

**Covered Electrode for Copper Alloy**

**HCU – 8AN**

■ Tip Color:               Black

■ Application

Anti scuffing for mold.  
 Welding of parts of pressure equipment, turbine and high pressure valve.  
 Overlaying of sliding abrasion area such as bearing, gear and marine propeller.

■ Features

1. HCU-8AN is special aluminum bronze cored covered electrode. By adding iron and nickel, the deposited metal shows excellent toughness.
2. The deposit metal has very dense  $\alpha + \beta$  phase. This structure shows excellent corrosion resistance and high hardness. These characteristics are suitable for overlaying on drawing area of the mold and sliding abrasion area of the machine.
3. The hardness of the weld metal is about HV250 in second layer because of iron dilution. It becomes HV180 in 3rd or higher layer. Its hardness can be increased by work hardening.

■ Welding Procedures

1. Preheating is not necessary if the aluminum bronze base metal is small and contains low aluminum (less than 9%). If the base metal is large, 150~200°C preheating and inter pass temperature are necessary. If aluminum content is high as well, 370~420°C preheating and interpass temperature are required.
2. About 200°C preheating makes multilayer welding easy especially when lower layer bead is cool.

■ Typical Chemical Components of the Deposited Metal (%)

Cu	Si	Mn	Pb	Al	Fe	Ni	Total of PbZn
Remain	0.2	1.6	0.002	7.8	2.8	1.5	0.006

■ Typical Mechanical Properties of the Deposited Metal as welded

Tensile Strength N/mm <sup>2</sup> (Kgf/mm <sup>2</sup> )	Elongation (%)	Hardness (HV)
525 (53.6)	35	160~200

■ Appropriate Welding Current (AC or DCEP)

Diameter (mm)	3.2	4.0	5.0
Length (mm)	350	400	400
Current (A)	70~110	100~140	140~200
Min. Quantity (Kg)	5.0	5.0	5.0

Equivalent to wire for MIG welding: HCU-8ANS  
 Equivalent to electrode for TIG welding: HCU-8ANT  
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