PALMER ASSOCIATES
over 25 years experiance

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Iron Alloy Properties

Material	Specification	Grade	Minimum Tensile Strength (ksi)	Minimum Yield Strength (ksi)	Minimum Elongation (%)	Hardness (BHN)	Heat Treatment Required
Gray Iron	ASTM A-48	class 30	30,000	-	-	171 - 255	-
		class 35	35,000	-	-	187 - 255	-
Ductile Iron	SAE J434C	D 4018	60,000	40,000	18	170 max.	Annealed
		D 4512	65,000	45,000	12	156 - 217	-
		D 5506	80,000	55,000	6	185 - 255	-
		D 7003	100,000	70,000	3	241 - 302	-
Austempered Ductile Iron (ADI	ASTM A-897	1	125,000	80,000	10	269 - 321	Quenched and Tempered
		2	150,000	100,000	7	302 - 363	
		3	175,000	125,000	4	341 - 444	
		4	200,000	155,000	1	388 - 477	
		5	230,000	185,000	n/a	420 - 500	

* The mechanical properties shown in the table above are intended as guidelines.

However, since the properties may vary with the location of a given casting, the suitability of a particular metal for a specific use is best determined by laboratory or service tests.

Mechanical properties will vary in terms of microstructure, which especially in as-cast conditions, is dependant on section size, chemical composition and foundry processes.

** Palmer Assoc. can supply castings compliant with specifications such as ASTM, SAE, DIN or other equivalent international requirements.

NOTE: PROPERITES ARE BELIEVED TO BE CORRECT, BUT ARE NOT WARRANTED IN ANY WAY BY