

The American Society for Testing and Materials is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

ASTM A668 Untreated and heat-treated carbon and alloy steel forging for general industrial use.

Summary

ASTM A668 covers untreated and heat treated carbon and alloy steel forgings for general industrial use. A668 cover carbon forgings in six classes, and alloy steel forgings in seven classes. Other forging specifications are available for specific applications. A common item Portland Bolt supplies that is made to ASTM A668 are clevis as used in tie rod assemblies. The standard class is class A, although other classes can be quoted upon request.

A668 Chemical Requirements

Element	Classes A to F and AH to FH	Classes G to N and GH to NH
Manganese % max	1.35	-
Phosphorous % max	0.050	0.040
Sulfur % max	0.050	0.040

A668 Mechanical Requirements

Class	Size, inches	Tensile, min ksi	Yield, min ksi	Elong, % min in 2"	RA, % min	Hardness, HBN
A	Up to 20	47	-	-	-	183max
B	Up to 20	60	30	24	36	120-174
C	Up to 12	66	33	23	36	137-183
	12 to 20	66	33	22	34	137-183
D	Up to 8	75	37.5	24	40	149-207
	8 to 12	75	37.5	22	35	149-207
	12 to 20	75	37.5	20	19	149-207
	Over 20	75	37.5	19	30	149-207
E	Up to 8	85	44	25	40	174-217
	8 to 12	85	44	23	37	174-217
	12 to 20	83	43	22	35	174-217
F	Up to 4	90	55	20	39	187-235
	4 to 7	85	50	20	39	174-217
	7 to 10	85	50	19	37	174-217
	10 to 20	82	48	19	36	174-217
G	Up to 12	80	50	24	40	163-207
	12 to 20	80	50	22	38	163-207
H	Up to 7	90	60	22	44	187-235
	7 to 10	90	58	21	42	187-235
	10 to 20	90	58	18	40	187-235
J	Up to 7	95	70	20	50	197-255
	7 to 10	90	65	20	50	187-235
	10 to 20	90	65	18	48	207-255
K	Up to 7	105	80	20	50	212-269
	7 to 10	100	75	19	50	207-269
	10 to 20	100	75	18	48	207-269
	Up to 4	125	105	16	50	255-321

L	4 to 7	115	95	16	45	235-302
	7 to 10	110	85	16	45	223-293
	10 to 20	110	85	14	40	223-293
M	Up to 4	145	120	15	45	293-352
	4 to 7	140	115	14	40	285-341
	7 to 10	135	110	13	40	269-331
	10 to 20	135	110	12	38	269-341
N	Up to 4	170	140	13	40	331-401
	4 to 7	165	135	12	35	331-401
	7 to 10	160	130	11	35	321-388
	10 to 20	160	130	11	35	321-402

Classes with an added 'H' are supplied on the basis of hardness values only. For example, AH. Classes A-F are carbon steel, classes G-N are alloy steel

A668 Heat Treatment

Class	Heat Treatment
A	Untreated
B	Annealed, or normalized, or normalized and tempered
C	Annealed, or normalized, or normalized and tempered
D	Annealed, or normalized, or normalized and tempered
E	Normalized and tempered or double normalized and tempered
F	Quenched and tempered, or normalized, quenched and tempered
G	Annealed, or normalized, or normalized and tempered
H	Normalized and tempered
J	Normalized and tempered, or normalized, quenched and tempered
K	Normalized, quenched and tempered
L	Normalized, quenched and tempered
M	Normalized, quenched and tempered
N	Normalized, quenched and tempered

Classes with an added 'H' are supplied on the basis of hardness values only. For example, AH.

HAIYAN BOLT

海盐百伦紧固件有限公司