



ArcelorMittal

A913: Welding Made Easier

A913 high-strength steel consistently proves to be the ideal option for optimizing your next structural steel project.

Benefits include:

- Higher yield strength up to 80 ksi
- Material savings
- Superior weldability with reduced preheat temperatures
- Outstanding toughness
- Reduction in embodied carbon
- Wide range of shape availability

With the release of AWS D1.1 2025, fabricators will benefit from a more streamlined process for welding the strongest grades of A913, further increasing efficiency and capitalizing on the benefits A913 brings to the project.

A913 Gr. 70:

- No preheat up to 2 1/2" thickness
- Lower preheat temperatures than A992 for material over 2 1/2" thickness

A913 Gr. 80:

- Only prequalified base metal with 80 ksi yield strength
- Same preheat temperatures as A992 for all material thicknesses
- FCAW-S E100 electrode available for field welding applications



Photo credit: Owen Steel

Effective with the release of AWS D1.1 2025

Thickness, in.	Minimum Prequalified Preheat Temperatures, °F [°C]			
	A992	A913		
		Grade 50 & 65*	Grade 70*	Grade 80**
1/8 to 3/4	32 [0]	32 [0]	32 [0]	32 [0]
3/4 to 1-1/2	50 [10]	32 [0]	32 [0]	50 [10]
1-1/2 to 2-1/2	150 [65]	32 [0]	32 [0]	150 [65]
Over 2-1/2	225 [110]	32 [0]	150 [65]	225 [110]

*Requires low hydrogen diffusible electrode, H8, or better

**Requires low hydrogen diffusible electrode, H4, or better

For metal at temperatures below 32 deg. F, minimum preheat is 70 deg. F