

Technical Bulletin #03-10

Master Plank® LVL Multiple Member Connections



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Multiple Member Connections

Master Plank® LVL Beams

General Notes and Examples:

1. Uniform loads in tables in this technical bulletin represent the load capacity of the fasteners. The load capacity of the beam may be less. Make sure the multiple member beam is sized correctly to carry the applied load.
2. Determine if the multiple member beam is top loaded or side loaded. (Refer to following examples)
3. Choose the correct fastener specification; nails, screws or bolts for the applied load.



Top – Loaded Master Plank LVL Beam:
Framing is applied to the top of the beam such that each member carries the same load.

Example: Master Plank LVL Beam supports floor joists sitting on top of the beam.

Use: **Top Loaded Beams** table to select fastener requirements



Side – Loaded Master Plank LVL Beam:
Framing is applied to one or both of the faces (or outer members of the beam).

Example: Master Plank LVL Beam supports floor joists framing in to one face of the beam.

Calculate: Load from floor joists in PLF.

Use: **Side Loaded Beams** table to select fastener requirements for calculated PLF.

Refer to the following examples to calculate the magnitude of load used to determine fastener requirements for **Side – Loaded** Master Plank LVL Beams:

Example 1: Master Plank LVL Beam supports 16 ft. floor joists framing in to one face of beam. (Floor load: 50 PSF total)

Calculate: Load from floor joists: $16' \times 0.5 \times 50 \text{ PSF} = 400 \text{ PLF}$

Use: **Side Loaded Beams** table and 400 PLF to select fasteners.

Example 2: Master Plank LVL Beam supports 18 ft. floor joists framing in to one face and 14 ft. floor joists framing in to the other. (Floor load: 50 PSF total)

Calculate: Total load from one joist: $18' \times 0.5 \times 50 \text{ PSF} = 450 \text{ PLF}$

Total load from other joist: $14' \times 0.5 \times 50 \text{ PSF} = 350 \text{ PLF}$

Use: **Side Loaded Beams** table and 450 PLF (greater of the two loads) to select fasteners.

General Notes:

1. Nail and bolt values use the 2005 edition of the NDS as a guideline.
2. Specific Gravity for fastener design: $G = 0.45$
3. Values listed in tables are for 100% duration and may be increased for other load durations as permitted by the NDS. For example:
 - o Increase values 15% for roof applications with snow load.
 - o Increase values 25% for non-snow loaded roof applications.
4. Four ply beams may be top loaded or side loaded equally from each face. Consult a design professional for other load conditions for 4-ply beams that may cause eccentricity or torsional loads in the beam.

Nailed Connections – 16d common nails:

Multiple Member Connections **Master Plank® LVL Beams**

A. Two ply Beams:

2 x 1-3/4 in = 3-1/2 in thick



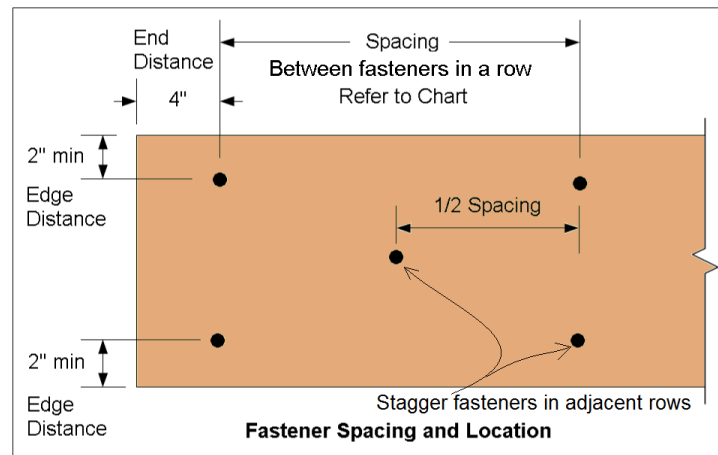
16d Common Wire Nails 0.162 in diameter 3-1/2 in long			
Driven into one face of 2-ply beam			
Number of Rows (one face)	Spacing (in each row) (in)	Fasteners per foot (one face)	Max Load (either face) (PLF)
2	12	2	-
3	12	3	-
4	12	4	-

Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	505
	2	8	3	760
	2	6	4	1015
9-1/4 in to 18 in deep	3	12	3	760
	3	8	4.5	1140
	3	6	6	1520
11-7/8 in to 24 in	4	12	4	1015
	4	8	6	1520
	4	6	8	2030
14-1/2 in to 24 in	5	12	5	1270
	5	8	7.5	1905
	5	6	10	2540
18 in to 24 in	6	12	6	1520
	6	8	9	2285
	6	6	12	3045



Additional Notes for 2- ply Beams:

1. For 1-3/4" thick Master Plank LVL and 16d common wire nails only.
2. Don't use this table for pneumatically driven "Gun" nails with smaller diameter. Use appropriate table.
3. Drive nails so heads are flush with surface of Master Plank LVL.
4. Refer to all notes and examples on Page 2 before using these tables.

Multiple Member Connections **Master Plank® LVL Beams**

B. Three ply Beams:

3 x 1-3/4 in = 5-1/4 in thick



16d pneumatically driven "Gun" nails 0.131 in diameter 3-1/2 in long
Driven into each face of 3-ply beam

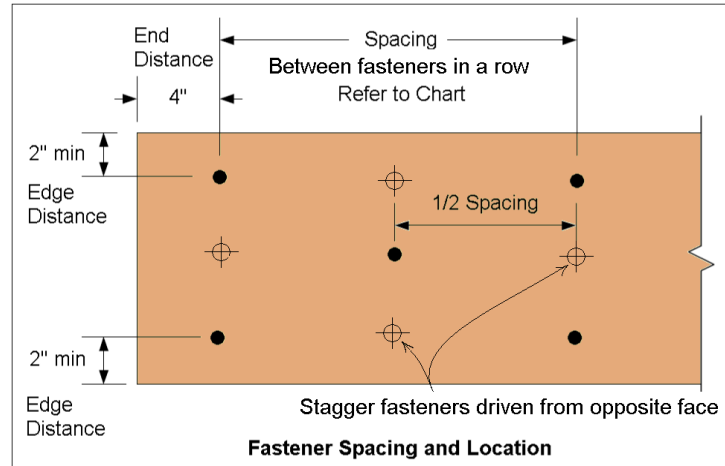
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
2	12	2	-
3	12	3	-
4	12	4	-

Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	260
	2	8	3	395
	2	6	4	525
9-1/4 in to 18 in deep	3	12	3	395
	3	8	4.5	590
	3	6	6	790
11-7/8 in to 24 in	4	12	4	525
	4	8	6	790
	4	6	8	1055
14-1/2 in to 24 in	5	12	5	660
	5	8	7.5	990
	5	6	10	1320
18 in to 24 in	6	12	6	790
	6	8	9	1185
	6	6	12	1580



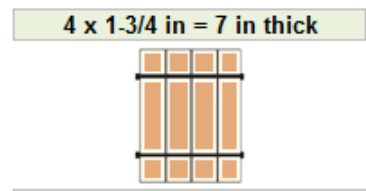
Additional Notes for 3-Ply Beams:

1. For 1-3/4" thick Master Plank LVL and 16d common wire nails only.
2. Don't use this table for pneumatically driven "Gun" nails with smaller diameter. Use appropriate table.
3. Drive nails so heads are flush with surface of Master Plank LVL.
4. Refer to all notes and examples on Page 2 before using these tables.

How to fasten 3-Ply Beams: Nail two (2) plies together using the rows and spacing shown on the chart. Turn the beam over and nail the third ply on the opposite face using the same rows and spacing shown on the chart. Stagger the nails between the nails driven from the opposite face.

Multiple Member Connections **Master Plank® LVL Beams**

C. Four ply Beams:



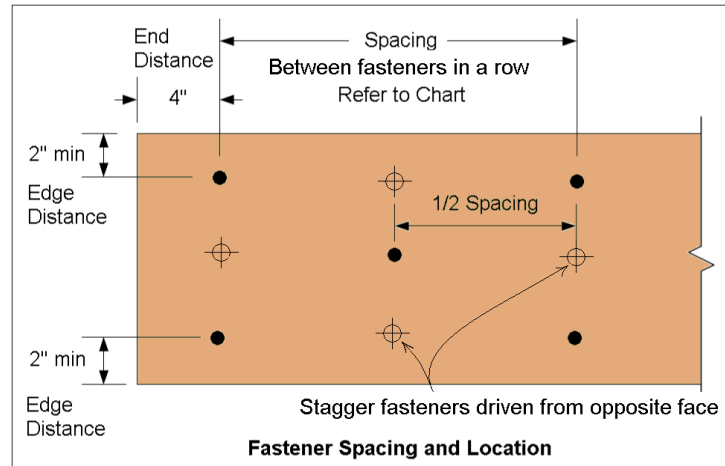
16d Common Wire Nails 0.162 in diameter 3-1/2 in long			
Driven into each face of 4-ply beam - 1/2 in diameter bolts also required			
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)

Top Loaded Beams:

Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Less than 12 in deep	2	12	2	1015
	2	8	3	1185
	2	6	4	1350
9-1/4 in to 18 in deep	3	12	3	1185
	3	8	4.5	1435
	3	6	6	1690
11-7/8 in to 24 in	4	12	4	1350
	4	8	6	1690
	4	6	8	2030
14-1/2 in to 24 in	5	12	5	1520
	5	8	7.5	1945
	5	6	10	2370
18 in to 24 in	6	12	6	1690
	6	8	9	2200
	6	6	12	2705



Additional Notes for 4-Ply Beams:

1. For 1-3/4" thick Master Plank LVL and 16d common wire nails only.
2. Don't use this chart for pneumatically driven "Gun" nails with smaller diameter. Use appropriate table.
3. Drive nails so heads are flush with surface of Master Plank LVL.
4. 4-ply beam may be top loaded or side loaded equally from each face. Consult a design professional for other load conditions that may cause eccentricity or torsional loads.
5. Refer to all notes and examples on Page 2 before using these tables.

How to fasten 4-Ply Beams: Nail two (2) plies together using the rows and spacing shown on the table. Nail the third ply on one face, turn the beam over and nail the fourth ply on the opposite face using the same rows and spacing shown on the table. Stagger the nails between the nails in the previous ply.

Bolts are required for 4- ply beams: In addition to nails, use 2-rows of 1/2" diameter bolts with flat washers spaced at 12" O.C. in each row. Use similar end and edge distances. Avoid nail locations.

Multiple Member Connections

Master Plank® LVL Beams

Nailed Connections – 16d “Gun” nails:

Multiple Member Connections

Master Plank® LVL Beams

A. Two ply Beams:

2 x 1-3/4 in = 3-1/2 in thick



16d pneumatically driven "Gun" nails 0.131 in diameter 3-1/2 in long

Driven into one face of 2-ply beam

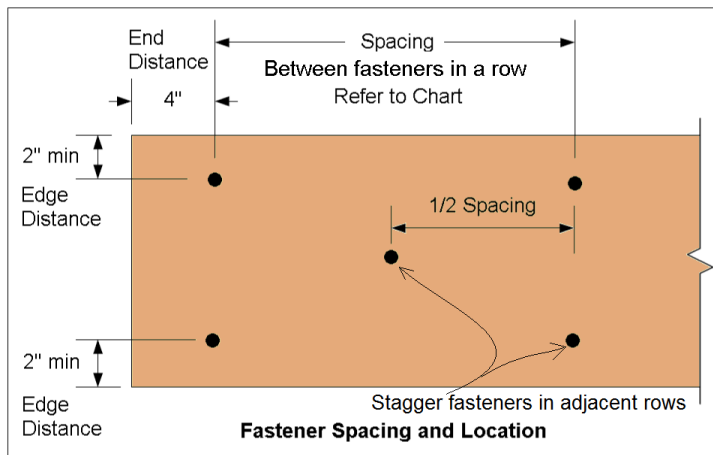
Number of Rows (one face)	Spacing (in each row) (in)	Fasteners per foot (one face)	Max Load (either face) (PLF)
2	12	2	-
3	12	3	-
4	12	4	-

Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	350
	2	8	3	525
	2	6	4	700
9-1/4 in to 18 in deep	3	12	3	525
	3	8	4.5	790
	3	6	6	1055
11-7/8 in to 24 in	4	12	4	700
	4	8	6	1055
	4	6	8	1405
14-1/2 in to 24 in	5	12	5	880
	5	8	7.5	1320
	5	6	10	1760
18 in to 24 in	6	12	6	1055
	6	8	9	1580
	6	6	12	2110



Additional Notes for 2-ply Beams:

1. For 1-3/4" thick Master Plank LVL And 16d "Gun" nails 0.131" diameter, 3-1/2" long.
2. Drive nails so heads are flush with surface of Master Plank LVL.
3. Refer to all notes and examples on Page 2 before using these tables.

Multiple Member Connections **Master Plank® LVL Beams**

B. Three ply Beams:

3 x 1-3/4 in = 5-1/4 in thick



16d pneumatically driven "Gun" nails 0.131 in diameter 3-1/2 in long
Driven into each face of 3-ply beam

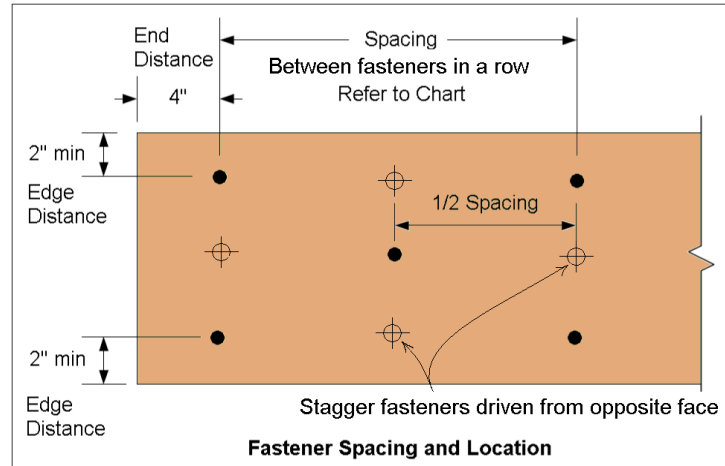
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
2	12	2	-
3	12	3	-
4	12	4	-

Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	260
	2	8	3	395
	2	6	4	525
9-1/4 in to 18 in deep	3	12	3	395
	3	8	4.5	590
	3	6	6	790
11-7/8 in to 24 in	4	12	4	525
	4	8	6	790
	4	6	8	1055
14-1/2 in to 24 in	5	12	5	660
	5	8	7.5	990
	5	6	10	1320
18 in to 24 in	6	12	6	790
	6	8	9	1185
	6	6	12	1580



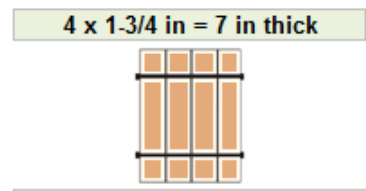
Additional Notes for 3-Ply Beams:

1. For 1-3/4" thick Master Plank LVL And 16d "Gun" nails 0.131" diameter, 3-1/2" long.
2. Drive nails so heads are flush with surface of Master Plank LVL.
3. Refer to all notes and examples on Page 2 before using these tables.

How to fasten 3-Ply Beams: Nail two (2) plies together using the rows and spacing shown on the table. Turn the beam over and nail the third ply on the opposite face using the same rows and spacing shown on the table. Stagger the nails between the nails driven from the opposite face.

Multiple Member Connections **Master Plank® LVL Beams**

C. Four ply Beams:



16d pneumatically driven "Gun" nails 0.131 in diameter 3-1/2 in long
 Driven into each face of 4-ply beam - 1/2 in diameter bolts also required

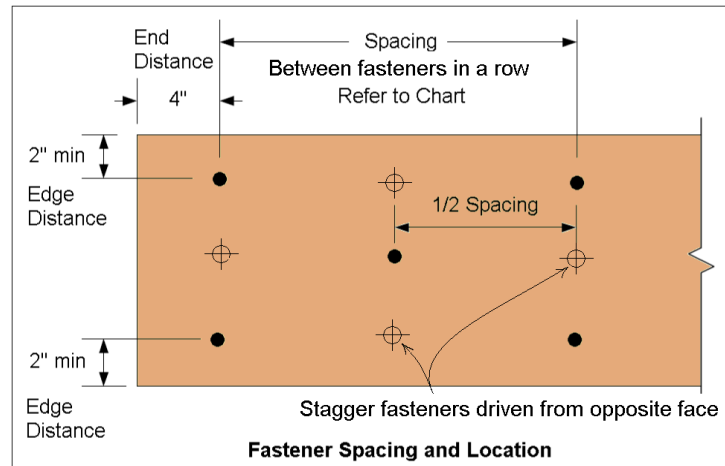
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
2	12	2	-
3	12	3	-
4	12	4	-

Top Loaded Beams:

Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Less than 12 in deep	2	12	2	910
	2	8	3	1025
	2	6	4	1145
9-1/4 in to 18 in deep	3	12	3	1025
	3	8	4.5	1205
	3	6	6	1380
11-7/8 in to 24 in	4	12	4	1145
	4	8	6	1380
	4	6	8	1615
14-1/2 in to 24 in	5	12	5	1260
	5	8	7.5	1555
	5	6	10	1850
18 in to 24 in	6	12	6	1380
	6	8	9	1730
	6	6	12	2085



Additional Notes for 4-Ply Beams:

1. For 1-3/4" thick Master Plank LVL And 16d "Gun" nails 0.131" diameter, 3-1/2" long.
2. Drive nails so heads are flush with surface of Master Plank LVL.
3. 4-ply beams may be top loaded or side loaded equally from each face. Consult a design professional for other load conditions that may cause eccentricity or rotation.
4. Refer to all notes and examples on Page 2 before using these tables.

How to fasten 4-Ply Beams: Nail two (2) plies together using the rows and spacing shown on the table. Nail the third ply on one face, turn the beam over and nail the fourth ply on the opposite face using the same rows and spacing shown on the table. Stagger the nails between the nails in the previous ply.

Bolts are required for 4- ply beams: In addition to nails, use 2-rows of 1/2" diameter bolts with flat washers spaced at 12" O.C. in each row. Use similar end and edge distances. Avoid nail locations.

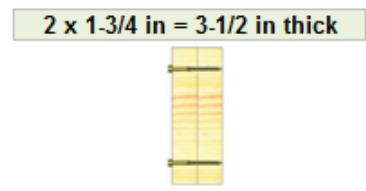
Multiple Member Connections

Master Plank[®] LVL Beams

USP Structural Connectors[®] WS35 and WS6 Screws

Multiple Member Connections **Master Plank® LVL Beams**

A. Two ply Beams:



USP Structural Connectors® WS35 Screws 1/4 in diameter 3-1/2 in long
Driven into one face of 2-ply beam

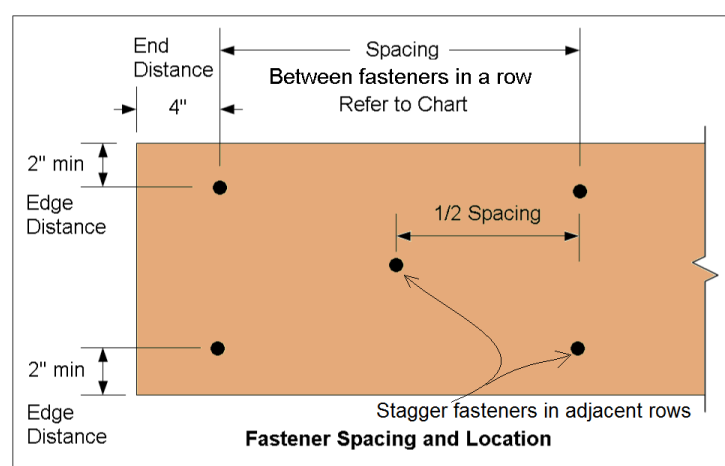
Number of Rows (one face)	Spacing (in each row) (in)	Fasteners per foot (one face)	Max Load (either face) (PLF)
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Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	870
	2	8	3	1300
	2	6	4	1735
9-1/4 in to 18 in deep	3	12	3	1300
	3	8	4.5	1955
	3	6	6	2605
11-7/8 in to 24 in	4	12	4	1735
	4	8	6	2605
	4	6	8	3470
14-1/2 in to 24 in	5	12	5	2170
	5	8	7.5	3255
	5	6	10	4340
18 in to 24 in	6	12	6	2605
	6	8	9	3905
	6	6	12	5210

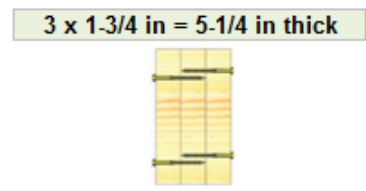


- Additional Notes for 2- ply Beams:**
1. For 1-3/4" thick Master Plank LVL and USP WS35 Screws only.
 2. **How to fasten 2-Ply Beams:** Screw two (2) plies together from one side (face) using the rows and spacing shown on the table.
 3. For **side loaded beams:** Load shall be applied to the side (face) with the screw heads.
 4. Refer to all notes and examples on Page 2 before using these tables.

How to Install USP WS35 Screws: Use a low speed clutch drill with 3/8" hex head driver. Washer head should be flat to the surface and the serrations will oppose turning and release the clutch. Do not over-tighten the screws. Installing the screw at an angle may introduce additional bending and tension forces into the fastener. Make sure the fastener is installed perpendicular to the plane of the Master Plank LVL ply.

Multiple Member Connections **Master Plank® LVL Beams**

B. Three ply Beams:



USP Structural Connectors® WS35 Screws 1/4 in diameter 3-1/2 in long
Driven into each face of 3-ply beam

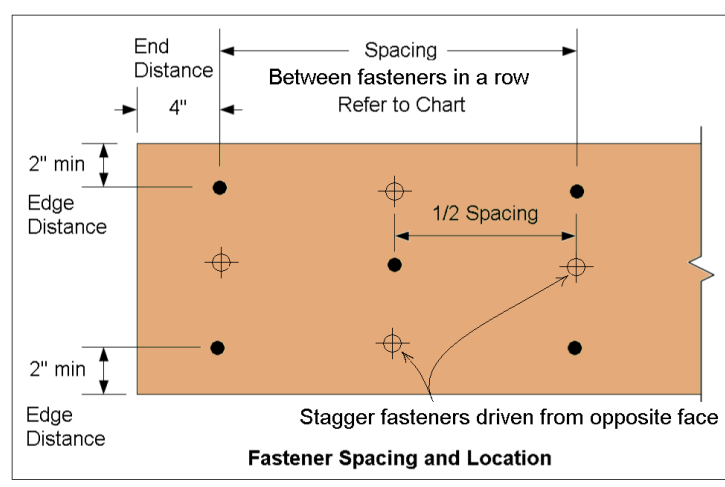
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
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Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	650
	2	8	3	975
	2	6	4	1300
9-1/4 in to 18 in deep	3	12	3	975
	3	8	4.5	1465
	3	6	6	1955
11-7/8 in to 24 in	4	12	4	1300
	4	8	6	1955
	4	6	8	2605
14-1/2 in to 24 in	5	12	5	1630
	5	8	7.5	2440
	5	6	10	3255
18 in to 24 in	6	12	6	1955
	6	8	9	2930
	6	6	12	3905



Additional Notes for 3- ply Beams:

- For 1-3/4" thick Master Plank LVL and USP WS35 Screws only.
- How to fasten 3-Ply Beams:**
 - Screw three (3) plies together with screws in one face using the rows and spacing shown on the table.
 - Turn the beam over and install screws in the opposite face using the same rows and spacing shown on the table.
 - Stagger screws between fasteners driven from the opposite face.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install USP WS35 Screws: Use a low speed clutch drill with 3/8" hex head driver. Washer head should be flat to the surface and the serrations will oppose turning and release the clutch. Do not over-tighten the screws.

Installing the screw at an angle may introduce additional bending and tension forces into the fastener. Make sure the fastener is installed perpendicular to the plane of the Master Plank LVL ply.

Multiple Member Connections

Master Plank® LVL Beams

C. Four ply Beams:

4 x 1-3/4 in = 7 in thick



USP Structural Connectors® WS6 Screws 1/4 in diameter 6 in long

Driven into each face of 4-ply beam

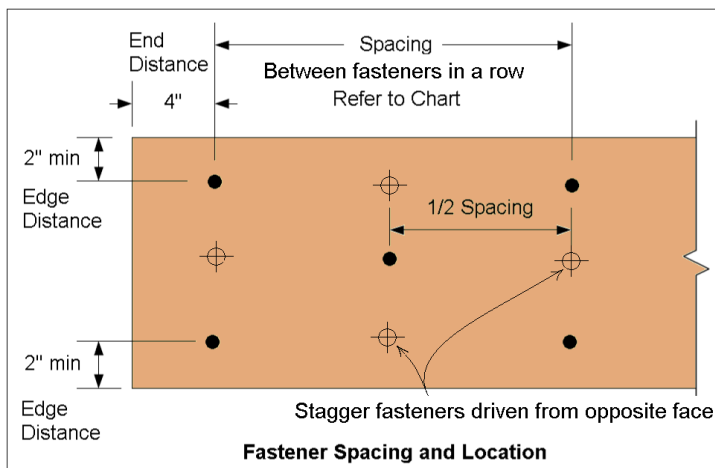
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
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Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	580
	2	8	3	870
	2	6	4	1155
9-1/4 in to 18 in deep	3	12	3	870
	3	8	4.5	1300
	3	6	6	1735
11-7/8 in to 24 in	4	12	4	1155
	4	8	6	1735
	4	6	8	2315
14-1/2 in to 24 in	5	12	5	1445
	5	8	7.5	2170
	5	6	10	2895
18 in to 24 in	6	12	6	1735
	6	8	9	2605
	6	6	12	3470



Additional Notes for 4- ply Beams:

- For 1-3/4" thick Master Plank LVL and USP WS6 Screws only.
- How to fasten 4-Ply Beams:**
 - Screw four (4) plies together with screws in one face using the rows and spacing shown on the table.
 - Turn the beam over and install screws in the opposite face using the same rows and spacing shown on the table.
 - Stagger screws between fasteners driven from the opposite face.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install USP WS6 Screws: Use a low speed clutch drill with 3/8" hex head driver. Washer head should be flat to the surface and the serrations will oppose turning and release the clutch. Do not over-tighten the screws.

Installing the screw at an angle may introduce additional bending and tension forces into the fastener. Make sure the fastener is installed perpendicular to the plane of the Master Plank LVL ply.

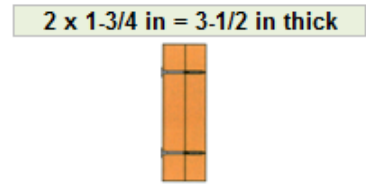
Multiple Member Connections

Master Plank® LVL Beams

Simpson SDW Strong-Drive® Screws

Multiple Member Connections **Master Plank® LVL Beams**

A. Two ply Beams:



Simpson SDW Strong-Drive® Screws 1/4 in diameter 3-1/2 in long
Driven into one face of 2-ply beam

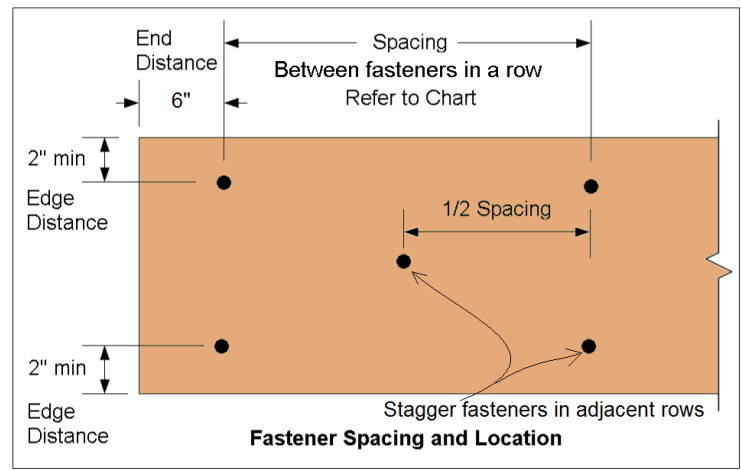
Number of Rows (one face)	Spacing (in each row) (in)	Fasteners per foot (one face)	Max Load (either face) (PLF)
2	12	2	-
3	12	3	-
4	12	4	-

Top Loaded Beams:

Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Less than 12 in deep	2	12	2	1020
	2	8	3	1530
	2	6	4	2040
9-1/4 in to 18 in deep	3	12	3	1530
	3	8	4.5	2295
	3	6	6	3060
11-7/8 in to 24 in	4	12	4	2040
	4	8	6	3060
	4	6	8	4080
14-1/2 in to 24 in	5	12	5	2550
	5	8	7.5	3825
	5	6	10	5100
18 in to 24 in	6	12	6	3060
	6	8	9	4590
	6	6	12	6120



Additional Notes for 2- ply Beams:

- For 1-3/4" thick Master Plank LVL and Simpson SDW Screws only.
- How to fasten 2-Ply Beams:** Screw two (2) plies together from one side (face) using the rows and spacing shown on the table.
- For **side loaded beams:** Load may be applied to either side (face) of the beam:
 - Screw head side
 - or
 - Screw tip (point) side.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install Simpson SDW Screws: Use a low-speed 1/2" drill and a T-40 6-lobe bit. The matched bit available with the screws is recommended for best results. No pre-drilling is required. Screw heads may be countersunk flush to the wood surface. Take care not to spin out the screw.

Multiple Member Connections

Master Plank® LVL Beams

B. Three ply Beams:

3 x 1-3/4 in = 5-1/4 in thick



Simpson SDW Strong-Drive® Screws 1/4 in diameter 5 in long

Driven into one face of 3-ply beam

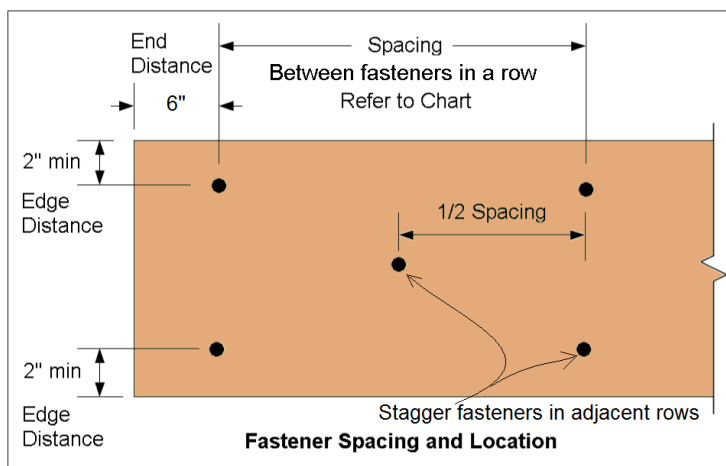
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
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Top Loaded Beams:

Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Less than 12 in deep	2	12	2	765
	2	8	3	1150
	2	6	4	1530
9-1/4 in to 18 in deep	3	12	3	1150
	3	8	4.5	1720
	3	6	6	2295
11-7/8 in to 24 in	4	12	4	1530
	4	8	6	2295
	4	6	8	3060
14-1/2 in to 24 in	5	12	5	1915
	5	8	7.5	2870
	5	6	10	3825
18 in to 24 in	6	12	6	2295
	6	8	9	3445
	6	6	12	4590



Additional Notes for 3- ply Beams:

- For 1-3/4" thick Master Plank LVL and Simpson SDW Screws only.
- How to fasten 3-Ply Beams:** Screw two (3) plies together from one side (face) using the rows and spacing shown on the table.
- For **side loaded beams:** Load may be applied to either side (face) of the beam:
 - Screw head side
 - or
 - Screw tip (point) side.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install Simpson SDW Screws: Use a low-speed 1/2" drill and a T-40 6-lobe bit. The matched bit available with the screws is recommended for best results. No pre-drilling is required. Screw heads may be countersunk flush to the wood surface. Take care not to spin out the screw.

Multiple Member Connections

Master Plank® LVL Beams

C. Four ply Beams:

4 x 1-3/4 in = 7 in thick



Simpson SDW Strong-Drive® Screws 1/4 in diameter 6-3/4 in long

Driven into one face of 4-ply beam

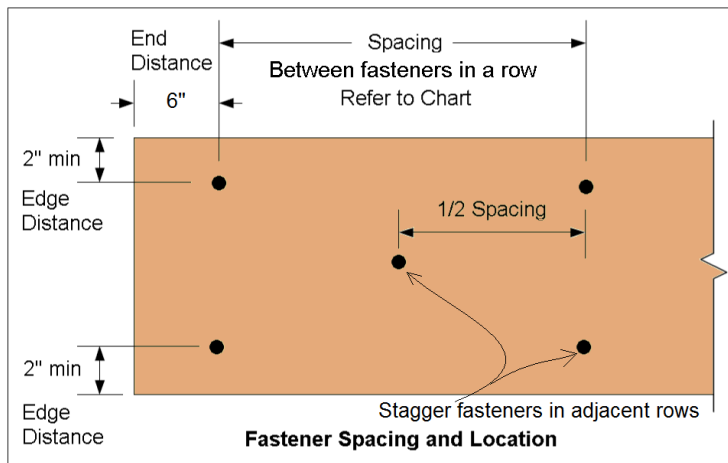
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
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Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	680
	2	8	3	1020
	2	6	4	1360
9-1/4 in to 18 in deep	3	12	3	1020
	3	8	4.5	1530
	3	6	6	2040
11-7/8 in to 24 in	4	12	4	1360
	4	8	6	2040
	4	6	8	2720
14-1/2 in to 24 in	5	12	5	1700
	5	8	7.5	2550
	5	6	10	3400
18 in to 24 in	6	12	6	2040
	6	8	9	3060
	6	6	12	4080



Additional Notes for 4-ply Beams:

- For 1-3/4" thick Master Plank LVL and Simpson SDW Screws only.
- How to fasten 4-Ply Beams:** Screw four (4) plies together from one side (face) using the rows and spacing shown on the table.
- For **side loaded beams:** Load may be applied to either side (face) of the beam:
 - Screw head side
 - or
 - Screw tip (point) side.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install Simpson SDW Screws: Use a low-speed 1/2" drill and a T-40 6-lobe bit. The matched bit available with the screws is recommended for best results. No pre-drilling is required. Screw heads may be countersunk flush to the wood surface. Take care not to spin out the screw.

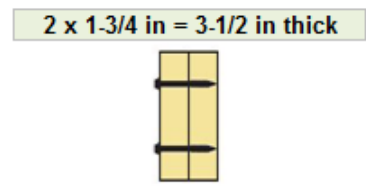
Multiple Member Connections

Master Plank® LVL Beams

FastenMaster® TrussLok® Screws

Multiple Member Connections **Master Plank® LVL Beams**

A. Two ply Beams:



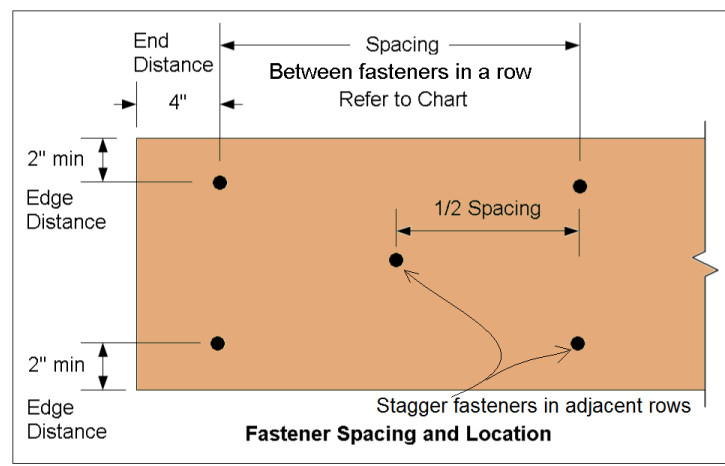
FastenMaster® TrussLok® Screws 1/4 in diameter 3-1/2 in long			
Driven into one face of 2-ply beam			
Number of Rows (one face)	Spacing (in each row) (in)	Fasteners per foot (one face)	Max Load (either face) (PLF)

Top Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Beam Depth	Number of Rows	Spacing (in)	Fasteners per foot	Max Load (PLF)
Less than 12 in deep	2	12	2	870
	2	8	3	1310
	2	6	4	1745
9-1/4 in to 18 in deep	3	12	3	1310
	3	8	4.5	1960
	3	6	6	2615
11-7/8 in to 24 in	4	12	4	1745
	4	8	6	2615
	4	6	8	3490
14-1/2 in to 24 in	5	12	5	2180
	5	8	7.5	3270
	5	6	10	4360
18 in to 24 in	6	12	6	2615
	6	8	9	3925
	6	6	12	5230



Additional Notes for 2- ply Beams:

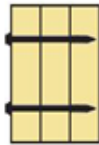
- For 1-3/4" thick Master Plank LVL and FastenMaster TrussLok Screws.
- How to fasten 2-Ply Beams:**
Screw two (2) plies together from one side (face) using the rows and spacing shown on the table.
- For **side loaded beams:**
Load may be applied to either side (face) of the beam:
 - Screw head side
 - or
 - Screw tip (point) side.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install FastenMaster TrussLok Screws: Use a 1/2" corded or cordless low speed/high torque drill, install screws into the side of the outermost ply. As the thread fully engages the final ply, allow the underside of the washer head to pull the plies firmly together. Do not countersink. Take care not to spin out the screw.

Multiple Member Connections **Master Plank® LVL Beams**

B. Three ply Beams:

3 x 1-3/4 in = 5-1/4 in thick



FastenMaster® TrussLok® Screws 1/4 in diameter 5 in long

Driven into one face of 3-ply beam

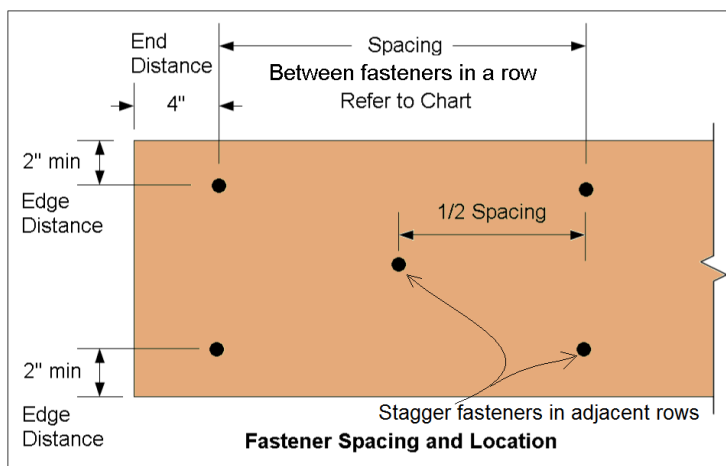
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
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Top Loaded Beams:

Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Less than 12 in deep	2	12	2	765
	2	8	3	1150
	2	6	4	1530
9-1/4 in to 18 in deep	3	12	3	1150
	3	8	4.5	1720
	3	6	6	2295
11-7/8 in to 24 in	4	12	4	1530
	4	8	6	2295
	4	6	8	3060
14-1/2 in to 24 in	5	12	5	1915
	5	8	7.5	2870
	5	6	10	3825
18 in to 24 in	6	12	6	2295
	6	8	9	3445
	6	6	12	4590



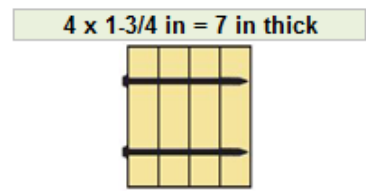
Additional Notes for 3- ply Beams:

- For 1-3/4" thick Master Plank LVL and FastenMaster TrussLok Screws.
- How to fasten 3-Ply Beams:** Screw two (2) plies together from one side (face) using the rows and spacing shown on the table.
- For **side loaded beams:** Load may be applied to either side (face) of the beam:
 - Screw head side
 - or
 - Screw tip (point) side.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install FastenMaster TrussLok Screws: Use a 1/2" corded or cordless low speed/high torque drill, install screws into the side of the outermost ply. As the thread fully engages the final ply, allow the underside of the washer head to pull the plies firmly together. Do not countersink. Take care not to spin out the screw.

Multiple Member Connections **Master Plank® LVL Beams**

C. Four ply Beams:



FastenMaster® TrussLok® Screws 1/4 in diameter 6-3/4 in long
Driven into one face of 4-ply beam

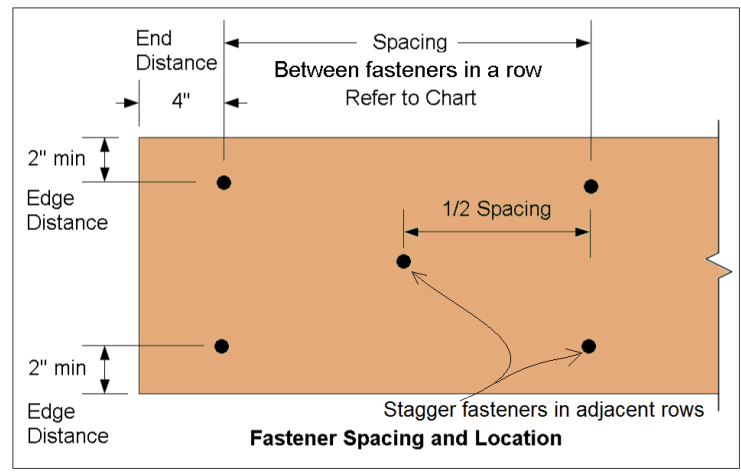
Number of Rows (each face)	Spacing (in each row) (in)	Fasteners per foot (each face)	Max Load (either face) (PLF)
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Top Loaded Beams:

Less than 12 in deep	2	12	2	-
12 in to 18 in deep	3	12	3	-
Greater than 18 in to 24 in	4	12	4	-

Side Loaded Beams:

Less than 12 in deep	2	12	2	680
	2	8	3	1020
	2	6	4	1360
9-1/4 in to 18 in deep	3	12	3	1020
	3	8	4.5	1530
	3	6	6	2040
11-7/8 in to 24 in	4	12	4	1360
	4	8	6	2040
	4	6	8	2720
14-1/2 in to 24 in	5	12	5	1700
	5	8	7.5	2550
	5	6	10	3400
18 in to 24 in	6	12	6	2040
	6	8	9	3060
	6	6	12	4080



Additional Notes for 4- ply Beams:

- For 1-3/4" thick Master Plank LVL and FastenMaster TrussLok Screws.
- How to fasten 4-Ply Beams:** Screw two (4) plies together from one side (face) using the rows and spacing shown on the table.
- For **side loaded beams:** Load may be applied to either side (face) of the beam:
 - Screw head side
 - or
 - Screw tip (point) side.
- Refer to all notes and examples on Page 2 before using these tables.

How to Install FastenMaster TrussLok Screws: Use a 1/2" corded or cordless low speed/high torque drill, install screws into the side of the outermost ply. As the thread fully engages the final ply, allow the underside of the washer head to pull the plies firmly together. Do not countersink. Take care not to spin out the screw.