

DATA SHEET: OIL CANNING

Oil canning is a characteristic of light gauge cold formed metal roofing and cladding panels that are folded or roll formed. It appears as waviness or rippling in the flat areas of the panel and may affect the overall aesthetic outcome. It can occur on all types of metal, including steel, zinc, copper and aluminium. Metal panels with less flat areas, such as corrugated profiles, are less likely to be affected by oil canning. Oil canning may be more likely to occur with seasonal and temperature changes. Oil canning is not considered a defect - the integrity of the material is not compromised by oil canning. Rather it is an aesthetic issue.

WHAT CAUSES OIL CANNING?

Variables in material type, finish, thickness and width as well as manufacturing and installation process, weather and light conditions can affect the appearance and degree of oil canning.

1. COIL PRODUCTION MANUFACTURE

Stresses during metal coil production can result in oil canning in the end roll formed product where those stresses are excessive.

2. METAL COIL SLITTING

Slitting of the master metal coil releases and redistributes residual forces in the coil. This can create or increase the chances of oil canning in the end roll formed product.

3. PANEL FORMATION

Additional stresses during the forming of panels, particularly at panel edges, can affect the metal in the center of the panel which may result in oil canning.

4. UNEVEN OR POORLY INSTALLED SUBSTRATES/SUPPORTS

Variation/misalignment of the substrate or fixing supports, as well as the stresses applied when fixing the panels to uneven substrates.

5. OVER ENGAGEMENT OF LAPPED PANELS

Over engagement of lapped panels prevents product flex and expansion. The restriction of this movement can result in oil canning.

6. FASTENER INSTALLATION

The over driving of fasteners, incorrect angle of fasteners, uneven fastener spacing, and incorrect fastener type can all result in oil canning

7. THERMAL FORCES & WEATHER

Panels expand and contract depending on temperature fluctuations. Thermal expansion and contraction depends on many variations: building orientation, product type, product colour, cloud cover, temperature. Waviness that results from thermal forces may appear and disappear as the conditions change.

8. MOVEMENT OF THE PRIMARY STRUCTURE

9. METAL PANEL LENGTH & WIDTH

Longer lengths and widths can increase the chance of oil canning

10. MATERIAL HANDLING & STORAGE

It is important to store and carry metal panels correctly. Avoid twisting and carrying of panels in a flat orientation.