

TYPE	TANDAR	GRADE	thickness : t mm.	CHEMICAL COMPOSITION (max)										Tension Test				OTHER TEST						
				C	Si	Mn	P	S	Cu ¹⁾ min	N	Nb	V	OTHER ELEMENTS	Yield Point _{min}	Tensile Strength	Elongation _{min}								
														thick : t mm.	Kgf / mm ² [MPa, N / mm ²] (ksi)	thick : t mm.	Kgf / mm ² [MPa, N / mm ²] (ksi)		thick : t mm.	Transverse				
High - Strength Low - alloy Columbiu m Vanadiu m Stuctural	ASTM A572 (2007)	42	t ≤ 40	0.21	0.40	1.35 ^{5),6)}	0.040	0.050	0.18	-	Alloy content				All	29.5 [290] (42)	All	42 [415] (60) min	All ²⁾	20	Supplement ary requiremen ts shall not apply unless specified in the purchase order.			
			t > 40		0.15 - 0.40						Type ⁷⁾	element	Heat analysis	%product analysis										
		50	t ≤ 40	0.23	0.40						1	Nb ⁸⁾	0.005-0.05	0.004-0.06								35 [345] (50)	46 [450] (65) min	18
			t > 40		0.15 - 0.40																			
		60	t ≤ 32	0.26	0.40						3	Nb ⁸⁾	0.005-0.05	0.004-0.06								42 [415] (60)	53 [520] (75)min	16
			t ≤ 13																					
		65	13 < t ≤ 32	0.23	0.40						3	Nb+V	0.02-0.15	0.01-0.16								46 [450] (65)	56 [550] (80) min	15
			t > 32																					
												1.65												