

Column-to-column concealed connection with strength, simplicity and versatility.

The MCT mass timber column tie connects two columns together while allowing the vertical download to be transferred by column-to-column bearing. The MCT can be used on a wide variety of column sizes and is compatible with the Simpson Strong-Tie® line of concealed beam hangers (CBH™, ACBH™, SCBH™, HSKP™), making it ideal for use in post-and-beam style construction.

Features

- Concealed connection for architectural aesthetics and fire protection
- Universal design allows the same connector to be used on wide range of column sizes
- Simple routing for CNC fabrication of columns
- Integrated lifting hole with tested lifting load values
- Crosshair marks at centerlines of pipe to aid installation

Seismic Deformation Compatibility Testing:

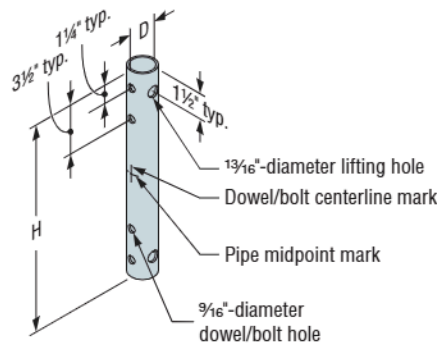
Recommended for use at column-to-column connections in any Seismic Design Category. See L-C-MCBDRIFT for more information.

Material: Steel

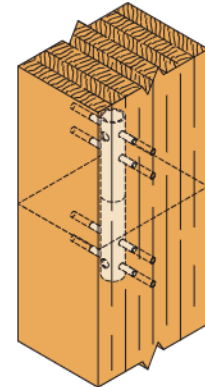
Finish: MCT — Electrogalvanized

Fasteners: Dowels or bolts with $F_y = 36$ ksi min. and $F_u = 60$ ksi min. Fasteners not included with connector. 1/2"-diameter x 4 3/4"-long mechanically galvanized dowels are available (Model No. CJTPL).

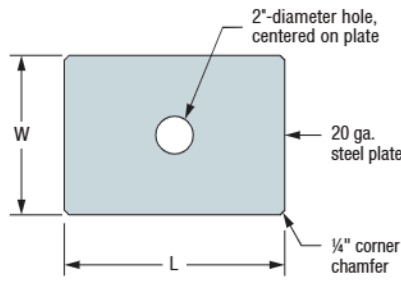
Options: MCTPLX configurable 20-gauge steel plate (G90) for increased end-to-end bearing capacity. Specifier provides "W" and "L" dimensions (6" minimum, 18" maximum).



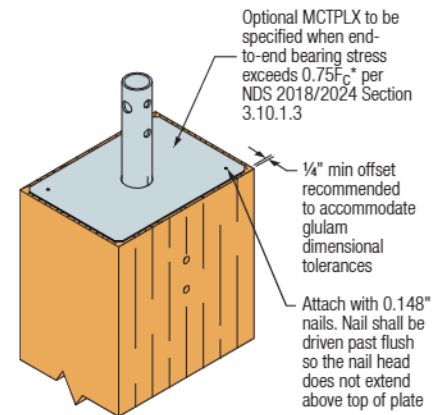
MCT1.9x15



MCT1.9x15 Installation



MCTPLX



MCT1.9x15 with MCTPLX Installation

Allowable Loads — Column-to-Column

Model No.	Minimum Column Width (in.)	Minimum Column Depth (in.)	Dimensions (in.)		Fasteners		Allowable Load (lb.) (DF/SP)		
			D	H	Qty.	Type	Uplift (160)	Lateral (160)	
								Concurrent Axial Compression	
< 20 kips	≥ 20 kips								
MCT1.9x15	8 3/4	9	1.9	15	4	1/2" x 4 3/4" (min.) dowel or 1/2" bolt	3,790	1,500	3,230
	12 1/4	15						2,500	5,470

1. Uplift and lateral loads have been increased for wind or earthquake loading, with no further increase allowed; reduce where other loads govern.
2. Allowable loads are based on DF/SP lumber. For SPF/HF lumber, multiply tabulated loads by 0.90 for uplift and 0.80 for lateral.
3. For SP glulam with minimum column width 8 1/2" and 12", use loads published for width 8 3/4" and 12 1/4", respectively.
4. For minimum column width/depth 6 3/4", allowable uplift = 2,670 lb. and allowable lateral load = 1,310 lb.
5. For simultaneous uplift and lateral loads, the connector must be evaluated using the Unity Equation: Design Uplift/Allowable Uplift + Design Lateral/Allowable Lateral ≤ 1.0.
6. Lead holes for dowels shall be drilled 0" to 1/32" smaller than the actual dowel diameter, per NDS 2018/2024 Section 12.1.7.1.
7. Holes for bolts shall be a minimum of 1/32" to a maximum of 1/16" larger than the diameter, per NDS 2018/2024 Section 12.1.3.2.
8. The designer is responsible for calculating the allowable download capacity, based on the column size selected. The bearing area shall be reduced by 3.14 in² to account for a 2"-diameter column end rout (see routing details).
9. For bearing parallel to grain where $f_c \geq 0.75F_c^*$, use a 20-gauge minimum plate inserted with a snug fit between abutting member ends, per NDS 2018/2024 Section 3.10.1.3.
10. Use half of the total required fasteners in each member being connected to achieve the listed loads.

Routing, Installation and Lifting

Glulam Fabrication Notes:

1. It is recommended to use CNC fabrication equipment to cut the glulam column, mill the column end, and drill fastener holes. Accurate fabrication with hand tools is possible, but extra care must be taken to ensure precision.
2. The column ends must be cut level to ensure proper bearing between the columns.
3. Dowel hole and end mill locations must be located on the true centerlines of the glulam (+/- 1/32"). Dimensioning off of one edge can lead to mislocation errors, as the true width or depth of a glulam column can vary from the theoretical size. Refer to ANSI A190.1 for dimensional tolerances for the manufacture of glulam members. Deviating from the centerline more than 1/32" in either direction can lead to fit-up issues, as the connector hole oversize for the fasteners is 1/16".
4. To reduce the likelihood of the drill bit wandering at wider columns, counterboring can be used to reduce the depth of drilling required for the dowel or bolt holes. Additionally, drilling from both sides of the column can help mitigate wander and help ensure proper hole alignment.

MCT Installation Notes:

1. Insert the MCT pipe into the end of a routed column. Align the pipe midpoint mark with the end of the column and align the dowel/bolt hole centerline mark with the holes in the glulam.
2. Install tight-fit dowels or bolts to connect the lower half of the MCT to the top of the column.
3. The user can attach to the 1 3/16" lifting hole in the connector using a long-reach shackle or other rigging device to tilt and lift the column into position. When using the MCT to lift a column, the user must ensure that the tight-fit dowels or bolts between the MCT and the column are adequately secured.
4. Set the column and attach the bottom to the support below. If the support connection uses MCT, MCB™, or MCBS™, install tight-fit dowels or bolts to complete the connection.
5. After setting the beams and floor panels of the next level, the column above can be lowered down onto the MCT pipe and the upper half of the MCT connection can be completed using tight-fit dowels or bolts.

Allowable Loads – Column Tilt-Up

Model No.	Minimum Column Width/Depth (in.)	Dimensions (in.)		Qty.	Fasteners Type	Allowable Load (lb.) (DF/SP)	
		D	H			F ₂	F ₄
MCT1.9x15	6 3/4"	1.9	15	2	1/2" x 4 3/4" (min.) dowel or 1/2" bolt	1,600	790
	8 3/4"					2,270	920

1. Allowable loads are based on the ultimate test load divided by a safety factor of 5.0.
2. Loads may not be increased for duration of load.
3. Allowable loads are based on DF/SP lumber. For SPF/HF lumber, multiply tabulated loads by 0.90 for F₂ and 0.80 for F₄.
4. For SP glulam with minimum column width 8 1/2", use loads published for width 8 3/4".
5. Lead holes for dowels shall be drilled 0" to 1/32" smaller than the actual dowel diameter, per NDS 2018/2024 Section 12.1.7.1. Holes for bolts shall be a minimum of 1/32" to a maximum of 1/16" larger than the diameter, per NDS 2018/2024 Section 12.1.3.2.
6. All rigging components that are used in conjunction with the MCT shall be of sufficient strength and stiffness to carry the required load.

