

FASCIA REMEDIATION · RESIDENTIAL GARAGE

Oil canning in metal cladding.

Why material selection and thickness matter, shown through a fascia we remediated above a residential garage door.



BEFORE · ORIGINAL INSTALLATION



AFTER · AMC REMEDIATION

LOCATION HAMPTON PHOTOGRAPHY AMC

SYSTEM	APPLICATION	MATERIAL	FINISH
Folded cassette, fixed face	Garage door fascia	5005 aluminium, 3.0 mm	Low-sheen powder coat

The brief

We were engaged to remediate a fascia above a residential garage door. The original subcontractor had used an undersized, insufficiently rigid material. The resulting oil canning, a visible waviness or rippling across a flat metal face, was unacceptable to the client and inconsistent with the high-specification garage door beneath.

The outcome

The before image shows the characteristic effect: uneven reflections, visible panel distortion and a lack of flatness across the horizontal face. The after image shows the result with correctly specified material, a visually flat, consistent surface with clean shadow-line joints that complement the garage door.

WHAT IS OIL CANNING?

Oil canning is an inherent characteristic of light-gauge sheet metal: a stress-related, in-plane buckling that shows as ripples, waves or a corrugated visual effect across a flat panel face. This case study sets out the root cause, the remediation approach and the specification principles that avoid the defect on future projects.

WHAT MAKES IT WORSE

Five conditions that invite oil canning.

- 01

Dark or high-gloss finishes, which amplify surface irregularities under raking light.
- 02

Wide, uninterrupted flat faces with no stiffening returns or folds.
- 03

Thin-gauge material, typically under 1 mm, with insufficient section stiffness.
- 04

Material under residual stress from coil set, cutting or improper handling.
- 05

Panels fixed at too many points, introducing differential restraint across the face.

ROOT CAUSE ON THIS PROJECT

Too thin to hold a flat face.



The original installation used thin-gauge sheet metal, estimated at 0.4 to 0.7 mm BMT, bent and fixed directly to the fascia framing. At this thickness the material lacks the stiffness to hold a flat face under its own dead load, thermal expansion forces or minor fixing eccentricities. Wide horizontal spans with no intermediate support compounded the problem.

The dark finish made the defect highly visible in everyday daylight, particularly when light strikes the face at a low angle.

THE AMC SOLUTION

Correct material, correct thickness, stiff edges.

System type	Folded aluminium cassette panel, fixed face
Material	Aluminium 5005 alloy
Thickness	3.0 mm, full solid sheet
Finish	Powder coat, low-sheen, matching the garage door
Panel configuration	Horizontal courses replicating the garage door module
Fabrication	CNC folded, cassette return edges on all four sides
Joint detail	Shadow-line joints, no exposed fasteners

WHY 3.0 MM SOLID ALUMINIUM

Cassette returns

Four-sided folded returns add significant edge stiffness, preventing the in-plane buckling that causes oil canning on open-face sheets.

Stiffness under movement

A much stiffer panel resists the buckling that thermal movement and minor fixing eccentricities would otherwise cause across the face.

Fabrication tolerance

CNC folding gives consistent panel geometry across a run, so joints and shadow lines stay uniform from panel to panel.

MATERIAL SELECTION PRINCIPLES

Recommended minimum thicknesses.

These are conservative working minimums for powder-coated aluminium in common cladding applications, with zinc shown for comparison. Project-specific factors, including span, fixing centres, wind load zone and finish sheen level, may require upward revision.

Application	Min. thickness	Notes
Capping / trim, short span under 300 mm	0.5 mm	Acceptable only with close fixing centres and minimal exposed face
Fascia cassette / visible face panel, medium span 300 to 450 mm	2.0 mm	Minimum for a cassette system; four-sided returns essential
Fascia cassette / visible face panel, medium span 450 to 600 mm	2.5 mm	Minimum for a cassette system; four-sided returns essential
Fascia cassette / visible face panel, wide span over 600 mm	3.0 mm	Recommended standard for wide horizontal faces, where oil canning risk is highest
Zinc standing seam / flatlock, 430 mm widths	0.7 to 0.8 mm	Structural form provides stiffness; flat-face panels still require heavier gauge

KEY TAKEAWAYS FOR SPECIFIERS AND BUILDERS

Five points to get right at tender stage.

- 01** Never specify thin-gauge sheet metal on wide, visible flat faces. Oil canning is likely regardless of installation quality.
- 02** Dark and high-gloss finishes are unforgiving, because any surface imperfection is amplified. Increase the specification when dark colours are required, and consider a low-sheen finish.
- 03** A cassette system with four-sided folded returns is the most reliable approach for large flat-face fascia and cladding panels.
- 04** Fixing centres and clip design must allow thermal movement without introducing differential restraint stress across the panel face.
- 05** Engage a specialist metal cladding contractor early in design development. Material selection decisions made at tender stage are difficult and costly to reverse after installation.

TALK TO US EARLY

Specifying a flat-face fascia or wall? We are happy to review the material and build-up with you before it is locked in.

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