

Valve Casting Material Metallurgical Chemical & Mechanical Specification

Duplex Stainless Steel A890/A995

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
255SS, UNS J93370, CD4MCu	A890 1A*	25Cr-5Ni-Mo-Cu	Carbon	0.04% Max	Nickel	4.75 - 6.0%	Tensile Strength	100,000 PSI Min
			Manganese	1.00% Max	Chromium	24.5 - 26.5%	Yield Strength	70,000 PSI Min
			Silicon	1.00% Max	Molybdenum	1.75 - 2.25%	Elongation at 2in.	16.0% Min
			Phosphorus	0.04% Max	Copper	2.75 - 3.25%		
			Sulfur	0.04% Max	Iron	Balance		
UNS J93372, CD4MCuN	A890 1B†(A) A995 1B	25Cr-5Ni-Mo-Cu-N	Carbon	0.04% Max	Nickel	4.7 - 6.0%	Tensile Strength	100,000 PSI Min
			Manganese	1.0% Max	Chromium	24.5 - 26.5%	Yield Strength	70,000 PSI Min
			Silicon	1.0 % Max	Molybdenum	1.7 - 2.3%	Elongation at 2in.	16.0% Min
			Phosphorus	0.04% Max	Copper	2.7 - 3.3%		
			Sulfur	0.04% Max	Nitrogen	0.15 - 0.25%		
UNS J93373, CD3MCuN	A890 1C*(B)	25Cr-6Ni-Mo-Cu-N	Carbon	0.03% Max	Nickel	5.6 - 6.7%	Tensile Strength	100,000 PSI Min
			Manganese	1.20% Max	Chromium	24.0 - 26.7%	Yield Strength	65,000 PSI Min
			Silicon	1.10% Max	Molybdenum	2.9 - 3.8%	Elongation at 2in.	25.0% Min
			Phosphorus	0.03% Max	Copper	1.40 - 1.9%		
			Sulfur	0.03% Max	Nitrogen	0.22 - 0.33%		
UNS J93345, CE8MN	A890 2A† A995 2A	24Cr-10Ni-Mo-N	Carbon	0.08% Max	Nickel	8.0 - 11.0%	Tensile Strength	95,000 PSI Min
			Manganese	1.00% Max	Chromium	22.5 - 25.5%	Yield Strength	65,000 PSI Min
			Silicon	1.50% Max	Molybdenum	3.0 - 4.5%	Elongation at 2in.	25.0% Min
			Phosphorus	0.04% Max	Nitrogen	0.10 - 0.30%		
			Sulfur	0.04% Max				
UNS J93371, CD6MN	A890 3A† A995 3A	25Cr-5Ni-Mo-N	Carbon	0.06% Max	Nickel	4.0 - 6.0%	Tensile Strength	95,000 PSI Min
			Manganese	1.00% Max	Chromium	24.0 - 27.0%	Yield Strength	65,000 PSI Min
			Silicon	1.00% Max	Molybdenum	1.75 - 2.5%	Elongation at 2in.	25.0% Min
			Phosphorus	0.04% Max	Nitrogen	0.15 - 0.25%		
			Sulfur	0.04% Max				
2205SS, UNS J92205, CD3MN	A890 4A† A995 4A	22Cr-5Ni-Mo-N	Carbon	0.03% Max	Nickel	4.5 - 6.5%	Tensile Strength	90,000 PSI Min
			Manganese	1.50% Max	Chromium	21.0 - 23.5%	Yield Strength	60,000 PSI Min
			Silicon	1.00% Max	Molybdenum	2.5 - 3.5%	Elongation at 2in.	25.0% Min
			Phosphorus	0.04% Max	Copper	1.00% Max		
			Sulfur	0.02% Max	Nitrogen	0.10 - 0.30%		
UNS J93404, CE3MN (Super Duplex)	A890 5A† (B) A995 5A (B)	25Cr-7Ni-Mo-N	Carbon	0.03% Max	Nickel	6.0 - 8.0%	Tensile Strength	100,000 PSI Min
			Manganese	1.50% Max	Chromium	24.0 - 26.0%	Yield Strength	75,000 PSI Min
			Silicon	1.00% Max	Molybdenum	4.0 - 5.0%	Elongation at 2in.	18.0% Min
			Phosphorus	0.04% Max	Nitrogen	0.10 - 0.30%		
			Sulfur	0.04% Max				
UNS J93380, CD3MWCuN (Super Duplex)	A890 6A† (B) A995 6A (B)	25Cr-7Ni-Mo-N	Carbon	0.03% Max	Chromium	24.0 - 26.0%	Tensile Strength	100,000 PSI Min
			Manganese	1.00% Max	Molybdenum	3.0 - 4.0	Yield Strength	65,000 PSI Min
			Silicon	1.00% Max	Copper	0.5 - 1.0%	Elongation at 2in.	25.0% Min
			Phosphorus	0.03% Max	Tungsten	0.5 - 1.0%		
			Sulfur	0.025% Max	Nitrogen	0.20 - 0.30%		
UNS J93379 (Zeron 100™) (Super Austenitic/Duplex)	A890 7A† (B) A995 7A (B)	27Cr-Ni-Mo-Cu-N	Carbon	0.03% Max	Molybdenum	2.0 - 3.5%	Tensile Strength	100,000 PSI Min
			Manganese	1.00 - 3.00%	Copper	1.00% Max	Yield Strength	75,000 PSI Min
			Silicon	1.00% Max	Tungsten	3.0 - 4.0%	Elongation at 2in.	20.0% Min
			Phosphorus	0.03% Max	Nitrogen	0.30 - 0.40%		
			Sulfur	0.02% Max	Barium	0.0002 - 0.010%		
			Nickel	6.0 - 8.0%	Boron	0.0010 - 0.010%		
			Chromium	26.0 - 28.0%	Ce + La	0.005 - 0.03%		

* A890 1A No longer referenced by API, A990 1C is not referenced in A995.

† Still in use but optionally superceded by A995.

A995-13 Current edition as of January 2017.

(A) % Cr + 3.3% Mo + 16% N ≥ 40.

(B) % CR + 3.3 (% Mo + 0.5 % W) + 16 % N ≥ 45.

Austenitic Stainless Steel A351/A743/A744

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
304SS, UNS J92600	A351 CF8 A743 CF8 A744 CF8	19Cr-9Ni	Carbon	0.08% Max	Sulfur	0.04% Max	Tensile Strength	70,000 PSI Min
			Manganese	1.50% Max	Nickel	8.0 - 11.0%	Yield Strength	30,000 PSI Min
			Silicon	2.00% Max	Chromium	18.0 - 21.0%	Elongation at 2in.	35.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50% Max		
304LSS, UNS J92500	A351 CF3 A743 CF3 A744 CF3	19Cr-9Ni	Carbon	0.03% Max	Sulfur	0.04% Max	Tensile Strength	70,000 PSI Min
			Manganese	1.50% Max	Nickel	8.0 - 12.0%	Yield Strength	30,000 PSI Min
			Silicon	2.00% Max	Chromium	17.0 - 21.0%	Elongation at 2in.	35.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50% Max		
316SS, UNS J92900	A351 CF8M A743 CF8M A744 CF8M	19Cr-10Ni-2Mo	Carbon	0.08% Max	Sulfur	0.04% Max	Tensile Strength	70,000 PSI Min
			Manganese	1.50% Max	Nickel	9.0 - 12.0%	Yield Strength	30,000 PSI Min
			Silicon	1.50% Max	Chromium	18.0 - 21.0%	Elongation at 2in.	30.0% Max
			Phosphorus	0.04% Max	Molybdenum	2.0 - 3.0%		
316LSS, UNS J92800	A351 CF3M A743 CF3M A744 CF3M	19Cr-10Ni-2Mo	Carbon	0.03% Max	Sulfur	0.04% Max	Tensile Strength	70,000 PSI Min
			Manganese	1.50% Max	Nickel	9.0 - 13.0%	Yield Strength	30,000 PSI Min
			Silicon	1.50% Max	Chromium	17.0 - 21.0%	Elongation at 2in.	30.0% Min
			Phosphorus	0.04% Max	Molybdenum	2.0 - 3.0%		
316ModSS, UNS J92804	A351 CF3MN A743 CF3MN	19Cr-10Ni-2-Mo-N	Carbon	0.03% Max	Nickel	9.0 - 13.0%	Tensile Strength	75,000 PSI Min
			Manganese	1.50% Max	Chromium	17.0 - 21.0%	Yield Strength	37,000 PSI Min
			Silicon	1.50% Max	Molybdenum	2.0 - 3.0%	Elongation at 2in.	35.0% Min
			Phosphorus	0.04% Max	Nitrogen	0.10 - 0.20%		
			Sulfur	0.04% Max				
UNS J93401	A351 CH10 A743 CH10		Carbon	0.04 - 0.10%	Sulfur	0.04% Max	Tensile Strength	70,000 PSI Min
			Manganese	1.50% Max	Nickel	12.0 - 15.0%	Yield Strength	30,000 PSI Min
			Silicon	2.00% Max	Chromium	22.0 - 26.0%	Elongation at 2in.	30.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50% Max		
UNS J93402	A351 CH20 A744 CH20	25Cr-13Ni	Carbon	0.04 - 0.20%	Sulfur	0.04% Max	Tensile Strength	70,000 PSI Min
			Manganese	1.50% Max	Nickel	12.0 - 15.0%	Yield Strength	30,000 PSI Min
			Silicon	2.00% Max	Chromium	22.0 - 26.0%	Elongation at 2in.	30.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50% Max		
UNS J94204	A351 HK40		Carbon	0.35 - 0.45%	Sulfur	0.04% Max	Tensile Strength	62,000 PSI Min
			Manganese	1.50% Max	Nickel	19.0 - 22.0%	Yield Strength	35,000 PSI Min
			Silicon	1.75% Max	Chromium	23.0 - 27.0%	Elongation at 2in.	10.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50% Max		
Alloy 20, UNS J95150	A351 CN7M A743 CN7M A744 CN7M	20Cr-29Ni-3Cu-2Mo	Carbon	0.07% Max	Nickel	27.5 - 30.5%	Tensile Strength	62,000 PSI Min
			Manganese	1.50% Max	Chromium	19.0 - 22.0%	Yield Strength	25,000 PSI Min
			Silicon	1.50% Max	Molybdenum	2.0 - 3.0%	Elongation at 2in.	35.0% Min
			Phosphorus	0.04% Max	Copper	3.0 - 4.0%		
			Sulfur	0.04% Max				
317LSS, UNS J92999	A351 CG3M A743 CG3M A744 CG3M	19Cr-11Ni-3Mo	Carbon	0.03% Max	Sulfur	0.04% Max	Tensile Strength	75,000 PSI Min
			Manganese	1.50% Max	Nickel	9.0 - 13.0% Max	Yield Strength	35,000 PSI Min
			Silicon	1.50% Max	Chromium	18.0 - 21.0% Max	Elongation at 2in.	25.0% Min
			Phosphorus	0.04% Max	Molybdenum	3.0 - 4.0% Max		
317SS, UNS J93000	A351 CG8M A743 CG8M A744 CG8M	19Cr-11Ni-3Mo	Carbon	0.08% Max	Sulfur	0.04% Max	Tensile Strength	75,000 PSI Min
			Manganese	1.50% Max	Nickel	9.0 - 13.0%	Yield Strength	35,000 PSI Min
			Silicon	1.50% Max	Chromium	18.0 - 21.0%	Elongation at 2in.	25.0% Min
			Phosphorus	0.04% Max	Molybdenum	3.0 - 4.0%		
218SS, UNS J92972, Nitronic 60	A351 CF10SMnN A742 CF10SMnN	17Cr-8.5Ni-N	Carbon	0.10% Max	Sulfur	0.03% Max	Tensile Strength	85,000 PSI Min
			Manganese	7.00 - 9.00%	Nickel	8.0 - 9.0%	Yield Strength	42,500 PSI Min
			Silicon	3.90 - 4.50%	Chromium	16.0 - 18.0%	Elongation at 2in.	30.0% Min
			Phosphorus	0.06% Max	Nitrogen	0.08 - 0.18%		
Duplex, 254SMO, UNS J93254	A351 CK3MCuN A743 CK3MCuN A744 CK3MCuN	20Cr-18Ni-6Mo-Cu-N	Carbon	0.025% Max	Nickel	17.5 - 19.5% Max	Tensile Strength	80,000 PSI Min
			Manganese	1.20% Max	Chromium	19.5 - 20.5%	Yield Strength	38,000 PSI Min
			Silicon	1.00% Max	Molybdenum	6.0 - 7.0%	Elongation at 2in.	35.0% Min
			Phosphorus	0.045% Max	Copper	0.50 - 1.00%		
			Sulfur	0.010% Max	Nitrogen	0.18 - 0.24%		

Martensitic Stainless Steel A217/A487/A743

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
UNS J91150	A217 CA15 A487 CA15 A743 CA15	Cr, Martensitic Cr, 12Cr	Carbon	0.15% Max	Sulfur	0.04% Max	Tensile Strength	90,000 PSI Min
			Manganese	1.00% Max	Nickel	1.00% Max	Yield Strength	65,000 PSI Min
			Silicon	1.50% Max	Chromium	11.5 - 14.0%	Elongation at 2in.	18.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.15 - 1.0%	Reduction of area	30.0% Min
410 Mod., UNS J91540	A352 CA6NM A486 CA6NM A&B A743 CA6NM	12.5Cr-4Ni-Mo, Martensitic Cr-Ni	Carbon	0.06% Max	Chromium	11.5 - 14.0%	Tensile Strength	100,000 PSI Min
			Manganese	1.00% Max	Molybdenum	0.4 - 1.0%	Yield Strength	75,000 Psi Min
			Silicon	1.00% Max	Copper	0.50% Max	Elongation at 2in.	17% Min
			Phosphorus	0.04% Max	Vanadium	0.05% Max	Reduction of area	35% Min
			Sulfur	0.03% Max	Tungsten	0.05% Max		
			Nickel	3.5 - 4.5%	Total residual elements	0.50%		

Nickel Base Steel A494

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
Ni210, N02100	A494 CZ100	95Ni	Carbon	1.00% Max	Sulfur	0.02% Max	Tensile Strength	50,000 PSI Min
			Manganese	1.5% Max	Nickel	95.0% Max	Yield Strength	18,000 PSI Min
			Silicon	2.00% Max	Copper	1.25% Max	Elongation at 2in.	10.0% Min
			Phosphorus	0.03% Max	Iron	3.00% Max		
Monel 400, N24130	A494 M30C	63Ni-29Cu-2Cb	Carbon	0.30% Max	Nickel	Balance	Tensile Strength	65,000 PSI Min
			Manganese	1.50% Max	Copper	26.0 - 33.0%	Yield Strength	32,500 PSI Min
			Silicon	1.0 - 2.0%	Columbium	3.50% Max	Elongation at 2in.	25.0% Min
			Phosphorus	0.03% Max	Iron	1.0 - 3.0%		
Ni'B', N30007, Hastalloy B2	A494 N7M	65Ni-28Mo-2Fe	Carbon	0.07% Max	Nickel	Balance	Tensile Strength	76,000 PSI Min
			Manganese	1.00% Max	Chromium	1.0% Max	Yield Strength	40,000 PSI Min
			Silicon	1.00% Max	Molybdenum	30.0 - 33.0%	Elongation at 2in.	20.0% Min
			Phosphorus	0.03% Max	Iron	3.00% Max		
Ni'C' Mod., N30002, Hastalloy C	A494 CW12MW	55Ni-17Mo-16Cr-4W	Carbon	0.12% Max	Chromium	15.5 - 17.5%	Tensile Strength	72,000 PSI Min
			Manganese	1.00% Max	Molybdenum	16.0 - 18.0%	Yield Strength	40,000 PSI Min
			Silicon	1.00% Max	Vanadium	0.20 - 0.40%	Elongation at 2in.	4.0% Min
			Phosphorus	0.03% Max	Tungsten	3.75 - 5.25%		
Ni'C' Mod., N26455, Hastalloy 4	A494 CW2M	61Ni-16Cr-16Mo	Carbon	0.02% Max	Nickel	Balance	Tensile Strength	72,000 PSI Min
			Manganese	1.00% Max	Chromium	15.0 - 17.5%	Yield Strength	40,000 PSI Min
			Silicon	0.80% Max	Molybdenum	15.0 - 17.5%	Elongation at 2in.	20.0% Min
			Phosphorus	0.03% Max	Tungsten	1.0% Max		
Inconel 625	A494 CW6MC	58Ni-21Cr-8.5Mo-3.4Cb-2Fe	Carbon	0.06% Max	Nickel	Balance	Tensile Strength	70,000 PSI Min
			Manganese	1.00% Max	Chromium	2.0 - 23.0%	Yield Strength	40,000 PSI Min
			Silicon	1.00% Max	Molybdenum	8.0 - 10.0%	Elongation at 2in.	25.0% Min
			Phosphorus	0.015% Max	Columbium	3.15 - 4.50%		
			Sulfur	0.015% Max	Iron	5.0% Max		

Heat Resistant Steel A297

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
309SS, UNS J93503	A297 HH	25Cr-12Ni	Carbon	0.20 - 0.50%	Sulfur	0.04% Max	Tensile Strength	75,000 PSI Min
			Manganese	2.00% Max	Nickel	11.0 - 14.0%	Yield Strength	35,000 PSI Min
			Silicon	2.00% Max	Chromium	24.0 - 28.0%	Elongation at 2in.	10.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50%		
310SS, UNS J94224	A297 HK	25Cr-20Ni	Carbon	0.20 - 0.60%	Sulfur	0.04% Max	Tensile Strength	65,000 PSI Min
			Manganese	2.00% Max	Nickel	18.0 - 22.0%	Yield Strength	35,000 PSI Min
			Silicon	2.00% Max	Chromium	24.0 - 28.0%	Elongation at 2in.	10.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50%		
312SS, UNS J93403	A297 HE	29Cr-9Ni	Carbon	0.20 - 0.50%	Sulfur	0.04% Max	Tensile Strength	85,000 PSI Min
			Manganese	2.00% Max	Nickel	8.0 - 11.0%	Yield Strength	40,000 PSI Min
			Silicon	2.00% Max	Chromium	26.0 - 30.0%	Elongation at 2in.	9.0% Min
			Phosphorus	0.04% Max	Molybdenum	0.50% Max		
330SS	A297 HT	15Cr-35Ni	Carbon	0.35 - 0.75%	Sulfur	33.0 - 37.0%	Tensile Strength	65,000 PSI Min
			Manganese	2.00% Max	Nickel	15.0 - 19.0%	Elongation at 2in.	4.0% Min
			Silicon	2.50% Max	Chromium	15.0 - 19.0%		
			Phosphorus	0.04% Max	Molybdenum	0.50% Max		

Precipitation Hardened Steel A747

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
17-4PH, UNS J92180, 5355	A747 CB7Cu-1	16Cr-4Ni-3Cu	Carbon	0.07% Max	Nickel	3.60 - 4.60%		
			Manganese	0.70% Max	Chromium	15.50 - 17.70%		
			Silicon	1.00% Max	Copper	2.50 - 3.20%		
			Phosphorus	0.035% Max	Nitrogen	0.05% Max		
			Sulfur	0.03% Max	Columbium	0.15 - 0.35%		
15-5PH, UNS J92110, 5346	A747 CB7Cu-2	16Cr-5Ni-3Cu	Carbon	0.07% Max	Nickel	4.50% Max		
			Manganese	0.70% Max	Chromium	14.0 - 15.5%		
			Silicon	1.00% Max	Copper	2.5 - 3.20%		
			Phosphorus	0.035% Max	Nitrogen	0.05% Max		
			Sulfur	0.03% Max	Columbium	0.15 - 0.35%		

Alloy Steels (Chrome-Moly) A217

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
4118 Mod., UNS J12072	A217 WC6	C-Mo	Carbon	0.05 - 0.20%	Chromium	1.00 - 1.50%	Tensile Strength	70,000 - 95,000 PSI
			Manganese	0.50 - 0.80%	Molybdenum	0.45 - 0.65%	Yield Strength	40,000 PSI Min
			Silicon	0.60% Max	Copper	0.50% Max	Elongation at 2in.	20% Min
			Phosphorus	0.035% Max (C)	Tungsten	0.10% Max	Reduction of area	35% Min
			Sulfur	0.035% Max (C)	Total of residual elements	1.00% Max		
			Nickel	0.50% Max				
4115 Mod., UNS J21890	A217 WC9	Cr-Mo	Carbon	0.05 - 0.18%	Chromium	2.00 - 2.75%	Tensile Strength	70,000 - 95,000 PSI
			Manganese	0.40 - 0.70%	Molybdenum	0.90 - 1.20%	Yield Strength	40,000 PSI Min
			Silicon	0.60% Max	Copper	0.50% Max	Elongation at 2in.	20% Min
			Phosphorus	0.035% Max	Tungsten	0.10% Max	Reduction of area	35% Min
			Sulfur	0.035% Max (C)	Total of residual elements	1.00% Max		
			Nickel	0.50% Max				
UNS J42045	A217 C5	Cr-Mo	Carbon	0.20% Max	Chromium	4.00 - 6.50%	Tensile Strength	90,000 - 115,000 PSI
			Manganese	0.40 - 0.70%	Molybdenum	0.45 - 0.65%	Yield Strength	60,000 PSI Min
			Silicon	0.75% Max	Copper	0.50% Max	Elongation at 2in.	18% Min
			Phosphorus	0.04% Max (C)	Tungsten	0.10% Max	Reduction of area	35.0% Min
			Sulfur	0.045% Max (C)	Total of residual elements	1.00% Max		
			Nickel	0.50% Max				
UNS J82090	A217 C12		Carbon	0.20% Max	Chromium	8.00 - 10.00%	Tensile Strength	90,000 - 115,000 PSI
			Manganese	0.35 - 0.65%	Molybdenum	0.90 - 1.20%	Yield Strength	60,000 PSI Min
			Silicon	1.00% Max	Copper	0.50% Max	Elongation at 2in.	18% Min
			Phosphorus	0.035% Max (C)	Tungsten	0.10% Max	Reduction of area	35.0% Min
			Sulfur	0.035% Max (C)	Columbium	0.03% Max		
			Nickel	0.50% Max			Total of residual elements	1.00% Max
	A217 C12A		Carbon	0.08 - 0.12%	Molybdenum	0.85 - 1.05%	Tensile Strength	85,000 - 110,000 PSI
			Manganese	0.30 - 0.60%	Vanadium	0.18 - 0.25%	Yield Strength	60,000 PSI Min
			Silicon	0.20 - 0.50%	Nitrogen	0.030 - 0.07%	Elongation at 2in.	18% Min
			Phosphorus	0.25% Max	Aluminium	0.02% Max	Reduction of area	45% Min
			Sulfur	0.01% Max	Columbium	0.06 - 0.10%		
			Nickel	0.40% Max	Titanium	0.01% Max		
			Chromium	8.0 - 9.5%	Zirconium	0.01% Max		

(C) For lower maximum phosphorus or sulfur contents, see ASTM A217/ A217M-14 Supplementary Requirement S52.

Carbon Steel A216

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
1025	A216 WCB		Carbon	0.30% Max	Chromium	0.50% Max	Tensile Strength	70,000 - 95,000 PSI
			Manganese	1.00% Max	Molybdenum	0.20% Max	Yield Strength	36,000 PSI Min
			Silicon	0.60% Max	Copper	0.30% Max	Elongation at 2in.	24.0% Min
			Phosphorus	0.035% Max	Vanadium	0.03% Max	Reduction of area	35.0% Min
			Sulfur	0.035% Max	Total of residual elements	1.00% Max		
			Nickel	0.50% Max				
1020	A216 WCC		Carbon	0.25% Max	Chromium	0.50% Max	Tensile Strength	70,000 - 95,000 PSI
			Manganese	1.20% Max	Molybdenum	0.20%	Yield Strength	40,000 PSI Min
			Silicon	0.60% Max	Copper	0.30	Elongation at 2in.	22.0% Min
			Phosphorus	0.035% Max	Vanadium	0.03% Max	Reduction of area	35.0% Min
			Sulfur	0.035% Max	Total of residual elements	1.00% Max		
			Nickel	0.50% Max				

Carbon Steel - Low Temp A352

Alloy/ Common Name	ASTM	Type	Chemical Composition				Physical Properties	
1025	A352 LCB	C	Carbon	0.30% Max	Nickel	0.50% Max	Tensile Strength	65,000 - 90,000 PSI
			Manganese	1.00% Max	Chromium	0.50% Max	Yield Strength	35,000 PSI Min
			Silicon	0.60% Max	Molybdenum	0.20% Max	Elongation at 2in.	24.0% Min
			Phosphorus	0.04% Max	Copper	0.30% Max	Reduction of area	35.0% Min
			Sulfur	0.045%	Vanadium	0.03% Max		
1020	A352 LCC	C, Mn	Carbon	0.25% Max	Nickel	0.50% Max	Tensile Strength	70,000 - 95,000 PSI
			Manganese	1.20% Max	Chromium	0.50% Max	Yield Strength	40,000 PSI Min
			Silicon	0.60% Max	Molybdenum	0.20% Max	Elongation at 2in.	22.0% Min
			Phosphorus	0.04% Max	Copper	0.30% Max	Reduction of area	35.0% Min
			Sulfur	0.045%	Vanadium	0.03% Max		

Global Supply Line puts the same care and attention to detail in this website as every facet of our business. If you find this website useful, refer it to your engineers, plant managers, and purchasing staff. We are a major valve & actuator stockist and supplier, supplying world wide.

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