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ASCE 4	1 for pre-19	00 steel: Lo	wer-bound $F_{v} = 24$	ksi, <i>F,,</i> = 36 ksi
0			y	
See AIS	C Design G	uide No. 15	for an expanded ta	bie
See ASCE 41 and FEMA 356 for L.B and expected strength tables				
TABLE 3.2 Typi	cal Design Values	for Structural Ste	eel Used in Buildings	5
Period	ASTM Specification	F_u (tensile strength), ksi	$F_{ m y}$ (minimum yield point), ksi	F _b (maximum bending stress), ksi
1900-1908	A9 (medium)	60-70	50% of F.,	16
1909-1923	A9 (structural)	55-65	50% of F_{μ}	16
1923-1931	A9 (structural)	55-65	50% of F_{w} but at least 30	18
1932	A140-32T	60-72	50% of F_w but at least 33	18
1933	A9 (structural)	55-65	50% of F_{w} but at least 30	18
1934-1936	A9 (structural)	60-72	50% of F_w but at least 33	18
1936-1960	A7 (structural)	60-72	50% of F_{w} but at least 33	20
	A9 (structural)			
1960–1963	A7 (or A36)	60-72 (58)	50% of F_{μ} but at least 33 (36)	22
1963-present	A36	58	36	24
1970s-present	A572, Gr. 50	65	50	33
SOURCE: Refer	ences 11, 17, and 26	3,		





rv) holts:
· y / Solid .
s in the
n diameter
9.02
6.01
9.02







Steel Identifying Joists, Cont'd Looking for design data: Search for drawings, tags at ends, age If no drawings – measure and analyze as trusses? TABLE 3.6 Maximum Stresses in Open-Web Joists Maximum tensile Year Joist series stress, ksi 1929-1958 SJ18 1953-1961 "L," L, "S," S 201962-1965 J 22 1965-1978 J 22 (sometimes 30) 1961-1966 LA 20 or 22 1961-1986 H 30 (sometimes 22) $0.6F_y$ (22–30) $0.6F_y$ (22–30) $0.6F_y$ (22–30) 1962-1988 LH1967-1978 LJ 1970-1972 DLJ 1970-1988 DLH $0.6F_{y}(22-30)$ 30 or 22 0.6F_y (22-30) 1986-present Κ 1978-present Joist girders SOURCE: References 24 and 25. 63 Or, try http://www.steeljoist.org/investigation/



























Steel

Eddy Current (ASTM E566)

- Electromagnetic induction: A conductor placed in changing magnetic field generates circular elec. currents (resembling tornados or eddies in water). Those generate *their* measurable magnetic field, affected by defects.
- Test: A probe coil is moved along object, generates eddy currents. Defects affect eddy currents and are detected.
- Finds cracks, voids, porosity, inclusions, changes in composition. Used to monitor thickness of produced metal. Can find repair welds in machined / ground surfaces.



