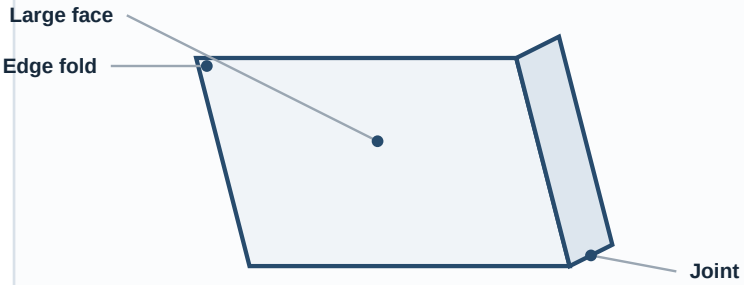
UNDERSTAND THE SURFACE BEFORE DESIGNING THE COATING.

Large Facade Panel & Composite (ACP) Surface — Facade UV, weathering, chlorides and an expectation of 25+ years of colour stability. Before designing the right coating, we evaluate the material chemistry, the geometry and the service conditions together.

PART DIAGRAM — LARGE FACADE PANEL & COMPOSITE (ACP) SURFACE



COATING CROSS-SECTION



Five questions define a coating system

1 MATERIAL
Aluminium sheet (0.3–0.5 mm skin) on a composite core, or a very large one-piece aluminium cassette; the core may not tolerate high oven temperatures and powder curing.

2 SURFACE
Sheet oil and protective film must be removed; etching/conversion coating and a dust-free, dry surface are required for wet paint adhesion.

3 GEOMETRY
A very large surface and a geometry that does not fit, or does not suit, a powder curing oven; metallic flop on the large face and colour matching at joints are critical.

4 SERVICE CONDITIONS
Facade UV, weathering, chlorides and an expectation of 25+ years of colour stability

5 PRODUCTION TARGET
Project-based, large format; colour-gloss matching between surfaces and consistent film thickness.

CONCLUSION: For the Large Facade Panel & Composite, the goal is not just a good-looking finish; it is a long-lasting wet-painted surface with PVDF durability that matches in colour and gloss between large surfaces, even on very large facades unsuited to powder curing.

FROM SURFACE TO PROCESS ENGINEERING FLOW

The Large Facade Panel & Composite cannot be coated like just any part. A sound process needs measurement, pretreatment, the right coating selection, application and verification to work together.

01	02	03	04	05	06
ANALYSIS	**PRETREATMENT**	**PAINT**	**APPLICATION**	**DRYING**	**VERIFICATION**
Substrate + surface	Cleaning + conversion	Chemistry + viscosity	Spraying + flow	Time + temperature	Test + record

A. Surface Characterisation

The condition of the substrate surface (cleanliness, roughness, oxide/scale and any weld zones) is determined. The right process starts with the right definition of the surface.

MEASURABLE INPUTS
Surface cleanliness • roughness • weld marks

B. Pretreatment Design

Degreasing, etching, rinsing and conversion coating; full dryness and a dust-free environment before wet painting.

CORE TARGET
Clean, active, uniform, repeatable surface

C. Coating System Selection

For a core or size unsuited to powder curing, a high-durability PVDF (fluorocarbon) wet paint system; long-term colour stability with 2–3 coats is targeted.

DECISION CRITERIA
Durability • appearance • service life • cost

D. Application Engineering

Wet (liquid) paint by HVLP/electrostatic spraying as primer and topcoat; robotic/automatic guns and controlled flash-off times are set for film uniformity on the large face, metallic flop and joint matching.

GEOMETRY EFFECT
Large face • Joint • Edge fold

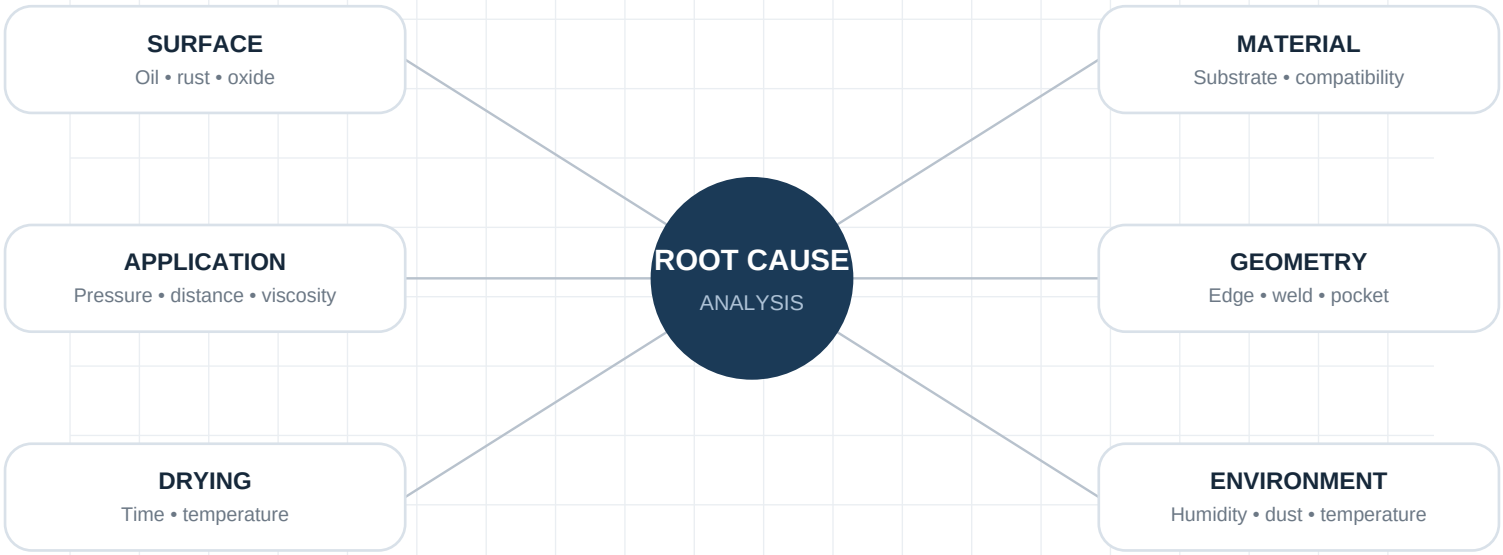
Managing the process with data, not by eye

µm	µm	s	°C / %RH
DRY FILM	**WET FILM**	**VISCOSITY**	**ENVIRONMENT**
Coating uniformity	Thickness at application	Flow and spray quality	Drying condition

ENGINEERING PRINCIPLE In the Large Facade Panel & Composite process, we define a process window rather than a single parameter. The aim is to reproduce the same surface quality across different shifts and part conditions.

A SURFACE DEFECT IS A SYMPTOM, NOT THE ROOT CAUSE

Paint defects rarely come from a single setting. The same symptom may stem from surface preparation, the substrate, viscosity, film thickness or drying.



Common defects and diagnostic approach

POOR ADHESION

The paint detaches from the surface or fails in testing.

CHECK: cleaning / pretreatment / primer

RUNS / SAGS

Paint runs on vertical surfaces and forms drips.

CHECK: thickness / viscosity / distance

ORANGE PEEL

Uneven flow; the surface looks wavy.

CHECK: viscosity / pressure / distance

CRATER

Local pits and openings form on the surface.

CHECK: oil / silicone / air quality

BLISTERING

Solvent blisters form during drying.

CHECK: coat thickness / drying / temperature

UNEVEN THICKNESS

Thin film at edges and welds, thick on flat areas.

CHECK: motion / distance / stripe coat

DIAGNOSTIC PROTOCOL

1 Define the symptom → **2** Measure the data → **3** Isolate the cause → **4** Test one variable → **5** Standardise

A GOOD SURFACE PROCESS must be measurable • repeatable • traceable • optimisable. This approach is the basis of part-specific application guides for parts such as the Large Facade Panel & Composite.

THE RIGHT EQUIPMENT, AT THE RIGHT SCALE.

For the Large Facade Panel & Composite, production volume drives the equipment choice. At low and medium volume, manual systems give flexibility; in series production, a conveyorised line repeats the same process on every part.

LOW / MEDIUM VOLUME

Manual application



Dry-Filter Wet Paint Booth

A clean application environment for manual spraying.



Positive Pressure Paint Room

A controlled environment protected from dust and dirt.



Curing Oven

Controlled drying and curing of large parts.

SERIES PRODUCTION

Automatic line



Conveyorised Line-Type Wet Paint Booth

Spraying on a continuous line.



Wet Paint Dip Line

Series application by dipping.



Spray Pretreatment

Surface preparation before painting.



Curing oven for large parts

PROJECT SUPPORT Share your line, your part and your production target, and we will define the equipment selection and the booth, oven and conveyor layout together. strong3000.com · info@strong3000.com · WhatsApp +90 537 353 54 19