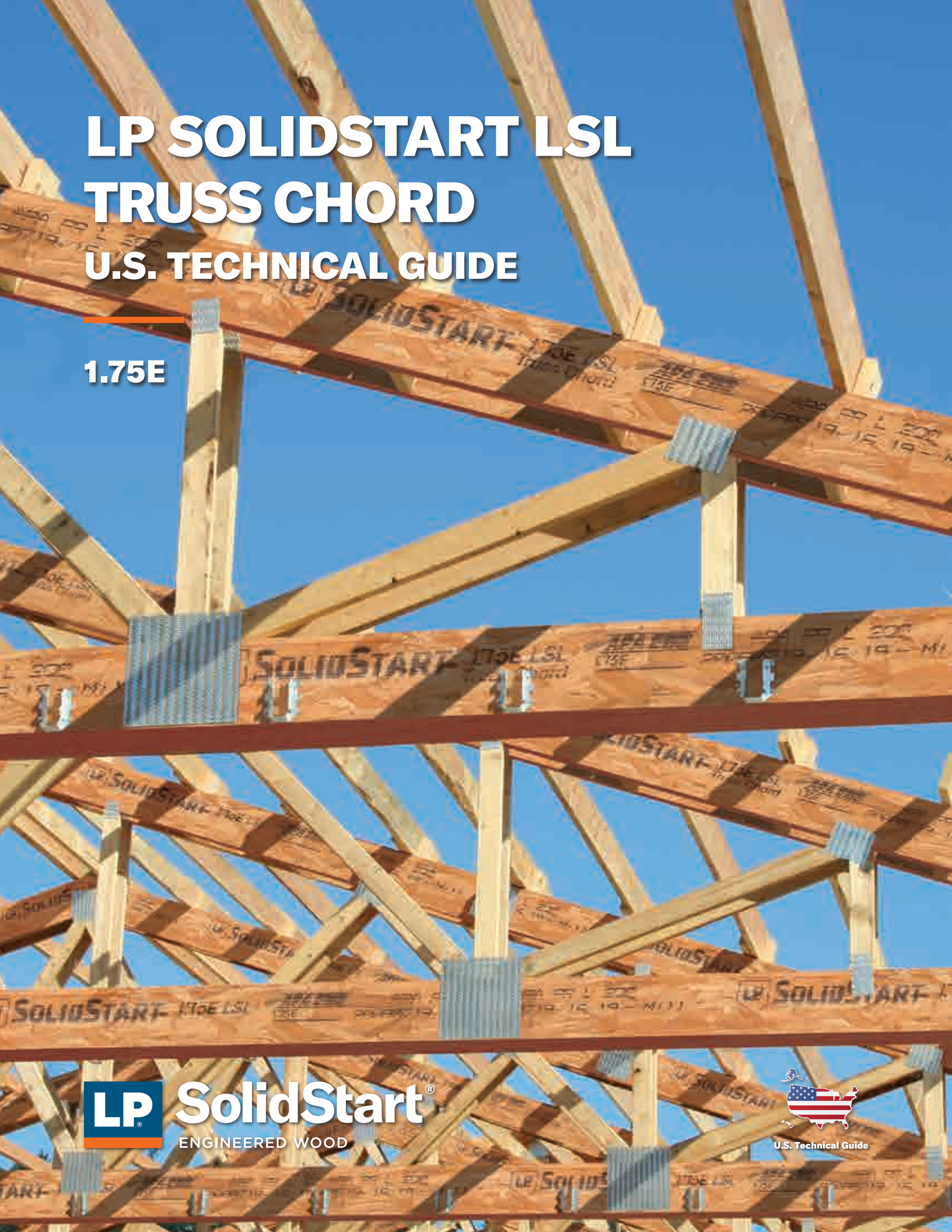
LP SOLIDSTART LSL TRUSS CHORD

U.S. TECHNICAL GUIDE

1.75E



LP SolidStart®
ENGINEERED WOOD

U.S. Technical Guide

LP SolidStart LSL 1.75E Truss Chords

LP EARNS THE HIGHEST GRADE WITH 1.75E LSL

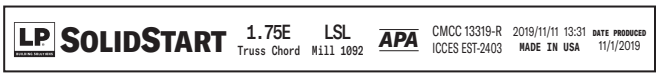
Whether you need straighter, longer lengths or I-Joist compatible depths for attic and girder truss applications, LP SolidStart LSL offers strengths and lengths beyond traditional lumber.

LP SolidStart Engineered Wood Truss Chords are available in a wide range of standard depths to match I-Joists or dimensional lumber. And, at 1.75E, the industry's newest laminated strand lumber for use in truss construction also earns the highest grade.

Exclusive LP SolidStart LSL advantages:

- 1.75E LSL combines quality and high strength properties
- 1.75E is the highest grade of LSL in the industry
- Straighter and stronger than traditional lumber
- Available in a variety of lengths to maximize efficiency
- Wide range of standard depths to match dimensional lumber or I-Joists
- Included in both MiTek® and Alpine® software for easy specification
- Manufactured with formaldehyde-free resins
- End and edge-sealed to protect against moisture

LP SolidStart LSL 1.75E Truss Chord grade is allowable for use in plated trusses and can be easily identified by a unique stamp from our manufacturing facility. LP SolidStart LSL Truss Chord material undergoes extensive evaluations in addition to normal quality control procedures, including truss plate connection testing to monitor structural performance in the same manner as real world truss chord applications.



Actual truss chord grade stamp represented. Look for the truss chord stamp on your product.

IMPORTANT NOTE: LP is not responsible for the design, fabrication, installation or bracing of trusses. Refer to the truss manufacturer and the truss plate manufacturer for this information. Obtain relevant reference documents and standards from the Truss Plate Institute (TPI) or the Wood Truss Council of America (WTCA).

IMPORTANT NOTE: LP SolidStart LSL Truss Chords shall not be used in the flat orientation. Plates shall not be installed into the narrow edges of the material.

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ALLOWABLE STRESS DESIGN VALUES (PSI)

Grade	Bending Stress F_b[4]	Modulus of Elasticity E ($x 10^6$ psi)	Shear Stress F_v	Compression Stress		Tension
				F_c (Parallel To Grain)	$F_{c\perp}$ (Perpendicular To Grain)	F_t[5]
$2500F_b$-1.75E	2500	1.75	410	2450	950	2100

NOTES:

1. LP SolidStart LSL shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
2. The allowable strengths and stiffness are for standard load duration. Bending, Shear and Compression parallel-to-grain shall be adjusted according to code. Stiffness and Compression perpendicular-to-grain shall not be adjusted.
3. The allowable Bending stress for LP SolidStart LSL is tabulated for 12" depths. For depths other than 12", multiply F_b by $(12/depth)^{0.120}$. For depths less than 3-1/2", multiply F_b by 1.159.
4. The allowable Bending Stress, F_b, for LP SolidStart LSL may be multiplied by 1.04 when the member qualifies as a repetitive member as defined in the NDS.
5. The allowable Tension, F_t, for LP SolidStart LSL is assigned for a standard length of 3 feet. For lengths longer than 3 feet, multiply F_t by $(3/length)^{0.092}$. For lengths less than 3 feet, use the design tension stresses in the table above, unadjusted.
6. Deflection calculations shall include both bending and shear deformations.

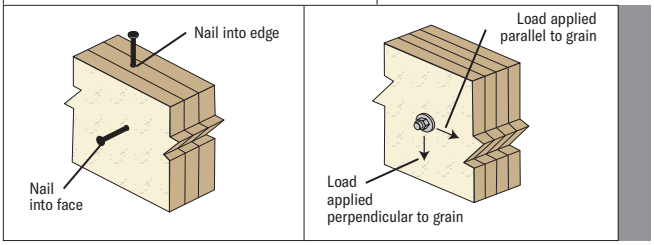
FASTENER DESIGN

Equivalent Specific Gravity					
Nails and Wood Screws				Bolts and Lag Screws	
Withdrawal		Dowel Bearing		Dowel Bearing (into the face only)	
Edge	Face	Edge	Face	Load Applied Parallel to Grain	Load Applied Perpendicular to Grain
0.46	0.50	0.50	0.55	0.50	0.58

NOTES:

1. The equivalent specific gravity for each connection type listed above is for standard load duration and shall be adjusted according to code.
2. Fastener spacing, end and edge distance shall be as specified by code except for nail spacing as specified below.
3. See details below for fastener and applied load orientation.
4. Refer to LP SolidStart LSL Beam and Header Technical Specification Guide for additional information for tabulated capacities and side loaded considerations.

FASTENER & LOAD ORIENTATION



NAIL SPACING REQUIREMENTS

LSL Ply Thickness	Fastener Orientation	Nail Size (common or box)	Minimum End Distance	Minimum Nail Spacing Per Row	
				Single Row	Multiple Row
≥ 1-1/2"	Edge[6]	8d & smaller	2"	3"	3"
		10d & 12d	2"	3"	4"
		16d[5]	2-1/2"	4"[4]	6"
	Face	8d & smaller	7/8"	1"	
		10d & 12d	7/8"	1"	
		16d[5]	7/8"	1-1/2"	

NOTES:

1. Edge distance shall be such that does not cause splitting.
2. Multiple rows of nails shall be offset at least 1/2" and staggered.
3. Edge orientation refers to nails driven into the narrow edge of the LSL, parallel to the face of the strands. Face orientation refers to nails driven into the wide face of the LSL, perpendicular to the face of the strands. (See Fastener & Load Orientation details above.)
4. Single row spacing for 16d nails into the edge can be reduced to 3" for 1-3/4" or thicker LSL.
5. 16d sinkers (3-1/4" x 0.148"Ø) can be spaced the same as the 10d and 12d nails.
6. Nail penetration for edge nailing must not exceed 2 inches for 16d common nails (3-1/2 in. by 0.162 in. diameter) and 2-1/2 inches for all nails with a smaller shank diameter.

NAILING REQUIREMENTS & RECOMMENDATIONS

LP SolidStart LSL can be fastened using nails, screws and bolts. The density of LSL is greater than other engineered wood products, so framers may need to make adjustments to their equipment for acceptable results.

Screws:

There are several manufacturers that promote the use of their screw products for LSL applications.

FastenMaster® TrussLOK-Z™ and Simpson Strong-Tie® SDW TRUSS-PLY fasteners can be used to connect up to four (4) plies of 1-1/2" LSL together. The lateral capacity of these fasteners is similar to 1/2" bolts. FastenMaster literature indicates the screws can be installed from one side to draw multiple members together. Refer to the fastener manufacturer's technical literature for capacity and installation instructions.

Nails:

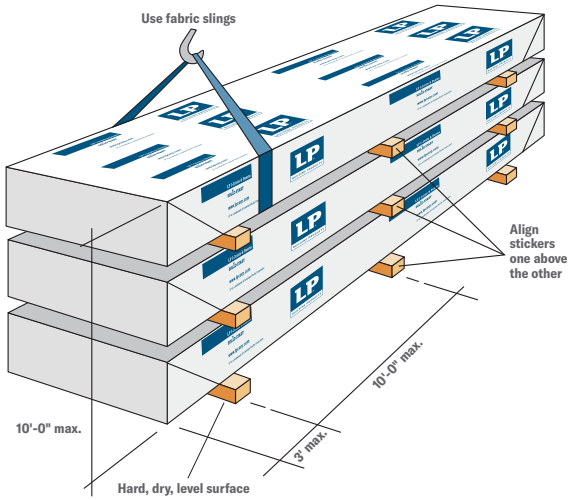
It is possible that framing nailers adjusted for nailing into lumber may not fully drive nails into LSL. Some simple adjustments can be made to facilitate nailing. These include:

- Increasing air pressure so it is at least 100 psi at the nail gun
- Using larger air hoses (e.g. 3/8") to deliver more air volume
- Limit the number of air guns drawing off of an air line
- Additional equipment enhancements include:
  - Using a nail gun with full-round striker feature, typically found in coil-fed nail guns and high performance strip-fed nail guns
  - Using a nail gun with a "power cap" feature (e.g. Paslode® PowerMaster Plus F350S), which acts as an air pressure accumulator at the nail gun.
    Note: LP is not endorsing or promoting this particular nail gun.
  - Maintaining proper lubrication and maintenance on nail guns.

Please refer to the LP SolidStart LSL Beam and Header Technical Guide and the LP Installation Detail sheet for additional information on fasteners and fastener spacing. For further questions, contact your LP representative or visit our web site at LPCorp.com.

HANDLING & STORAGE GUIDELINES

- **WARNING:** Failure to follow proper procedures for handling, storage and installation could result in unsatisfactory performance, unsafe structures and possible collapse.
- Keep LP® SolidStart® LSL dry. These products are intended to resist the effects of moisture on structural performance from normal construction delays but are not intended for permanent exposure to the weather.
- Unload products carefully, by lifting. Support the bundles to reduce excessive bowing. Individual products should be handled in a manner which prevents physical damage during measuring, cutting, erection, etc.
- Keep products stored in wrapped and strapped bundles, stacked no more than 10' high. Support and separate bundles with 2x4 (or larger) stickers spaced no more than 10' apart. Keep stickers in line vertically.
- Product must not be stored in contact with the ground, or have prolonged exposure to the weather.
- Use forklifts and cranes carefully to avoid damaging product.



- Do not use a visually damaged product. Call your local LP SolidStart Engineered Wood Products distributor for assistance when damaged products are encountered.
- For satisfactory performance, LP SolidStart Engineered Wood Products must be used under dry, covered and well-ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
- For built-up members, LP SolidStart LSL shall be dry before nailing or bolting to avoid trapping moisture.
- LP SolidStart LSL shall not be used for unintended purposes such as ramps and planks.

LP SolidStart LSL 1.75E

Standard Thickness: 1-1/2"

Standard Depths: 3-1/2", 5-1/2", 7-1/4", 9-1/4", 9-1/2", 11-1/4", 11-7/8", and 14"

Standard Lengths: 16', 20', 24' with lengths up to 64' available

CODE EVALUATION

Code evaluation reports can be obtained at www.lpcorp.com

ICC-ES ESR 2403

APA PR-L280

For more information on the full line of LP SolidStart Engineered Wood Products or the nearest distributor, visit our web site at LPCorp.com.

Phone: 1-888-820-0325
E-mail: customer.support@LPCorp.com.

LP SolidStart Engineered Wood Products are manufactured at different locations in the United States and Canada.
Please verify availability with the LP SolidStart Engineered Wood Products distributor in your area before specifying these products.

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LP SolidStart® ENGINEERED WOOD

For product catalog & complete warranty details, visit LPCorp.com

⚠ **CAL. PROP 65 WARNING:** Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.

NOTE: Louisiana-Pacific Corporation periodically updates and revises its product information. To verify that this version is current, contact the nearest sales office, visit LPCorp.com, or call 1-888-820-0325.

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