



DAMERON ALLOY FOUNDRIES ALLOY REFERENCE GUIDE



CORROSION RESISTANCE STAINLESS STEELS

TYPICAL HARDNESS VALUES AND SEPARATELY CAST TEST BARS

ALLOY	Grade	Condition	Tensile	Yield	Approx. Elong. %	Hardness
			Min. (KSI)	Min. (KSI)		Max.
303	CF16F	Annealed	70	30	25	Rb 90
304	CF8	Annealed	70	30	35	Rb 90
304L	CF3	Annealed	70	30	35	Rb 90
309	CH-20	Annealed	70	30	30	Rb 90
310	CK-20	Annealed	65	30	35	Rb 90
316	CF8M	Annealed	70	30	30	Rb 90
316L	CF3M	Annealed	70	30	30	Rb 90
317	CG8M	Annealed	75	35	25	Rb 90
347	CF8C	Annealed	70	32	30	Rb 90
A-20	CN7M	Annealed	62	25	35	Rb 90

CHARACTERISTICS :

Good corrosion resistance to most chemicals, salts, and acids. Characteristics include, excellent machineability, good weldability, immune to most organic chemicals, resists oxidizing solutions.

APPLICATION :

Oil Refinery, bearings, bushings, pumps and valves, chemical processing, food and dairy, marine, flanges, fittings, impellers, medical applications and pressure retaining parts.

HARDENABLE STAINLESS STEELS

TYPICAL HARDNESS VALUES AND SEPARATELY CAST TEST BARS

ALLOY	Grade	Condition	Tensile	Yield	Approx. Elong. %	Hardness
			Min. (KSI)	Min. (KSI)		Max.
400	C-12	Hardened	90-115	60	18	Rc 45
410	CA15	Hardened	90-115	65	18	Rc 45
410 MOD	CA-6NM	Hardened	110	80	15	Rc 35
416	IC 416	Hardened	95	75	8	Rc 45
420	CA40	Hardened	100	70	15	Rc 52
431	IC 431	Hardened	110	75	5-20	Rc 40
440A	IC 440A	Hardened	---	---	---	Rc 56
440C	IC 440C	Hardened	---	---	---	Rc 60
17-4 PH	IC 17-4	Hardened	150	140	6-20	Rc 44
15-5 PH	IC 15-5	Hardened	135	110	5-15	Rc 38
Bromalloy	B-152	Hardened	---	---	---	Rc 58
DUPLEX	5 A	Hardened	100	75	18	----

CHARACTERISTICS :

Excellent resistance to atmospheric corrosion and abrasive chemicals. Good to excellent wear resistance superior to chromium grades. Good ductility in some applications.

APPLICATION :

400 Series & CA6NM : Chemical & food processing, impellers, pump casing, knives and cutlery. Glass Industry mold components (Bromalloy 152)
17-4 & 15-5 PH : Aircraft parts, valves, fittings, impellers, gears, hardware, pump and propeller shafting.

COBALT BASE ALLOYS

TYPICAL HARDNESS VALUES AND SEPARATELY CAST TEST BARS

ALLOY	Grade	Condition	Tensile	Yield	Approx. Elong. %	Hardness
			Min. (KSI)	Min. (KSI)		Max.
Cobalt #3		As-Cast	---	---	---	Rc 53
Cobalt #6		As-Cast	115	96	3	Rc 45
Cobalt #12		As-Cast	---	---	---	Rc 50
Cobalt #19		As-Cast	---	---	---	Rc 52
Cobalt #21		As-Cast	95	65	8-20	Rc 32
Cobalt #28	F-75	As-Cast	95	65	8	Rc 32
Cobalt #31		As-Cast	105	75	6-10	Rc 30

CHARACTERISTICS :

Excellent corrosion, wear and heat resistance. Excellent resistance to abrasion, erosion and wear. Used in a wide range of parts requiring high strength and oxidation resistance at elevated temperatures.

APPLICATION :

Valves, pumps chemical, petro-chemical and oil refining equipment, aircraft (high-temperature), applications, gas turbine applications, turbine blades and wheels and medical implant applications.



DAMERON ALLOY FOUNDRIES

ALLOY REFERENCE GUIDE



NICKEL BASE ALLOYS

TYPICAL HARDNESS VALUES AND SEPARATELY CAST TEST BARS

<u>ALLOY</u>	<u>Grade</u>	<u>Condition</u>	<u>Min.</u> <u>(KSI)</u>	<u>Min.</u> <u>(KSI)</u>	<u>Approx.</u> <u>Elong. %</u>	<u>Hardness</u> <u>Max.</u>
Alloy B		Annealed	75	50	20	Rb 100
Alloy C		Annealed	75	45	12	Rb 90
Monel S		Hardened	120	85	0	Rc 38
Monel E		As-Cast	65	33	25-35	Rb 78
M-35		As-Cast	65	25	25-40	Rb 85
Inconel	CY40	As-Cast	70	28	30	Rb 90
HR-30		As-Cast	80	70	1	Rc 32
HR-34		As-Cast	80	70	1	Rc 34
HR-40		As-Cast	80	70	1	Rc 42
HR-44		As-Cast	80	70	1	Rc 44
HR-54		As-Cast	80	70	1	Rc 50
IN 625	{Vacuum Cast}	H'treated	85	45	25	
IN 718	{Vacuum Cast}	H'treated	120	105	3	Rc 25

CHARACTERISTICS :

Nickel base alloys, because of their chemical corrosion resistance and ability to maintain good mechanical properties at elevated temperatures, affords an excellent means for achieving stronger, advanced-temperature, oxidation-

APPLICATION :

Valves, pumps chemical, petro-chemical and oil refining equipment, aircraft (high-temperature) applications, gas turbine, turbine blades and wheels, glass container forming and glass

CARBON STEELS / MILD STEELS / TOOL STEELS

TYPICAL HARDNESS VALUES AND SEPARATELY CAST TEST BARS

<u>ALLOY</u>	<u>Grade</u>	<u>Condition</u>	<u>Tensile</u>		<u>Approx.</u> <u>Elong. %</u>	<u>Hardness</u> <u>Max.</u>
			<u>Min.</u> <u>(KSI)</u>	<u>Yield</u> <u>Min.</u> <u>(KSI)</u>		
1025	A-216 WCB	Annealed	63	42	25-35	Rb 80
1025	A-352 LCB	Annealed	65	35	24	Rb 80
1020	A-216 WCC	Annealed	70	40	25	Rb 80
4140	IC 4140	Hardened	130	100	5-20	Rc 57
8620	IC 8620	Hardened	100	80	10-20	Rc 45
A2 Tool Steel		Hardened	---	---	---	Rc 60
D2 Tool Steel		Hardened	---	---	---	Rc 59
H13 Tool Steel		Hardened	---	---	---	Rc 53
M4 Tool Steel		Hardened	---	---	---	Rc 64
S7 Tool Steel		Hardened	---	---	---	Rc 58

CHARACTERISTICS :

High impact strength and wear resistance. Minimum corrosive properties.

APPLICATION :

Carbon & Mild Steels :

Railroad and transportation industries, oil refinery equip., hardware and spray nozzles.

Tool Steels :

Bearings, rollers, forming dies, gages, cutting tools, reamers, broaches and hardware.

ALUMINUM ALLOYS

TYPICAL VALUES AND SEPARATELY CAST TEST BARS

<u>ALLOY</u>	<u>Grade</u>	<u>Condition</u>	<u>Tensile</u>		<u>Approx.</u> <u>Elong. %</u>	<u>Hardness</u> <u>Max.</u>
			<u>Min.</u> <u>(KSI)</u>	<u>Yield</u> <u>Min.</u> <u>(KSI)</u>		
356	A-356	T6 treated	38	28	3%	Rb 70
Almag 35	535-2	As Cast	35	18	9%	Rb 70
Tensaloy	713-1	Aged	32	22	3%	Rb 75

CHARACTERISTICS :

Corrosion resistant, readily machined & welded.

APPLICATION :

Hardware, structural, brackets, aircraft, pumps, agricultural.

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