

## S355 European Standard Steel

### S355 EN 10025 : 2004 Standard Structural Steel Plate

S355 structural steel plate is a high-strength low-alloy European standard structural steel covering four of the six "Parts" within the **EN 10025 – 2004** standard. With minimum yield of 50,000 KSI, it meets requirements in chemistry and physical properties similar to ASTM A572 / 709. Careful attention should always be placed on the specific variation of S355 required if considering substitute material.

S355 is used in almost every facet of structural fabrication. Typical applications include:

- Structural steelworks: bridge components, components for offshore structures
- Power plants
- Mining and earth-moving equipment
- Load-handling equipment
- Wind tower components

Part 2 - Non-Alloy Structural Steels	
S...	Structural Steel
E...	Engineering Steel
355	Minimum yield strength (ReH) in Mpa up to 16mm
...JR..	Charpy V-notch (Longitudinal) 27 J @ +20 Celsius
...JO..	Charpy V-notch (Longitudinal) 27 J @ 0 Celsius
...J2..	Charpy V-notch (Longitudinal) 27 J @ -20 Celsius
...K2..	Charpy V-notch (Longitudinal) 40 J @ +20 Celsius
...+AR	Supply condition "As Rolled"
...+N	Supply condition "Normalized or Normalized Rolled"
Additional Options	
...Z..	Grade with improved properties perpendicular to the surface

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<b>Part 3 - Normalised / Normalised Rolled Weldable Fine Grain Structural Steel</b>	
S...	Structural Steel
355	Minimum yield strength (Reh) in Mpa up to 16mm
...N..	Longitudinal Charpy V-notch impacts at a temperature not lower than minus 20 Celsius
...NL..	Longitudinal Charpy V-notch impacts at a temperature not lower than minus 50 Celsius
Additional Options	
...Z..	Grade with improved properties perpendicular to the surface
<b>Part 4 - Thermomechanically Rolled Weldable Fine Grain Structural Steels</b>	
S...	Structural Steel
355	Minimum yield strength (Reh) in Mpa up to 16mm
...M..	Longitudinal Charpy V-notch impacts at a temperature not lower than minus 20 Celsius
...ML..	Longitudinal Charpy V-notch impacts at a temperature not lower than minus 50 Celsius
Additional Options	
...Z..	Grade with improved properties perpendicular to the surface

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Part 4 - Thermomechanically Rolled Weldable Fine Grain Structural Steels	
S...	Structural Steel
355	Minimum yield strength (Reh) in Mpa up to 16mm
...JO..	Charpy V-notch (Longitudinal) 27 J @ 0 Celsius
...J2..	Charpy V-notch (Longitudinal) 27 J @ -20 Celsius
...K2..	Charpy V-notch (Longitudinal) 40 J @ +20 Celsius
...W..	Improved Atmospheric Corrosion Resistance
...P..	Greater phosphorus content (grade S355 only)
...+AR	Supply condition "As Rolled"
...+N	Supply condition "Normalized or Normalized Rolled"
Additional Options	
...Z..	Grade with improved properties perpendicular to the surface

Mechanical Properties		(1MPa = 145.03 PSI)							
Grade	Yield Strength (Mpa) in Nom. Thicknesses (mm)								
	>3 - ≤16	>16 - ≤40	>40 - ≤63	>63 - ≤80	>80 - ≤100	>100 - ≤150	>150 - ≤200	>200 - ≤250	>250 - ≤400
S355JR	355 min.	345 min.	335 min.	325 min.	315 min.	295 min.	285 min.	275 min.	-
S355JO	355 min.	345 min.	335 min.	325 min.	315 min.	295 min.	285 min.	275 min.	-
S355J2	355 min.	345 min.	335 min.	325 min.	315 min.	295 min.	285 min.	275 min.	265 min.
S355K2	355 min.	345 min.	335 min.	325 min.	315 min.	295 min.	285 min.	275 min.	265 min.
S355N	355 min.	345 min.	335 min.	325 min.	315 min.	295 min.	285 min.	275 min.	
S355NL	355 min.	345 min.	335 min.	325 min.	315 min.	295 min.	285 min.	275 min.	

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Mechanical Properties							(1MPa = 145.03 PSI)		
S355M	355 min.	345 min.	335 min.	325 min.	325 min.	295 min.			
S355ML	355 min.	345 min.	335 min.	325 min.	325 min.	295 min.			
S355J0WP	355 min.	345 min.	-	-	-	-			
S355J2WP	355 min.	345 min.	-	-	-	-			
S355J0W	355 min.	345 min.	335 min.	325 min.	315 min.	295 min.			
Grade	Tensile Strength (Mpa) in Nom. Thicknesses (mm)								
	>3 - ≤16	>16 - ≤40	>40 - ≤63	>63- ≤80	>80 - ≤100	>100 - ≤150	>150 - ≤200	>200 - ≤250	>250 - ≤400
S355JR	470 - 630	470 - 630	470 - 630	470 - 630	470 - 630	450 - 600	450 - 600	450 - 600	-
S355JO	470 - 630	470 - 630	470 - 630	470 - 630	470 - 630	450 - 600	450 - 600	450 - 600	-
S355J2	470 - 630	470 - 630	470 - 630	470 - 630	470 - 630	450 - 600	450 - 600	450 - 600	450 - 600
S355K2	470 - 630	470 - 630	470 - 630	470 - 630	470 - 630	450 - 600	450 - 600	450 - 600	450 - 600
S355N	470 - 630	470 - 630	470 - 630	470 - 630	470 - 630	450 - 600	450 - 600	450 - 600	-
S355NL	470 - 630	470 - 630	470 - 630	470 - 630	470 - 630	450 - 600	450 - 600	450 - 600	-
S355M	470 - 630	470 - 630	450 - 610	440 - 600	440 - 600	430 - 590	-	-	-
S355ML	470 - 630	470 - 630	450 - 610	440 - 600	325 440 - 600.	430 - 590	-	-	-
S355J0WP	470 - 630	470 - 630	-	-	-	-	-	-	-
S355J2WP	470 - 630	470 - 630	-	-	-	-	-	-	-

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Mechanical Properties								(1MPa = 145.03 PSI)	
S355J0W	470 - 630	470 - 630	470 - 630	470 - 630	470 - 630	450 - 600	-	-	-

Chemical Composition															
Grade	Thickness (mm)	C	Mn	P	S	Si	Cr	Ni	Mo	V	Al	Cu	Ti	Nb	N
S355JR	<40	.24 max	1.60 max	.035 max	.035 max	.55 max	-	-	-	-	-	.55 max	-	-	.012 max
S355JR	41 - ≤150	.24 max	1.60 max	.035 max	.035 max	.55 max	-	-	-	-	-	.55 max	-	-	.012 max
S355JR	151 - ≤250	.24 max	1.60 max	.035 max	.035 max	.55 max	-	-	-	-	-	.55 max	-	-	.012 max
S355J0	<40	.20 max	1.60 max	.030 max	.030 max	.55 max	-	-	-	-	-	.55 max	-	-	.012 max
S355J0	41 - ≤150	.22 max	1.60 max	.030 max	.030 max	.55 max	-	-	-	-	-	.55 max	-	-	.012 max
S355J0	151 - ≤250	.22 max	1.60 max	.030 max	.030 max	.55 max	-	-	-	-	-	.55 max	-	-	.012 max
S355J2	<40	.20 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-
S355J2	41 - ≤150	.22 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-
S355J2	151 - ≤250	.22 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-
S355J2	>250 - ≤400	.22 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-
S355K2	<40	.20 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-
S355K2	41 - ≤150	.22 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-
S355K2	151 - ≤250	.22 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-

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Chemical Composition															
S355K2	>250 - ≤400	.22 max	1.60 max	.025 max	.025 max	.55 max	-	-	-	-	-	.55 max	-	-	-
S355N	<250	.20 max	.90 - 1.65	.030 max	.025 max	.50 max	.030 max	.50 max	.10 max	.12 max	.02 min	.55 max	.05 max	.05 max	.015 max
S355NL	<250	.18 max	.90 - 1.65	.025 max	.020 max	.50 max	.030 max	.50 max	.10 max	.12 max	.02 min	.55 max	.05 max	.05 max	.015 max
S355M	<150	.14 max	1.60 max	.030 max	.025 max	.50 max	.030 max	.50 max	.10 max	.10 max	.02 min	.55 max	.05 max	.05 max	.015 max
S355ML	<150	.14 max	1.60 max	.025 max	.020 max	.50 max	.030 max	.50 max	.10 max	.10 max	.02 min	.55 max	.05 max	.05 max	.015 max
S355J0WP	<40	.12 max	1.0 max	.06 - .15	.035 max	.75 max	-	-	-	-	-	.25 - .55	-	-	.009 max
S355J2WP	<40	.12 max	1.0 max	.06 - .15	.030 max	.75 max	-	-	-	-	-	.25 - .55	-	-	-
S355J0W	<150	.16 max	.50 - 1.50	.035 max	.035 max	.50 max	-	-	-	-	-	.25 - .55	-	-	.009 max

Charpy V-Notch Testing												
Grade	Elongation in Nom. Thicknesses (mm)									Grain	@ Degrees	Min. Absorbed Energy
	>3 - ≤16	>16 - ≤40	>40 - ≤63	>63 - ≤80	>80 - ≤100	>100 - ≤150	>150 - ≤200	>200 - ≤250	>250 - ≤400			
S355JR	22 min (L)	21 min (L)	20 min (L)	18 min (L)	17 min (L)	-	-	-	-	-	+20 Celsius	>27 J
S355JO	22 min (L)	21 min (L)	20 min (L)	18 min (L)	17 min (L)	-	-	-	-	-	0 Celsius	27 J
S355J2	22 min (L)	21 min	20 min (L)	18 min	17 min (L)	-	-	-	-	-	-20 Celsius	27 J

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Charpy V-Notch Testing										
		(L)		(L)						
S355K2	22 min (L)	21 min (L)	20 min (L)	18 min (L)	17 min (L)		-	-20 Celsius	40 J	
S355N	22 min (Longitudinal)		21 min (Longitudinal)				-	6 min	-20 Celsius	40 J
S355NL	22 min (Longitudinal)		21 min (Longitudinal)				-	6 min	-50 Celsius	27 J
S355M	22 min (Longitudinal)				-	-	-	6 min	-20 Celsius	40 J
S355ML	22 min (Longitudinal)				-	-	-	6 min	-50 Celsius	27 J
S355J0WP	22 min (L)	-	-	-	-	-	-	-	0 Celsius	27 J
S355J2WP	22 min (L)	-	-	-	-	-	-	-	-20 Celsius	27 J
S355J0W	20 min (Longitudinal)			18 min (L)	-	-	-	-	0 Celsius	27 J