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PRODUCT DATA SHEET

Copper & Alloy Products Polishing Quality

Copper Alloys

Copper and copper alloys, such as brass and bronze, are often used for decorative items with an excellent surface finish. The finish may be produced by polishing, or by plating with gold, silver, nickel or chromium, all of which require an excellent polished surface.

The high gloss surfaces achievable on these alloys may highlight features in the microstructure, which attract the attention of the eye and may be seen as defects.

Reliable production of a high quality polished or plated surface requires the use of material which has been specially produced for polished items. It is usually known as 'polishing quality'. It can usually only be produced by the mill in limited quantities, with extra processing steps in manufacture, and consequently is significantly more expensive. Most material supplied by Austral Wright Metals is not of polishing quality, as very few users need or are willing to pay for the extra quality. Austral Wright Metals may be able to supply special material, at a price premium, usually at longer lead times as special manufacture will be required.

Many users are able to achieve satisfactory results by careful attention to the polishing process they apply to the material. In particular, it is advantageous initially to cut the surface to a significant depth, to remove artefacts from the heavily worked surface layer. This requires the use of coarse abrasives, which in turn may require extra polishing steps to achieve the necessary smooth final surface.

Because the extra steps incur extra expense, some customers prefer to omit the initial deep cut, and are often able to achieve a satisfactory surface with only fine abrasives. However not all batches of product supplied by Austral Wright Metals will allow this. Some batches will show artefacts which mar the surface, which may be more or less easy to see depending on the gloss level of the polished surface. The artefacts may be highlighted by streaks or 'comet-tails' which are left by the polishing process. Unfortunately, the presence of the artefacts may not become obvious until many items have been polished or even plated, and since the only remedy is to repeat the polishing after an initial deep cut, significant expense may be incurred.

It is therefore prudent to check the performance of each new batch of material by processing a few items to completion before doing any processing on the bulk of the batch. It is also essential to review the performance of the polishing process carefully before a batch of material is condemned – numerous instances have been encountered of material being blamed for problems which were resolved by reviewing the polishing process.

Customers are responsible for choosing to use mill finish quality for high surface finish applications. For these high surface finish applications, polishing quality can be supplied, for sufficient quantity to allow a manufacturing batch, and if sufficient notice is given.