CANADIAN SPECIALTY CASTINGS

CSC Standard Steel Grades 2016

If your required Grade is not listed please contact CSC's Engineering for further information.
Other grades can be provied on request.

AISI STEELS

	ASTM Code	Grade	Condition	Carbon C% Max.	Silicon Si% Max.	Manganese Mn% Max.	Nickel Ni%	Chromium Cr%	Molybdenum Mo%	Phosphorus P% Max.	Sulfur S% Max.	Copper Cu%	Vanadium V%	Iron Fe%	Tungsten W%	Cobalt Co%	Nickel + Cobalt Ni% + Co%	Aluminum Al%	Titanium Ti%	Niobium Nb%	Niobium + Tantalum Nb% + Ta%	Boron B%	Nitrogen N%	Nitrogen + Carbon + C% N%	Alloy % Total - Without Iron	Charpy "V" Notch ft. lb.	Tensile Strength K.S.i.	Yield Strength K.S.i.	Elong%	Brinell Hardness #	Reduction of Area %	USA Wrought AISI STD
WROUGHT GRADES																															
Carbon and Alloyed Steels	A915	SC 1025		0.22 to 0.28	0.30 to 0.60	0.40 to 0.80				0.04	0.04			98.62											1.38							1025
	A915	SC 1030		0.28 to 0.34	0.30 to 0.60	0.50 to 0.90				0.04	0.04			98.46											1.54							1030
	A915	SC 1040		0.37 to 0.44	0.30 to 0.60	0.50 to 0.90				0.04	0.04			98.37											1.64							1040
	A915	SC 1045		0.43 to 0.50	0.30 to 0.60	0.50 to 0.90				0.04	0.04			98.31											1.70							1045
	A915	SC 4130		0.28 to 0.33	0.30 to 0.60	0.40 to 0.80		0.80 to 1.10	0.15 to 0.25	.035	0.04			97.42											2.58							4130
	A915	SC 4140		0.38 to 0.43	0.30 to 0.60	0.70 to 1.10		0.80 to 1.10	0.15 to 0.25	.035	0.04			97.02											2.98							4140
	A915	SC 4330		0.28 to 0.33	0.30 to 0.60	0.60 to 0.90	1.65 to 2.00	0.70 to 0.90	0.20 to 0.30	.035	0.04			95.55											4.46							4330
	A915	SC 4340		0.38 to 0.43	0.30 to 0.60	0.60 to 0.90	1.65 to 2.00	0.70 to 0.90	0.20 to 0.30	.035	0.04			95.45											4.56							4340
	A915	SC 8620		0.18 to 0.23	0.30 to 0.60	0.60 to 1.00	0.40 to 0.70	0.40 to 0.60	0.15 to 0.25	.035	0.04			97.22											2.78							8620
	A915	SC 8625		0.23 to 0.28	0.30 to 0.60	0.60 to 1.00	0.40 to 0.70	0.40 to 0.60	0.15 to 0.25	.035	0.04			97.17											2.83							8625
	A915	SC 8630		0.28 to 0.33	0.30 to 0.60	0.60 to 1.00	0.40 to 0.60	0.40 to 0.60	0.15 to 0.25	.035	0.04			97.17											2.83							8630
		H13		0.32 to 0.45	0.80 to 1.20	0.20 to 0.50	0.30 Max.	4.75 to 5.50	1.10 to 1.75				0.80 to 1.20	90.42											9.59							H13
		H21		0.26 to 0.36	0.15 to 0.50	0.15 to 0.40	0.30 Max.	3.00 to 3.75					0.30 to 0.60	85.72	8.50 to 10.00										14.29							H21
Hastalloys - High Nickel		Hastalloy C276		0.01	0.08	1.00	55.24	14.50 to 16.50	15.00 to 17.00	0.04	0.03		0.35	4.00 to 7.00	3.00 to 4.50	2.50 Max.									44.76							
		Hastalloy B2		0.02	0.10	1.00	66.81	1.00	26.00 to 30.00	0.04	0.03			2.00 Max.		1.00 Max.									33.19							
		Incoloy 825		0.05	0.05	1.00	38.00 to 46.00	19.50 to 23.50	2.50 to 3.50		0.03	1.50 to 3.00		29.02				0.20	0.60 to 1.20						70.98							
		Inconel 600		0.15	0.50	1.00	74.34	14.00 to 17.00			.015	0.50		6.00 to 10.00											25.665							
		Inconel 625		0.10	0.50	0.50	57.92	20.00 to 23.00	8.00 to 10.00	.015	.015			5.00		1.00		0.40	0.40		3.15 to 4.15				42.08							
		Inconel 718		0.08	0.35	0.35		17.00 to 21.00	2.80 to 3.30	.015	.015	0.30		17.11		1.00	50.00 to 55.00	0.20 to 0.80	0.65 to 1.15		4.75 to 5.50	.006			82.891							
CARBON & LOW ALLOY STEELS:																															
Carbon Steel	A27	N-1		0.25	0.80	0.75				0.05	0.06			98.09											1.91							
	A27	N-2		0.35	0.80	0.60				0.05	0.06			98.14											1.86							
	A27	U 60-30		0.25	0.80	0.75				0.05	0.06			98.09											1.91		60	30	22		30	
	A27	60-30		0.30	0.80	0.60				0.05	0.06			98.19											1.81		60	30	24		35	1020
	A27	65-35		0.30	0.80	0.70				0.05	0.06			98.09											1.91		65	35	24		35	
	A27	70-36		0.35	0.80	0.70				0.05	0.06			98.04											1.96		70	36	22		30	1030
	A27	70-40		0.25	0.80	1.20				0.05	0.06			97.64											2.36		70	40	22		30	
	A216	WCA		0.25	0.60	0.70	0.50 Max.	0.50 Max.	0.20 Max.	0.04	0.045	0.30 Max.	0.03 Max.	96.84											3.17		60-85	30	24		35	
	A216	WCB		0.30	0.60	1.00	0.50 Max.	0.50 Max.	0.20 Max.	0.04	0.045	0.30 Max.	0.03 Max.	96.49											3.52		70-95	36	22		35	
	A216	WCC		0.25	0.60	1.20	0.50 Max.	0.50 Max.	0.20 Max.	0.04	0.045	0.30 Max.	0.03 Max.	96.34											3.67		70-95	40	22		35	
	A352	LCA		0.25	0.60	0.70	0.50	0.50	0.20	0.04	0.045	0.30	0.03	96.84											3.17	13 (-25 F)	60-85	30	24		35	
	A352	LCB		0.30	0.60	1.00	0.50	0.50	0.20	0.04	0.045	0.30	0.03	96.49											3.52	13 (-50 F)	65-90	35	24		35	
	A352	LCC		0.25	0.60	1.20	0.50	0.50	0.20	0.04	.045	0.30	0.03	96.34											3.67	13 (-50 F)	70-95	40	22		35	
	A356	Grade 1		0.35	0.60	0.70				.035	0.03			98.29											1.72		70	36	20			
Tool Steel	A597	CA-2		0.95 to 1.05	1.50	0.75		4.75 to 5.50	0.90 to 1.40				0.20 to 0.50	90.13											9.88					58-62 RC		
	A597	CD-2		1.40 to 1.60	1.50	1.00		11.00 to 13.00	0.70 to 1.20				0.40 to 1.00	81.50		0.70 to 1.00									18.50					58-64 RC		
	A597	CD-5		1.35 to 1.60	1.50	0.75		11.00 to 13.00	0.70 to 1.20				0.35 to 0.55	79.88		2.50 to 3.50									20.13					58-64 RC		
	A597	CM-2		0.78 to 0.88	1.00	0.75	0.25	3.75 to 4.50	4.50 to 5.50				1.25 to 2.20	79.95	5.50 to 6.75	0.25									20.06					64-66 RC		
	A597	CS-5		0.50 to 0.65	1.75 to 2.20	0.60 to 1.00	0.40 to 0.60	0.35	0.20 0.80				1.25 to 2.20	87.50	5.50 to 6.75	0.25									12.50					53-58 RC		
	A597	CS-7		0.45 to 0.55	0.60 to 1.00	0.40 to 0.80		3.00 to 3.50	1.20 to 1.60					93.45											6.55							
	A597	CH-12		0.30 to 0.40	1.50	0.75		4.75 to 5.75	1.25 to 1.75				0.20 to 0.50	88.95	1.00 to 1.70										11.05					40-55 RC		
	A597	CH-13		0.30 to 0.42	1.50	0.75		4.75 to 5.75	1.25 to 1.75				0.75 to 1.20	89.67											10.34					40-55 RC		
NICKEL BASE ALLOYS:																															
Nickel Base Corrosion Resistant Alloys	A494	CZ-100	.95 min. Ni	1.00	2.00	1.50	91.19			0.03	0.03	1.25 Max.		3.00 Max.											8.81		50	18	10	90-140		
	A494	M-35-1		0.35	1.25	1.50	63.34			0.03	0.03	26.00 to 33.00		3.50 Max.						0.50 Max.					36.66		65	25	25			
	A494	M-25-S		0.25	3.50 to 4.50	1.50	60.69			0.03	0.03	27.00 to 33.00		3.50 Max.											39.31							
	A494	M-30C		0.30	1.00 to 2.00	1.50	61.64			0.03	0.03	26.00 to 33.00		3.50 Max.						1.00 to 3.00					38.36		65	32.5	25	125-180		
	A494	N-12MV		0.12	1.00	1.00	63.41	1.00	26.00 to 30.00	0.04	0.03		0.20 to 0.60	4.00 to 6.00											36.59		76	40	6	180-220		
	A494	N-7M		0.07	1.00	1.00	62.36	1.00	30.00 to 33.00	0.04	0.03			3.00 Max.											37.64		76	40	20			
	A494	CY-40		0.40	3.00	1.50	68.54	14.00 to 17.00		0.03	0.03			11.00 Max.											31.46		70	28	30			Fe 11.0
	A494	CW-12MW		0.12	1.00	1.00	58.31	15.50 to 17.50	16.00 to 18.00	0.04	0.03			4.50 to 7.50											41.69		72	40	4	220-280		C
	A494	CW-6M		0.07	1.00	1.00	57.86	17.00 to 20.00	17.00 to 20.00	0.04	0.03			3.00 Max.											42.14		72	40	25			
	A494	CW-2M		0.02	0.80	1.00	63.62	15.00 to 17.50	15.00 to 17.50	0.03	0.03			2.00 Max.											36.38		72	40	20			
	A494	CW-6MC		0.06	1.00	1.00	62.41	20.00 to 23.00	8.00 to 10.00	.015	.015			5.00 Max.											37.59		70	40	25			625
HIGH STRENGTH CARBON STEELS:																															
High Strength Carbon Steel	A148	80-40		0.35 to 0.45	0.20 to 0.60	0.60 to 1.00				0.05	0.06			98.29											1.71		80	40	18	170-207	30	
	A148	80-50		0.25 to 0.30	0.30 to 0.60	0.75 to 1.00	0.40 to 0.70	0.40 to 0.70	0.20 to 0.30	0.05	0.06			96.94											3.06		80	50	22	180-207	35	
	A148	90-60		0.25 to 0.30	0.30 to 0.60	0.75 to 1.00	0.40 to 0.70	0.40 to 0.70	0.20 to 0.30	0.05	0.06			96.94											3.06		90	60	20	190-220	40	
	A148	105-85		0.25 to 0.30	0.30 to 0.60	0.75 to 1.00	0.40 to 0.70	0.40 to 0.70	0.20 to 0.30	0.05	0.06			96.94											3.06		105	85	17	220-250	35	
STEEL CASTINGS:																															
Low Alloy Steel	A217	WC1		0.25	0.60	0.50 to 0.80			0.45 to 0.65	0.04	.045			97.87											2.14		60-90	35	24		35	
	A217	WC4		0.05 to 0.20	0.60	0.50 to 0.80	0.70 to 1.10	0.50 to 0.80	0.45 to 0.65	0.04	.045			96.44											3.56		70-95	40	20		35	
	A217	WC5		0.05 to 0.20	0.60	0.40 to 0.70	0.60 to 1.00	0.50 to 0.90	0.90 to 1.20	0.04	.045			96.09											3.91		70-95	40	20		35	
	A217	WC6		0.05 to 0.20	0.60	0.50 to 0.80		1.00 to 1.50	0.45 to 0.65	0.04	.045			96.74											3.26		70-95	40	20		35	
	A217	WC9		0.05 to 0.18	0.60	0.40 to 0.70		2.00 to 2.75	0.90 to 1.20	0.04	.045			95.23											4.78		70-95	40	20		35	
	A217	WC11		0.15 to 0.21	0.30 to 0.60	0.50 to 0.80		1.00 to 1.50	0.45 to 0.65	0.02	.015			96.89											3.12		80-105	50	18		45	
	A217	C5		0.20	0.75	0.40 to 0.70		4.00 to 6.50	0.45 to 0.65	0.04	.045			92.62											7.39		90-115	60	18		35	
	A217	C12		0.20	1.00	0.35 to 0.65		8.00 to 10.00	0.90 to 1.20	0.04	.045			88.17											11.84		90-115	60	18		35	
	A217	C12A		0.08 to 0.12	0.20 to 0.50	0.30 to 0.60	0.40	8.00 to 9.50	0.85 to 1.05	0.03	.010			88.38						0.06 to 1.00			0.03 to 0.07		11.62		85-110	65	20		45	

MECHANICAL PROPERTIES

SYMBOLS

Al	Aluminum	Fe	Iron
As	Arsenic	Mg	Magnesium
B	Boron	Mn	Manganese
C	Carbon	Mo	Molybdenum
Cb	Columbium (Niobium)	N	Nitrogen
Ce	Cerium	Nb	Niobium (now Columbium)
Co	Cobalt	Ni	Nickel
Cr	Chromium	P	Phosphorus
Cu	Copper	Pb	Lead
Fe	Iron	S	Sulfur
Mg	Magnesium	Sb	Antimony
Mn	Manganese	Se	Selenium
Mo	Molybdenum	Si	Silicon
N	Nitrogen	Sn	Tin
Nb	Niobium (now Columbium)	Ta	Tantalum
Ni	Nickel	Ti	Titanium
P	Phosphorus	V	Vanadium
Pb	Lead	W	Tungsten
		Zn	Zinc