

ANVILOY® 1150

AN INNOVATIVE MATERIAL FOR DIE CASTING, TOOLING, AND ALUMINUM PERMANENT MOLD



LOWER OPERATING COST COMPARED TO H-13 TOOL STEEL

Anviloy® 1150 is a tungsten-based material that was developed primarily for die-casting, aluminum permanent mold, and difficult extrusions. To produce Anviloy® 1150 material, we use special high temperature powder metallurgy processes. A low coefficient of thermal expansion, good thermal conductivity and good material properties at elevated temperatures combine for superior performance in a variety of applications. This unusual combination of properties results in less thermal fatigue and soldering in the die cast or extrusion.

Tungsten has a high melting point and low coefficient of thermal expansion. We add other elements to the tungsten to enhance machinability, ductility and strength, which makes it Anviloy® 1150. Good thermal conductivity increases cooling in difficult to cool areas and can increase production rates. Material properties established during the production of Anviloy® eliminate the problems often associated with heat treatment of other standard tool materials.

Join the cutting-edge companies that are using Anviloy®! The innovative material, for die casting or extruding that will save you time and money.

APPLICATIONS

- » Die Cast Tooling
- » Extrusion Dies
- » Hot Runner Nozzles
- » Vibration and Tool Chatter Reduction
- » Plastic Injection Molding
- » High Elongation Requirements
- » Maximum Thermal Conductivity Needs
- » Shot Sleeves

BENEFITS

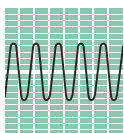
- » Minimizes heat checking (*thermal fatigue*)
- » Reduces soldering (*sticking*)
- » Faster cycle times
- » Less porosity in heavy sections
- » Less production downtime
- » Fewer rejects
- » Worn parts are easily re-machined into smaller diameter core pins or larger extrusion dies
- » Requires no pre-machining or post-machining heat treatment
- » Easily welded and repaired with Anviloy® Weld Rod
- » Low erosion rate
- » Provides additional cooling
- » Longer die and core life
- » Readily machinable
- » Better surface finishes on product
- » Lower cost per piece

Distributed by:

PRODUCTION ENGINEERING

888-654-WELD (9353)

www.resistanceweldsupplies.com



ANVILOY® 1150

AN INNOVATIVE MATERIAL FOR DIE CASTING, TOOLING, AND ALUMINUM PERMANENT MOLD

TYPICAL ROOM TEMPERATURE MECHANICAL PROPERTIES

	ANVILOY® 1150	H-13
Ultimate Tensile Strength, psi (MPa)	140,000 (965)	233,000 (1610)
Yield Strength, 0.2% offset, psi (MPa)	125,000 (862)	192,000 (1320)
Elongation, % in 2 inches	3.0	13.1
Hardness, HRC	34	45
Modulus of Elasticity, psi x 10 ⁶ (GPa)	49.0 (338)	30.5 (210)

ELEVATED TEMPERATURE TENSILE PROPERTIES

UTS, psi (MPa) at 1000 °F (537°C)	113,000 (779)	142,000 (979)
UTS, psi (MPa) at 1200 °F (648°C)	105,000 (724)	85,000 (586)
UTS, psi (MPa) at 1500 °F (815°C)	75,000 (517)	20,500 (141)

COEFFICIENT OF THERMAL EXPANSION, °F (°C-1)

68 - 750 °F (20 - 400 °C)	2.52×10^{-6} (4.54×10^{-6})	6.8×10^{-6} (12.2×10^{-6})
68 - 1450 °F (20 - 790 °C)	2.92×10^{-6} (5.26×10^{-6})	7.5×10^{-6} (13.5×10^{-6})

THERMAL CONDUCTIVITY [W/m K] @500°C

	70.2	28.4
--	------	------

DENSITY, lb/in³ (g/cm³)

0.623 (17.25)	0.280 (7.76)
---------------	--------------



Distributed by:

PRODUCTION ENGINEERING

1344 Woodman Drive
Dayton, Ohio 45432

888-654-WELD (9353)
sales@productionengineering.com

www.resistanceweldsupplies.com