

Material Selection Guide



Huron Casting, Inc.

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Quality Shell Molded Steel Castings – Material Selection Guide

Carbon & Low Alloy Steels (includes wear resistant and low temperature service)

Steel Casting Specs		Nominal Chemical Composition						Minimum Mechanical Properties					Heat Treatment
ASTM	AISI/SAE	C	Mn	Si	Ni	Cr	Mo	TS, ksi	YS, ksi	EL, %	RA, %	Bhn	
A27, A216 WCA	1018 1020	.20	.65	.65	-	-	-	60, 65	30, 35	22, 24	30, 35	137- 192	N
A27, Gr 70-40 A216 WCB	1025	.25	.65	.65	-	-	-	70	36	22	30	143- 192	N
A27, A352 LCB A148 Gr 80-50	1025M	.26	0.90	.50	-	-	-	80 80	40 50	18 22	30 35	163- 197	N, NT, QT QT
A148 Medium Carbon	1030, 1035, 1040	.30 .35 .40	.65 .75 .80	.65 .65 .65	-	-	-	80 90	50 60	22 20	35 40	187- 241	N, NT, QT N, NT, QT
A148 Gr 90-60	1025M	.28	1.10	.55				90	60	20	40	197- 241	QT
A148 Gr 105-85 A487 4A	1020M	.23	1.35	.50	-	-	.10	105	85	17	35	223- 269	QT
A148, A487 9A-E	4130/ 4135	.30- .35	.50	.50	-	.90	.18	90-115	60-95	15-18	35	241- 302	N, NT, QT
4140	4140	.40	.50	.50	-	.90	.18	90-115	60-95	15-18	35	241- 302	N, NT, OQT
A148, A487 4A-E	8620- 8630	.20 .30	.80 .80	.50 .50	.50 .50	.50 .50	.18 .18	90-135	60-115	9-18	22-40	241 311	N, NT, QT
A148, A487 4A-E	8635- 8640	.35- .40	.80	.50	.50	.50	.18	90-135	60-95	15-18	35-40	241- 311	N, NT, OQT
A148 Gr 120-100, Replaces 8630	1330M	.27	1.65	.55	-	-	.15	120	100	13	25	255- 321	QT
Induction Hardening	1335	.35	1.75	.55	-	-	-	Can meet Rc 50 minimum at 2mm deep and Rc 40 minimum down to 7mm deep.				285 max	N, As supplied
Wear Resistant	EX34	.30	1.0	.50	-	.50	.18	-	-	-	-	341- 415-	QT
Wear Resistant	4130M	.30	.80	.50	-	.80	.18	-	-	-	-	415- 514	QT
Wear Resistant	1327	.27	1.75	.55	-	-	-	-	-	-	-	341- 514	QT

High Alloy – Corrosion and Heat Resistant

Steel Casting Specs		Nominal Chemical Composition						Minimum Mechanical Properties					Heat Treatment
ASTM	AISI/SAE	C	Mn	Si	Ni	Cr	Mo	TS, ksi	YS, ksi	EL, %	RA, %	Avg Bhn	
A279 HF-HT	302, 310 330	varies	see	spec	-	-	-	-	-	-	-	-	None or Q
A351	CF8	.08	1.50	2.00	8-11	18-21	.50	-	-	-	-	-	Q
A351	CF8M	.08	1.50	1.50	9-12	18-21	2-3	-	-	-	-	-	Q
A217 A487	CA15	.10	1.00	1.50	-	11.5 14	-	-	-	-	-	207	Annealed

Modifications and Special Grades Can Be Made To Your Specifications.