

TI113 – Powder coatings versus liquid coatings in architectural applications

Criteria	Powder coatings	Liquid coatings
Surfaces / coating properties / film properties	• High resistance to chemicals and mechanical stress in industrial applications • High elasticity and impact resistance • Powder coating systems for façade exteriors approved by Qualicoat and/or GSB/Qualitcoat	• High chemical and mechanical resistance to chemicals in industrial applications • Impact resistance and elasticity are product-dependent • Weather-resistant systems in the gloss range (PVDF-based)
Substrate	• Small irregularities in the substrate are very well covered by the high Film thickness of the coating • Very good bonding with the pre-treated substrate	• Unevenness and scratches must be levelled or primed before coating • Good substrate wetting and adhesion strength
Economy / application efficiency	• 60% to 80% first application efficiency • Overspray is recovered and fed back into the powder cycle	• 30% to 40% first coat efficiency • Overspray cannot be recovered with solvent-based systems
Ecology	• Solvent-free • Declaration-free • 100% Solids • Minimal fire risk • EPD certification (Environmental Product Declaration)	• Contains solvents • VOC release • 35% Solids • Increased fire risk
Storage / Transport	• No special safety regulations	• Special transport and storage regulations
Layer thickness / Film thickness	• Up to 120 µm Film thickness possible in one application • Single-layer applications with Qualicoat / GSB seal of approval in façade applications	• Film thicknesses of 25 - 30 µm in one coat • 2-layer systems, depending on requirements
Curing process / cross-linking agent	• Is thermally melted and cured (15 min. 160° C to 200° C)	• Is chemically cured (2-component) hardened
Quality / resistance (corrosion DIN EN ISO 9227)	• Very good results	• Good to very good results

Processing times	• Fast throughput times • After curing and cooling, the powder coating can be fully loaded immediately • Immediate further processing possible	• Longer processing times • With air drying, further processing is possible after approx. 24 hours, significantly shorter with forced drying
Processing	• Industrial processing (factory application) necessary	• Location-independent, direct application on site possible
Application	• With electrostatic (corona) and triboelectric systems (tribo), can be automated • Equipment is investment-intensive	• With application equipment (airless spraying, compressed air spraying), can be automated
Order quantities	• Stock items available from 2.5 kg • Minimum production quantities are sometimes required	• Available from 1 to 2 kg • Mixing ramp / mixing systems available on site for Uni colours