

Exaton 2594

2594 is used for welding of Sandvik SAF 2507 and other super-duplex steels. The grade is characterized by excellent resistance to stress corrosion in chloride-bearing environments and excellent resistance to pitting and crevice corrosion.

2594 can also be used for welding Sandvik SAF 2205 and corresponding duplex steels when the highest possible corrosion resistance is required. It is used for MIG/MAG welding.

Classifications Wire Electrode	SFA/AWS A5.9 : ER2594 EN ISO 14343-A : G 25 9 4 N L
Approvals	ABS ER 2594 CE EN 13479 DNV-GL Duplex Steels

Approvals are based on factory location. Please contact ESAB for more information.

Alloy Type	Austenitic-ferritic (duplex) with approx. 50 FN ferrite - 25% Cr - 10% Ni - 4% Mo - Low C
Shielding Gas	M12 (EN ISO 14175)

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	650 MPa (94 ksi)	850 MPa (123 ksi)	25 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
As Welded	20 °C (68 °F)	210 J (155 ft-lb)
As Welded	-40 °C (-40 °F)	170 J (126 ft-lb)
As Welded	-46 °C (-51 °F)	150 J (111 ft-lb)
As Welded	-50 °C (-58 °F)	140 J (104 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Mo	Cu	N
0.01	0.4	0.4	0.001	0.02	9.5	25	3.9	0.1	0.24

Typical Weld Metal Analysis %

Nb	W	PRE	FN WRC-92
0.01	0.01	41.7	52

Typical Wire Composition %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
0.012	0.4	0.3	0.0005	0.015	9.5	25	4	0.05	0.07

Typical Wire Composition %

N	Nb	Ti	Co	W	PRE	FN WRC-92
0.25	0.01	0.003	0.04	0.01	42	50

Recommended Welding Parameters

Wire Diameter	Current	Voltage	Wire Feed Speed
0.8 mm (0.030 in.)	40-120 A	15-19 V	4.0-8.0 m/min (157-315 in./min)
1.0 mm (0.040 in.)	60-220 A	15-28 V	4.0-12.0 m/min (157-472 in./min)
1.2 mm (0.047 in.)	150-260 A	24-29 V	3.0-10.0 m/min (118-394 in./min)
1.6 mm (1/16 in.)	230-350 A	25-30 V	3.0-5.0 m/min (118-197 in./min)

*For MIG welding of ferritic-austenitic stainless steels