

Stainless Steel Pipe Specification

Standard Item	ASTM A213					ASTM A269					ASTM A312																		
Grade	304	304L	304H	304N	304LN	304	304L	304H	304N	304LN	304	304L	304H	304N	304LN	316	316L	316Ti	316N	316LN	321	321H	310S	310H	309S	317	317L	347	347H
Yield Strength (Mpa)	≥170 ; ≥205					≥170 ; ≥205					≥170 ; ≥205																		
Tensile Strength (Mpa)	≥485 ; ≥515					≥485 ; ≥515					≥485 ; ≥515																		
Elongation(%)	≥35					≥35					≥35																		
Hydrostatic Test	D(mm)	Pmax(Mpa)				D(mm)	Pmax(Mpa)				D(mm)	Pmax(Mpa)																	
	D<25.4	7				D<25.4	7				D≤88.9	17																	
	25.4≤D<38.1	10				25.4≤D<38.1	10																						
	38.1≤D<50.8	14				38.1≤D<50.8	14																						
	50.8≤D<76.2	17				50.8≤D<76.2	17				D>88.9	19																	
	76.2≤D<127	24				76.2≤D<127	24																						
	D≥127	31				D≥127	31																						
	P=220.6t/D					P=220.6t/D					P=2St/D S=50%Rp _{0.2}																		
IC Test	ASTMA262 E					ASTMA262 E					ASTMA262 E																		
SEddyCurrent Test	ASTM E426					ASTM E426					ASTM E426																		
O.D. Tolerance (mm)	O.D.	O.D.Tolerance				O.D.	O.D.Tolerance				O.D.	O.D.Tolerance																	
	D<25.4	+/-0.10				D<38.1	+/-0.13				10.3≤D≤48.3	+0.40/-0.80																	
	25.4≤D≤38.1	+/-0.15																											
	38.1<D<50.8	+/-0.20				38.1≤D<88.9	+/-0.25				48.3<D≤114.3	+0.80/-0.80																	
	50.8≤D<63.5	+/-0.25																											
	63.5≤D<76.2	+/-0.30				88.9≤D<139.7	+/-0.38				114.3<D≤219.1	+1.60/-0.80																	
	76.2≤D≤101.6	+/-0.38																											
	101.6<D≤190.5	+0.38/-0.64				139.7≤D<203.2	+/-0.76				219.1<D≤457.0	+2.40/-0.80																	
	190.5<D≤228.6	+0.38/-1.14																											
W.T. Tolerance (mm)	O.D.	W.T.Tolerance				O.D.	W.T.Tolerance				O.D.	W.T.Tolerance																	
	D≤38.1	+20%/-0				D<12.7	+/-15%				10.3≤D≤73.0	+20.0%/-12.5%																	
						12.7≤D<38.1	+/-10%				88.9≤D≤457.0 t/D ≤5%	+22.5%/-12.5%																	
	D>38.1	+22%/-0				D≥38.1	+/-10%				88.9≤D≤457.0 t/D >5%	+15.0%/-12.5%																	

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Standard Item	ASTM A789		ASTM A790		EN 10216-5	
Grade	S31803 S32205 S32750		S31803 S32205 S32750		1.4301 1.4307 1.4948 1.4315 1.4401 1.4404 1.4571 1.4541 1.4941 1.4845 1.4449 1.4438 1.4550 1.4912 1.4462 1.4410	
Yield Strength (Mpa)	≥450 ; ≥485 ; ≥550		≥450 ; ≥450 ; ≥550		---	
Tensile Strength (Mpa)	≥620 ; ≥655 ; ≥800		≥620 ; ≥655 ; ≥800		---	
Elongation(%)	≥25 ; ≥25 ; ≥15		≥25 ; ≥25 ; ≥15		---	
Hydrostatic Test	The Hydrostatic Test shall be in accordance with ASTM A1016. Could be replaced by ECT.		The Hydrostatic Test shall be in accordance with ASTM A999. Could be replaced by ECT.		The hydrostatic test shall be carried out at a test pressure of 7MPa or at a test pressure calculated using the following formula $P=2St/D$ $S=70\%Rp_{0.2}$	
IC Test	Usually use Pitting Corrosion Test.		Usually use Pitting Corrosion Test.		EN ISO 3651-2 (Optional)	
Eddy Current Test	Could be replaced by HT.		Could be replaced by HT.		EN 10246-3	
O.D. Tolerance (mm)	O.D.	O.D.Tolerance	O.D.	O.D.Tolerance	O.D. Tolerance Class	
	D<12.7	+/-0.13	10.3≤D≤48.3	+0.40/-0.80	D3	+/-0.75% or +/-0.3mm
	12.7≤D<38.1	+/-0.13	48.3<D≤114.3	+0.80/-0.80	whichever is the greater	
	38.1≤D<88.9	+/-0.25	114.3<D≤219.1	+1.60/-0.80	D4	+/-0.5% or +/-0.1mm
	88.9≤D<139.7	+/-0.38	219.1<D≤457.0	+2.40/-0.80	whichever is the greater	
W.T. Tolerance (mm)	O.D.	W.T.Tolerance	O.D.	W.T.Tolerance	W.T. Tolerance Class	
	D<12.7	+/-15%	10.3≤D≤73.0	+20.0%/-12.5%	T3	+/-10% or +/-0.2mm
	12.7≤D<38.1	+/-10%	88.9≤D≤457.0 t/D ≤5%	+22.5%/-12.5%	whichever is the greater	
	38.1≤D<88.9	+/-10%		88.9≤D≤457.0 t/D >5%	+15.0%/-12.5%	T4
	88.9≤D<139.7	+/-10%	whichever is the greater			