatic conditions (i.e. closeness to the sea about 5 – 15 km).

COATING FOR EXTERNAL APPLICATION WITH HIGH RESISTANCE TO ABRASION AND UV
50 µm POLYAMID MODIF. POLYURETHAN [PUR-PA 50]

Corrosion resistance: R_C 4 / R_C 5 according DIN EN 10169:2022-06
UV resistance: R_{UV} 4 according DIN EN 10169:2022-06
Temperature load: -20 to 80 °C

Due to its high percentage of polyamide, this system has great surface hardness. Therefore, this coating with visually grained structure is extremely resistant to abrasion and provides strong protection against mechanical damages, including- up to a certain extent- even animal tear & wear (like i.e. poultry). Due to its flexibility and outstanding resistance against UV radiation, this system is also recommended for external applications.

COATING STRUCTURE EXAMPLE

temporary protective foil
top-coating
primer
passivation
strip galvanisation Z 275
steel core
strip galvanisation Z 275
passivation
protective back coating

STANDARD COLOURS | POLYESTER

COLOUR GROUP 1 EXTERNAL SHEET

MC 9002 grey-white

MC 7035 light grey

MC 1015 light ivory

MC 9010 pure white

COLOUR GROUP 2 EXTERNAL SHEET

MC 6011 reseda green

MC 9007 grey aluminium

MC 9006 white aluminium

MC 7037 dusty grey

aluzinc

Colour deviations are possible due to printing. Metecno colour shades are oriented towards the RAL standard. Precise colour matching with sample sheets is possible.

For availability of colours and coating systems please contact our sales department prior order placement.

COLOUR GROUP 3 EXTERIOR SHEET*

MC 3000 flame red

MC 3009 oxide red

MC 5010 gentian blue

MC 6020 chrome green

MC 7016 anthracite grey

MC 7037 dusty grey

MC 8004 copper brown

MC 8011 nut brown

MC 6005 moss green

MC 8012 red brown

* minimum core thickness 40mm

COATING SYSTEMS | SELECTION CRITERIA

Coating systems for light-weight sandwich panels are categorized according their different properties regarding resistance to corrosion (R_C), UV radiation (R_{UV}), robustness (R_M) and expected term of protection. All these properties influence each other and must therefore be adapted to the requirements of the respective building project. Hence, the selection of the right coating system plays a very important role.

RESISTCANCE TO CORROSION (R_C)

According DIN EN 10169, corrosion resistance is divided into five categories (R_C 1 to R_C 5+). By reference to the category, the chemical composition, the thickness of the coating and the functional term of protection until the moment of necessary renewal can be determined for the respective coating system (aesthetics is of no importance here; L = low = up to 5 years; M = medium = 5 to 15 years; H = high = longer than 15 years). With the help of a quality assessment, a building's shell made of steel can be protected from corrosion sustainably. The different corrosion resistances correspond to the corrosion categories according DIN EN ISO 12944-2 and are divided into the classes C1 (insignificant) to C5M (high corrosivity).

UV RESISTCANCE (R_{UV})

Resistance against loss of gloss and colour. At locations with high solar radiation, for objects with high aesthetic requirements or which have intensive colours (i.e. blue or red), the use of material with high UV resistance (min. R_{UV} 4) is required.

ROBUSTNESS (R_M)

Resistance against mechanical stress - more specifically- formability, wear and scratch resistance. The standard (minimum) for roof and wall panels is a coating thickness of min. 25 µm. However, IFBS suggests a min. of 35 µm for accessible roofs and a min. of 45 µm for roofs with photovoltaic systems.

	REQUIREMENTS	WALL	ROOF accessible	ROOF not accessible
EXTERNAL SHEET	**CORROSION RESISTANCE R_C (FUNCTIONALITY)**			
	high	PUR-PA 50	PUR-PA 50	PUR-PA 50
	middle	PVDF 25	PVDF 35 / PUR-PA 50	PVDF 25
	low	SP 25	PVDF 35	SP 25
	UV RESISTANCE R_{UV} (AESTHETICS)			
	high	PVDF 35	PVDF 35	PVDF 35
	middle	PVDF 25 / PUR-PA 50	PVDF 35 / PUR-PA 50	PVDF 25 / PUR-PA 50
	low	SP 25	PUR-PA 50	SP 25
	ROBUSTNESS R_M (MECHANICAL STRESS)			
	high	PUR-PA 50	PUR-PA 50	PUR-PA 50
	middle	PVDF 35	PUR-PA 50	PVDF 35
	low	SP 25	PVDF 35	SP 25

INTERNAL SHEET *		
normal indoor climate and humidity	SP 15 (DU)
industry with high humidity und slight pollution	SP 25
chemical plants, swimming pools, boat houses	PVDF 35
almost ongoing condensation and strong pollution	PUR-PA 50
direct contact with food (food safe)	FOODSAFE 150 µm or VA-steel
close to food (food grade)	SP 25 (only certain colours)
stables	PUR-PA 50

* orientation guideline only, for detailed advice concerning deviations from a normal indoor climate (up to corrosion category C2) please contact producer of coating