

STANDARD SAWBROOK STEELS

Sawbrook Designation	TYPICAL COMPOSITION RANGE ⁽¹⁾						MECHANICAL PROPERTIES						
	C	Mn	Cr	Ni	Mo	Cu	Tensile Strength ⁽³⁾ (ksi)	Yield Strength ⁽³⁾ (ksi)	% Elongation ⁽³⁾	% Reduction of Area	Typical BHN Range ⁽²⁾	Typical Heat Treatment ⁽⁴⁾	Applicable Specification
GR:WCA	.25 max.	.70 max.	-	-	-	-	60	30	24	35	-	A or N	ASTM A216
GR:WCB	.30 max.	1.00	-	-	-	-	70	36	22	35	-	A or N	ASTM A216
1015	.15-.25	.40-.60	-	-	-	-	60	30	24	35	121-170	A or N	ASTM A27
1020	.15-.25	.40-.60	-	-	-	-	65	35	24	35	128-179	A or N	ASTM A27
1025	.20-.30	.50-.90	-	-	-	-	70	36	22	30	137-187	A or N	ASTM A27
1019	.15-.23	.90-1.20	-	-	-	-	70	40	22	30	137-187	N&T	ASTM A27
1040	.35-.45	.60-.90	-	-	-	-	80	40	18	30	163-202	A or N	ASTM A148
1045	.40-.50	.50-.90	-	-	-	-	85	45	16	24	174-229	N&T	SAE J435a 0050A
1045	.40-.50	.50-.90	-	-	-	-	100	70	10	15	212-255	Q&T	SAE J435a 0050B
2317	.15-.23	.40-.60	-	3.25-3.75	-	-	-	-	-	-	187-229	Carburize	-
8620	.15-.25	.60-.90	.40-.60	.40-.70	.15-.25	-	-	-	-	-	-	Carburize	-
8630	.25-.35	.60-.90	.40-.60	.40-.70	.15-.25	-	90	60	20	40	187-229	N&T	ASTM A148
8630	.25-.35	.60-.90	.40-.60	.40-.70	.15-.25	-	105	85	17	35	223-262	Q&T	ASTM A148
8630	.25-.35	.60-.90	.40-.60	.40-.70	.15-.25	-	120	95	14	30	262-302	Q&T	ASTM A148
4140	.35-.45	.60-.90	.80-1.10	-	.15-.25	-	150	125	9	22	321-375	Q&T	ASTM A148
4140	.35-.45	.60-.90	.80-1.10	-	.15-.25	-	175	145	6	12	363-404	Q&T	ASTM A148
4320L	.18-.22	.75-1.00	.55-.90	1.50-2.00	.20-.40	-	-	-	-	-	-	Q&T	ASTM A487
4340	.38-.43	.60-.80	.70-.90	1.65-2.00	.20-.30	-	-	-	-	-	-	Q&T	ASTM A487

FOOTNOTES 1. Typical Composition Range - The ranges shown are for our standard materials used to meet the indicated specifications. Sawbrook produces other low alloys which, depending on the application, may be substituted.

2. Carburizing and flame hardening grades are available in both carbon and low alloy steels.

3. Minimum Mechanical Properties - The properties listed are the minimum for the indicated specification and are typical for one-inch sections. A variation of properties is readily obtained by varying the heat treatment.

4. Heat Treatment - With specification limitations, the heat treatment can be varied to obtain desired mechanical properties and to meet design needs. Water quenching and tempering are available at our foundry.