

Exaton 27.7.5.L

Exaton 27.7.5.L is a hyper-duplex (austenitic-ferritic) filler metal with improved yield strength and better pitting and crevice corrosion resistance compared to super-duplex stainless steels (UNS S32750 and S32760). It also has higher HISC (hydrogen induced stress cracking) resistance compared to super-duplex stainless steels and higher resistance to aggressively sour environments.

Exaton 27.7.5.L can be advantageously used for welding 13% Cr flow pipes, as its high strength enables reduction of repair rates during pipeline production, because finite element analysis is not required for weld metal of matching strength and the acceptance criteria can be less conservative.

The high pitting resistance of Exaton 27.7.5.L makes it suitable for root pass welding in Sandvik SAF 2507 and other super-duplex stainless steels (UNS S32750 and S32760) when the risk of pitting corrosion is critical, or when mixed shielding gases cannot be used.

Exaton 27.7.5.L can be used for plasma welding, but primarily used for overlay welding using hot wire TIG and mechanical TIG e.g. tube sheets in heat-exchangers or for joint welding of hyper-duplex (UNS S32707) pipe with wall thickness < 13 mm.

Classifications Wire Electrode	EN ISO 14343-A : G Z 27 7 5 L
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Alloy Type	Austenitic-ferritic (duplex) with approx. 65% ferrite - 27% Cr - 6.5 %Ni - 5% Mo - Low C
Shielding Gas	N ₂ (EN ISO 14175)

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	690 MPa (100 ksi)	890 MPa (129 ksi)	25 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
As Welded	20 °C (68 °F)	190 J (141 ft-lb)
As Welded	-30 °C (-22 °F)	106 J (78 ft-lb)
As Welded	-46 °C (-51 °F)	45 J (33 ft-lb)

Typical Wire Composition %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
0.015	1.0	0.3	0.0007	0.017	6.5	27	5.0	0.07	0.15

Typical Wire Composition %

N	Nb	Ti	Co	W	PRE
0.4	0.01	0.001	1	0.02	49

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)
1.2 mm (0.047 in.)	150-260 A	24-29 V	3.0-10.0 m/min (118-394 in./min)