

MiTek recommends the use of hex head metal screws with a self-drilling tip, for ease of installation and strength. Screw diameter ranges from 0.190" to 0.250" and is specified for each connector in their corresponding load table.

An important factor to consider when selecting a self-drilling screw is the material thickness specifically the combined side and main member thickness. Care should be taken by the designer to verify that the drill point and thread length are long enough to appropriately fasten the members per the fasteners manufacturers specifications.

The drill point is the unthreaded section from the screw tip to the first thread. This length must be long enough to completely drill through the material before the threads engage. If the threads engage too early, they can cause the fastener to bind and break.



Specification Table

Screw Size	Nominal Diameter d (in)	Washer Diameter d _w (in)	Allowable Screw Shear Strength (P _{ss} /Ω)	Allowable Shear Connection Strength (P _{ns} /Ω, P _{ss} /Ω)					Allowable Screw Tension Strength (P _{ts} /Ω)	Allowable Tensile Pull-Out Strength (P _{not} /Ω, P _{ts} /Ω)				
				Steel Thickness mil (gauge)						Steel Thickness mil (gauge)				
				33–33	43–43	54–54	68–68	97–97		33	43	54	68	97
				(20–20)	(18–18)	(16–16)	(14–14)	(12–12)		(20)	(18)	(16)	(14)	(12)
#10 x 1/2"	0.190	0.375	573	188	289	404	564	573	885	87	116	145	182	254
#12 x 3/4"	0.216	0.375	724	200	308	430	601	724	1184	99	132	165	207	289
#14 x 3/4"	0.250	0.500	990	215	331	463	647	990	1605	115	153	191	239	335

- 1) Allowable loads are per AISI S-100 and are for use when utilizing the traditional Allowable Stress Design methodology. The tabulated loads may be multiplied by a Factor of Safety (Ω) of 3 to determine the screw nominal strength. The LRFD load may be determined by multiplying the allowable screw load by the ASD safety factor of 3 then by Resistance Factor (φ) of 0.50.
- 2) Allowable loads may not be increased for wind or seismic load unless otherwise noted.
- 3) Allowable loads are based on cold-formed steel members with a minimum yield strength, F_y, of 33 ksi and tensile strength, with an F_u, of 45 ksi.
- 4) Allowable loads are based on design steel thickness for 33 mil = 0.036", 43 mil = 0.048", 54 mil = 0.060", 68 mil = 0.075", and 97 mil = 0.105" per ITW Buildex ESR-1976.
- 5) Self-drilling tapping screw fasteners for steel-to-steel connections used for connectors in this catalog shall be in compliance with ASTM C1513.
- 6) Screw diameters used in the calculation of shear loads per ANSI/ASME standard.

Screw Identification Table

Screw Point Type	Screw Size	Maximum Material Thickness ^{1,2}	
		(in)	(mm)
TEKS/1	#10	0.095	2.41
	#12	0.095	2.41
	#14	0.095	2.41
TEKS/3	#10	0.175	4.45
	#12	0.210	5.33
	#14	0.210	5.33
TEKS/4	#12	0.250	6.35
TEKS/4.5	#14	0.375	9.53
TEKS/5	#12	0.500	12.70
	#14	0.500	12.70

- 1) Total thickness of all steel, including any spacing between steel layers.
- 2) Drill and tap capacities may vary.
- 3) Table is guideline only; see individual product for specific maximum material thickness.