Model Matching Process

AustubeMills

Common international Pipe and Tube Standards and Grades

HSS: COMPARISON OF MASS TOLERANCE AND GRADE BETWEEN VARIOUS NATIONAL PRODUCT STANDARDS

HSS Product Standard	Mass Tolerance	Thickness Tolerance	GRADE - Standard, Grade Designation, Min.Yield Stress																			
			JIS G 3444	ASTM A500	JIS G 3444	EN 10219	JIS G 3466	AS/NZS 1163	ASTM A500	EN 10219	ASTM A500	JIS G 3444	ASTM A500	ASTM A500	JIS G 3466	ASTM A500	AS/NZS 1163	EN 10219	JIS G 3444	JIS G 3444	EN 10219	AS/NZS 1163	EN 10219
			STK290	Grade A (CHS)	STK400	S235	STKR400	C250	Grade A (RHS)	S275	Grade B (CHS)	STK490	Grade B (RHS)	Grade C (CHS)	STKR490	Grade C (RHS)	C350	S355	STK500	STK540	S420	C450	S460
AS/NZS 1163	-4%	+/- 10%						250									350					450	
ASTM A500	None	+/- 10%		230					270		290		315	315		345							
JIS 3444	+/- 10% (Note 1)	+/- 10%	Note (5)		235							315							353	390			
JIS 3466	+/- 10% (Note 1)	+/- 10% (Note 3)					245								325								
EN 10219	-6%	+/- 10% (Note 4)				235				275								353			420		460

Notes:
AS/NZS 1163:2009 Cold-formed structural steel hollow sections
ASTM A500 - 2010 Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
JIS G 3444:2006 Carbon steel tubes for general structural purposes (CHS only)
JIS G 3466:1998 Carbon Steel Square Pipes for General Structural Purposes
EN 10219:2006 Cold formed welded structural hollow sections of non-alloy and fine grain steels
(1) For the version of JIS sighted, there is no mention of Mass Tolerance. However, the IPSOS report notes +/-10%.
(2) +/-10% for 4.0-8.0 mm thick, +/- 0.3 mm for 2.0-3.2 mm thick
(3) For wall thickness under 3.0 mm, tolerance is +/-0.3 mm.
(4) For CHS with OD <= 406. 4mm and all RHS: for thickness (t) <= 5 mm then +/-10% for t > 5 mm then +/-0.5 mm. For all other CHS, t tolerance is +/-10% with a maximum of +/- 2 mm.
(5) Min. Yield Stress not nominated in the Standard.

Green Section comparable grades to AS/NZS1163 - C250
Yellow Section comparable grades to AS/NZS1163 - C350
Orange Section comparable grade to AS/NZS1163 - C450

This table compares the minimum yield strength requirement of each of the Strength Grade designation in the commonly used National Standards.