DP28W

References

Basic chemical composition: 27.5Cr-7.7Ni-W-Mo-N
UNS No.: S32808
ASTM: A789/A789M, A790/A790M, A240/A240M
ASME: Code Case 2496-1
EN:
JIS:
Others:

Classification: Duplex
Application: Heat Exchanger
Feature: Urea

Main Features

- Excellent resistance to general corrosion in urea-carbamate solutions
- High resistance to stress corrosion cracking
- Very high mechanical strength
- Good weldability
- Good formability

Standard

- UNS No. S32808
- ASTM A789/A789M, A790/A790M, A240/A240M
- ASME Code Case 2496-1

Chemical Composition

(mass%)

C	Si	Mn	P	S	Ni	Cr	Mo	N	W
max. 0.030	max. 0.50	max. 1.10	max. 0.030	max. 0.010	7.0 -8.2	27.0 -27.9	0.80 -1.20	0.30 -0.40	2.10 -2.50

Properties

Mechanical properties

Tensile property requirement at room temperature

Grade	Tensile strength (MPa)	0.2% Proof stress (MPa)	Elongation (%)	Hardness (Hv)
DP28W™	934	647	42	281
DP12	822	610	42	251
25-22-2(S31050)	676	352	50	173
316L	518	234	52	144

Microstructure

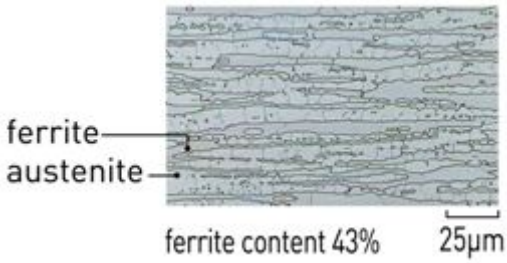

Fig. Typical microstructure.

DP28W™ has a fine two phases; ferrite and austenite.

Corrosion Resistance

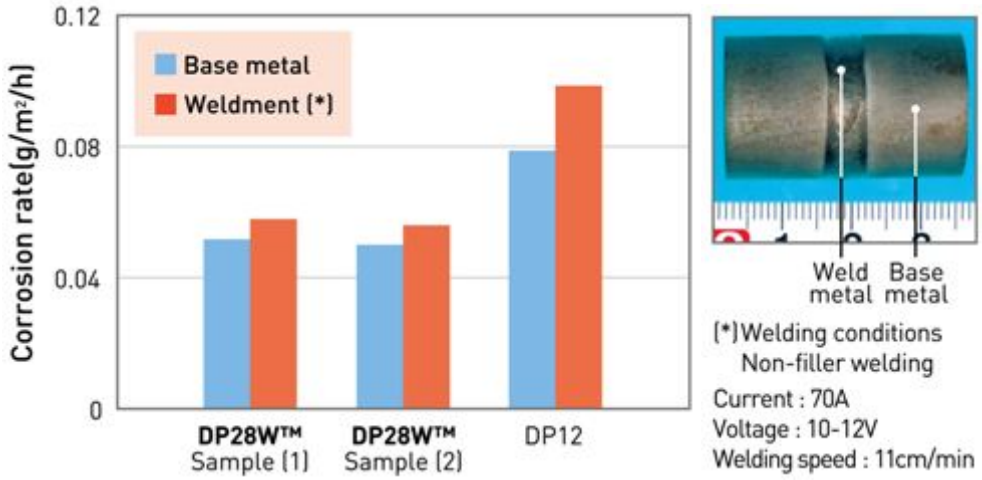

Fig. Corrosion rate of DP28W and DP12 in boiling nitric acid.

Corrosion resistance for boiling nitric acid is great in both base metal and weldment.

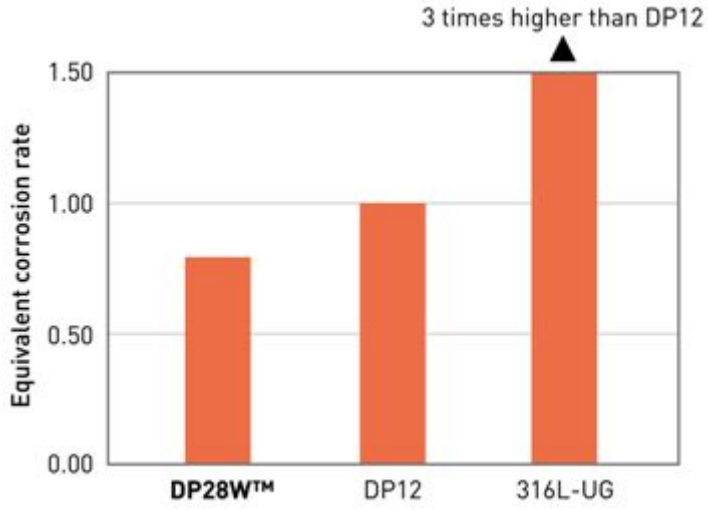

Fig. Result of corrosion test in urea carbamate solution.

Corrosion resistance for urea carbamate is excellent.

Weldability

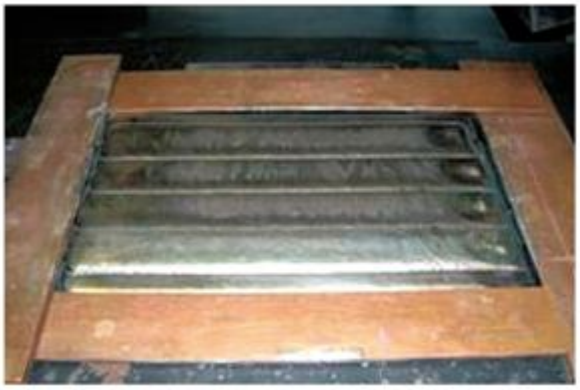

Fig. Appearance of weld overlay by ESW.
Matching filler metals have been developed for gas tungsten arc welding (GTAW) and electro slag welding (ESW).
No undercut is observed at fusion boundary.

Formability

Fig. Appearance of bended U tube of DP28W.
DP28W™ has good formability. Flaring and flattening test is also satisfied.