

A Faster, More Economical Spline Connection Than Plywood



Save labor and manufacturing costs with the LDSS spline solution from Simpson Strong-Tie®. Unlike plywood splines that require routing, the LDSS light diaphragm steel spline strap can be placed directly on top of CLT and other mass timber panels. It installs easily and safely with our Quik Drive® PRO300SG2 system and collated Strong-Drive® WSV Subfloor screws. An innovative embossed hole design helps guide the installation tool and increases fastener capacity. Typical mass timber projects can save on the total cost of their spline connections by switching to the LDSS system, with multiple additional advantages over plywood splines.

Features

Cost effective and reliable

- No routing required: can be placed directly on top of CLT panels, reducing manufacturing time and cost
- Less susceptible to moisture damage than plywood splines, reducing need for expensive repairs
- Embossed hole increases capacity per fastener
- Tested for in-plane shear values
- Straps, tools and fasteners are shipped on demand with the rest of your Simpson Strong-Tie fastener and connector order

Fast, easy, safe installation

- Quik Drive tool and collated WSV Subfloor fasteners increase installation speed, reduce fatigue and eliminate the need for a pneumatic nailer
- Embossed hole helps guide the installation tool into the hole
- Cordless tool reduces tripping hazards
- Tool extension allows screw installation from standing position

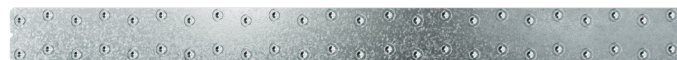
Available

The complete LDSS spline solution is widely available, tested and backed by our expert service and support.

Material: 18 gauge

Finish: Galvanized

Visit strongtie.com/LDSS or contact your local rep at 800-999-5099 to find out how much cost can be saved by switching to the LDSS and Quik Drive systems.



LDSS48



PNOSECLIP-LDSS

Cordless Quik Drive PRO300SG2DC2K system

WSV3S (Collated)

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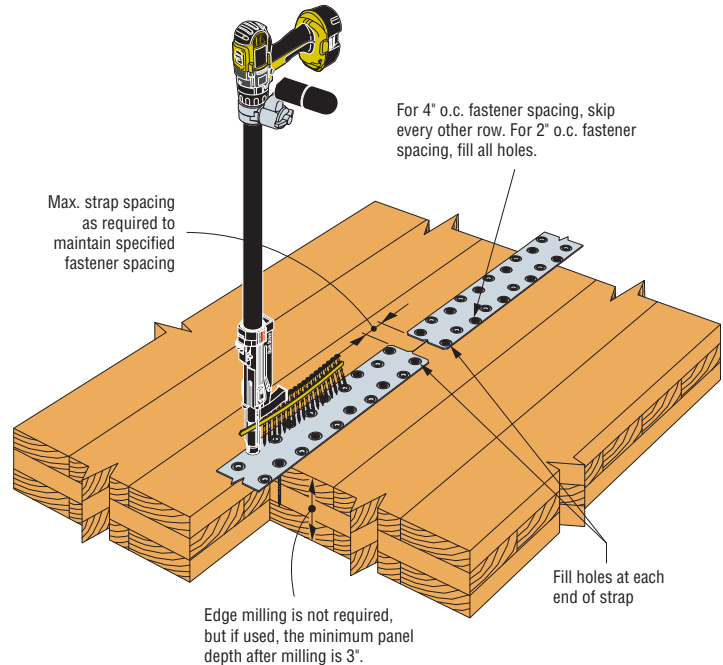
Quik Drive® Tool Setup

1. Assemble the Quik Drive PRO300SG2 cordless driver tool.
2. Remove the standard Quik Drive noseclip and replace with the PNOSECLIP-LDSS.
3. Calibrate the drive depth of the screw according to the instructions provided with the PNOSECLIP-LDSS. The ideal depth setting locates the bottom of the countersunk head just above the hole in the embossed feature.

Installation

1. Place the strap on the surface of the mass timber panels with the centerline notches aligned with joint between adjacent panels.
2. From a standing position, hold tool perpendicular to the face of the strap and place the noseclip over the embossed feature. Drive the screw. Repeat.
3. Use all specified fasteners.

The LDSS has also been tested with 0.148" x 2½" nails for specifiers or contractors who prefer a nailed connection. The embossed hole allows for the use of a power framing nailer using concentric, full round-head nails.



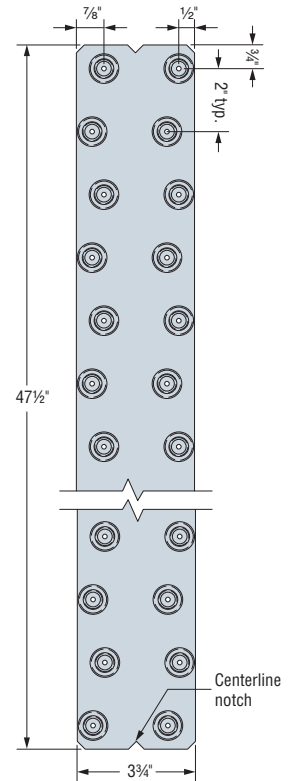
Typical LDSS48 Installation with WSV3S Screws at 4" o.c. in a Three-Ply CLT Panel (five-ply and seven-ply panel similar)

Light Diaphragm Spline Strap (LDSS) for Mass Timber

Model No.	Ga.	CLT Layup (min.)	Fasteners	Fastener Spacing (in.)	Allowable Shear Load (lb./ft.)				Slip Modulus Y (lb./in.)
					Wind		Seismic		
					DF/SP	SPF/HF	DF/SP	SPF/HF	
LDSS48	18	Three-ply	#9 x 3" WSV	4	1,030	1,030	1,030	1,030	6,330
				2	2,240	2,240	2,240	2,240	6,330
			0.148" x 2½"	4	430	430	430	430	7,685
				2	820	820	820	820	7,685

1. Allowable loads are based on the use of cross-laminated timber (CLT) grades E1-E4 and V1-V4 material conforming to APA PRG-320.
2. Allowable loads have been increased for wind or seismic loading with no further increase allowed; reduce where other loads govern.
3. Allowable loads are based on lesser of calculations per SDPWS 2021 or assembly tests with a safety factor.
4. Fastener failure modes are Mode IIIs or Mode IV.
5. **Nails:** 0.148" x 2½" = nail dimension listed diameter by length; **Screws:** #9 x 3" WSV = model WSV3S.
6. CLT panel minimum thickness is three-ply = 4.125".
7. The component of diaphragm deflection due to fastener slip at panel-to-panel joints calculated as $\delta_f = CLe_n$, where,
 - $C = (1/P_L + 1/P_W)/2$
 - P_L = Length of individual CLT panel (ft.); P_W = Width of individual CLT panel (ft.)
 - L = Overall length of diaphragm (ft.)
 - e_n = Design load per fastener (lb.) / Slip Modulus, Y (lb./in.)

(Reference — Applied Technology Council. 1981. *Guidelines for the design of horizontal wood diaphragms*. Redwood City, CA)



Product Information

Ordering SKU	Description	Quantity
LDSS48	Light Diaphragm Spline Strap (3¾" x 47½" x 18 gauge)	1, 10 or 500
PRO300SG2DC2K	Quik Drive PRO300SG2 system kit with Cordless DeWalt® driver	1
PNOSECLIP-LDSS	Quik Drive Noseclip for LDSS	1
WSV3S	Strong-Drive® WSV #9 x 3" SUBFLOOR Screw (Collated)	1,000
N10DHDGPT2500	Strong-Drive 33° SCN SMOOTH-SHANK CONNECTOR Nail 0.148" x 2½" Hot-Dip Galvanized	2,500
N10DBRP2500	Strong-Drive 33° SCN SMOOTH-SHANK CONNECTOR Nail 0.148" x 2½" Bright	2,500

This filer is effective until December 31, 2024, and reflects information available as of October 1, 2022. This information is updated periodically and should not be relied upon after December 31, 2024. Contact Simpson Strong-Tie for current information and limited warranty or see strongtie.com.