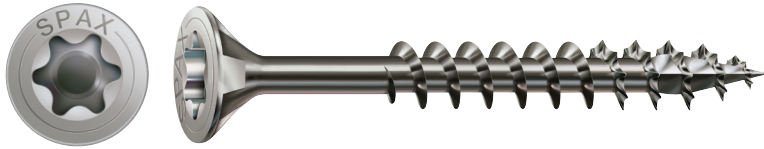




T-STAR *plus* Flat Head 304 Stainless Steel



Specialty Fasteners



MADE IN GERMANY

DESCRIPTION

SPAX® T-STAR *plus* Flat Head fasteners made of 304 stainless steel are designed for use in exterior wood connections often found outside residential domains. These “work horse” construction fasteners are designed to countersink in treated lumber for a clean-flush finish. 304 stainless steel fasteners are well suited for cedar and redwood decking materials and use in coastal environments.

MATERIALS & COATING

Cold-rolled 304 stainless steel wire, with a passivated surface to provide corrosion protection. “Stainless steel” is code compliant for use in ground contact pressure treated and fire-retardant-treated¹ lumber for exterior, coastal general construction applications (e.g., AWPAC UC1-UC4B, UCFA and UCFB).

EXTERIOR



Patented **MULTI-Head**

Countersinks screw head flush with material.

U.S. Patent No. 7,334,976



Unique **4CUT™** Point

Prevents splitting and requires no pre-drilling in wood.



Patented **Serrations**

Allow for quicker, easier fastening.

U.S. Patent No. 7,101,133



T-STAR *plus* Drive

“The PRO’s Choice” drive system provides superior bit engagement, eliminates camming out and facilitates overhead driving.



TYPICAL EXTERIOR APPLICATIONS

- 2-by framing connections - coastal environment applications
- Deck board finishing installation, especially cedar and redwoods
- Deck railing 2x2 baulster
- Stair treads - treated lumber deck
- Exterior fencing
- Shed construction
- Outdoor furniture

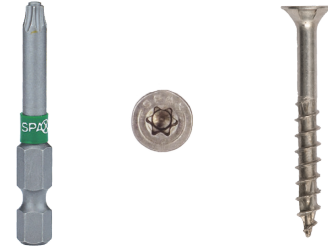
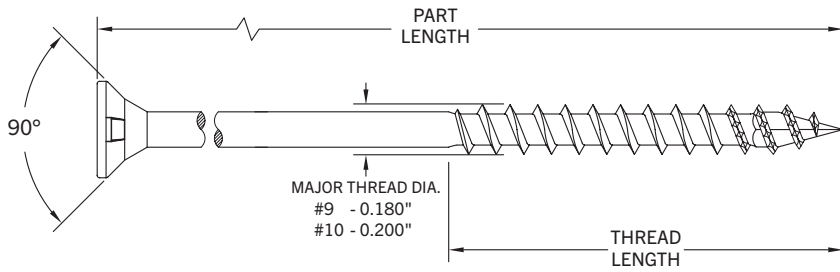
1. Refer to FRT manufacturer for recommendations on fastener coatings into FRT lumber.



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EXTERIOR

PRODUCT SELECTION

PART LENGTH	THREAD LENGTH		HEAD SIZE	DRIVE/BIT SIZE	APPROX. QTY.	PKG. TYPE	MASTER QTY.	PART NO.
	FULL	PARTIAL						
#9 x 1-1/2"	N/A	1.000"	0.340"	T20+	155	1 lb. Box	5	4197000450404
					2000	Bulk Pail	N/A	3197000450400
#9 x 2"	N/A	1.280"	0.340"	T20+	125	1 lb. Box	5	4197000450504
					1500	Bulk Pail	N/A	3197000450500
#10 x 2-1/2"	2.275"	1.450"	0.390"	T20+	83	1 lb. Box	5	4197000500604
					1500	Bulk Pail	N/A	3197000500600
#10 x 3"	2.375"	1.600"	0.390"	T20+	68	1 lb. Box	5	4197000500754
					205	3 lb. Box	3	41970005007545
					1500	Bulk Pail	N/A	3197000500750

NOTE: Only sold in master cartons.



1 and 3 lb. Boxes



Bulk Pail



T-STAR *plus* Bit

BIT SELECTION

DRIVE BIT	BIT SIZE	MASTER QTY.	PART NO.
T20+	1"	10	5000009185209
	2"	10	5000009285209



NOTE: Only sold in master cartons. Made in Taiwan.



FASTENER LENGTHS

PART LENGTH	HEAD	FASTENER	PART LENGTH	HEAD	FASTENER
#9 x 1-1/2"			#10 x 2-1/2"		
#9 x 2"			#10 x 3"		

PERFORMANCE SPECIFICATIONS



TER No. 2010-02
Construction Screw Properties

DIAMETER	ALLOWABLE WITHDRAWAL (W) AND HEAD PULL-THROUGH (W_H) ^{1,2,3,4}					
	SOUTHERN PINE (SG=0.55)		DOUGLAS-FIR (SG=0.50)		HEM FIR & SPRUCE-PINE-FIR (SG=0.42)	
	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)
#9	190	168	146	143	132	118
#10	190	168	176	143	144	118

DIAMETER	ALLOWABLE WITHDRAWAL (W) AND HEAD PULL-THROUGH (W_H) ^{1,2}											
	PLYWOOD 15/32" (0.39)		PLYWOOD 19/32" (0.39)		PLYWOOD 23/32" (0.50)		OSB 15/32" (0.50)		OSB 19/32" (0.50)		OSB 23/32" (0.50)	
	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)	WITHDRAWAL W (lbs./inch)	HEAD PULL-THROUGH W_H (lbs.)
#9	51	78	92	130	186	145	54	77	54	91	66	103
#10	90	78	92	130	186	145	54	77	54	91	66	103

¹ Tabulated withdrawal and head pull-through design values (W) and (W_H) are shown at a $C_o = 1.0$. Tabulated withdrawal and head pull-through values shall be adjusted by all applicable adjustment factors per *NDS Table 11.3.1*.

² Full withdrawal strength is calculated by multiplying the length of thread embedded in the main member by the tabulated reference withdrawal values.

³ Head pull-through values for #8 diameter and larger in Southern Pine, Douglas-Fir, Hem-Fir and Spruce-Pine-Fir are minimum 1.5" side member thickness.

⁴ For wood species with an assigned specific gravity between 0.42 and 0.50, use the tabulated values for specific gravity of 0.42. For wood species with an assigned specific gravity between 0.50 and 0.55, use the tabulated values for specific gravity of 0.50. For wood species with an assigned specific gravity greater than or equal to 0.55, use the tabulated values for specific gravity of 0.55.

DIAMETER	BENDING YIELD STRENGTH ¹ , f_y (psi)	ALLOWABLE STEEL STRENGTH (lbs)	
		TENSILE	SHEAR ²
#9	129,000	395	380
#10	126,000	480	440

¹ Bending yield strength, f_y , is determined in accordance with *ASTM F1575* using minor thread diameter when fastener is tested in thread section.

² Shear strength is determined in accordance with *AISI S904* using minor thread diameter when fastener is tested in threaded section.

DIAMETER	MINIMUM MAIN MEMBER PENETRATION ¹ (in)	MINIMUM SIDE MEMBER THICKNESS (in)	REFERENCE LATERAL SHEAR VALUE ^{4,5,6} , Z (lbf)		
			WOOD SPECIES (SPECIFIC GRAVITY ^{2,3})		
			SP (0.55)	DF-L (0.50)	SPF/HF (0.42)
#9 x 1-1/2"	3/4"	3/4"	49	67	78
#9 x 2"	1-1/4"	3/4"	62	79	91
#10 x 2-1/2"	1"	1-1/2"	72	92	106
#10 x 3"	1-1/2"	1-1/2"	84	99	108

SI: 1 in = 25.4 mm, 1 lbf = 4.45 N

¹ Penetration depth includes the length of tapered tip.

² The species applies to both the main and the side members. Where the Members are different specific gravities, use the lower of the two.

³ For wood species with an assigned specific gravity between 0.42 and 0.50, use the tabulated values for specific gravity of 0.42. For wood species with an assigned specific gravity between 0.50 and 0.55, use the tabulated values for specific gravity of 0.50. For wood species with an assigned specific gravity greater than or equal to 0.55, use the tabulated values for specific gravity of 0.55.

⁴ The fastener orientation shall be perpendicular to the grain, and the underside of the fastener head shall be installed flush with the surface of the side member.

⁵ Lateral design values apply to both perpendicular grain (Z_{\perp}) and parallel to grain (Z_{\parallel}) orientations.

⁶ Tabulated lateral design values shall be adjusted by all applicable adjustment factors per *NDS 11.3.1*.



Specialty Fasteners

EXTERIOR

DIAMETER	REFERENCE LATERAL SHEAR VALUE, Z (lbf)			
	MINIMUM MAIN MEMBER PENETRATION ¹ (in)	MINIMUM SIDE MEMBER THICKNESS (in)	REFERENCE LATERAL SHEAR VALUE ^{1-3,4} , Z (lbf)	
			OSB ⁵ (0.50)	PLYWOOD ⁵ (0.39)
#9 x 1-1/2"	1-1/16"	7/16"	57	-
#9 x 1-1/2"	1-1/32"	15/32"	57	50
#9 x 1-1/2"	29/32"	19/32"	56	46
#9 x 1-1/2"	25/32"	23/32"	59	45
#9 x 2"	1-9/16"	7/16"	59	-
#9 x 2"	1-17/32"	15/32"	60	51
#9 x 2"	1-13/32"	19/32"	66	53
#9 x 2"	1-9/32"	23/32"	72	57
#10 x 2-1/2"	2-1/16"	7/16"	68	-
#10 x 2-1/2"	2-1/32"	15/32"	69	59
#10 x 2-1/2"	1-29/32"	19/32"	74	61
#10 x 2-1/2"	1-25/32"	23/32"	81	64
#10 x 3"	2-1/16"	7/16"	68	-
#10 x 3"	2-1/32"	15/32"	69	59
#10 x 3"	1-29/32"	19/32"	74	61
#10 x 3"	1-25/32"	23/32"	81	64

SI: 1 in = 25.4 mm, 1 lbf = 4.45 N

¹ Reference lateral design values apply to two-member single shear connections where the side member is OSB or plywood, the main member is SPF (SG = 0.42), and the fastener is installed in the face of the member and oriented perpendicular to the grain. The underside of the fastener head shall be installed flush with the surface of the side member.

² Penetration depth includes the length of the tapered tip.

³ Lateral design values apply to both perpendicular to grain (Z_{\perp}) and parallel to grain (Z_{\parallel}) orientations.

⁴ Tabulated lateral design values shall be adjusted by all applicable adjustment factors per *NDS Table 11.3.1*.

⁵ OSB shall comply with *DOC PS 2* and have a minimum specific gravity of 0.50. Plywood shall comply with *DOC PS 1* and have a minimum specific gravity of 0.39.