

Stainless steel electrode

Classification

ASW A5.4-92 : E308MoL-16*
EN 1600-97 : E 20 10 3 R 32

* Deviation: see remarks

Temperature Range

pressurized parts: -20 ... +350°C
scaling resistance: n.a.

General description

A rutile-basic all position electrode for welding dissimilar joints
The general purpose electrode for repair welding
Suitable for hobby and professional applications
Excellent bead appearance and slag release
Also applicable for joining steels difficult to weld
Weldable on AC and DC+ polarity

Welding positions



Current type

AC / DC electr. +

Approvals

| BV | CTL | DB | DNV | GL | TÜV |
|----|-----|----|-------|------|-----|
| UP | + | + | 308Mo | 4431 | + |

Chemical composition (w%), typical, all weld metal

| C | Mn | Si | Cr | Ni | Mo | FN |
|-------|-----|-----|------|-----|-----|----|
| 0.025 | 0.8 | 1.0 | 20.0 | 9.5 | 2.3 | 20 |

Mechanical properties, all weld metal

| | Condition | 0.2% Proof strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) | |
|-----------------------|-----------|---|--|-------------------|-----------------|-------|
| | | | | | +20°C | -20°C |
| Required: AWS A5.4-92 | | not required | min. 520 | min. 35 | not required | |
| EN 1600-97 | | min. 400 | min. 620 | min. 20 | not required | |
| Typical values | AW | 500 | 720 | 30 | 70 | 60 |

Packaging, available sizes and identification

| | Diameter (mm) | Length (mm) | | | | |
|-----------|-------------------------|-------------|-----|-----|-----|-----|
| | | 2.0 | 2.5 | 3.2 | 4.0 | 5.0 |
| Unit: Box | Pieces / unit (nominal) | 225 | 135 | 150 | 100 | 65 |
| | Net weight/unit (kg) | 2.5 | 2.7 | 4.9 | 5.0 | 5.0 |

Identification

Imprint: 308MoL-16/Nichroma

Tip colour: mauve

Nichroma: rev. EN 15

Materials to be welded

| Steel grades | EN 10088-1/-2 | EN 102 13-4 | W.Nr. | ASTM/ACI A240/A312/A351 | UNS |
|--|---------------------|------------------|--------|----------------------------|------------------|
| First layer in CrNiMo- claddings | X2 CrNiMo 17-12-2 | | 1.4404 | (TP)316L CF-3M | S31603 J92800 |
| | X2 CrNiMo 18-14-3 | | 1.4435 | (TP)316L | S31603 |
| | X2 CrNiMoN 17-11-2 | | 1.4406 | (TP)316LN | S31653 |
| | X2 CrNiMoN 17-13-3 | | 1.4429 | | |
| | X4 CrNiMo 17-12-2 | | 1.4401 | (TP)316 | S31600 |
| | X4 CrNiMo 17-13-3 | | 1.4436 | | |
| | X6 CrNiMoTi 17-12-2 | | 1.4571 | 316Ti | S31635 |
| | X10 CrNiMoTi 17-3 | | 1.4573 | 316Ti | S31635 |
| | X6 CrNiMoNb 17-12-2 | | 1.4580 | 316Cb | S31640 |
| | | GX5 CrNiMo 19-11 | 1.4408 | | |

- Welding dissimilar metals: mild steel or low alloyed steel to stainless CrNi and CrNiMo-steel
- Build-up welding on mild or low alloyed steel

Calculation data

| Sizes Diam. x length (mm) | Current range type (A) | Current | Arc time - per electrode at max. current - (s)* | Energy E(kJ) | Dep.rate H(kg/h) | Weight/ 1000 pcs. (kg) | Electrodes/ kg weldmetal B | kg Electrodes/ kg weldmetal 1/N |
|---------------------------------|------------------------------|---------|---|-----------------|---------------------|------------------------------|----------------------------------|---------------------------------------|
| 2.0 x 300 | 30 - 50 | DC+ | 44 | 46 | 0.57 | 11.0 | 144 | 1.59 |
| 2.5 x 350 | 40 - 75 | DC+ | 54 | 99 | 0.86 | 19.8 | 78 | 1.54 |
| 3.2 x 350 | 60 - 110 | DC+ | 52 | 132 | 1.5 | 33.4 | 46 | 1.54 |
| 4.0 x 350 | 80 - 150 | DC+ | 62 | 234 | 1.9 | 49.6 | 30 | 1.49 |
| 5.0 x 350 | 140 - 220 | DC+ | 66 | 365 | 2.8 | 78.4 | 19 | 1.52 |

* stub end 35mm

Welding parameters, optimum fill passes

| Welding position: Diameter (mm) | PA/1G Current (A) | PB/2F | PC/2G | PF/3G up | PE/4G | PF/5G up |
|------------------------------------|----------------------|-------|-------|----------|-------|----------|
| 2.0 | | 45 | 45 | 40 | 40 | 40 |
| 2.5 | 70 | 70 | 70 | 60 | 60 | 60 |
| 3.2 | 100 | 100 | 100 | 70 | 70 | 70 |
| 4.0 | 140 | 140 | 140 | 80 | | |
| 5.0 | 180 | 180 | 180 | | | |

Remarks

Deviations: chemical composition:

Si = 0.4 - 1.2%

AWS: Si = max. 0.90%