



Technical Information

AA 944, AA 83

The high performance AMPCOLOY copper alloys and their outstanding mirror polishability.

Ampcoloy 944 and Ampcoloy 83 can be both used for cores and mold inserts in plastics injection molds to reduce the cycle time V_R by at least 20 %.

Polishability is also requested from such alloys to reach the best possible injected plastic part quality .

We have made tests with a polishing company in Switzerland, Polisar in St. Imier, www.polisar.ch on round material diameter 63.5 mm both in Ampcoloy 83 and Ampcoloy 944

Ampcoloy 944 hardness 298 HB:

Achieved rugosity in the center: Ra = 0.041 μm
 Achieved rugosity in the outside: Ra = 0.016 μm

Ampcoloy 83 hardness 383 HB:

Achieved rugosity overall : Ra = 0.011 μm

These low rugosity values correspond to very high mirror polished surfaces.

These very low rugosity values correspond to better than :

N1 surface finish for Ampcoloy 83
 N1 to N2 surface finish for Ampcoloy 944

Surface finish classes

N1	Ra = 0.025 μm
N2	Ra = 0.050 μm
N3	Ra = 0.100 μm
N4	Ra = 0.200 μm
N5	Ra = 0.400 μm
N6	Ra = 0.800 μm
N7	Ra = 1.600 μm
N8	Ra = 3.200 μm
N9	Ra = 6.300 μm
N10	Ra = 12.50 μm
N11	Ra = 25.00 μm
N12	Ra = 50.00 μm

Ampcoloy 944 mechanical properties:

Tensile strength Rm 938 N/mm²
 Yield strength Rp0,5 730 N/mm²
 Elongation 5 %
 Hardness 294 HB
 Heat conductivity 156 W/m °K

Ampcoloy 83 mechanical properties:

Tensile strength Rm 1310 N/mm²
 Yield strength Rp0,5 1000 N/mm²
 Elongation 4 %
 Hardness 380 HB
 Heat conductivity 106 W/m °K

Based on their superior mechanical properties and outstanding achievable mirror polished surfaces , both Ampcoloy 944 and Ampcoloy 83 are a must in each plastics injection mold.

Advantages of Ampcoloy 944 and Ampcoloy 83 in plastics injection molds:

- High class achievable mirror polished surfaces
- High heat conductivity
- High hardness

