



Marvalloy TDC Properties and Characteristics

Hardness

Marvalloy TDC, as deposited, has an equivalent hardness of 72 Rockwell C and is compatible with most ferrous and nonferrous metals. When measured by conventional microhardness methods, the host material will modify this measurement to some degree.

Adhesion

Marvalloy TDC does not chip, flake, crack, peel or separate from the base material under standard bend tests.

Coefficient of Friction

Material against Material	Static	Sliding
Steel - Steel	0.30	0.20
Steel - Babbitt	0.25	0.20
Steel - Marvalloy	0.17	0.16
Babbitt - Marvalloy	0.15	0.13
Marvalloy - Marvalloy	0.14	0.12

**Measurements made at 72°F using other materials for comparison.*

Heat Resistance

Marvalloy TDC withstands temperatures of -400°F to 2,300°F. At elevated temperatures above 1,300°F, it will react with carbon monoxide, sulfur vapor, and phosphorus. At bright red heat, oxidation occurs in steam or alkali hydroxide atmospheres. Hardness and wear resistance will reduce to some degree at temperatures above 700°F.

Corrosion Resistance

Marvalloy TDC resists attack by most organic and inorganic compounds except sulfuric and hydrochloric acids. The porosity of the base metals, compound concentration and exposure time to the compound become corrosion factors. Marvalloy only enhances the base material. Marvalloy TDC is FDA and caustic washdown compliant.

Thickness

Marvalloy TDC thickness is in relation to the base metal, and thickness will vary from one base to another. Thickness with regard to given base metal, however, will remain constant and predictable, and under normal circumstances will not reflect a buildup greater than .0002 of an inch. The perfect bond experienced in Marvalloy, as compared to conventional treatments gives the advantage of functional thickness and the resulting properties that remain with a base metal.

Material for Processing

Marvalloy TDC may be applied to all ferrous and nonferrous metals with the exception of magnesium.

Processing

Marvalloy TDC processing is of a proprietary nature with quality control basing of prime importance. Process temperatures are maintained at 136°F. This ensures no effect on heat treatment nor is severe thermal distortion introduced in the host part. Extreme care in handling is exercised during the entire process.

Surface Quality

Marvalloy TDC conforms to the existing surface, threads, flutes, scratches, etc. with amazing reproducibility. R.M.S. finish will improve slightly down to about 8 R.M.S.; below 4 R.M.S. the process may deter slightly. Processed parts will project a mat or micro-orange peel surface with very good retention qualities.

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