

JIS G3106

Chemical composition

Unit: %

Symbol of grade	C	Si	Mn	P	S
SM400A	50 mm or under in thickness 0.23 max.	-	2.5 × C min. ⁽¹⁾	0.035 max.	0.035 max.
	Over 50 mm, up to and incl. 200 mm in thickness 0.25 max.				
SM400B	50 mm or under in thickness 0.20 max.	0.35 max.	0.60 to 1.40	0.035 max.	0.035 max.
	Over 50 mm, up to and incl. 200 mm in thickness 0.22 max.				
SM400C	100 mm or under in thickness 0.18 max.	0.35 max.	1.40 max.	0.035 max.	0.035 max.
SM490A	50 mm or under in thickness 0.20 max.	0.55 max.	1.60 max.	0.035 max.	0.035 max.
	Over 50 mm, up to and incl. 200 mm in thickness 0.22 max.				
SM490B	50 mm or under in thickness 0.18 max.	0.55 max.	1.60 max.	0.035 max.	0.035 max.
	Over 50 mm, up to and incl. 200 mm in thickness 0.20 max.				
SM490C	100 mm or under in thickness 0.18 max.	0.55 max.	1.60 max.	0.035 max.	0.035 max.
SM490YA	100 mm or under in thickness 0.20 max.	0.55 max.	1.60 max.	0.035 max.	0.035 max.
SM490YB					
SM520B	100 mm or under in thickness 0.20 max.	0.55 max.	1.60 max.	0.035 max.	0.035 max.
SM520C					
SM570	100 mm or under in thickness 0.18 max.	0.55 max.	1.60 max.	0.035 max.	0.035 max.

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Yield point or proof stress, tensile strength and elongation

Symbol of grade	Yield point or proof stress N/mm ²						Tensile strength N/mm ²		Elongation		
	Thickness of steel product ⁽²⁾ mm						Thickness of steel product ⁽²⁾ mm		Thickness of steel product ⁽²⁾ mm	Test piece	%
	16 or under	Over 16, up to and incl. 40	Over 40, up to and incl. 75	Over 75, up to and incl. 100	Over 100, up to and incl. 160	Over 160, up to and incl. 200	100 or under	Over 100, up to and incl. 200			
SM400A SM400B	245 min.	235 min.	215 min.	215 min.	205 min.	195 min.	400 to 510	400 to 510	5 or under Over 5, up to and incl. 16 Over 16, up to and incl. 50 Over 40	No. 5 No. 1A No. 1A No. 4	23 min 18 min 22 min 24 min
SM400C					-	-					
SM490A SM490B	325 min.	315 min.	295 min.	295 min.	285 min.	275 min.	490 to 610	490 to 610			
SM490C					-	-			5 or under Over 5, up to and incl. 16 Over 16, up to and incl. 50 Over 40	No. 5 No. 1A No. 1A No. 4	22 min 17 min 21 min 23 min
SM490YA SM490YB	365 min.	355 min.	335 min.	325 min.	-	-	490 to 610	-	5 or under Over 5, up to and incl. 16 Over 16, up to and incl. 50 Over 40	No. 5 No. 1A No. 1A No. 4	19 min 15 min 19 min 21 min

Symbol of grade	Yield point or proof stress N/mm ²						Tensile strength N/mm ²		Elongation		
	Thickness of steel product ⁽²⁾ mm						Thickness of steel product ⁽²⁾ mm		Thickness of steel product ⁽²⁾ mm	Test piece	%
	16 or under	Over 16, up to and incl. 40	Over 40, up to and incl. 75	Over 75, up to and incl. 100	Over 100, up to and incl. 160	Over 160, up to and incl. 200	100 or under	Over 100, up to and incl. 200			
SM520B SM520C	365 min.	355 min.	335 min.	325 min.	-	-	520 to 640	-	5 or under Over 5, up to and incl. 16 Over 16, up to and incl. 50 Over 40	No. 5 No. 1A No. 1A No. 4	19 min 15 min 19 min 21 min
SM570	460 min.	450 min.	430 min.	420 min.	-	-	570 to 720	-	16 or under Over 16 Over 20	No. 5 No. 5 No. 4	19 min 26 min 20 min

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Charpy absorption energy

Symbol of grade	Test temperature Degree Celsius	Charpy absorption energy (J)	Test piece
SM400B	0	27 min	No. 4 in rolling direction
SM400C	0	47 min	
SM490B	0	27 min	
SM490C	0	47 min	
SM490YB	0	27 min	
SM520B	0	27 min	
SM520C	0	47 min	
SM570	-5	47 min	