

CROSS REFERENCE OF ASTM MATERIAL SPECIFICATIONS COVERING CAST AND EQUIVALENT FORGED VALVES

Important Note: Data provided on this chart is for information purposes only. Always consult current ASME or API official publications to verify information and cross reference data.

CHEMICAL COMPOSITION	ASTM CAST	ASTM FORGED
CARBON STEEL		
0.30/0.35 % MAX	A216-WCB†	A105/A106
0.25/0.35 % MAX	A216-WCC	A105N
LOW TEMPERATURE STEEL		
0.30 % MAX	A352-LCB†	A350-LF2 Cl.1
0.5 Ni	A352-LCC	
0.5 Mo	A352-LC1	
2 Ni	A352-LC2	
3 Ni	A352-LC2-1*	
3.5 Ni	A352-LC3	A350-LF3 Cl.1
4.5 Ni	A352-LC4*	
9 Ni	A352-LC9*	
ALLOY STEEL		
0.5 Mo	A217-WC1	A182-F1
0.6 Cr - Ni-0.2 Mo	A487-4C*	
0.75 Cr - 0.75 Ni - 1 Mo	A217-WC5	
1 Cr - 0.5 Mo		A182-F12 Cl.2
1.25 Cr - 0.5 Mo	A217-WC6	A182-F11 Cl.2
1.25 Cr - 0.5 Mo	A217-WC11	
2.25 Cr - 1 Mo	A217-WC9	A182-F22 Cl.3
3 Cr - 1 Mo	A182-F21	
5 Cr - 0.5 Mo	A217-C5	A182-F5a
9 Cr - 1 Mo	A217-C12	A182-F9
9 Cr - 1 Mo-0.2 V	A217-C12A	A182-F91
STAINLESS STEEL		
13 Cr	A217-CA15	A182-F6A
13 Cr - 4 Ni		A182-F6NM
13 Cr - 4 Ni - 0.7 Mo	A351-CA6NM*	
18 Cr - 8 Ni	A351-CF10M	A182-F304H
18 Cr - 8 Ni with Molybdenum		A182-F316H
18 Cr - 8 Ni with Titanium		A182-F321
18 Cr - 8 Ni with Titanium		A182-F321H
18 Cr - 8 Ni with Columbium	A351-CF8A	A182-F347H
19 Cr - 9 Ni	A351-CF8	A182-F304
19 Cr - 10 Ni Low Carbon	A351-CF3	A182-F304L
19 Cr - 10 Ni - 2 Mo	A351-CF8M	A182-F316
19 Cr - 10 Ni - 2 Mo Low Carbon	A351-CF3M	A182-F316L
19 Cr - 9 Ni - Cb	A351-CF8C	A182-F347
DUPLEX STEEL		
19-22 Cr 27.5-30.5 Ni 2-3 Mo	A351-CN7M	B473-N0820 (Alloy 20)
24-25 Cr 7-10 Ni 4 Mo N/V	A351-CD4MCu	A182-F53
18-21 Cr 9-13 Ni 3-4 Mo	A351-CG8M*	(AISI 317)
19.5-20.5 Cr 17.5-19.5 Ni 6-7 Mo	A351-CK3MCuN	A182-F44
24.5-26.5 Cr 4.7 Ni 1.7-2.2 Mo	A890-1A*	A182-F50*
21-23.5 Cr 4.5-6.5 Ni 2.5-3.5 Mo	A890-4A*/A351-CD3MN	A182-F51
24-26 Cr 6-8 Ni 4-5 Mo	A890-5A*/A351-CD4MCu*	A182-F53
24-26 Cr 6.5-8.5 Ni 2-4 Mo	A995-CD3MWCuN/6A	A182-F55
25 Cr 20 Ni		A182-F310H

† ASTM A216/A352 permits maximum carbon content of 0.30% for grade LCB/WCB but GSL only allows 0.25% maximum.
* No longer referenced 2009 edition of ASME B16.34.

For more metallurgical information and alternative cross references to DIN, EN, UNS, etc., go to:-
<https://globalsupplyline.com.au/catalogue-gsl-valve-api603/>

CASTING/ FORGING/ BARSTOCK CROSS REFERENCE

DESCRIPTION	UNS GRADE	FORGING	CASTING	BARSTOCK
Carbon steel	K30504	A105	A216 WCB	A105
Low-temp. carbon	K03011	A350 LF2	A352 LCB	A350 LF2
High-yield steel	K03014	A694 F60	-	A694 F60
3-1/2 nickel steel	K32025	A350 LF3	A352 LC3	A350 LF3
5 chrome, 1/2 moly	K41545	A182 F5	A217 C5	A182 F5
1 1/4 chrome, 1/2 moly	K11597	A182 F11	A217 WC6	A739 B11
2 1/4 chrome moly, 1 moly	K21590	A182 F22	A217 WC9	A739 B22
9 chrome, 1 moly	K90941	A182 F9	A217 WC6	A182 F9
13 chrome	S41000	A182 F6A	A351 CA15	A276 or A479 410
304	S30400	A182 F304	A351 CF8	A276 or A479 304
304L	S30403	A182 F304L	A351 CF3	A276 or 479 304L
316	S31600	A182 F316	A351 CF8M	A276 or A479 316
316L	S31603	A182 F316L	A351 CF3M	A276 or A479 316L
317L	S31703	A182 F317L	A351 CG8M	A276 or 479 317L
321	S32100	A182 F321	-	A276 or A479 321
347	S34700	A182 F347	A351 CF8C	A276 or A479 347
17-4pH	S17400	A564 630	A564 630	-
Alloy 400	N04400	B564 N04400	A494 M35-1	B164 N04400
Alloy K500	N05500	-	-	B865 N05500
Alloy 800	N08800	B564 N08810	-	B408 N08800
Alloy 825	N08825	-	-	B425 N08825
Alloy 600	N06600	B564 N06600	A494 CY40	B166 N06600
Alloy 625	N06625	B564 N06625	A494 CW6MC	B446 N06625
Alloy B2	B10665	B564 N10665	A494 N 12MV	B335 N10665
Alloy C	N10002	-	A494 CW6M	-
Alloy C22	N06022	B574 N06022	A494 CX2MW	B574 N06022
Alloy C276	N10276	B564 N10276	A494 CW12 MW	B574 N10276
22% duplex	S13803	A182 F51	A890 Gr. 4A	A276 or A479 S13803
25% duplex	S32750 or 32760	A182 F53	A890 Gr. 6A	A276/479 S32750 or 60
2545MO	S31254	A182 F44	A351 CK3MCuN	A182 F44
904L	N08904	B625 N08904	-	B649 N08904
Titanium	R50400	B381 F2	B367 C2	B348 Gr. 2

S31803 has been supplemented by S32205 (F60) which dual conforms to S31803 but has a higher minimum N, Mo, Ni and Cr which guarantees a better corrosion resistance.

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