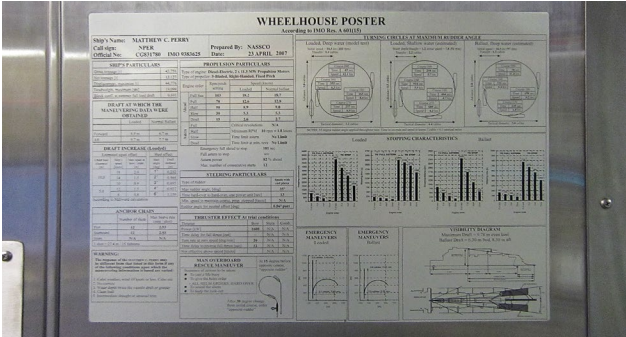


Camcode Case Study: The Good the Bad and the Ugly (Label Plate)

The Good:



This classic '60s Clint Eastwood movie reference is one way to describe the state of label plates in today's shipbuilding world.

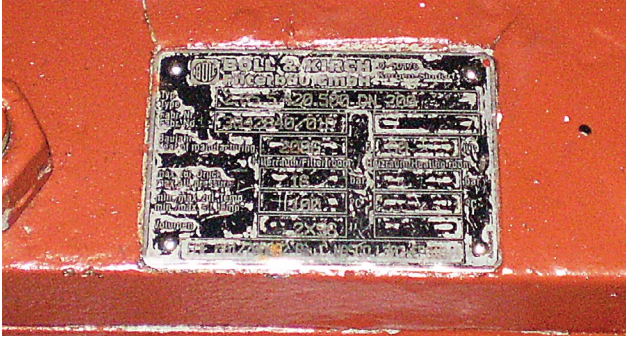
Technology has significantly affected label plate materials and processes since that movie was made but somehow, we still see good, bad and ugly label plates on frequent occasions onboard Navy ships and on marine equipment. One would think we would have advanced to only products that are good and "really" good by now.

The Bad:



The good news is that top quality can be achieved by keeping track of a few points about label plates and by knowing the operating conditions and use environment of equipment and the signage to be marked.

The Ugly:



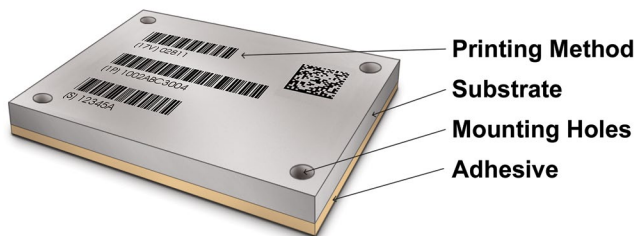
Here's how to avoid creating your own Good, Bad, Ugly sequel.

Labels plates are defined here as the thicker, more robust, longer life plates you need for permanent industry and defense applications. Not to be confused with consumer products or packaging labels.

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The construction of a label plate has three basic elements. Getting them all correct results in a good, or even outstanding, long life label plate. Getting any one of them wrong could eventually get you a bad, ugly or even worse – completely missing label plate.

These elements are applicable to both metal and plastic labels. A common 4th element is a top coat or clear laminate. Top coats or laminates can be used to further protect a print method and are typically used on plastic products or less durable metal plates.



Label plates and signage are damaged most often by:

- Fading from sunlight or heat
- Deterioration from salt exposure, abrasion, or chemicals
- Denting, disfiguring or being dislodged by direct impact
- Deterioration or detachment from galvanic reaction to mounting hardware in salt environment
- Delamination from poor material choices or low quality items

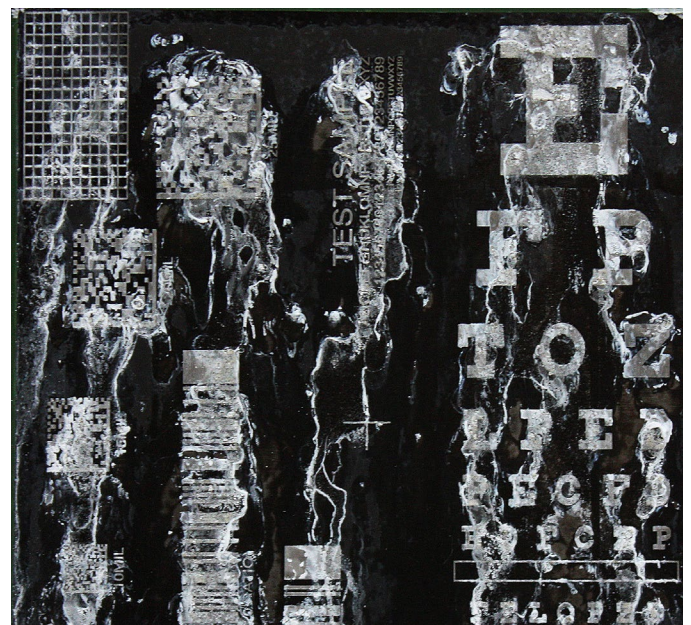
Most of the issues occur from print method choices. Modern graphics production makes it difficult to determine good from bad through observation. Most every product looks good when you get it. For shipboard use however, the proof is in the

longevity of the print method. Organic inks and dyes can and will fade over time when subjected to heat or sunlight.



Painted surfaces almost always chip over time or blister when exposed to some chemicals. Engraved and filled lose their fill and can become filled with grease or dirt, making them less legible. The same can happen with two-ply engraved plastics.

Etched products or laser engraved products can corrode quite quickly when exposed to salt spray and so must be used judiciously.



Materials (substrates) vary but aluminum with a minimum thickness of .020" and CRES (stainless steel) are quite common for shipboard label plates. The Navy specifies photographically printed anodized aluminum labels (Federal Specification GGP-455B) for most applications because it has proven to hold up long term in salt spray, direct sunlight and in oily dirty equipment spaces. CRES is still preferred for weather deck horizontal surfaces and where heavy duty exposure demands it.

Choosing a correct mounting method is also critical. The best label plate fails if it doesn't remain on the item or location where mounted, or if the attachment method causes inadvertent issues like galvanic reaction that can corrode an otherwise robust label plate and cause illegibility or total failure.

Shipboard applications usually use adhesive for mounting but rivets or fasteners are not uncommon for some areas and on some equipment. Adhesive must be thick enough to conform to irregular surfaces and different surface energies. And they must be applied to a clean, warm (preferably 50F) surface to get correct bonding. Curing can take up to 24 hours, depending on your application conditions -temperature and

humidity. Adhesive can be helpful to use adhesive even when mechanical fasteners are used since the adhesive serves as an insulator between dissimilar metals.

In conclusion, it can be easier to use products with wide performance characteristics as opposed to using a wide variety of products for the various applications. This can help you avoid getting the wrong product for a particular application and provides for a consistency in appearance through the vessel. This can also be your low-cost option because identification plate and sign pricing is most affected by quantity. By working toward standardization of size and material you can benefit from quantity discounts even if your graphics vary per plate.

Please contact us with any questions or for help with any challenging or confusing application. Thank you.

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About Camcode:

Founded in 1979, Camcode® is a recognized worldwide leader in the design and manufacture of durable pre-printed bar code labels and customized services and products for the marine, defense, warehouse, utilities industries and many others.

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