



Metal Roof & Wall Panels

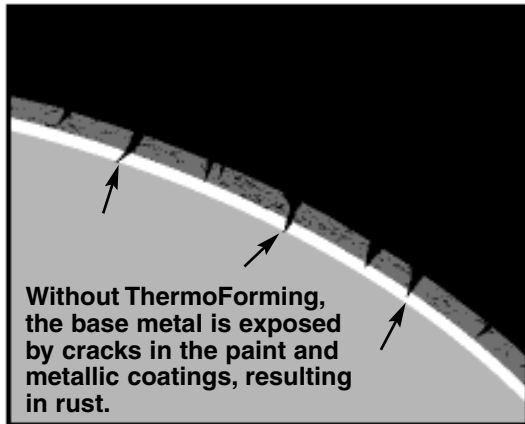
## THERMOFORMING

Technical Bulletin

To increase corrosion protection for greater longevity, visual appeal and value, McElroy Metal now ThermoForms all Max-Rib® galvanized and galvalume metal panels with siliconized polyester coatings.

### Why?

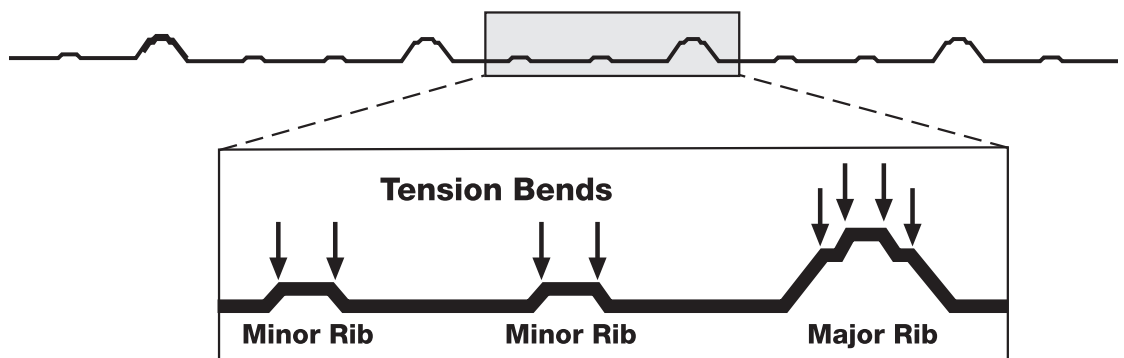
ThermoForming of metal panels reduces the risk of premature corrosion of roof and sidewall panels by significantly reducing tension-bend cracking of the paint and metallic coatings.



### What is TENSION - BEND CRACKING?

At colder forming temperatures, the substrate and siliconized polyester paint coatings become brittle, and the forced bending by the rollers may crack both layers as shown. This exposure point is unprotected from oxidation (rusting) of the base metal substrate. Because Kynar 500® coatings are more flexible, tension-bend cracking is not an issue with Max-Rib® Ultra.

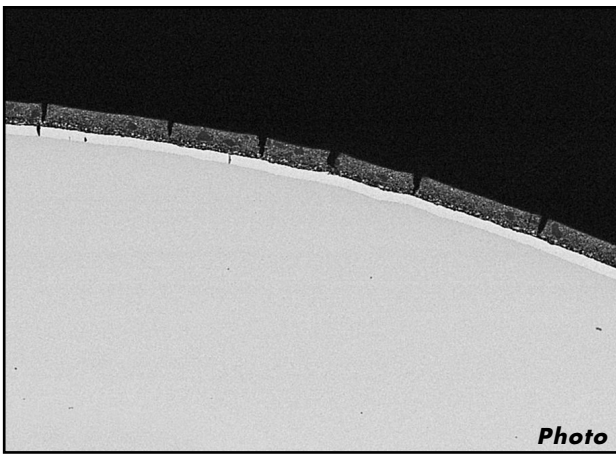
### Where do TENSION-BEND CRACKS occur?



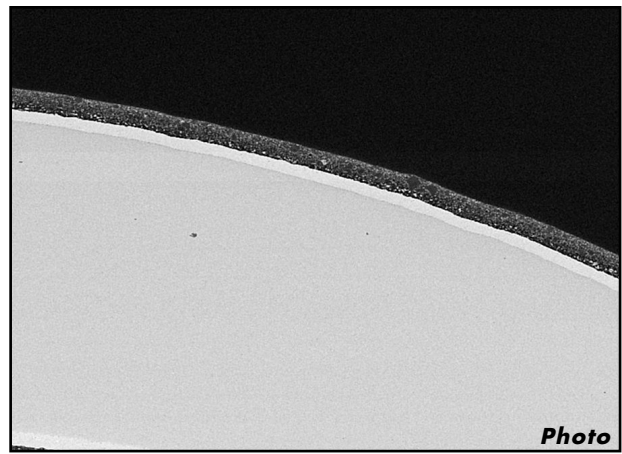
### The THERMOFORM Process . . .

Prior to entering the roll-former, the coil sheet enters a heater that raises inner and outer temperatures to >120F. This process increases the ductility of the paint coating as well as the ductility of the galvanized or galvalume metallic coating.

**ThermoForming prolongs visual appeal of Sil-Poly coated galvanized G60 substrate:**

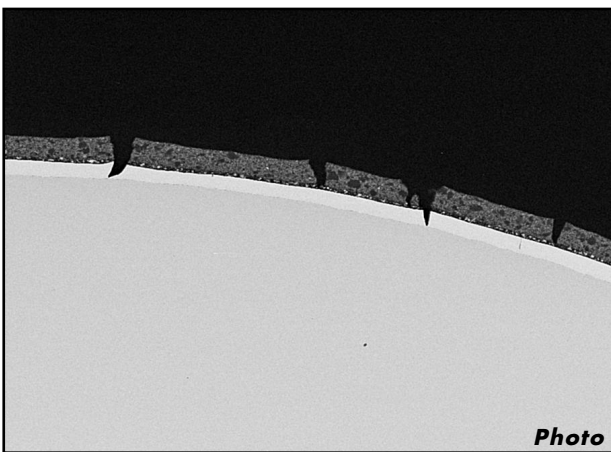


Cold forming of panel with G60 galvanized substrate and siliconized-polyester topcoating produces tension-bend cracks in the siliconized-polyester paint and galvanized coatings. (150x mag.)

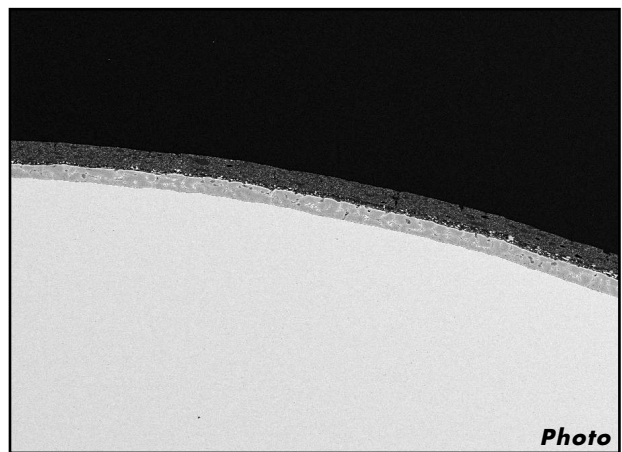


With ThermoForming, note there are no cracks in the siliconized-polyester paint and galvanized coatings. This panel was ThermoFormed at 124F. (150x mag.)

**ThermoForming adds life, looks and value to Sil-Poly coated galvanized G90 substrate:**



Not cracking as much as the other coatings, the siliconized-polyester coated G90 substrate still reflects tension-bend cracks in both galvanized and paint layers. This panel was cold-rolled at 72F. (150x mag.)



ThermoForming eliminates tension-bend cracking in G90 galvanized strata as well as in the siliconized-polyester paint coating. This panel was ThermoFormed at 133F. (150x mag.)

Max-Rib Commodity	Max-Rib 100	Max-Rib II	Max-Rib Ultra
ThermoFormed	ThermoFormed	ThermoFormed	<b>NOT REQUIRED*</b>

\*Kynar 500® coatings are so flexible that tension-bend cracking does not occur. ThermoForming not required.

All data taken from a Project by the Research and Technology Center of United States Steel Corporation in Monroeville, PA. and is used with their permission.



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