

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.

Классификация сварочной проволоки	EN ISO 14343-A : G Z 27 7 5 L
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Тип сплава	Austenitic-ferritic (duplex) with approx. 65% ferrite - 27% Cr - 6.5 %Ni - 5% Mo - Low C
Защитный газ	N2 (EN ISO 14175)

Механические свойства при растяжении

Состояние	Предел текучести	Предел прочности при растяжении	Удлинение
После сварки	690 MPa	890 MPa	25 %

Типичные свойства образца с V-образным надрезом по Шарпи

Состояние	Температура испытания	Работа удара
После сварки	20 °C	190 J
После сварки	-30 °C	106 J
После сварки	-46 °C	45 J

Хим. состав проволоки

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

Хим. состав проволоки

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

Данные наплавки

Диаметр проволоки	Current	Voltage	Wire Feed Speed
0.8 mm	40-120 A	15-19 V	4.0-8.0 m/min
1.2 mm	150-260 A	24-29 V	3.0-10.0 m/min