

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0517894

Insp Area: 4

Thos Bros: 257A4

Site Address: 319 BELFONT CR SAC

Parcel No: 201-0490-099

Sub-Type: ASFR

Housing (Y/N): N

CONTRACTOR
OWNER BUILDER

OWNER
BOYCHUK ROMAN
319 BELFONT CIR
SACRAMENTO, CA 95835

ARCHITECT

Nature of Work: INTERIOR REMODEL - CONVERT GARAGE TO PLAY RM & STORAGE; ADD NEW 390 SF GARAGE W/BALCONY @ 2ND FLOOR

CONSTRUCTION LENDING AGENCY : I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name _____ Lender's Address _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class _____ License Number 0 _____ Date _____ Contractor Signature _____

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

RS I, as owner of the property, am exclusively contracting with licensed contractor to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I am exempt under Sec. _____ B & PC for this reason: _____

Date 11/29/05 Owner Signature *R. Boychuk*

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and herby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 11/29/05 Applicant/Agent Signature *R. Boychuk*

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier _____ Policy Number _____ Exp Date _____

(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date _____ Applicant Signature _____

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

P.A.S. Design Services
Specializing in Residential Design
Structural Analysis, Grading & Site Plans

To: City Inspector
City of Sacramento Building Department
Sacramento, CA

Date: February 4, 2006

From: Patrice Stafford, PE
9046 Feather River Way
Sacramento, CA 95826
916-396-9120, email k5blazer@pacbell.net

Subject: Correction Notice for Addition to Single Family Residence
319 Belfont Circle, Sacramento, CA

I have met with the framers to provide technical support to them during the construction process. I have reviewed the framing changes and have specified the following items:

- 1) The ABWP becomes shear walls that are 24" in length. The calculations are attached. The HPAHD22 hold downs are sufficient for the uplift. Add plywood on inside wall to accommodate for shear requirement.
- 2) The ledger attachment detail has been modified to show balloon wall framing condition. Install 3-SDS1~~4~~3 Wood Screws along ledger at each stud.
- 3) Joists that were specified were replaced by TJI 230's 11 7/8" Depth @ 12" o.c. with an allowable span of 21.0' to span 19.5'.
- 4) Contractor will add (1) 2050 window next to the installed (2)2050 windows to provide adequate light and ventilation.

Please let me know if you have any questions. You can contact me by cell 916-396-9120.

Patrice Stafford

Patrice A. Stafford, REGISTERED CIVIL ENGINEER

2/4/06

DATE



Seismic Loading:

Date: 10/6/2005

Zone = 3
 Soil Type = Sd
 Cv = 0.54 (T-16-R UBC)
 Ca = 0.36 (T-16-Q UBC)
 hn = 27.00 ft, roof height

R = 5 (T-16-N UBC)
 I = 1 (T-16-C UBC)
 Ct = 2

Ts = seconds [$T_s = C_v / (2.5 \cdot C_a)$]
 T = seconds [$T = C_t \cdot (h_n)^{3/4}$]

V = W
 V min = W

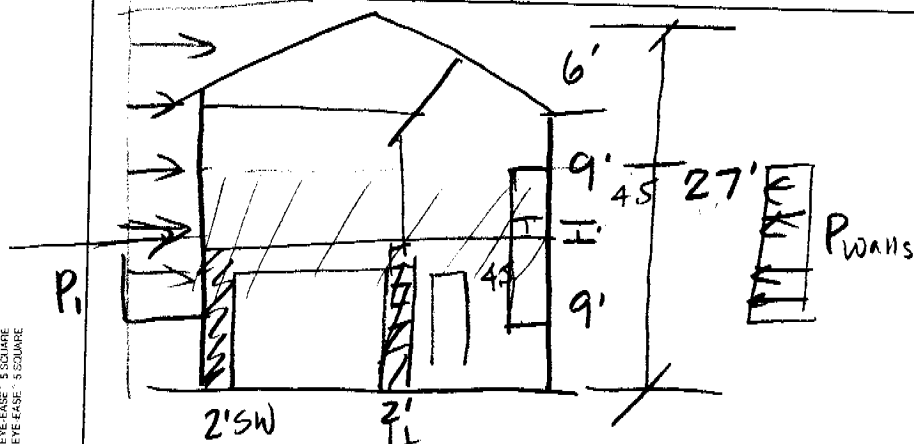
Load Combination = $0.9D + E/1.4$
 $p = 1$ (Ass. = 1.0, correct w/ length of shear walls or maintain as Safety Factor)
 $E = pEh + Ev = W$
 Vbase shear, Load Comb. = W

Wind Loading:

Method 2, $P = C_e \cdot C_q \cdot q_s \cdot I$

P (h 0-15) =	psf	P (v 0-15) =	psf
P (h 15-20) =	psf	P (v 15-20) =	psf
P (h 20-25) =	psf	P (v 20-25) =	psf
P (h 25-30) =	psf	P (v 25-30) =	psf
P (h 30-35) =	psf	P (v 30-35) =	psf

hn = ft, Total height of structure
 Exposure = B (UBC 1616; B or C)
 Ce = (T-16-G UBC, height of structure 0ft - 15ft)
 Ce = (T-16-G UBC, height of structure 15ft - 20ft)
 Ce = (T-16-G UBC, height of structure 20ft - 25ft)
 Ce = (T-16-G UBC, height of structure 25ft - 30ft)
 Ce = (T-16-G UBC, height of structure 30ft - 35ft)
 Cq (h) = (T-16-H UBC; Method 2)
 Cq (v) = (T-16-H UBC; Method 2)
 Wind Speed = 75 mph
 qs =
 I =



Wind governs
By inspection.

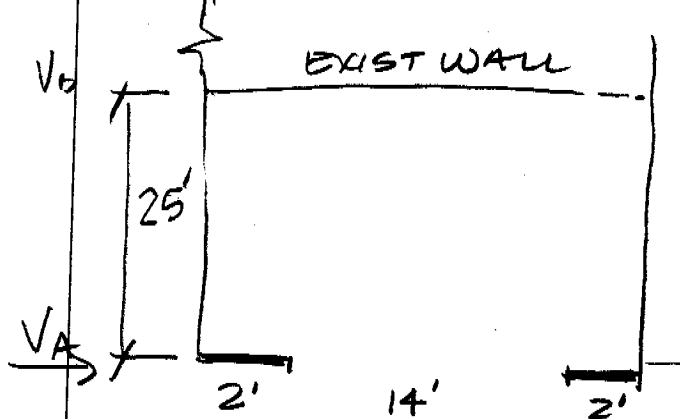
42-381 45 SHEETS EYE CASE 5 SQUARE
 42-382 100 SHEETS EYE CASE 3 SQUARE
 42-389 200 SHEETS EYE CASE 3 SQUARE
 National Brand

$$\begin{aligned}
 W_1 = P_1 &= (4.5' + 6')_{15} (11.687) = 122.71 \text{ PLF} \\
 W_2 = P_2(H_2) &= 12.6295 (5) = 63.15 \text{ PLF} \\
 W_3 = P_3(H_3) &= 13.572 (5) = 67.86 \text{ PLF} \\
 W_4 = P_4(H_4) &= 14.326 (2') = 28.652 \text{ PLF}
 \end{aligned}$$

$W_T =$

$$V = 10' (11.687) = 116.87 \text{ PLF}$$

on front walls

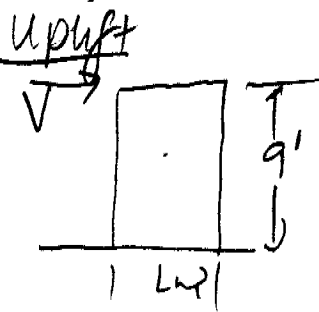


$$\begin{aligned}
 V_A &= \frac{W_L}{2} \\
 &= \frac{116.87 (25)}{2} = 1460.89 \# \\
 &= 1461 \#
 \end{aligned}$$

$$\begin{aligned}
 V_{\text{ROOF}} &= \frac{1461}{34} \\
 &= 42.97 \text{ PLF}
 \end{aligned}$$

$$V_{\text{WALL}} = \frac{1461}{L_w} = \frac{1461}{8'} = 182.63 \text{ PLF}$$

Use 6" / 12" Nailing SW Type A
8d Nails w/ 1 1/2" Penetration. 3/8" Sheathing



$$\begin{aligned}
 T &= \frac{OTM - RM}{L_w} \\
 &= \frac{1461 \left(\frac{2}{8}\right) \cdot 9 - 0}{2} = 1643.63 \# \text{ Req'd.}
 \end{aligned}$$

$D_{NAG} = 2(182.63) + 14(42.97) - 2(18.63)$
Use STRAP - C516 across HEADER

HPAHD22 has 3335# allow. good

PA/PAHD/HPAHD Strap Tie Holdowns



Wood-to-concrete connectors that satisfy engineering and code requirements.

MATERIAL: HPA—10 ga; all others—12 ga

FINISH: Galvanized, some models available in ZMAX or HDG.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Install before concrete pour with a StrapMate, or other holding device.
- Bending the strap 90° to aid wall placement may cause spalling behind the strap. If the spall is 1" or less, measured from the embedment line to the bottom of the spall, full loads apply. For spalls between 1" and 4" (see illustration on page 45), the allowable load is 0.90 of the table loads.
- For two pour installations spalling is measured from the first pour.
- Nail strap from bottom up. Strap may be bent one full cycle.
- Where fewer fasteners are used in the structural wood member, reduce loads according to the code. A wood splitting problem may occur when holdowns are nailed to lumber less than 3½" wide. To lessen splitting of 3x's or double 2x's, either fill every nail hole with 10d x 1½" nails or fill every other nail hole with 16d commons. Reduce the allowable load based on the size and quantity of fasteners used.
- Unless otherwise noted, do NOT install where: (a) a horizontal cold joint exists within the embedment depth between the slab and foundation wall or footing beneath, unless provisions are made to transfer the load, or the slab is designed to resist the load imposed by the anchor; or (b) slabs are poured over concrete block foundation walls.
- To get the full table load, the minimum center-to-center spacing is twice the embedment depth when resisting tension loads at the same time.
- To tie double 2x members together, the Designer must determine the fasteners required to bind members to act as one unit without splitting the wood.
- Additional studs attached to the shearwall studs or post may be required by the Designer for wall sheathing nailing.

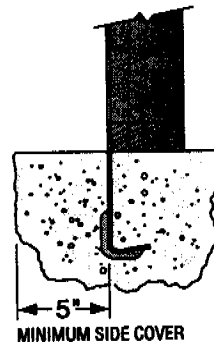
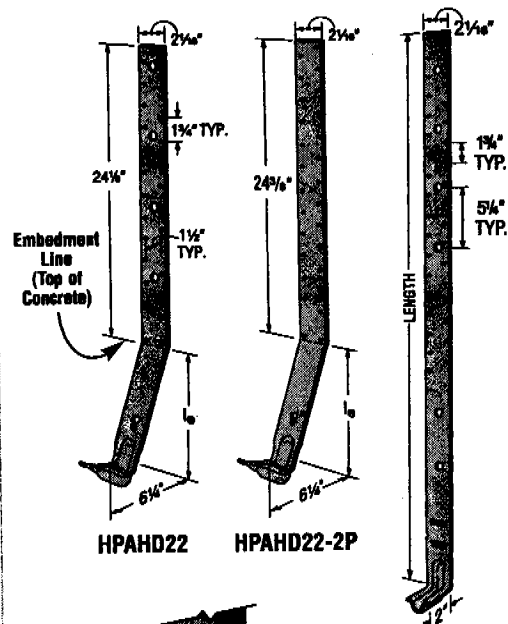
FOUNDATION CORNERS: Nail and bolt quantities have been reduced when the load is limited by tested concrete pullout strength (fill holes from bottom up); additional nail holes need not be filled. Nail and bolt quantities may be reduced further for less than 8" corner distance design loads—use code allowable loads for fasteners used in shear.

TWO-POUR SYSTEMS: When a cold joint exists between slab and foundation, the holdown will be lower on the stud wall since the embedded portion of the holdown must be in the foundation (see table footnote 1 for exception). Fewer fasteners are used, reducing allowable loads. Loads are calculated using a 4" slab over 6" and 8" foundation walls.

PAHD42, HPAHD22, HPAHD22-2P HOLDOWNS: Designed to be installed at the edge of concrete. Tests determined the pullout strength with one horizontal #4 rebar in the shear cone. Rebar should be a minimum length of 2x embedment depth + 12" (except corner installations, page 45). Install before pouring concrete by nailing to form. Installation holes allow nailing to the form, resulting in 1" deeper embedment; see illustration.

OPTIONS: See also STHD Holdowns, LTT, MTT, HTT Tension Ties.

CODES: See page 12 for Code Listing Key Chart.



Typical PA connecting Stud to Foundation (use PAHD42 or HPAHD22 for edge applications)

Available with additional corrosion protection. Check with factory.

Model No.	L	Min. Embed. Depth	Nails	Allowable Uplift Loads		Code Ref.
				(133)	(160)	
PA51	51	4	9-16d	1690	2030	8, 36, 121
PA68	70	4	9-16d	1690	2030	

1. Loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. 16d sinkers (9 ga x 3¼") or 10d commons may be substituted for the specified 16d commons at 0.84 of the table loads.
3. Optional fastener holes provided. Calculate loads according to the code to a maximum of 3685 lbs. Minimum embedment is 4"; 5" to the nearest edge.

Model No.	Min Stem Wall	Embed. Depth	Nails	Allowable Tension Loads (133 & 160) DFSP								Code Ref.
				2000 psi Concrete				2500 psi Concrete				
				End Distance								
				¼"		½"		¾"		1"		
SINGLE POUR												
PAHD42	6	6½"	12-16d	920	920	2030	2030	1225	1225	2205	2205	20, 124
			16-16d	1050	1050	2715	2715	1400	1400	2945	2945	
HPAHD22	6	10"	16-16d	1315	1315	3335	3335	1750	1750	3335	3335	
			23-16d	2030	2030	4745	4745	2210	2210	4875	5160	
TWO POUR												
PAHD42	6	6½"	12-16d	920	920	2030	2030	1225	1225	2205	2205	20, 124
			12-16d	1050	1050	2305	2715	1400	1400	2305	2765	
HPAHD22	6	10"	16-16d	1315	1315	3335	3335	1750	1750	3335	3335	
			19-16d	2030	2030	4090	4745	2210	2210	4030	4835	
HPAHD22-2P	6	14 7/16"	16-16d	2455	2455	3335	3335	2455	2455	3335	3335	8, 20, 28, 121, 124
			23-16d	2455	2455	4745	4745	2455	2455	4875	5160	

1. HPAHD22 may be embedded 4" into the slab and 6" into the 8" stemwall beneath for a maximum load of 2810 lbs. at 8" minimum from the closest corner, and 1200 lbs. at ½" from the closest corner (like installation 4).
2. Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
3. 16d sinkers (0.148" dia. x 3¼" long) or 10d commons may be substituted for specified 16d commons at 0.85 of table loads.
4. Minimum nail end distance to prevent splitting is 10x the nail diameter, or 1¼" for 16d nails.
5. Calculate loads using straight line interpolation for corner distances between ½" and 8".
6. Optional fastener holes are provided on selected products. Because the product is limited by the concrete foundation, you may not need to install optional fasteners.
7. Strap may be bent one full cycle. (Bent horizontal 90° then bent vertical.)
8. Rim Joist application: see Installation 3 for corner condition.
9. Loads shown apply to post-tension slabs when one #4 rebar (minimum) is installed as shown on page 43.
10. Post design shall be by Designer.
11. NAILS: 16d = 0.162" dia. x 3½" long. See page 16-17 for other nail sizes and information.

TIMBERSTRAND® LSL AND TJ-STRAND® RIM BOARD

Encloses cantilevered TJI joists

Attach to each joist with two 10d (3") box nails, one each at top and bottom flange.

High vertical load transfer capacity. Replaces TJI® rim joists and blocking panels.

Vertical load transfer capacity = 4,250 plf

Provides a solid surface for attachment of sheathing, siding, and deck ledgers

When attaching deck ledgers, locate bolts 2" minimum from top and bottom edges of TimberStrand® LSL rim board and deck ledger.

Required bolt frequency varies by application and is dictated by specific deck geometry/loading. Bolt spacing limits match NDS® minimum recommendations.

Fastener Size	Allowable Load (lbs) ⁽¹⁾
¼" screw(2)	250
¾" lag bolt	400
½" lag bolt	475

(1) Allowable load determined in accordance with AC124.

(2) Screws must have self-drilling tip and a minimum bending yield strength of 217,000 psi. Lead holes may be required by local building official.

1 1/4" nailing surface increases load capacity, reduces splits, and makes subflooring easier to fasten

Closest on-center spacing

For single row of nails in the narrow face

Nail Size	Box	Common
8d (2 1/2")	4"	4"
10d (3")	4"	4"
12d ⁽¹⁾ (3 1/4")	4"	4"
16d (3 1/2")	4"	4"

(1) Also referred to as 16d sinker.

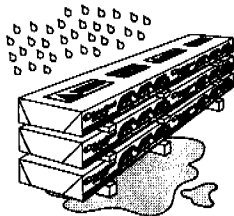
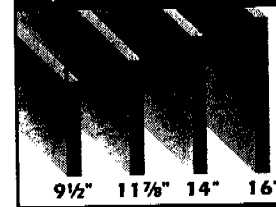
(2) When nailing through the wall sill plate and floor sheathing, the closest on-center spacing is 4" (1 3/8" maximum penetration).

Encloses TJI joist ends and acts as an end or starter joist

Attach TimberStrand® LSL or TJ-Strand® rim board to TJI® joists with two 10d (3") box nails, one each at top and bottom flange.

toenail rim board to bearing plate with minimum 10d (3") box nails at 6" on-center.

Manufactured to a consistent moisture content and uniform dimensions, with depths that match other Silent Floor® System components



- Protect products from sun and water
- Wrap is slippery when wet or icy
- Use support blocks at 10' on-center to keep products out of mud and water



1-800-628-3997

www.trusjoist.com

Email: trusjoist@weyerhaeuser.com

200 E. Mallard Drive (83706)

P.O. Box 60 ♦ Boise, ID 83707 ♦ (208) 364-1200

Product Warranty

Trus Joist warrants that its products will be free from manufacturing errors or defects in workmanship and material. In addition, provided the product is correctly installed and used, the company warrants the adequacy of its design for the normal and expected life of the building.



200 E. Mallard Drive • Boise, Idaho 83706
1-800-628-3997

J.H.G.
The Quality Connection

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Printed in the USA on recycled paper (10% post-consumer fiber).

Reorder 2107

April 2005 NW/7.5M
If this guide is more than one year old, contact your dealer or Trus Joist rep.

SCREWS



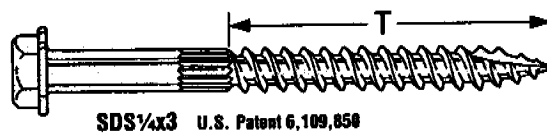
The SDS Strong-Driver® has a deep socket and magnetic tip to help provide a positive installation for the SDS Screws. Fits a standard drill.

The Simpson Strong-Driver® wood screw has a hex washer head for easy driving with a 3/8" hex head socket and a low speed drill. The built-in reamer and type 17 tip cuts a hole to allow installation without predrilling. Predrilling may be necessary depending on the type and moisture content of wood. Use 5/32" drill bit.

WARNING: Industry studies show that hardened fasteners can experience performance problems in wet or corrosive environments. Accordingly, use this product in dry, interior, and noncorrosive environments only. (Titen and SDS only)

CODES: See page 12 for Code Listing Key Chart.

Identification on all SDS screw heads (SDS 1/4 x 3 shown)



Titen Hex Head



SDS 8 x 1.25



SDSD 3/8-RB Strong-Driver®

Titen Screw Anchors for Concrete

Titen Dia. (in)	Drill Bit Dia. (in)	Embed Depth (in)	Critical Spacing (in)	Critical Edge Dist. (in)	Tension Load		Shear Load	Code Ref.
					f'c >= 2000 psi (13.8 MPa) Concrete	f'c >= 4000 psi (27.6 MPa) Concrete	f'c >= 2000 psi (13.8 MPa) Concrete	
					Allowable lbs.	Allowable lbs.	Allowable lbs.	
3/16"	5/32"	1	2 1/4	1 1/2	125	160	255	131
3/16"	5/32"	1 1/2	2 1/4	1 1/2	305	460	415	
1/4"	3/16"	1	3	1 1/2	145	180	225	
1/4"	3/16"	1 1/2	3	1 1/2	365	500	400	

1. These loads also apply to masonry.
2. The Designer shall verify allowable load of the attached member or element as it may govern the allowable load.



Titen Drill Bit

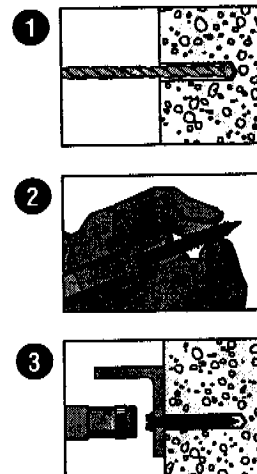


Titen Drill Bit / Driver



Special hex adaptor on the bit allows the Titen Installation Tool to slide over the bit and lock in, ready to drive screws.

Titen Installation Sequence



SDS and SD Wood Screws

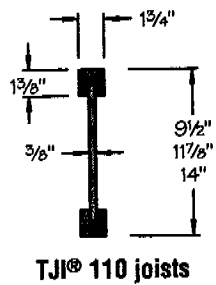
Available with additional corrosion protection. Check with factory.

Model No.	Wood Screw Description (Metric Equivalent) (mm)	T	Finish ³	Fasteners per Carton	Douglas Fir-Larch/Southern Pine Allowable Loads ¹				Spruce-Pine-Fir Allowable Loads ¹				Code Ref.		
					Shear ² Wood to Wood (DF to DF)	14 ga to 3 ga ¹³		Withdrawal ¹² (lbs.)	Shear ² Wood to Wood (SPF to SPF)	14 ga to 3 ga ¹³		Withdrawal ¹² (lbs.)			
						Shear (100)	Shear (133/160) ¹⁴			Shear (100)	Shear (133/160) ¹⁴			Shear (100)	Shear (133/160) ¹⁴
SD8x1.25 ⁸	3/32 x 1 1/4" (4.2 x 31.8)	—	EG	—	—	50	65	—	—	—	45	60	—	—	170
SDS 1/4 x 1 1/2	1/4 x 1 1/2" (6.1 x 38)	1	ZINC	1500	—	295	390	170	230	—	245	325	120	160	27, 96, 126
SDS 1/4 x 1 1/2 HDG	1/4 x 1 1/2" (6.1 x 38)	1	HDG	1500	—	295	390	170	230	—	245	325	120	160	
SDS 1/4 x 1 3/4	1/4 x 1 3/4" (6.1 x 44.5)	1 1/4	ZINC	1400	—	295	390	215	285	—	245	325	150	200	
SDS 1/4 x 2	1/4 x 2" (6.1 x 50.8)	1 1/4	ZINC	1300	—	470	625	215	285	—	395	525	150	200	
SDS 1/4 x 2 HDG	1/4 x 2" (6.1 x 50.8)	1 1/4	HDG	1300	—	470	625	215	285	—	395	525	150	200	
SDS 1/4 x 2 1/2	1/4 x 2 1/2" (6.1 x 63.5)	1 1/2	ZINC	1100	—	470	625	255	345	—	395	525	180	240	
SDS 1/4 x 2 1/2 HDG	1/4 x 2 1/2" (6.1 x 63.5)	1 1/2	HDG	1100	—	470	625	255	345	—	395	525	180	240	
SDS 1/4 x 3	1/4 x 3" (6.1 x 76.2)	2	ZINC	950	240	470	625	345	460	200	395	525	240	320	
SDS 1/4 x 3 HDG	1/4 x 3" (6.1 x 76.2)	2	HDG	950	240	470	625	345	460	200	395	525	240	320	
SDS 1/4 x 3 1/2	1/4 x 3 1/2" (6.1 x 88.9)	2 1/4	ZINC	900	240	470	625	385	515	200	395	525	270	365	
SDS 1/4 x 4 1/2	1/4 x 4 1/2" (6.1 x 114.3)	2 3/4	ZINC	800	260	470	625	475	630	220	395	525	330	445	
SDS 1/4 x 6	1/4 x 6" (6.1 x 152.4)	3 1/4	ZINC	600	260	470	625	490	650	220	395	525	345	460	

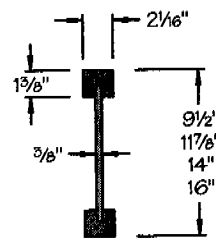
1. Allowable loads for SDS screws are based on testing per ASTM D1761.
2. Metric equivalents are listed by Diameter x Length.
3. Zinc = Yellow zinc dichromate, EG = ElectroGalvanized, HDG = Hot-dip Galvanized.
4. SDS screws install best with a low speed 1/2" drill with a 3/8" hex head driver.
5. Wood-to-wood applications are based on a wood thickness of 1 1/2" side member. All applications are based on full penetration into the main member.
6. Shear (100) values may be increased by the wood load duration factor, C_d, as permitted by the building code.
7. DO NOT USE SD8x1.25 wood screws with structural connectors

8. SD8 requires 3/4" minimum penetration.
9. Load shown may not match code reports. New tested loads have been submitted to the Code Report Agencies.
10. The SDS screws with HDG finish will be supplied with their corresponding HDG or ZMAX™ connectors.
11. SDS-HDG available in bulk or 50-piece retail pack.
12. Loads based on NDS calculation for a #14 wood screw or tested ultimate/5. If thread penetration into main member is less than thread length T as shown in table, reduce allowable load by 172 lbs. x inches of thread not in main member. Use 121 lbs./inch for SPF.
13. Shear: steel side member to wood main member.
14. The (133/160) values for earthquake or wind loading may not be increased any further than shown.

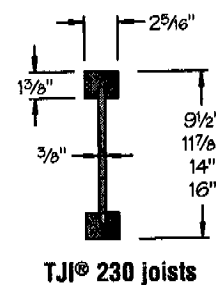
Not all products are available in all markets. Contact your Trus Joist representative for information.



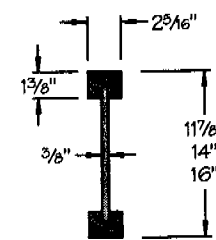
TJI® 110 joists



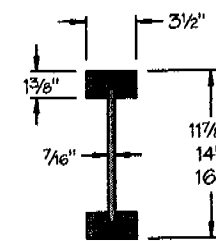
TJI® 210 joists



TJI® 230 joists



TJI® 360 joists



TJI® 560 joists

L/480 Live Load Deflection

Depth	TJI®	40 PSF Live Load / 10 PSF Dead Load				40 PSF Live Load / 20 PSF Dead Load			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9 1/2"	110	16'-5"	15'-0"	14'-2"	13'-2"	16'-5"	15'-0"	13'-11"	12'-5"
	210	17'-3"	15'-9"	14'-10"	13'-10"	17'-3"	15'-9"	14'-10"	13'-8"
	230	17'-8"	16'-2"	15'-3"	14'-2"	17'-8"	16'-2"	15'-3"	14'-2"
11 7/8"	110	19'-6"	17'-10"	16'-10"	15'-5" ⁽¹⁾	19'-6"	17'-3"	15'-8"	14'-0" ⁽¹⁾
	210	20'-6"	18'-0"	17'-8"	16'-5"	20'-6"	18'-8"	17'-3"	15'-5" ⁽¹⁾
	230	21'-0"	19'-2"	18'-1"	16'-10"	21'-0"	19'-2"	18'-1"	16'-3" ⁽¹⁾
	560	22'-11"	20'-11"	19'-8"	18'-4"	22'-11"	20'-11"	19'-8"	17'-10" ⁽¹⁾
14"	110	22'-2"	20'-3"	18'-9"	16'-9" ⁽¹⁾	21'-8"	18'-9"	17'-1" ⁽¹⁾	14'-7" ⁽¹⁾
	210	23'-3"	21'-3"	20'-0"	18'-4" ⁽¹⁾	23'-3"	20'-7"	18'-9" ⁽¹⁾	16'-2" ⁽¹⁾
	230	23'-10"	21'-8"	20'-6"	19'-1"	23'-10"	21'-8"	19'-9"	17'-1" ⁽¹⁾
	560	26'-0"	23'-8"	22'-4"	20'-9" ⁽¹⁾	26'-0"	23'-8"	22'-4" ⁽¹⁾	17'-10" ⁽¹⁾
16"	110	25'-9"	23'-6"	22'-0" ⁽¹⁾	19'-5" ⁽¹⁾	25'-5"	22'-0" ⁽¹⁾	20'-1" ⁽¹⁾	16'-2" ⁽¹⁾
	210	26'-5"	24'-1"	22'-9"	20'-7" ⁽¹⁾	26'-5"	23'-2"	21'-2" ⁽¹⁾	17'-1" ⁽¹⁾
	360	28'-9"	26'-3"	24'-8" ⁽¹⁾	21'-5" ⁽¹⁾	28'-9"	26'-3" ⁽¹⁾	22'-4" ⁽¹⁾	17'-10" ⁽¹⁾
	560	32'-8"	29'-8"	28'-0"	25'-2" ⁽¹⁾	32'-8"	29'-8"	26'-3" ⁽¹⁾	20'-11" ⁽¹⁾

L/360 Live Load Deflection (Minimum Criteria per Code)

Depth	TJI®	40 PSF Live Load / 10 PSF Dead Load				40 PSF Live Load / 20 PSF Dead Load			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9 1/2"	110	18'-2"	16'-7"	15'-3"	13'-8"	17'-8"	15'-3"	13'-11"	12'-5"
	210	19'-1"	17'-5"	16'-6"	15'-0"	19'-1"	16'-9"	15'-4"	13'-8"
	230	19'-7"	17'-11"	16'-11"	15'-9"	19'-7"	17'-6"	16'-1"	14'-5"
11 7/8"	110	21'-7"	18'-11"	17'-3"	15'-5" ⁽¹⁾	19'-11"	17'-3"	15'-8"	14'-0" ⁽¹⁾
	210	22'-8"	20'-8"	18'-11"	16'-10"	21'-10"	18'-11"	17'-3"	15'-5" ⁽¹⁾
	230	23'-3"	21'-3"	19'-11"	17'-9"	23'-0"	19'-11"	18'-2"	16'-3" ⁽¹⁾
	560	25'-4"	23'-2"	21'-10"	20'-4" ⁽¹⁾	25'-4"	23'-2"	21'-10" ⁽¹⁾	17'-10" ⁽¹⁾
14"	110	23'-9"	20'-6"	18'-9"	16'-9" ⁽¹⁾	21'-8"	18'-9"	17'-1" ⁽¹⁾	14'-7" ⁽¹⁾
	210	25'-8"	22'-6"	20'-7"	18'-4" ⁽¹⁾	23'-9"	20'-7"	18'-9" ⁽¹⁾	16'-2" ⁽¹⁾
	230	26'-4"	23'-9"	21'-8"	19'-4" ⁽¹⁾	25'-9"	21'-8"	19'-9"	17'-1" ⁽¹⁾
	560	28'-9"	26'-3"	24'-9" ⁽¹⁾	21'-5" ⁽¹⁾	28'-9"	26'-3" ⁽¹⁾	22'-4" ⁽¹⁾	17'-10" ⁽¹⁾
16"	110	27'-10"	24'-1"	22'-0" ⁽¹⁾	19'-5" ⁽¹⁾	25'-5"	22'-0" ⁽¹⁾	20'-1" ⁽¹⁾	16'-2" ⁽¹⁾
	210	29'-2"	25'-8"	23'-2"	20'-7" ⁽¹⁾	26'-9"	23'-2"	21'-2" ⁽¹⁾	17'-1" ⁽¹⁾
	360	31'-10"	29'-0"	26'-10" ⁽¹⁾	21'-5" ⁽¹⁾	31'-10"	26'-10" ⁽¹⁾	22'-4" ⁽¹⁾	17'-10" ⁽¹⁾
	560	36'-1"	32'-11"	31'-0" ⁽¹⁾	25'-2" ⁽¹⁾	36'-1"	31'-6" ⁽¹⁾	26'-3" ⁽¹⁾	20'-11" ⁽¹⁾

Long term deflection under dead load, which includes the effect of creep, has not been considered. Bold Italic spans reflect initial dead load deflection exceeding 0.33".

(1) Web stiffeners are required at intermediate supports of continuous-span joists when the intermediate bearing length is less than 5/4" and the span on either side of the intermediate bearing is greater than the following spans:

TJI®	40 PSF Live Load / 10 PSF Dead Load				40 PSF Live Load / 20 PSF Dead Load			
	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
110	N.A.	N.A.	N.A.	15'-4"	N.A.	N.A.	16'-0"	12'-9"
210	N.A.	N.A.	21'-4"	17'-0"	N.A.	21'-4"	17'-9"	14'-2"
230	N.A.	N.A.	N.A.	19'-2"	N.A.	N.A.	19'-11"	15'-11"
360	N.A.	N.A.	24'-5"	19'-6"	N.A.	24'-5"	20'-4"	16'-3"
560	N.A.	N.A.	29'-10"	23'-10"	N.A.	29'-10"	24'-10"	19'-10"

How to Use These Tables

1. Determine the appropriate live load deflection criteria.
2. Identify the live and dead load condition.
3. Select on-center spacing.
4. Scan down the column until you meet or exceed the span of your application.
5. Select TJI® joist and depth.

Live load deflection is not the only factor that affects how a floor will perform. To more accurately predict floor performance, use our TJI-Pro™ Rating system.

General Notes

- Tables are based on:
 - Uniform loads.
 - More restrictive of simple or continuous span.
 - Clear distance between supports (1 3/4" minimum end bearing).
- Assumed composite action with a single layer of 24" on-center span-rated, glue-nailed floor panels for deflection only. Spans shall be reduced 6" when floor panels are nailed only.
- Spans generated from Trus Joist software may exceed the spans shown in these tables because software reflects actual design conditions.
- For loading conditions not shown, refer to software or to load tables on page 5.