

KOBELCO

KOBE STEEL GROUP

/ GAS INNOVATIONS

Spring 2010 products

KOBELCO *NEW* **PRODUCTS**

Super Duplex Stainless Flux Cored Wire

PREMIARC™ DW-2594

For Super duplex stainless ASTM3275 and ASTM32760 grade.
AWS A5.22 E2594T1-1,-4

Nickel Based Alloy Flux Cored Wire

PREMIARC™ DW-N625

For alloy 625,825, and super austenitic stainless steel
AWS A5.34 ENiCrMo3T1-4

PREMIARC™ DW-NC276

For alloy C276, and super austenitic stainless steel
AWS A5.34 ENiCrMo4T1-4

110 Ksi class high strength steel

TRUSTARC™ DW-A80L

Rutile based flux cored wire for 110 Ksi class high tensile steel
AWS A5.29 E111T1-GM H4

TRUSTARC™ MX-A80L

Metal Cored Wire for 110 Ksi class high tensile steel
AWS A5.29 E110C-G H4

To place an order or for additional technical information please contact Gas Innovations (281) 471-2200. KOBELCO may also be reached at their U.S. Corporate office (800)-961-3158

www.Gasinnovations.com www.kobelcowelding.com

DW-2594

**All positional flux cored wire
for super duplex stainless**



New generation

Outstanding Features

- DW-2594 is an innovative rutile flux cored wire specially designed for welding super duplex stainless ASTM32750 grade and ASTM 32760 grade.
- DW-2594 operates with a very stable, spatter free arc producing a bright smooth weld bead surface and self releasing slag.
- DW-2594 has the option of being shielded by 75%Ar-25%CO₂ gas mixture or 100%CO₂ gas (75%Ar-25%CO₂ recommended).

Typical chemistry of weld metal (75%Ar-25%CO₂)

C	Si	Mn	Cr	Ni	Mo	Cu	N	PRE	FN
0.03	0.50	1.18	25.7	9.6	3.8	<0.1	0.24	41.8	49

PRE=Cr+3.3×Mo+16×N, FN=Ferrite Number by WRC Diagram(1992)

Typical mechanical property of weld metal (75%Ar-25%CO₂)

0.2%P.S (psi)	T.S (psi)	Elongation (%)	Impact value (ft-lbs)	
			-40 °F	0 °F
103,270	131,260	27	30 <15.7>	47 <22.8>

Test method: AWS A5.22, welding parameter: 200A-30V (0.045")

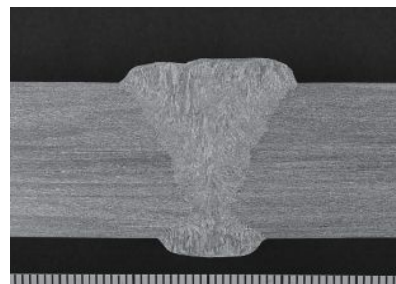
< >: Lateral expansion (unit=mils)

Pitting Corrosion Property

Test Solution	Time of exposure	Critical Pitting Temperature (°F)
6%FeCl ₃ +1%HCl solution aq.	24hrs	104

Test method: According ASTM G48 Practice E

Macrostructure of butt joint (3G)



Base material:
S32760
Wall thickness: 3/4"
Welding parameter:
160A-26V
Shielding gas:
75%Ar-25%CO₂

KOBELCO**Nickel based alloy flux cored wires****PREMIARC™****PREMIARC™****DW-N625****DW-NC276****AWS A5.34 ENiCrMo3T1-4****AWS A5.34 ENiCrMo4T1-4****Outstanding Features**

- DW-N625 is a flux cored wire for alloy 625, 825 and super austenitic stainless steel.
- DW-NC276 is a flux cored wire for alloy C276 and super austenitic stainless steel.
- These wires generate a stable arc with little spatter, suitable for all positions with 75%Ar-25%CO₂.
- These wires are recommended for a variety of welding applications including overlay welding of carbon steels or low alloy steels and a wide variety of dissimilar joints.

Typical chemistry of weld metal (75%Ar-25%CO₂)

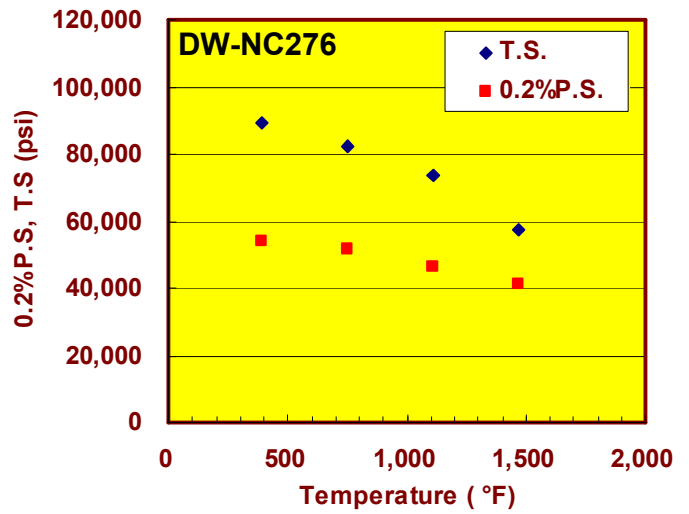
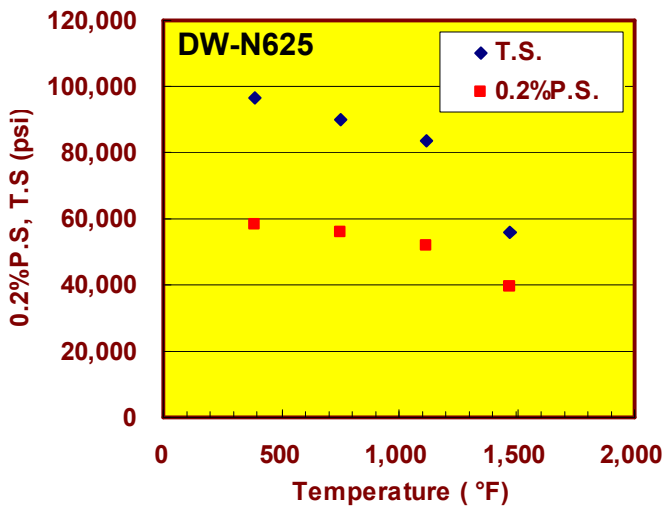
Wire	C	Mn	Fe	P	S	Si	Cu	Ni
DW-N625	0.030	0.41	4.1	0.008	0.002	0.36	0.01	60.8
DW-NC276	0.018	0.74	6.2	0.009	0.004	0.16	0.06	57.5

Wire	Co	Ti	Cr	Nb+Ta	Mo	V	W
DW-N625	-	0.16	21.6	3.4	9.1	-	-
DW-NC276	0.02	-	15.5	-	15.9	0.02	3.6

Typical mechanical property of weld metal (75%Ar-25%CO₂)

Wire	0.2%P.S (psi)	T.S (psi)	Elongation (%)	Impact value (ft-lbs)		
				-320 °F	-150 °F	32 °F
DW-N625	68,400	109,000	38	38	46	49
DW-NC276	66,600	104,400	48	39	43	49

Test method: AWS A5.34, welding parameter: 180-200A/29-30V (0.045")

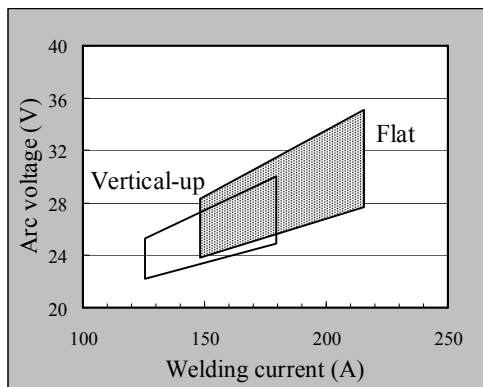


Tensile properties at high temperatures

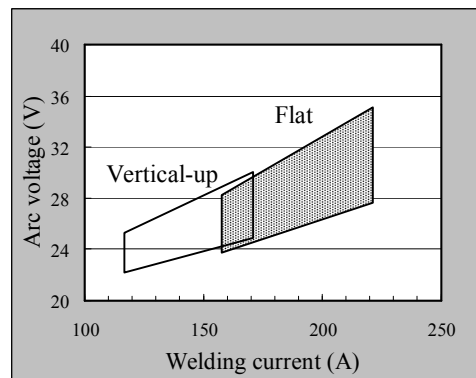


Base material:
 Alloy 825
 Wall thickness: 15/32"
 Welding parameter:
 160A/26-27V
 Shielding gas:
 75%Ar-25%CO₂

Bead appearance and macrostructure of butt joint for DW-N625 (3G)



DW-N625



DW-NC276

Recommended welding parameters (75%Ar-25%CO₂)



**For tensile strength 110ksi
Class high strength steel**

**TRUSTARC™
DW-A80L**

**Rutile based flux
cored wire**

AWS A5.29 E111T1-GM H4

**TRUSTARC™
MX-A80L**

Metal cored wire

AWS A5.28 E110C-G H4

Outstanding Features



- DW-A80L and MX-A80L are designed for welding tensile strength 110ksi class high strength steel that are used in heavy industries such as Offshore, Pipeline, Crane, Construction machinery, etc.
- DW-A80L is a rutile flux cored wire for all positional welding.
- MX-A80L is a metal cored wire for flat and horizontal welding.
- Both these wires can provide excellent mechanical properties and crack resistance.

Typical chemistry of weld metal (80%Ar-20%CO₂)

Wire	C	Si	Mn	P	S	Ni	Mo
DW-A80L	0.07	0.31	1.86	0.007	0.006	2.49	0.16
MX-A80L	0.06	0.48	1.87	0.008	0.010	2.37	0.09

Typical mechanical property of weld metal(80%Ar-20%CO₂)

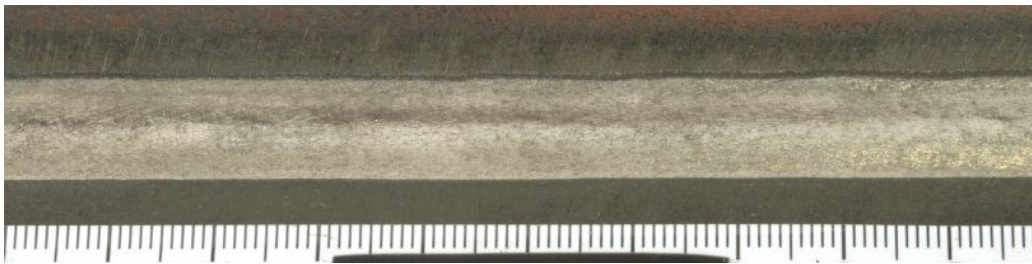
Wire	0.2%P.S (ksi)	T.S (ksi)	Elongation (%)	Impact value (ft-lbf)	
				-76 °F	-40 °F
DW-A80L	111	118	21	60	83
MX-A80L	104	115	24	66	107

Typical diffusible hydrogen content in deposited metal (80%Ar-20%CO₂)

Wire	Diffusible hydrogen content ^a (ml/100g)				Average
DW-A80L	2.6	2.9	2.6	2.6	2.7
MX-A80L	1.3	1.2	1.4	1.3	1.3

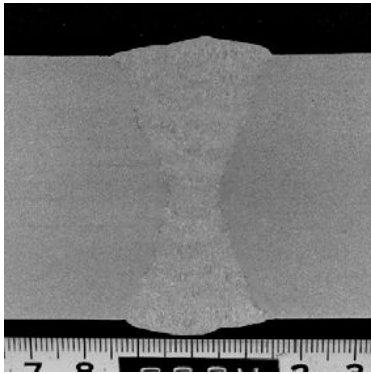
a. Gas chromatography method (AWS A4.3)

Bead appearance and macro cross sections

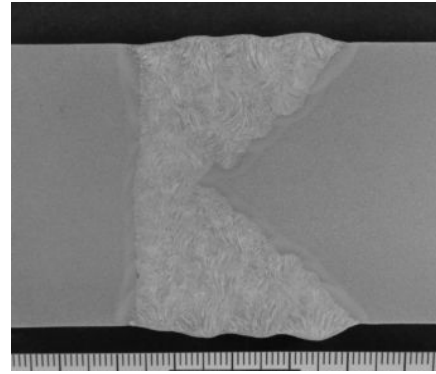


MX-A80L

Horizontal fillet welding
 0.045" 260A-31V-18IPM
 80%Ar-20%CO₂



Position: 3G, Wall thickness: 50mm,
 Heat input: 5.3kJ/inch



Position: 1G, Wall thickness: 50mm,
 Heat input: 4.6kJ/inch

Diameters: 0.045"
 Spool size: 28lbs