



Kobelco New Flux Cored Wires

Bi Free Type Stainless Flux Cored Wires

H-Series

PREMIARC

DW-308H

PREMIARC

DW-308LH

PREMIARC

DW-309LH

PREMIARC

DW-316H

PREMIARC

DW-316LH

PREMIARC

DW-347H

Lean Duplex Stainless Flux Cored Wire

PREMIARC

DW-2101

Seismic Wire meets requirements of FEMA 353 and AWS D1.8

FAMILIARC

DW-50S

Metal Cored Wires

FAMILIARC

MX-A70C6

FAMILIARC

MX-A70C6LF

KOBELCO WELDING OF AMERICA INC.

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<http://www.kobelcowelding.com>



Bi free type Stainless Flux Cored Wires

H-Series for high temperature applications

PREMIARC
DW-308H **PREMIARC**
DW-308LH

PREMIARC
DW-316H **PREMIARC**
DW-316LH

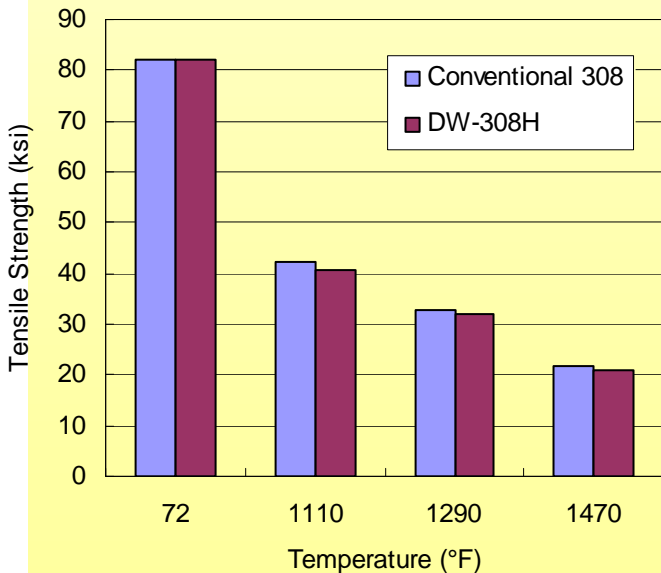
PREMIARC
DW-347H **PREMIARC**
DW-309LH

Outstanding Features

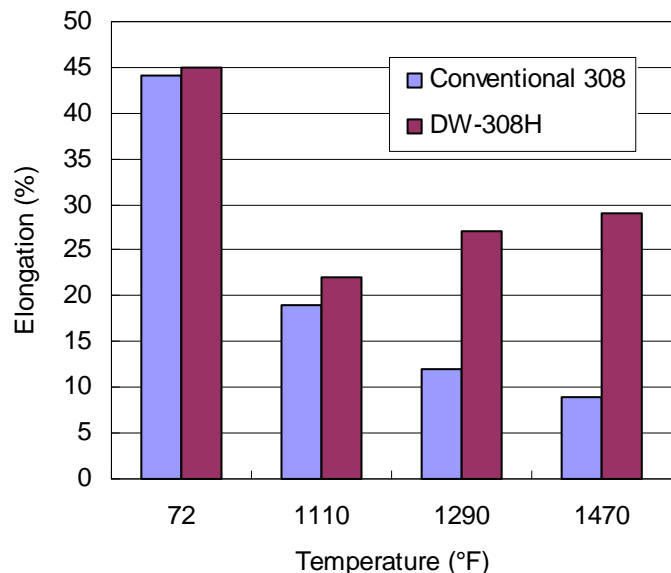
- **H-series contains no bismuth in the weld metal. Consequently, the elongation of the weld metal at high temperatures is higher than that of conventional FCWs.**
- **Even with no bismuth, the slag removability is comparable to conventional FCWs.**
- **Excellent performance in vertical upward position with either 75%Ar-25%CO₂ gas mixture or 100%CO₂.**



Bead appearance of DW-308H



A comparison of high temperature tensile strength



A comparison of high temperature elongation



PREMIARC DW-308H AWS A5.22
E308HT1-1, -4

PREMIARC DW-308LH AWS A5.22
E308LT1-1, -4

PREMIARC DW-316H AWS A5.22
E316T1-1, -4

PREMIARC DW-316LH AWS A5.22
E316LT1-1, -4

PREMIARC DW-347H AWS A5.22
E347T1-1, -4

PREMIARC DW-309LH AWS A5.22
E309LT1-1, -4

Typical chemistry of weld metal (0.045" Dia. 75%Ar-25%CO₂)

Alloy	C	Si	Mn	Cr	Ni	Mo	Bi	FN
DW-308H	0.06	0.45	1.36	18.97	9.42	-	<0.001	5.5
DW-308LH	0.02	0.46	1.25	18.93	9.68	-	<0.001	8.7
DW-316H	0.05	0.38	1.39	18.75	11.60	2.40	<0.001	6.0
DW-316LH	0.02	0.48	1.38	18.64	12.13	2.39	<0.001	7.5
DW-347H	0.05	0.47	1.65	19.17	9.65	-	<0.001	7.8
DW-309LH	0.03	0.51	1.32	24.34	12.59	-	<0.001	20.3

FN=Ferrite Number by WRC Diagram (1992)

Typical mechanical property of weld metal (0.045" Dia. 75%Ar-25%CO₂)

Alloy	T.S (ksi)	Elongation (%)
DW-308H	86	43
DW-308LH	80	41
DW-316H	83	42
DW-316LH	80	40
DW-347H	94	38
DW-309LH	83	35

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

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KOBELCO

PREMIARC™

DW-2101

All positional flux cored wire for LDX 2101® stainless



New generation

Outstanding Features

- DW-2101 is designed for welding the lean duplex stainless steel LDX 2101®.
- Excellent weldability not only in flat and horizontal but in vertical upward welding.
- DW-2101 has the option of being shielded by 75%Ar-25%CO₂ gas mixture or 100%CO₂ gas (Mixture gas is preferable).
- DW-2101 provides a smooth bead appearance, minimal spattering and slag is easily removable.

*LDX2101® has registered trade name by Outokumpu

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

C	Si	Mn	Cr	Ni	Mo	Cu	N	PRE	FN
0.03	0.70	1.50	24.7	8.1	<0.1	0.02	0.13	26.8	47

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	68 °F
86,400	109,600	29	27 <17>	36 <27>

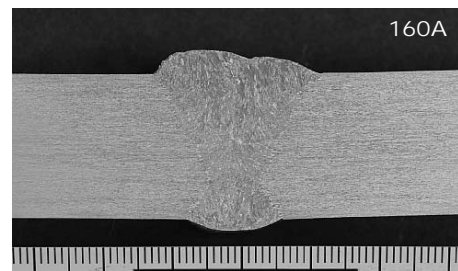
Test method: AWS A5.22, welding parameter: 200A-28V (0.045")

< >: Lateral expansion (unit=mils)

Macrostructure of butt joint (2G)



Macrostructure of butt joint (3G)



KOBELCO

FAMILIARC™

DW-50S

Meets requirements of
FEMA 353 and AWS D1.8



For Seismic

Code Data

AWS A5.20 E71T-1CH8, 1MH8/ -9CH8, 9MH8

Outstanding Features

- Meets mechanical properties, diffusible hydrogen contents and packaging requirements of FEMA 353 and AWS D1.8.
- Fast freezing slag formula gives DW-50S its excellent weldability not only in horizontal but in vertical and overhead welding.
- DW-50S can be used with 100%CO₂ or 75%Ar-25%CO₂ shielding gas.
- Its low fume emission formula creates a clean welding environment at any welding condition.

Typical chemistry of weld metal (100%CO₂ As welded)

Wire size (in.)	Position	Heat Input (kJ/in.)	C	Si	Mn	P	S
0.045	1G	29	0.04	0.67	1.40	0.010	0.011
	3G	73	0.05	0.60	1.32	0.010	0.010
1/16	1G	30	0.04	0.65	1.36	0.010	0.008
	3G	72	0.05	0.61	1.27	0.010	0.008

Typical mechanical tensile properties of weld metal (100%CO₂ As welded)

Wire size (in.)	Position	Heat Input (kJ/in.)	0.2%P.S (psi)	T.S (psi)	Elongation (%)
0.045	1G	29	91,400	94,700	28
	3G	73	67,400	80,800	31
1/16	1G	30	82,200	90,800	28
	3G	72	68,700	82,100	30

Test method: AWS A5.20

Typical mechanical impact properties of weld metal (100%CO₂ As welded)

Wire size (in.)	Position	Heat Input (kJ/in.)	Impact value (ft-lbs)	
			-20 °F	70°F
0.045	1G	29	-	74
		43	56	-
	3G	73	-	91
1/16	1G	30	-	77
		45	37	-
	3G	72	-	101

Test method: AWS A5.20

Typical diffusible hydrogen content (100%CO₂)

Immediately after unpack the package (ml/100g)	After 168 hours exposure 80°F and 80% (ml/100g)
5.4	5.8

Gas chromatography method (AWS A4.3)

Recommended welding conditions and deposition rate

Wire size (in.)	Wire feed speed (in./min)	Current (A)	Arc Voltage (V)	Deposition rate (lbs/hr)	Wire stick-out (in.)
0.045	140	120	23-26	4.0	3/4"
	200	160	25-28	6.0	
	290	200	27-30	8.0	
	330	220	27-30	9.0	
	400	250	28-30	10.5	
1/16	100	180	24-27	4.5	3/4"
	165	240	25-28	7.0	
	190	260	26-29	8.0	1"
	250	300	29-31	10.0	
	300	340	30-32	11.5	

Tables shown are approximate values that will vary with changes in welding conditions.
 Voltages shown are for 100%CO₂ shielding gas. For 75%Ar-25%CO₂ use two volts less than shown.
 *DC-Electrode positive **Arc voltage is measured at wire feeder.



Highly efficient metal-cored wires for carbon steel

FAMILIARC™

MX-A70C6

Less silicate islands
High impact value

AWS A5.18 E70C-6MH4

FAMILIARC™

MX-A70C6LF

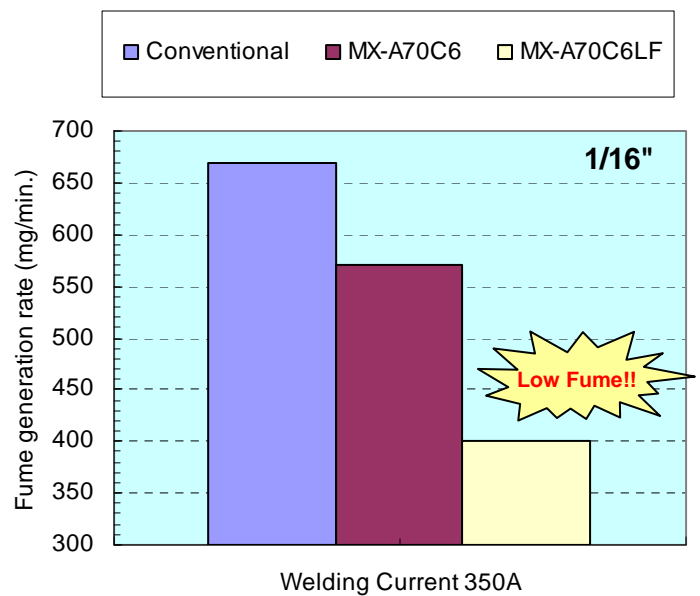
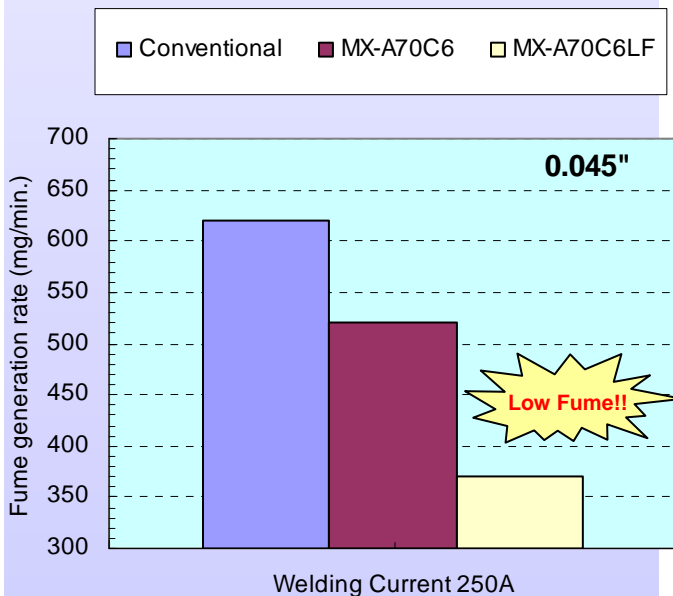
Extremely low fume
and less spatter

AWS A5.18 E70C-6MH4

Outstanding Features



- MX-A70C6 and MX-A70C6LF have lower fume and spatter generation than conventional metal cored wire.
- MX-A70C6 has reduced silicate islands for heavy-duty materials.
- The fume levels of MX-A70C6LF are lower than previous generation formulas.
- Its cored metal powder has higher deposition rates than solid wire and even flux cored wire.



Fume generation (90%Ar-10%CO₂)

Typical chemistry of weld metal and diffusible hydrogen content(80%Ar-20%CO₂)

Wire	C	Si	Mn	P	S	Diffusible hydrogen content ^a (ml/100g)
MX-A70C6	0.05	0.75	1.72	0.010	0.008	3.9
MX-A70C6LF	0.03	0.85	1.70	0.008	0.010	3.9

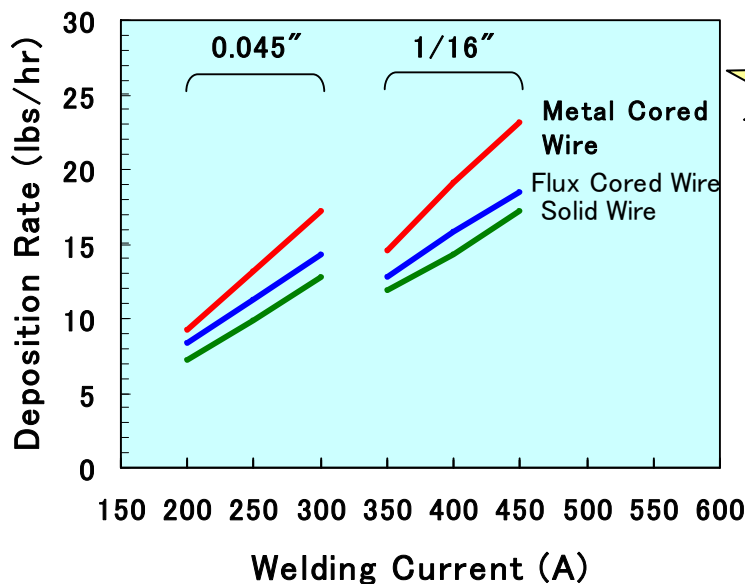
a. Gas chromatography method (AWS A4.3)

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

Wire	0.2%P.S (ksi)	T.S (ksi)	Elongation (%)	Impact value (ft-lbs)	
				-20 °F	-40 °F ^b
MX-A70C6	70	84	31	96	83
MX-A70C6LF	75	80	31	64	-

a. Test method: AWS A5.18

b. 90%Ar-10%CO₂



Typical deposition rate of welding consumables