Oil-Canning

Description:

Oil-canning is the term used to describe a wavy or rippled appearance of flat metal panels that sometimes occurs due to thermal expansion. As the ambient air temperature rises, the panel will expand along its length. If the panel is mechanically fastened to a substructure, the expanding metal is restricted, resulting in buckling between fasteners. The longer the panel, the more susceptible the panel is to the oil-canning effect. Additional contributing factors could be: panel type, non-planar installation surface, finish texture, and installation techniques. Steps can be taken to minimize each of these causes. Oil-canning is considered an aesthetic problem, and not a reason to reject the panels.

Installation techniques:

Proper handling, especially when storing or loading the panels is important. Avoid twisting and bowing the panels over their length. Substrates and/or sub-girts should be true, straight and in plane. If there is a gap between the panel and the substrate at a fastener location, tightening that fastener will oil-can the panel. Overtightening of the attachment fasteners can create excessive stress in the panel, resulting in ripples along each fastener point.

Solutions:

Oil-canning occurs in degrees of severity, from barely noticeable to the appearance of being badly dented, and can come and go depending on the time of day and location of the sun.

To completely eliminate the possibility of oil-canning, we recommend using either ribbed or foam core panels. Otherwise, consider the following suggestions to reduce the likelihood and severity of oil-canning:

- Choose a textured finish panel.
- Pre-drill or punch oversized or slotted holes at fastener locations to allow the panel to expand and contract.
- Use a standing seam panel with concealed, floating clips to allow for proper expansion.