

MECHANICAL PROPERTIES

PT. TOYOGIRI IRON STEEL

TYPE	SNI 07-2052-2002						JIS G 3112						
	PLAIN		DEFORMED				PLAIN		DEFORMED				
	(kg / mm2)												
Symbol of Grade	BJTP 24	BJTP 30	BJTS 30	BJTS 35	BJTS 40	BJTS 50	SR 235	SR 295	SD 295A	SD 295B	SD 345	SD 390	SD 490
Yield Point	24 min.	30 min.	30 min.	35 min.	40 min.	50 min.	235 min.	295 min.	295 min.	295 - 390	345 - 440	390 - 510	490 - 625
Tensile Strength	39 min.	45 min.	45 min.	50 min.	57 min.	63 min.	380 - 520	440 - 600	440 - 600	440 min.	490 min.	560 min.	620 min.
Elongation Minimum (%)	20 and 24	18 and 20	16 and 18	18 and 20	16 and 18	12 and 14	20 and 24	18 and 20	16 and 18	16 and 18	18 and 20	16 and 18	12 and 14
Ratio (Tensile/Yield)	-	-	-	-	-	-	-	-	-	-	-	-	-

TYPE	ASTM A-615 / A-615M - 04a			ASTM A-706 / A 706M - 04a	BS 4449 / 1997			NZS 3402 : 1989		CAN/CSA-G30. 18-M92		
	PLAIN and DEFORMED			DEFORMED	PLAIN	DEFORMED		PLAIN and DEFORMED		PLAIN	DEFORMED	
	(Mpa)			(Mpa)	(Mpa)			(Mpa)		(Mpa)		
Symbol of Grade	GRADE 40	GRADE 60	GRADE 75	GRADE 60	GRADE 250	GRADE 460A	GRADE 460B	GRADE 300	GRADE 430	GRADE 300R	GRADE 400W	GRADE 500W
Yield Point	280min	420min	520min	420 - 540	250 min.	460 min.	460 min.	275 - 380	410 - 520	300 min.	400 - 525	500 - 625
Tensile Strength	420 min.	620 min.	690 min	550 min.	1.15 x actual yield point (min)	1.05 x actual yield point (min)	1.08 x actual yield point (min)	300 - 355	430 - 500	405 min.	540 min.	625 min.
Elongation Minimum (%)	11 and 12	7, 8 and 9	6 and 7	10, 12 and 14	22	12	14	20	15	11 and 12	12 and 13	10 and 12
Ratio (Tensile/Yield)	-	-	-	1.25 min.	1.15 min.	1.05 min.	1.08 min.	1.15 - 1.50	1.15 - 1.40	1.15 min.	1.15 min.	1.15 min.

CONVERSION FACTORS	Mega Pascal (Mpa) = Newton per square millimeter (N/mm ²)	Kilogram per square millimeter (kgf/mm ²)	Pound per square inch (psi) (lbf/in ²)
Mega Pascal (Mpa) = Newton per square millimeter (N/mm ²)	1	1.01972 x 10 ⁻¹	1.45038 x 10 ²
Kilogram per square millimeter (kgf/mm ²)	9.80665	1	1.42233 x 10 ³
Pound per square inch (lbf/in ²) = psi	6.89476 x 10 ⁻³	7.03070 x 10 ⁻⁴	1