

Parameters Data of Structural Pipe

Mechanical and Processing Properties

Grade	Quality Grade	Yield Point (MPa)				Tensile Strength (MPa)	Elongation (%)	Impact Force (AKV) (Longitudinal) (J)				Bending Test d= Flexural Center Diameter a=Specimen Thickness (Diameter)	
		Thickness (Diameter, Side Length) (mm)						+20℃	0℃	-20℃	-40℃	Thickness (Diameter), (mm)	
		≤16	>16-35	>35-50	>50-100							≤16	>16-100
		Not less than						Not less than				≤16	>16-100
Q295	A	295	275	255	235	390-570	23					d=2a	d=3a
	B	295	275	255	235	390-570	23	34				d=2a	d=3a
Q345	A	345	325	295	275	470-630	21					d=2a	d=3a
	B	345	325	295	275	470-630	21	34				d=2a	d=3a
	C	345	325	295	275	470-630	22		34			d=2a	d=3a
	D	345	325	295	275	470-630	22			34		d=2a	d=3a
	E	345	325	295	275	470-630	22				27	d=2a	d=3a
Q390	A	390	370	350	330	490-650	19					d=2a	d=3a
	B	390	370	350	330	490-650	19	34				d=2a	d=3a
	C	390	370	350	330	490-650	20		34			d=2a	d=3a
	D	390	370	350	330	490-650	20			34		d=2a	d=3a
	E	390	370	350	330	490-650	20				27	d=2a	d=3a
Q420	A	420	400	380	360	520-680	18					d=2a	d=3a
	B	420	400	380	360	520-680	18	34				d=2a	d=3a
	C	420	400	380	360	520-680	19		34			d=2a	d=3a
	D	420	400	380	360	520-680	19			34		d=2a	d=3a
	E	420	400	380	360	520-680	19				27	d=2a	d=3a
Q460	C	460	440	420	400	550-720	17		34			d=2a	d=3a
	D	460	440	420	400	550-720	17			34		d=2a	d=3a
	E	460	440	420	400	550-720	17				27	d=2a	d=3a

Note:

1. When do drawing and bending test, we should select transverse steel test sample. The steel with the width of less than 600 mm, we choose longitudinal test piece.
2. The elongation of seamless steel tube is allowed to be reduced by $\pm 1\%$ than the values in the above table.
3. The elongation of Q345 grade steel plate with the thickness of 35 mm can be reduced by $\pm 1\%$.
4. For the round or square steel with the side length or diameter more than 50 mm to 100 mm, the elongation can be reduced by $\pm 1\%$ than the values in the above table.
5. The upper limit value of tensile strength of wide steel strips will not be treated as the delivery condition.
6. Grade A steel must be done with bending test. For other grades of steel, if suppliers can guarantee the bending test result complies with the requirements in the above table, the test can be avoided.
7. The impact force and test temperature in Charpy (V-notch) impact test should comply with the requirements on the table. Impact force value is calculated

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by the arithmetic mean value of three samples in a group. It allows one sample value be below the specified value in the table, but not less than 70% of the specified value.

8. When we adopt small size samples to do impact test (5 mm × 10 mm × 55 mm), the test result should not be less than 50% of the specified value.

9. Q460 and various grades of D and E steel generally do not supply profile steel and steel bar.