



## Storage, Handling & Maintenance (Aluminum)

Aluminum is one of the easiest materials to keep in good condition. It has a high natural resistance to corrosive conditions normally encountered during shipment and storage, and a little care will maintain its original appearance for a long time. The principal things to guard against are conditions that might cause surface abrasions or water stains.

### Storage:

Aluminum foil and foil tapes should be stored in a climate-controlled environment. Best practice is to keep rolls in a 70°F environment with relative humidity below 60%.

When transporting from the low temperature area to the high temperature and humidity area, you should not be in a hurry to open the package or storage. It is best to store in a dry place for a certain period of time. Wait for the aluminum foil temperature to rise to room temperature before you open the package or storage container.

Aluminum that is exposed to moisture of any kind is susceptible to oxidation. Oxidation over time will degrade the aluminum and desired performance will drop.

Water stains are nonmetallic in appearance and, while usually whitish, may appear iridescent, depending upon the alloy or degree of oxidation. They are caused by the entrapment of moisture between the adjacent surfaces of the closely packed material. Water stain is a superficial condition, and the mechanical properties of the metal having such stain are not affected.

Condensation is perhaps the most troublesome cause of water stains. It may be prevented by avoiding conditions where the temperature of the metal drops below the dew point of the surrounding air; or conversely, conditions where the moisture of the air increases enough to carry the dew point above the metal temperature. It is thus important to ensure that a sudden fall in temperature or increase in humidity does not occur in the place of storage.

If possible, cold metal should be placed in a dry storage place until its temperature has increased substantially before it is brought into a heated room with a higher humidity. This may be accomplished by placing a new shipment in temporary storage where its temperature is raised slowly to that of the permanent storage room.

### Maintenance:

If a shipment of aluminum arrives in wet condition, it should be thoroughly dried before storing. This may be done by evaporation in air or by means of dry air currents. When the moisture is removed in this manner within a short period after the metal becomes wet, stain is usually prevented. If stain has occurred, and the moist condition causing it is removed, the stain will not develop further. Once safely dry, the metal should not be stored near such obvious water sources as steam and water pipes, and it should be kept at a reasonable distance from open doors and windows.

Where water stains have occurred, the degree of staining may be judged accurately by the relative roughness of the stained area. If the surface is reasonably smooth, the stain is merely superficial, and its appearance may be improved by mechanical or chemical treatments. Scratch brushing or the use of steel wool and oil is effective in removing water stain.

Aluminum packed in original boxes should never be left in the open, because the greater variations in temperature and humidity outdoors increases the possibility of condensation. Even if the package is wrapped with "water-proof" wrapper, the impossibility of obtaining a perfect seal makes outdoor storage highly undesirable. So-called waterproof



packages are designed solely for the protection of the metal during shipment and are not meant to withstand any extended exposure to the weather.

In the continuous use of large quantities of metal, the oldest stock should be used first. Occasional checking of the stock on hand will help prevent any serious corrosion.

In storing aluminum, it is desirable to avoid contact between it and other metals, since this sometimes results in scratches or other marks. The use of wood faced shelving racks and bins is recommended. It is also good practice to keep aluminum away from concrete products, water/moisture, caustics, nitrates, phosphates, halogens, alkalis, and acids.

**Handling:**

As in handling most highly finished stocks. Fingerprinting or other soiling or smudging should be avoided. If sheets of foil for example, must have frequent or extensive handling, prior to printing, coating, or other final converting. Wearing of ordinary white cotton work gloves is effective in keeping the surface clean. Always wear recommended personal protective equipment. Edges of the foil are sharp.

US Foils warrants that all our products have left our facility in pristine condition with no defects.

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