

PERFORMANCE TABLES

TABLE 1: FASTENER SPECIFICATIONS

FASTENER DESIGNATION	OVERALL LENGTH ¹ (INCHES)	LENGTH OF THREAD ² (INCHES)	MINOR THREAD DIAMETER ³ (INCHES)	SHANK DIAMETER ³ (INCHES)	OUTSIDE THREAD DIAMETER ³ (INCHES)	ALLOWABLE STEEL STRENGTH			
						BENDING YIELD STRENGTH ⁴ F _{yb} (PSI)	TENSILE (PSI) [POUNDS]	SHEAR (PSI) [POUNDS]	
R4	9 x 2"	2	1-1/4	0.117	0.130	0.174	158,800	61,760 [627]	39,660 [428]
	9 x 2-1/2"	2-3/8	1-5/8						
	9 x 2-3/4"	2-3/4	1-7/8						
	9 x 3-1/8"	3-1/8	2-1/8						
	10 x 2-1/2"	2-3/8	1-5/8	0.128	0.142	0.194	143,590	62,640 [846]	44,520 [542]
	10 x 2-3/4"	2-3/4	1-7/8						
	10 x 3-1/8"	3-1/8	2-1/8						
	10 x 3-1/2"	3-1/2	2-3/8						
	10 x 4"	3-7/8	2-5/8						
	10 x 4-3/4"	4-5/8	3	0.153	0.172	0.238	134,280	60,580 [1,134]	38,610 [655]
	12 x 2-1/2"	2-3/8	1-1/2						
	12 x 2-3/4"	2-3/4	1-3/4						
	12 x 3-1/8"	3-1/8	2-1/8						
	12 x 3-1/2"	3-1/2	2-3/8						
	12 x 4"	3-7/8	2-5/8						
	12 x 4-3/4"	4-5/8	3						
	12 x 5-5/8"	5-1/2	3						
	12 x 6-3/8"	6-1/4	3						
12 x 7-1/4"	7	3							
12 x 8"	7-7/8	2-5/8							
12 x 10"	9-3/4	2-3/4							
12 x 12"	11-3/4	2-3/4							
TRIM	8 x 2-1/2"	2-3/8	1-1/2	0.106	0.116	0.160	148,410	56,580 [499]	40,000 [360]
	8 x 2-3/4"	2-3/4	1-7/8						
	8 x 3-1/8"	3-1/8	2-1/8						
	9 x 2-1/2"	2-3/8	1-5/8	0.114	0.128	0.176	147,280	57,000 [576]	42,160 [425]
	9 x 2-3/4"	2-3/4	1-3/4						
	9 x 3-1/8"	3-1/8	2-1/8						
KAMELEON	9 x 2-1/2"	2-1/2	1-5/8	0.119	0.134	0.177	160,210	57,490 [634]	37,870 [437]
	9 x 2-3/4"	2-3/4	1-3/4						
	9 x 3-1/8"	3-1/8	2-1/8						

for S1: 1 inch = 25.4 mm; 1 psi = 6.9 kPa.

¹ Overall length of fastener is measured from the top of the head to bottom of the tip. See Figure 1.

² Length of thread includes tip. See detailed illustration, Figure 1.

³ Minor thread, shank and outside thread diameters are shown in table without manufacturing tolerances.

⁴ Bending yield strength determined in accordance with ASTM F 1575 using the minor thread diameter.

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SCREW TYPE	HEAD Ø	CEE-THREAD
R4 - #9 (4.5 mm)	0.328 ± 0.006	LENGTH = > 2"
R4 - #10 (5.0 mm)	0.368 ± 0.006	LENGTH = > 2"
R4 - #12 (6.0 mm)	0.439 ± 0.010	LENGTH = > 2"
TRIM - #8 (4.0 mm)	0.197 ± 0.006	N/A
TRIM - #9 (4.5 mm)	0.230 ± 0.006	N/A
KAMELEON - #9 (4.5 mm)	0.258 ± 0.006	ALL LENGTHS

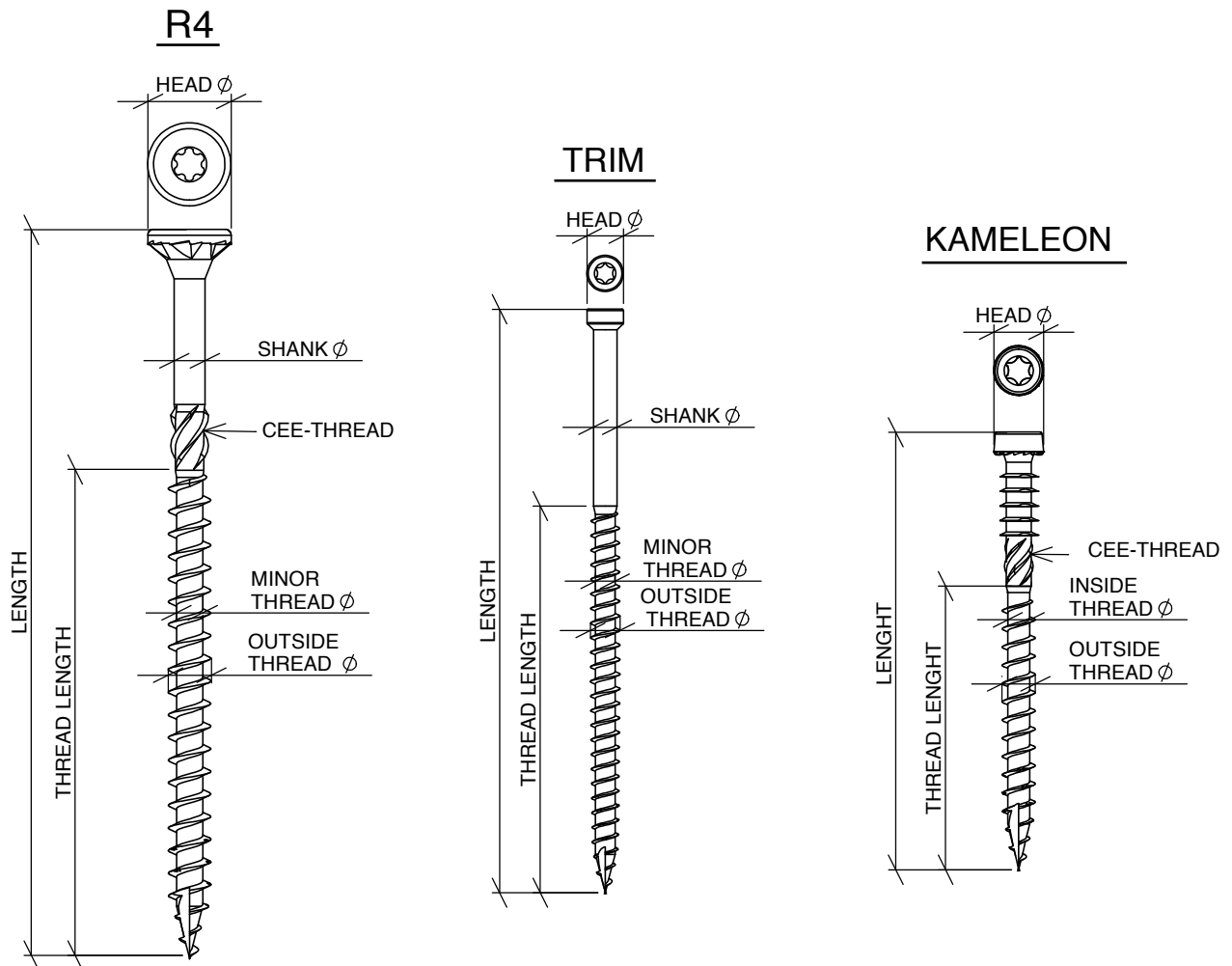


FIGURE 1 - FASTENER DIMENSIONS

NOTES:

1. See table 1 for overall length, thread length, shank diameter, outside thread diameter and minor thread diameter.
2. CEE thread on screws with lengths greater than or equal to those indicated, not used for calculations.
3. Dimensions given if not otherwise stated are in inches (for SI 1 inch = 25.4 mm)

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TABLE 2: DESIGN WITHDRAWAL VALUES (W)¹
[TABULATED WITHDRAWAL VALUES (W) ARE IN POUNDS PER INCH OF THREAD PENETRATION INTO SIDE GRAIN OF MAIN MEMBER]

FASTENER DESIGNATION		WITHDRAWAL, W (LBS./IN.) FOR SPECIFIC GRAVITIES OF:
		0.67
R4	# 9	179
	# 10	249
	#12	255
TRIM	# 8	175
	# 9	221
KAMELEON	# 9	186

for S1: 1 inch = 25.4 mm; 1 lbf/in = 175.127 N/m.

¹ Fastener withdrawal was tested in accordance with ASTM D 1761.

² Values must not be multiplied by any adjustment/safety factor.

TABLE 3: DESIGN PULL-THROUGH VALUES (P)¹
(TABULATED PULL-THROUGH VALUES (P) ARE IN POUNDS PER INCH OF SIDE MEMBER THICKNESS)

FASTENER DESIGNATION		PULL-THROUGH, P (LBS./IN.) FOR SPECIFIC GRAVITIES OF:
		0.67
R4	# 9	162
	# 10	275
	#12	407
TRIM	# 8	61
	# 9	94
KAMELEON	# 9	143

for S1: 1 inch = 25.4 mm; 1 lbf/in = 175.127 N/m.

¹ Fastener pull-through testing was performed in accordance with ASTM D 1037.

² Values must be multiplied by all applicable adjustment factors. (20.15 NDS Table 11.3.1)

³ Minimum side member thickness must be 3/4".

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TABLE 4: REFERENCE LATERAL DESIGN VALUES (Z) FOR SINGLE SHEAR (TWO MEMBER) CONNECTIONS¹
[FOR SAWN LUMBER OR SCL WITH BOTH MEMBERS OF IDENTICAL SPECIFIC GRAVITY]

	FASTENER DESIGNATION	SIDE MEMBER THICKNESS, T_5 (INCHES)	FASTENER PENETRATION, P (INCHES)	REFERENCE LATERAL ULTIMATE VALUE, Z (POUNDS) FOR SPECIFIC
				0.67
				PARALLEL TO GRAIN, $Z_{ }$
R4	9 x 2"	3/4	1-1/8	175
	9 x 2-1/2"	3/4	1-1/2	
	9 x 2-3/4"	3/4	2	
	9 x 3-1/8"	3/4	2-3/8	
	10 x 2-1/2"	3/4	1-1/2	203
	10 x 2-3/4"	3/4	2	
	10 x 3-1/8"	3/4	2-3/8	
	10 x 3-1/2"	3/4	2-3/4	
	10 x 4"	3/4	3-1/8	242
	10 x 4-3/4"	3/4	3-7/8	
	12 x 2-1/2"	3/4	1-1/2	
	12 x 2-3/4"	3/4	2	
	12 x 3-1/8"	3/4	2-3/8	
	12 x 3-1/2"	3/4	2-3/4	
	12 x 4"	3/4	3-1/8	
	12 x 4-3/4"	3/4	3-7/8	
	12 x 5-5/8"	3/4	4-3/4	
	12 x 6-3/8"	3/4	5-1/2	
	12 x 7-1/4"	3/4	6-1/4	
12 x 8"	3/4	7		
12 x 10"	3/4	9		
12 x 12"	3/4	11		
TRIM	8 x 2-1/2"	3/4	1-1/2	84
	8 x 2-3/4"	3/4	2	
	8 x 3-1/8"	3/4	2-1/2	
	9 x 2-1/2"	3/4	1-1/2	104
	9 x 2-3/4"	3/4	2	
	9 x 3-1/8"	3/4	2-3/8	
KAMELEON	9 x 2-1/2"	3/4	1-5/8	159
	9 x 2-3/4"	3/4	1-7/8	
	9 x 3-1/8"	3/4	2-3/8	

for S1: 1 inch = 25.4 mm

¹ Lateral load testing was performed in accordance with ASTM D 1761.

² Values must be multiplied by all applicable adjustment factors. (20.15 NDS Table 11.3.1)