



## MECHANICAL PROPERTIES

Standard	Quality	Heat Treatment	Yield Strength (Mpa)			Tensile Strength (Mpa)	KV (J)
			1<16 mm	1=16-40 mm	1=40-65 mm		
API Spec. 5L	A(L210)-PSL1	U,N	210	210	210	min. 335	
API Spec. 5L	B(L245)-PSL1	U,N	245	245	245	min. 415	
API Spec. 5L	BN(L245N)-PSL 2	U,N	245 - 450	245 - 450		415-760	T=27(0°C); L=41(0°C)
API Spec. 5L	X42(L290)-PSL1	U,N	290	290	290	min. 415	
API Spec. 5L	X42N(L290N)-PSL2	U,N	290 - 495	290 - 496		415-760	T=27(0°C); L=41(0°C)
API Spec. 5L	X46(L320)-PSL1	U,N	320	320	320	min. 435	
API Spec. 5L	X46N(L320N)-PSL2	U,N	320 - 525	320 - 525		435 - 760	T=27(0°C); L=41(0°C)
API Spec. 5L	X52(L360)-PSL1	U,N	360	360	360	min. 460	
API Spec. 5L	X52N(L360N)-PSL2	U,N	360 - 530	360 - 530		460 - 760	T=27(0°C); L=41(0°C)
API Spec. 5L	X56(L390)-PSL1	U,N	390	390	390	min. 490	
API Spec. 5L	X56N(L390N)-PSL2	U,N	390 - 545	390 - 545		490 - 760	T=27(0°C); L=41(0°C)
API Spec. 5L	X60(L415)-PSL1	U,N	415	415	415	min. 520	
API Spec. 5L	X60N(L415N)-PSL2	U,N	415 - 565	415 - 565		520 - 760	T=27(0°C); L=41(0°C)
API Spec. 5L	X65(L450)-PSL1	U,N	450	450	450	min. 535	
API Spec. 5L	X65Q(L450Q)-PSL2	U,N	450 - 600	450 - 600		535 - 760	T=27(0°C); L=41(0°C)

**U-Without Heat Treatment    N- Normalizing**

Standard	Quality	Heat Treatment	Yield Strength (Mpa)			Tensile Strength (Mpa)	Elongation (%)	KV (J)	Temperature of Application
			1<16 mm	1=16-40 mm	1=40-65 mm				
ASTM A53	Gr.A	U,N	205	205	205	min. 330		20	
ASTM A53	Gr.B	U,N	240	240	240	min. 415		20	
ASTM A106	Gr.A	U,N	205	205	205	min. 330	35	475	
ASTM A106	Gr.B	U,N	240	240	240	min. 415	30	475	
ASTM A106	Gr.C	U,N	275	275	275	min. 485	30	20	
ASTM A333	Gr.1	U,N	205	205	205	min. 380	35	L=18(-45°C)	-50
ASTM A333	Gr.6	U,N	240	240	240	min. 415	30	L=18(-45°C)	-50

**U-Without Heat Treatment    N- Normalizing**