

KNOW THE FACTS

OIL CANNING IN SHEET METAL

ALL METAL TYPES
ARE SUBJECT TO
SOME DEGREE OF
OIL CANNING.



WHAT IS OIL CANNING?

Oil canning is the inherent wave-like, rippling or buckling appearance of sheet metal. The degree of the waviness tends to change under different natural lighting conditions and varies by metal type. It's a natural phenomenon that occurs in all types of metals.

WHY DOES IT HAPPEN?

There are many factors that contribute to the look of wavy panels:

- ◆ The roof decking is not truly flat—or not aligned properly.
- ◆ Dark and reflective colors accentuate shadows.
- ◆ Overdriving fasteners when installing panels.
- ◆ Thermal movement: the natural process of panels expanding and contracting from changes in surface temperatures can create oil canning at times of the day that are warmest and coolest.
- ◆ Varying Conditions: Different seasons, time of day, the viewing angle, roof pitch and the angle at which sunlight strikes metal panels all have an impact on what the eye sees at any given moment.



Flat panel orders require acceptance of **EMF Oil Canning Acknowledgment/Waiver** by the home/building owner prior to ordering materials. Download waiver at extrememetalfabricators.com/resources for use with your clients.

REDUCE THE NATURAL APPEARANCE OF OIL CANNING



HOW DO I MINIMIZE OIL CANNING?

While it is unrealistic to expect any architectural roof or similar wide-metal element to be totally free of some degree of oil canning, **understanding this phenomenon can lead to best practices in field installation, accommodations to rectify correctable issues and the implementation of proven visual methods that work to greatly improve the overall appearance** of a metal panel system.

- ✓ **Gauge Selection Thicker material = less oil canning.** A panel made with thicker metal will better withstand natural stresses that create the waviness of oil canning.
- ✓ **Width** Similarly, **choosing a narrower panel width can reduce stresses** since oil canning tends to be most visible in the broad, flat areas of a metal roof.
- ✓ **Design Ribbed panels or adding striations to a flat metal panel will strengthen them** and visually break up the surface reducing the appearance of oil canning.
- ✓ **Color** Dark and metallic panels emphasize the perception of uneven surfaces. Selecting a light, **more neutral color can help** lessen the appearance of oil canning.
- ✓ **Texture** Non-reflective or textured surfaces also **reduce the amount of reflected light the eye perceives** diminishing the effect of wavy panels.
- ✓ **Handling and Preparation** Minimize the appearance of oil canning by avoiding improper handling of metal panels. Verify that roof deck is flat and properly aligned, addressing potential issues before installation begins.
- ✓ **Fastener/Clip Installation** Install panels using specified fasteners without overdriving them. If panels include clip relief stations, take precautions to avoid walking on or near these areas to limit read-through and a wavy look.
- ✓ **Shimming Materials** The use of **backer rods, a compressible foam strip, or other shimming device under panels** form a uniform pillow effect that can relieve stress, reducing the appearance of oil canning.

SHOULD I REJECT THE PANELS?

No. Oil canning is a common and often unavoidable phenomenon in all metal panels. At Extreme Metal Fabricators, we go above and beyond the roof. We're dedicated to providing you with honest answers about oil canning so you get the best end product possible.