



# Tech-Rod 190

**Description:** Tech-Rod 190 is used for welding nickel-copper alloys to themselves and to steel. They also can be used for overlay welding as well as for welding of clad steels where nickel-copper surfacing is required. Dissimilar welding applications including joining nickel 200 to copper-nickel alloys.

## Specifications & Approvals:

AWS A5.11:2010 ENiCu-7

UNS W84190

ASME QSC-395

## Typical Chemical Composition

C	Mn	Si	Fe	Cr	Mo	Ni	Nb	W	S	P	Ti	Al	Cu
.06	3.2	.8	1			67			.006	.009	.2		Rem

## Typical Mechanical Properties

Tensile Strength	75,500 PSI	520 MPa
Yield Strength	52,000 PSI	360 MPa
Elongation	39%	

## Welding Parameters

Process	Diameter x Length	Voltage	Amperage	
			Flat	Vertical & Overhead
SMAW	3/32" (2.4mm) x 12" (305mm)	24-28	70-85	65-75
	1/8" (3.2mm) x 14" (355mm)	26-30	85-110	80-90
	5/32" (4.0mm) x 14" (355mm)	28-32	110-140	100-120
	3/16" (4.8mm) x 14" (355mm)	28-32	120-160	110-130

## Standard Packages:

3/32" Diameter	8 Lb (3.6Kg) Can	24 Lb (10.9Kg) Master Carton	26 Electrodes per Lb
1/8" Diameter	10 Lb (4.5Kg) Can	30 Lb (13.6Kg) Master Carton	14 Electrodes per Lb
5/32" Diameter	10 Lb (4.5Kg) Can	30 Lb (13.6Kg) Master Carton	9 Electrodes per Lb
3/16" Diameter	10 Lb (4.5Kg) Can	30 Lb (13.6Kg) Master Carton	6 Electrodes per Lb