

## OK Autrod 312

A continuous solid corrosion resisting chromium-nickel wire for welding of stainless steels of the 29% Cr, 9% Ni types. OK Autrod 312 has a good oxidation resistance at high temperatures due to its high content of Cr. The alloy is widely used for joining dissimilar steels especially if one of the component is fully austenitic and steels that are difficult to weld, i.e. machine components, tools, austenitic manganese steels.

| Specifications         |   |
|------------------------|---|
| <b>Classifications</b> | EN ISO 14343-A : G 29 9<br>SFA/AWS A5.9 : ER312 |

|                      |  |
|----------------------|--|
| <b>Alloy Type</b>    | Ferritic-austenitic (29 % Cr - 9 % Ni) |
| <b>Shielding Gas</b> | M12, M13 (EN ISO 14175)                |

| Typical Tensile Properties |                    |                     |
|----------------------------|--------------------|---------------------|
| Condition                  | Yield Strength     | Tensile Strength    |
| As Welded                  | 610 MPa ( 88 ksi ) | 770 MPa ( 112 ksi ) |

| Typical Charpy V-Notch Properties |                     |                   |
|-----------------------------------|---------------------|-------------------|
| Condition                         | Testing Temperature | Impact Value      |
| As Welded                         | 20 °C ( 68 °F )     | 50 J ( 37 ft-lb ) |

| Typical Weld Metal Analysis % |     |     |       |       |    |    |
|-------------------------------|-----|-----|-------|-------|----|----|
| C                             | Mn  | Si  | S     | P     | Ni | Cr |
| 0.1                           | 1.7 | 0.5 | 0.010 | 0.020 | 9  | 29 |

| Typical Wire Composition % |     |      |       |       |     |      |      |      |      |
|----------------------------|-----|------|-------|-------|-----|------|------|------|------|
| C                          | Mn  | Si   | S     | P     | Ni  | Cr   | Mo   | Cu   | N    |
| 0.10                       | 1.7 | 0.41 | 0.001 | 0.020 | 8.8 | 30.4 | 0.15 | 0.11 | 0.05 |

| Deposition Data         |           |         |                                      |                                   |
|-------------------------|-----------|---------|--------------------------------------|-----------------------------------|
| Diameter                | Current   | Voltage | Wire Feed Speed                      | Deposition Rate                   |
| 1.0 mm<br>( 0.040 in. ) | 80-190 A  | 16-24 V | 2.9-8.4 m/min<br>( 114-331 in./min ) | 1.1-3.1 kg/h<br>( 2.4-6.8 lbs/h ) |
| 1.2 mm<br>( 0.047 in. ) | 180-280 A | 20-28 V | 4.9-8.5 m/min<br>( 193-335 in./min ) | 2.6-4.5 kg/h<br>( 5.7-9.9 lbs/h ) |