



PRO PLUG SYSTEM STRUCTURAL Screw Properties and Design Values*

***BUILDING INSPECTIONS MUST OCCUR BEFORE PLUGS ARE INSTALLED.
PRO PLUG SYSTEM STRUCTURAL SHOULD NOT BE USED FOR DECK LEDGER ATTACHMENTS.**

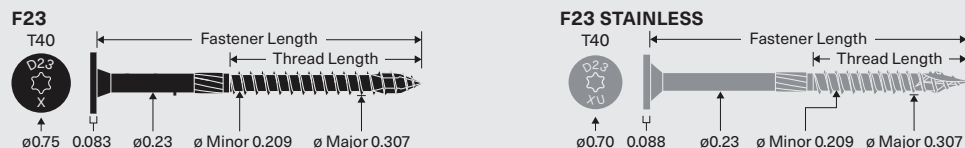


TABLE 1: Reference Lateral Design Values For Single Shear Connections - Countersunk Installation

PRODUCT NAME	HEAD MARKING	UNTHREADED SHANK DIAMETER (IN)	HEAD TYPE	SCREW LENGTH (IN)	THREAD LENGTH (IN)	MINIMUM SIDE MEMBER THICKNESS (IN)	MAIN MEMBER PENETRATION (IN)	LATERAL DESIGN VALUES (LBF) BY SPECIES (SG) AND LOAD ORIENTATION				
								HF/SPF (0.42)		DF/SP (0.50)		OC LUMBER
								Z PERP	Z PARA	Z PERP	Z PARA	Z PERP
Structural F23	D23 2.9	0.23	Flat	2-7/8	1.4	1-1/2	1-7/8	285	290	395	455	265
	D23 4			4	2-3/8		3	380	330	490	465	265
	D23 5			5	3		4					
	D23 6			6	2-3/4		5					
Structural F23 Stainless	D23 2.9 XU	0.23	Flat	2-7/8	1.4	1-1/2	1-7/8	285	290	395	455	265
	D23 4 XU			4	2-3/8		3	380	330	490	465	265
	D23 5 XU			5	3		4					
	D23 6 XU			6	2-3/4		5					

1. Reference lateral design values apply to two-member single shear connections where both members are of the same specific gravity and the screw is oriented perpendicular to grain. When the wood members have different specific gravities, use the lower of the two.
2. Countersunk depth shall not exceed 1/2".
3. Values shall be adjusted by all applicable adjustment factors per NDS.
4. Z Perp = lateral design value for connection with wood members loaded perpendicular to grain.
5. Z Para = lateral design value for connection with wood members loaded parallel to grain.

TABLE 2: Reference Withdrawal Design Values in Side Grain Applications & Head Pull-Through Design Values - Countersink Installation*

PRODUCT NAME	SCREW LENGTH (IN)	THREAD LENGTH (IN)	ALLOWABLE WITHDRAWAL DESIGN VALUES (LBF/IN) ¹					ALLOWABLE MAXIMUM WITHDRAWAL DESIGN VALUES (LBF)			ALLOWABLE HEAD PULL-THROUGH DESIGN VALUES (LBF/IN) ²			
			SPECIES (SG)					SPECIES (SG)			SIDE MEMBER THICKNESS	SPECIES (SG)		
			HF/SPF (0.42)		DF/SP (0.50)		OC LUMBER	HF/SPF (0.42)	DF/SP (0.50)	OC LUMBER		HF/SPF (0.42)	DF/SP (0.50)	OC LUMBER
			THREAD PENETRATION (IN) ³											
			1	2	1	2	1							
Structural F23	2-7/8	1.4	280	-	360	-	235	470	570	330	1-1/2"	645	805	440
	4	2-3/8		380		445		940	1090	560				
	5	3						1240	1420	705				
	6	2-3/4						1120	1290	645				
Structural F23 Stainless	2-7/8	1.4	190	-	225	-	155	265	315	215	1-1/2"	385	545	410
	4	2-3/8		285		335		450	535	370				
	5	3						570	675	465				
	6	2-3/4						525	620	425				

Values shall be adjusted by all applicable adjustment factors per NDS Section 11.3 for wood screws.
Maximum withdrawal design values based on full thread engagement, including the tip. Values based on 1-1/2" thick wood member.
Countersunk depth shall not exceed 1/2".
Tabulated values are for a standard load duration. Values shall be factored by all applicable modification factors per the NDS for wood screws.
For structural composite lumber, use the assigned specific gravity for the product and use the corresponding lumber design values shown above.

lbf = pound-force
SG = Specific Gravity
HF = Hem-Fir
SPF = Spruce-Pine-Fir
DF = Douglas Fir
SP = Southern Pine

*Western Red Cedar: 0.35 (SG)

*Ipe: 0.85 (SG)