# G-TECH 2595B

SMAW

**DUPLEX - SUPERDUPLEX**
ZERON 100

## DESCRIPTION

**Basic coated electrode for Zeron® 100 alloy**

Offshore applications exploit the high resistance to pitting and stress-corrosion cracking in seawater. It is also highly resistant to caustic alkalis and phosphoric acid. Service temperature range is usually limited to -50°C to 280°C. It is widely used in oil and gas production and process pipework, risers, manifolds, pressure vessels, valves, pumps, desalination plant, systems for flue-gas desulphurisation (FGD) and also in the mining, chemical and pharmaceutical industries. Its basic coating ensures excellent positional welding characteristics with good gap bridging ability.

## SPECIFICATIONS

| | | | |
|---|---|---|---|
| **EN ISO 3581-A** | E 25 9 4 N L B 42 | **AWS A5.4** | E2595-15 |
| **Shielding** | - | **Positions** | PA, PB, PC, PD, PE, PF |
| **Current** | DC+; | **Packaging Type** | Carton box |

## ASME QUALIFICATIONS

| | |
|---|---|
| **F-No (QW432)** | 5 |
| **A-No (QW442)** | - |

## FERRITE

% 30-60

## PREN

42.54

| CHEM. COMP. % | DEFAULT |
|---|---|
| C | 0.035 |
| Mn | 0.9 |
| Ni | 9.5 |
| Cr | 25.5 |
| N | 0.24 |
| P | 0.02 |
| S | 0.01 |
| Mo | 4 |
| Si | 0.7 |
| Cu | 0.7 |

| MECHANICAL PROPERTIES | MIN. PER STANDARD | PRODUCT |
|---|---|---|
| Tensile strength $R_m$ MPa | 620 | 850 |
| Yield strength $R_{p0.2}$ MPa | 550 | 630 |
| Elongation A ($L_0$=5$d_0$) % | 18 | 22 |
| Impact Charpy ISO-V | - | 40J @ -40°C |
| Impact Charpy ISO-V | - | - |

| WELDING PARAMETERS | 2.5 mm | 3.2 mm | 4.0 mm |
|---|---|---|---|
| Ampere | 50A - 80A | 70A - 110A | 100A - 160A |
| Voltage | - | - | - |
| Packaging | 56 pcs/kg | 30 pcs/kg | 19 pcs/kg |
| Packaging Type | Carton box | Carton box | Carton box |

## NOTES

Rutile-basic (-16) version available upon request. Pcs/kg is indicative, actual number may vary ± 5%.



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DAIKO

# ZERON 100

DESCRIPTION



## APPLICATION

Zeron® 100 stands out for its extraordinary ability to resist corrosion and erosion in a wide range of aggressive environments. The special Cu+W combination significantly improves resistance to sulfuric and hydrochloric acids, compared to similar alloys without such additives. Thanks to its high resistance to pitting and stress corrosion cracking, Zeron® 100 is widely used in offshore applications, especially in seawater contexts. This material also offers excellent resistance to caustic alkalis and phosphoric acid. Its service temperature range generally varies between -50 °C and 280 °C, with the upper limit due to thermal instability (450 °C and sigma phase embrittlement). Zeron® 100 is highly valued in the oil and gas production sector and is used in a wide range of applications, including process piping, risers, manifolds, pressure vessels, valves, pumps, desalination plants, flue gas desulfurization (FGD) systems, and in the mining, chemical, and pharmaceutical industries. Furthermore, Zeron® 100 wires are ideal for joining supermartensitic stainless steels.

## ALLOY TYPE

25%Cr ferritic-austenitic superduplex stainless steels matching the proprietary Zeron® 100 alloy.

## MICROSTRUCTURE

Austenite-ferrite duplex microstructure in AW or solution annealed condition with an approximate 30- 60% ferrite level, depending on heat cycle conditions.

## MATERIALS

**EN W.Nr.**: 1.4508, 1.4501, 1.4469
**ASTM**: A890 6A, A182 F55, A890 5A
**UNS**: S32760, J93380, S32750, S32550, S32520, S39274, S32950, J93404
**PROPRIETARY**: Zeron 100 (Rolled Alloys) DP3W (Nippon Steel Corporation), 7-Mo Plus (Carpenter), SAF 2507 (Sandvik)

## WELDING & PWHT

For welding Zeron® 100, preheating is generally not required. The interpass temperature should not exceed 150 °C. A heat input between 1.0 and 2.0 kJ/mm (based on the material thickness) is considered optimal, though many industrial codes set a maximum limit of 1.5 or 1.75 kJ/mm. While welds in wrought duplex stainless steels are usually left as is, major repairs on castings often require a solution treatment. Field tests confirm that good properties are obtained by following a water quench treatment at 1120 °C for a period between 3 and 6 hours.



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