


KOBELCO FCW Data Sheet 11
DW-312

**Classification : AWS A5.22 E312T0-1
AWS A5.22 E312T0-4**

Due to the nature of the chemical composition of DW-312, it's ferrite content is very high as compared to DW-309L. This provides greater crack resistance, when welding high carbon steel, tools and dies. This high amount of ferrite should be taken into consideration when welding Stainless Steels that may require low ferrite weld metal.

**All-Weld-Metal (100% CO₂)
11-1. Chemical Composition**

Unit : wt%

	C	Mn	Si	P	S	Ni	Cr	Cu	N
DW-312	0.11	1.15	0.56	0.021	0.014	10.10	28.25	0.04	0.012
E312TX-X	≤0.15	0.5/2.5	≤1.0	≤0.04	≤0.03	8.0/10.5	28/32	≤0.5	---

11-2. Ferrite Content

	Shaeffler Diagram (%)	DeLong Diagram (FN)	1992 WRC Diagram (FN)
As welded	29.5	>18	51.1

11-3. Tensile Test

	0.2% Yield Strength (psi)	Tensile Strength (psi)	Elongation (%)	Reduction of Area (%)
DW-312	79,143	113,300	24	26
E312TX-X	---	295,000	≥22	---

11-4. Applications

Due to its high strength and excellent crack resistance, DW-312 is the most versatile of all the DW stainless series wires. Some of its applications are as follows:

- Joining of dissimilar metals such as stainless to carbon, carbon to manganese, etc.
- Joining or build-up of crack sensitive or difficult to weld high carbon steels.
- The repair of tools and dies, build-up of components prior to hardfacing, providing an excellent cushion layer for hard metal that might otherwise crack under high impact.