Steel grades according to Japanese standards

Mechanical properties

Standards		Ladle analysis										Bendability	
		Minimum yield strength R_{eH}					Tensile strength R_m MPa		Minimum elongation A A%			Angle of bending o	Inside radius
		Nominal thickness (mm)					Nominal thickness (mm)		Nominal thickness (mm)[1]				
		≤16	>16 ≤40	>40 ≤75	>75 ≤l00	>100 ≤140	≤100	>100 ≤140	>5 ≤16	>16 ≤50	>40		
JIS G 3106-2015	SM 400 A* SM 400 B* SM 400 C*	245	235	215	215	205 –	400-510	400-510	18	22	24		
	SM 490 YA* SM 490 YB*	365	355	335	325	–	490-610	–	15	19	21		
JIS G 3101-2015	SS 400*	245	235	215	215	205	400-510	400-510	17	21	23	180	1,5 times the thickness 1,5 mal
	SS 490*	285	275	255	255	245	490-610	490-610	15	19	21	180	2,0 times the thickness

Standards	Grades	Notch impact test	
		Temperature	Min. absorbed energy
		°C	J
JIS G 3106-2015	SM 400 A*	–	–
	SM 400 B*	0	27
	SM 400 C*	0	47
	SM 490 YA*	-	-
	SM 490 YB*	0	27

1) For the nominal thickness and the position where the test piece has been taken see specific information in the standard.

* Available upon agreement.

Chemical composition

Standards	Grades	Ladle analysis						
		C* max. %			Mn %	P max. %	S max. %	Si max. %
		Nominal thickness (mm)						
		≤50	>50 ≤100	>100 ≤140				
JIS G 3106-2015	SM 400 A*	0,23	0,25	0,25	2,5 x C min.[1)]	0,035	0,035	–
	SM 400 B*	0,20	0,22	0,22	0,60-1,50	0,035	0,035	0,35
	SM 400 C*	0,18	0,18	–	0,60-1,50	0,035	0,035	0,35
	SM 490 YA*	0,20	0,20	–	1,65 max.	0,035	0,035	0,55
	SM 490 YB*			–				
JIS G 3101-2015	SS400*	–			–	0,050	0,050	–
	SS490*	–			–	0,050	0,050	–

1) The value of carbon given here is the actual cast analysis value.

* Available upon agreement.