

A-1 ALUMINUM INC.

Tiger Stripe Staining

The following information has been received from Commonwealth Metals, a coil coater who supplies common alloy aluminum sheet coated for the gutter industry from such well-known industry names as BarMet and Hastings.

"This is a phenomena often used in the Coil Building Products area to describe irregularities in the appearance of the visible surface. The effect develops with time as the surface is exposed to the elements; a common occurrence as the atmosphere conditions vary. The tendency to form irreversible (un-cleanable) tiger stripes is most severe on formed substrates directly below the drip edge, and is more prevalent in environments with high levels of airborne industrial pollutants and acid rain.

Periodically the atmosphere may contain particulate dirt (products of combustion), chemicals (Nitric and/or sulphurous acid), and spores (from decaying vegetation i.e. leaves), with the normal components of the air and water. This combination has the ability to leach, deposit on evaporation, or chemically change the surface. Materials leaching from the roofing compositions (asphalt, wood, etc) leave deposits varying in intensity relative to their solubility in water or acidified water. The consistency of the change will vary from area to area since the water will condense from the atmosphere, and run off dependent on the surface tension of the coating. The reason for the irregular pattern would be due to the variations in deposited dirt and concentrations of acid, therein developing a differential attack.

The final appearance, a variegated effect differential of dark and light streaks, is often referred to as "Tiger Striping". All light colored coatings will collect dirt. Coatings more resistant to tiger stripe staining will not collect dirt as readily, and will clean more easily in the presence of mild detergent, applying mild pressure."

Many of the complaints we receive regarding "defective coil" are in fact instances of the above phenomenon. The reason we see more of it now than we did in the past is primarily due to increased pollutants and vegetation growing above the height of the gutter. We all are aware of the "ozone action days" in the large metropolitan areas, and the fact that trees DO grow.

The other situation we see repeatedly in the applications we are called on to inspect are areas of scratches or stains with touch up paint sprayed over them to attempt to conceal them. This usually never works as the touch up paint is an air-dried spray enamel and the coating on the coil is a heat set polyester acrylic. The touch up paint is primarily for fastener heads.

Courtesy of A-1 Aluminum Inc.

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