

# 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

ISO 3581-A		E 25 9 4 N L B 42	AWS A5.4		E2595-15
Certifications		-	Shielding		-
Positions		PA, PB, PC, PD, PE, PF	Current		DC+;
Packaging Type					Carton box
ASME QUALIFICATIONS		FERRITE	PREN	HARDNESS	
F-No (QW432)	5	% 30-60	42.54	-	
A-No (QW442)	-				
CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES		MIN	VARIANT
С	0.035	Tensile strength R <sub>m</sub> MPa		620	850
Mn	0.9	Yield strength R <sub>p0.2</sub> MPa		550	630
Ni	9.5	Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %		18	22
Cr	25.5	Impact Charpy ISO-V		-	40J @ -40°C
Ν	0.24	Impact Charpy ISO-V		-	-
Р	0.02	WELDING PARAMETERS	2.5 mm	3.2 mm	4 m m
S	0.01	Ampere	50A - 80A	70A - 110A	100A - 160A
Mo	4	Voltage	-	-	-
Si	0.7	Packaging	56 pcs/kg	30 pcs/kg	19 pcs/kg
Cu	0.7	Packaging Type	Carton box	Carton box	Carton box



The information in this datasheet is the result of detailed research and is considered accurate as of the publication date. However, we cannot guarantee its complete accuracy, and it is subject to change without notice. Actual results may vary due to many factors like welding procedures, material composition, temperature conditions, bevel configuration, and specific manufacturing techniques. We accept no liability for any errors or omissions in this datasheet. For the most current information, please visit www.daikowelding.com.







#### APPLICATION

Zeron® 100 excels in strength and in corrosion and erosion resistance, proving effective in aggressive environments. The Cu+W addition enhances resistance to sulphuric and hydrochloric acids, surpassing alloys without these elements. Notable for its offshore use, it resists pitting and stress-corrosion cracking in seawater and withstands caustic alkalis and phosphoric acid. Its service temperature range is typically -50°C to 280°C, with factors like thermal instability (450°C) and sigma embrittlement influencing the upper limit. Widely applied in oil and gas, it serves in pipework, risers, manifolds, pressure vessels, valves, pumps, desalination plants, and FGD systems. Versatile across mining, chemical, and pharmaceutical industries, Zeron® 100 wires are employed for joining supermartensitic stainless steels, showcasing adaptability across various industrial applications.

### 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

Preheating is typically unnecessary. Maintain interpass temperature below 150°C. Acceptable heat input falls within the range of 1.0–2.0 kJ/mm, contingent on material thickness; however, many codes impose a maximum limit of 1.5 or 1.75 kJ/mm. While welds in wrought duplex stainless steels are typically preserved in the as-welded state, significant repairs to castings are commonly mandated in the solution-treated condition. Empirical evidence suggests favorable properties following treatment at 1120°C for 3-6 hours, followed by water quenching.



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