



ASTM A1085

A Dynamic Step Forward

Atlas Tube is a proud producer of ASTM A1085—the new cold-formed, welded carbon steel HSS specification. This new spec offers enhanced performance in seismic and other fatigue-related applications, resulting in an easier, more cost-effective HSS design overall. A1085 raises the bar on performance, bringing HSS to the forefront of steel design.



Atlas Tube

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A1085 HSS: Benefits & Advantages



Minimum yield stress of 50 ksi

All sizes and shapes (round, square, rectangular) will have the same minimum yield stress of 50 ksi used for design.

Tighter material tolerances

More stringent wall tolerances and the addition of a mass tolerance mean the full nominal wall thickness can be used for design of HSS. This means no longer needing to reduce the nominal wall thickness by 0.93 as prescribed in the AISC Steel Construction Manual for both member selection and connection design.

More area available for design and a higher minimum yield mean that HSS are more economical and more efficient.

Maximum yield stress of 70 ksi

The actual yield stress cannot exceed 70 ksi. This maximum yield point will result in a lower expected yield strength and the associated overstrength factors. This will reduce capacity design requirements in seismic designs.

This is the only specification used in North America or Europe that puts an upper limit on the yield stress in HSS.

Standard requirement for Charpy V-notch toughness

This new specification will require all HSS to meet a minimum CVN value of 25 ft.-lbs. at 40° F, which corresponds to Zone 2, Fracture Critical Elements, as listed in ASTM A709 and AASHTO M270.

Having the minimum CVN required makes HSS more suitable for use in structures subject to fatigue.

Applications

- Sign supports and poles
- Amusement rides
- Buildings
- Bridges
- Towers
- Cranes
- And more!

ASTM A500-13 GRADE B

ASTM A1085

Scope	Cold-formed welded & seamless		Cold-formed welded	
Max. Perimeter	88"		88"	
Thickness Range	t < 0.875"		0.148" < t < 0.875"	
Yield Stress	Round	42 ksi min.	All shapes	50 ksi min.
	Sq./rect.	46 ksi min.		70 ksi max.
Tensile Stress	Round	58 ksi min.	65 ksi min.	
	Sq./rect.	58 ksi min.		
Wall Thickness	-10%		-5%	
Mass Tolerance	N/A		-3.5%	
Corner Radii (Rectangular and Square HSS)	r < 3 t		t ≤ 0.400"	1.6 t to 3.0 t
			t > 0.400"	1.8 t to 3.0 t
CVN	N/A		25 ft.-lbs. @ 40° F	
Supplemental Requirements	N/A		Optional heat-treating Optional varying CVN	

To learn more about this exciting new spec, visit atlastube.com/astm-a1085

ATU-012717