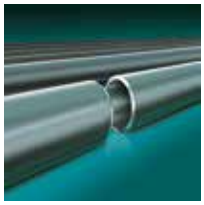

STEELS TABLE

CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES

NORM	GRADE	EXECUTION	CHEMICAL ELEMENTS (% on mass)											Yield strength Rt0.5 (Mpa)	Tensile strength Rm (Mpa)
			C max.	Mn max.	P max.	S max.	V max.	Nb max.	Ti max.	Cu max.	Ni max.	Cr max.	Mo max.		
API 5L PSL 1	A	S	0.22	0.90	0.030	0.030	-	-	-	0.50	0.50	0.50	0.15	210	335
		W	0.22	0.90			-	-	-						
	B	S	0.28	1.20			a,b	a,b	b					245	415
		W	0.26	1.20			a,b	a,b	b						
	X42	S	0.28	1.30			b	b	b					290	415
		W	0.26	1.30			b	b	b						
	X46	S	0.28	1.40			b	b	b					320	435
		W	0.26	1.40			b	b	b						
	X52	S	0.28	1.40			b	b	b					360	460
		W	0.26	1.40			b	b	b						
	X56	S	0.28	1.40			b	b	b					390	490
		W	0.26	1.40			b	b	b						
	X60	S	0.28	1.40			b	b	b					415	520
		W	0.26	1.40			b	b	b						
	X65	S	0.28	1.40			b	b	b					450	535
		W	0.26	1.45			b	b	b						
	X70	S	0.28	1.40			b	b	b					485	570
		W	0.26	1.65			b	b	b						
ASTM A53	A	S	0.25	0.95	0.05	0.045	0.08*	-	-	0.40*	0.40*	0.40*	0.15*	205	330
		W (ERW)	0.25	0.95	0.05	0.045	0.08*	-	-	0.50*	0.40*	0.40*	0.15*		
	B	S	0.30	1.20	0.05	0.045	0.08*	-	-	0.40*	0.40*	0.40*	0.15*	240	415
		W (ERW)	0.30	1.20	0.05	0.045	0.08*	-	-	0.50*	0.40*	0.40*	0.15*		

a Nb + V ≤ 0.06 %
b Nb + V + Ti ≤ 0.15 %

S = seamless pipes
W = welded pipes

* V + Cu + Ni + Cr + Mo < 1.00 %

Note: the yield and tensile strength values stated in the table here above are the minimum requirements foreseen by the norm, that does not foresee maximum values.