



# AQUASAN Ni50 COVERED ELECTRODES

## DATASHEET

AquaSan Ni50 is a specially formulated, nickel based covered electrode with a waterproof coating for the welding of high strength steels with a Carbon Equivalent (CE) >0.4.

AquaSan Ni50 is specified for welding base materials with a CE >0.4, which are susceptible to hydrogen embrittlement. Nickel has a high affinity for hydrogen and this composition allows hydrogen to diffuse into the weld metal and away from the high strength steel.

### STANDARDS

- AWS A5.35: (pending initial publication).

### CHEMICAL COMPOSITION (NOMINAL) %

#### Chemical composition (nominal) %

| C     | Si  | Mn  | Cr | Ni | Mo  |
|-------|-----|-----|----|----|-----|
| ≤0.08 | 0.3 | 2.4 | 12 | 64 | 6.5 |

### APPLICATIONS

AquaSan Ni50 has been qualified for underwater welding of the following steel types to a maximum depth of 50 ft (15m):

Grades: HY 80, HY 100, 204B, A36, 300 series stainless steels

### FORMS OF SUPPLY

#### Packaging

One 30 lb (13.5 kg) carton of AquaSan Ni50 electrodes includes 3 x 10 lb (4.5 kg) plastic containers. Each 10 lb plastic container includes 5 x 2 lb (0.9 kg) sealed plastic bags.

### WELD METAL CHARACTERISTICS

#### Microstructure

The all weld metal for AquaSan Ni50 has a fully Austenitic matrix.

### MECHANICAL PROPERTIES

|                                   |           |           |
|-----------------------------------|-----------|-----------|
| Temperature                       | °C (°F)   | 20 (68)   |
| Proof strength, R <sub>p0.2</sub> | MPa (ksi) | 524 (76)  |
| Tensile strength, R <sub>m</sub>  | MPa (ksi) | 648 (101) |
| Elongation, A <sub>5</sub>        | %         | 14        |

### FABRICATION

## Welding data

|                    |                      |
|--------------------|----------------------|
| Welding positions  | All                  |
| Current/polarity   | DC/-                 |
| Diameter, mm (in.) | 2.4 mm (0.093)       |
| Current, A         | 90-110 (105 typical) |

Disclaimer: Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Sandvik materials.