



# Tech-Rod 99

**Description:** Tech-Rod 99 is designed for welding of gray iron castings to themselves as well as joining them to mild steel. It is also used extensively to repair castings. The welds are quite machinable. A preheat and interpass temperature of not less than 350°F is recommended during welding.

## Specifications & Approvals:

AWS A5.15:2006 ENi-CI                      UNS W82001                      QSC-395

## Typical Chemical Composition

| C  | Mn | Si | Fe  | Cr | Mo | Ni | Nb | W | S    | P    | Ti | Al  | Other |
|----|----|----|-----|----|----|----|----|---|------|------|----|-----|-------|
| .5 | .3 | .5 | 1.5 |    |    | 97 |    |   | .005 | .015 |    | .06 |       |

## Typical Mechanical Properties

|                  |            |         |
|------------------|------------|---------|
| Tensile Strength | 60,000 PSI | 414 MPa |
| Yield Strength   | 56,500 PSI | 390 MPa |
| Elongation       | 5%         |         |

## 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  |