

312

Comparable specifications

ASME SFA A 5.9: ER312 EN ISO 14343-A: 29 9 Werkstoff Nr.: 1.4337

Description and applications*

* Illustrative, not-exhaustive list

Austenitic stainless steel filler metal originally designed to weld cast alloys of similar composition, found also valuable in welding dissimilar metals such as carbon steel to stainless steel, particularly those grades high in nickel. It gives a two-phase weld deposit with substantial percentages of ferrite in austenite matrix. Even with considerable dilution by austenite-forming elements such as nickel, the microstructure remains two-phase and thus highly resistant to weld metal cracks and fissures.

Due to its high ferrite level, very adapted to heterogeneous welding, especially when one of the components is fully austenitic. Good corrosion oxidation resistance at high temperature due to its high content of Cr. Service temperatures should be below 420°C to prevent formation of secondary brittle phases.

This grade may be essentially used for:

- welding of stainless steels with similar chemical composition;
- welding of dissimilar steels such as medium and high carbon steels to stainless steel;
- welding and facing of difficult-to-weld steels;
- buffering of layers on tooling prior to surfacing;
- wear facing, where resistance to severe impact is required.

Weldable base materials*

* Illustrative, not-exhaustive list

Mild and low alloy steels, stainless steel of similar composition.

All-weld metal mech. properties*

* For reference only values

Tensile strength (Rm): ~ 660 N/mm²
Elongation: ~ 22%

Chemical composition*

* For reference only values

C	Mn	Si	S	P	Ni	Cr	Mo	Cu
max	1.00	max	max	max	8.00	28.00	max	max
0.15	2.50	0.65	0.020	0.030	10.50	32.00	0.50	0.50

Standard packaging data*

Welding process	Product type	Ø mm (inches)	Packing type	Weight kg (lbs)	Length mm (inches)
GMAW **	filler wire	0.80 - 1.20 (0.030 - 0.047)	spools BS300 / D300	15 (33)	n.a.
GTAW **	filler rod	1.60 - 4.00 (1/16 - 5/32)	cardboard boxes / tubes	5 (11)	1000 (39.4)
SAW **	filler wire	1.60 - 4.00 (1/16 - 5/32)	basket rims B450	25 (55)	n.a.
SMAW **	core wire for electrodes	1.60 - 5.00 (1/16 - 0.197)	wooden boxes	500 - 750 (1100 - 1650)	250 - 450 (10 - 18)

* Other sizes and packing types are available upon request

** GMAW: gas metal arc welding; GTAW: gas tungsten arc welding; SAW: submerged arc welding; SMAW: shielded metal arc welding

Marking

Each filler rod for GTAW welding is durably marked with an identification traceable to the unique product type. Welding filler materials wound on spools or in coils are durably marked on the coil or spool with an identification traceable to the unique product type. The outside of each unit package is suitably labelled with at minimum the following data: grade, diameter, heat, lot no., classifications. Customized labels are available upon request.

Type approvals

Canadian Welding Bureau Cert. nr. NOV312 (GMAW / GTAW)

Lot classification

All our productions fulfil the **Class S3** requirements acc. to EN ISO 14344.