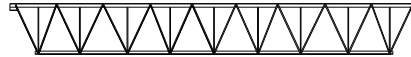




# CANAM JOIST INSTALLATION MANUAL





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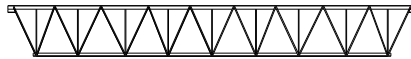
This manual is a general guide for the installation of Canam joists (long, medium and short-span systems).

It should be used in conjunction with the erection drawings that specify the measurements and details necessary to properly carry out the installation in compliance with best practices.

The application of the instructions contained in this manual is the sole responsibility of the user who should be thoroughly familiar and able to comply with all applicable building codes and safety regulations.

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## DELIVERY

## HANDLING

## STORAGE

### DELIVERY

Canam joists are usually delivered by tractor-trailer. They are packaged in bundles and labelled by lot. Suitable lifting equipment is required at the jobsite in order to unload the joists when they arrive.

The purchaser and/or installer must inspect the joists when they arrive at the jobsite. Any irregularities or damage must be reported immediately to Canam.

### LIFTING

When unloading or handling joists, slings must be attached at two points of the top chord at the intersection with the vertical and/or diagonals at all times. Do not attach slings in the middle of panels, verticals or diagonals.

For long-span over 22m, slings must be attached on three points equally spaced.

### STORAGE

Canam joists must be stored upright on a flat surface. To prevent damage, do not store bundles up against or on top of each other.

### DAMAGED JOISTS

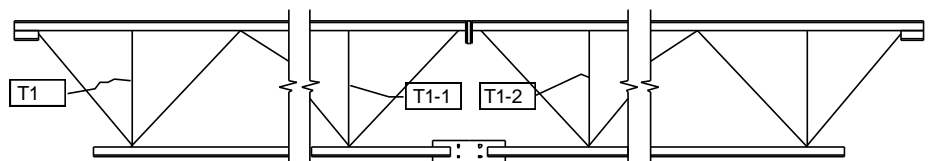
Care must be taken at all times to avoid damaging joists as a result of improper handling during unloading, storage and/or assembly operations. Note that damaged joists can hinder the effectiveness and safety of the overall system. Any damaged joists must be repaired or replaced prior to installation.

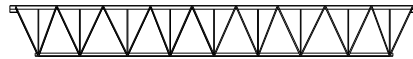
**👉 IMPORTANT: DO NOT REPAIR JOISTS ONSITE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM CANAM.**

### JOIST IDENTIFICATION

Canam joists are identified on the erection drawings using piece marks (T1, T2, J1, J2, etc.). Identical joists have the same piece mark. Piece marks are indicated on the erection drawings near supports. A metal identification tag is also attached to one end of the joist before leaving the plant.

When joists are delivered in two (2) sections with a bolted joint in the middle, two (2) additional ID tags are attached at the designated intersection to facilitate identification of the left and right side of the joist.





## JOIST INSTALLATION

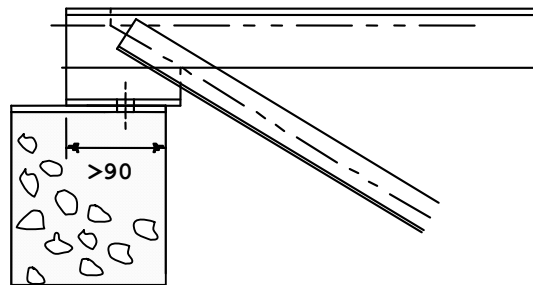
The position and spacing of Canam joists is indicated on the erection drawings.

It is essential that the joists are installed so that the piece mark is found on the same side as that shown on the erection drawings.

### SUPPORT

- **On masonry:**

If the joist will bear on solid masonry or a concrete support (with or without a bearing plate), the bearing surface must be at least 90 mm unless otherwise specified on the erection drawings.

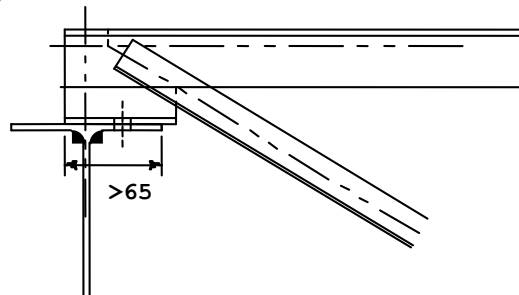


Joist on a concrete beam

- **On the steel frame:**

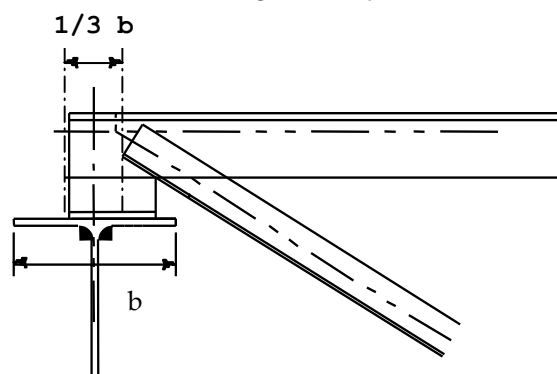
Steel beams must extend at least 65 mm beyond the edge of the support unless otherwise specified on the erection drawings.

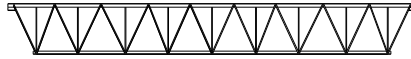
- **Spandrel beam:**



Joist on a steel beam

For spandrel beams and other beams on which the joists frame from the side only, best practices dictate that the centre of the bearing shoe be located within the middle third of the flange of the supporting beam. The 65mm minimum bearing is always to be considered.



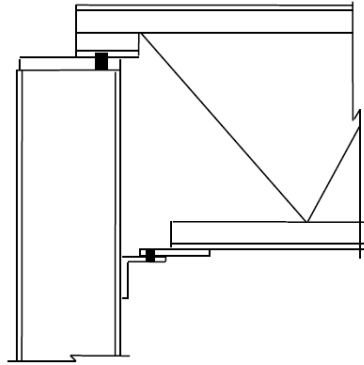


## JOIST INSTALLATION

### ▪ Joist ties:

Joists are fastened in place in order to facilitate the mounting and plumbing of the frame if required by steel erector.

Generally, the lower chord is attached to the column by means of slots. In this case, the joists are not related in any way to the structural framework action.



### WELDING

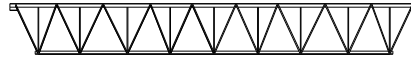
Welds must be made by qualified welders.

If the joists are welded to the supporting elements directly onsite, the welding surfaces must be prepped and cleaned of any coating or material that may affect the quality of the weld. The welds must also be cleaned of excess flux and iron slag.

### STABILITY DURING ASSEMBLY

Stability systems must be put in place to prevent the joists from swaying and otherwise maintain them in a stable position.

Joists must be braced to avoid overturning during erection until the permanent bracing and decking is installed.



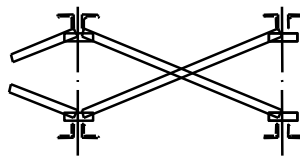
## RESTRAINT

### INSTALLATION

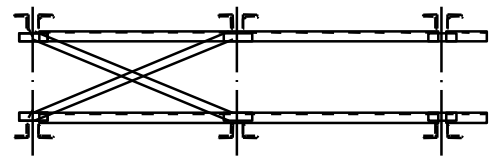
Restraints and anchors must be installed before placing any construction loads on the joists.

### TYPES

Unless otherwise indicated or subject to approval by the designer, the joist manufacturer, i.e. Canam, will also provide the necessary restraint components (for horizontal or diagonal installation).



Diagonal restraint

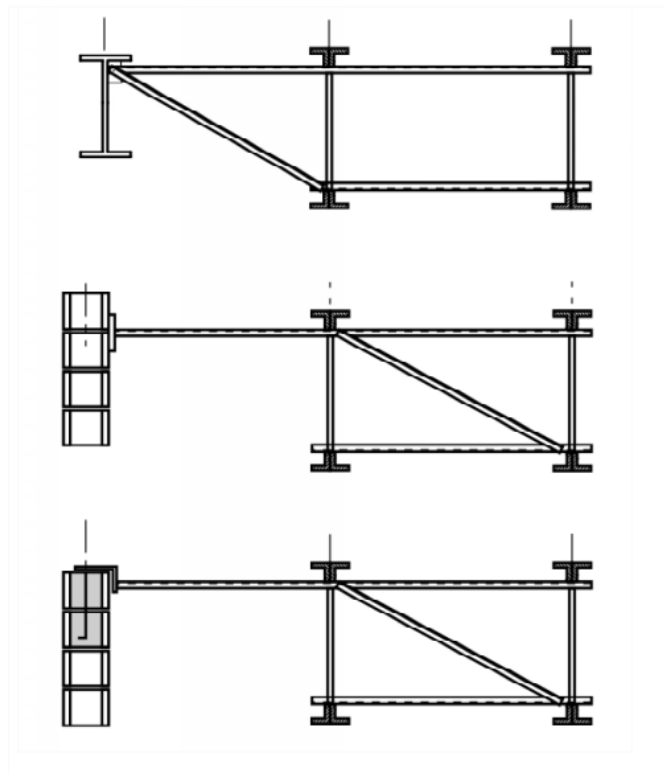


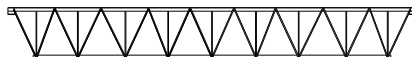
Horizontal restraint

### RESTRAINT ANCHORAGE

Each row of restraint must be adequately anchored at each end to sturdy walls or the main components of the structural frame,

Otherwise, double joist restraints (diagonal and horizontal) must be installed between adjacent joists located at the end of the restraint rows.



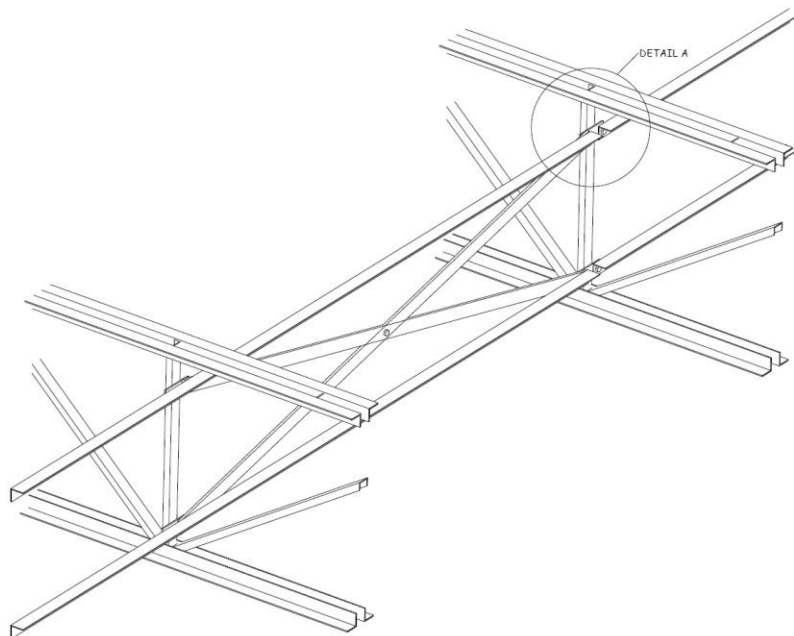


## RESTRAINT

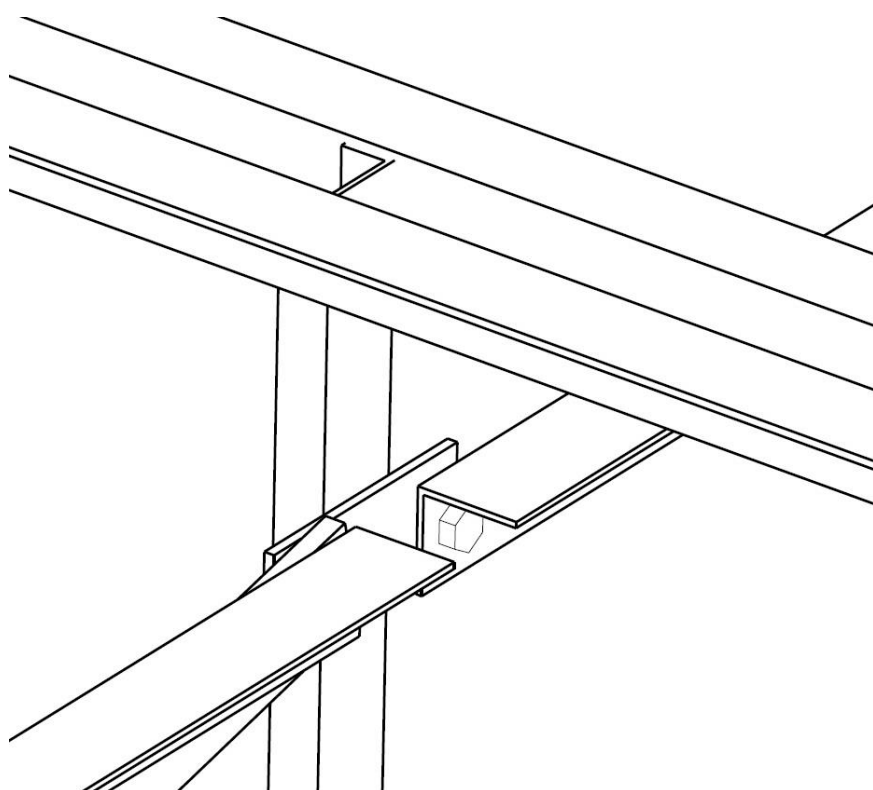
### FASTENING METHODS

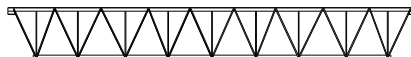
Joist restraint components can be fastened either by bolting. The applicable fastening method is specified on the erection drawings.

### Detail A



### Detail B





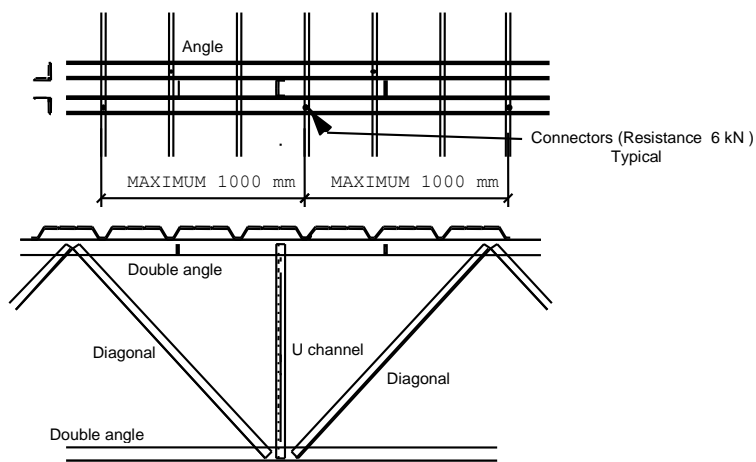
## STEEL DECK

### STEEL DECK: STANDARD INSTALLATION

The steel deck or floor must be installed directly on the frame.

The spacing of fasteners is indicated on the erection drawings. In no case whatsoever can fasteners be placed at a distance of more than 1000 mm along the joists.

In cases where the steel deck is combined with joists to form a stabilization diaphragm, all fastening requirements are clearly indicated on the erection drawings.

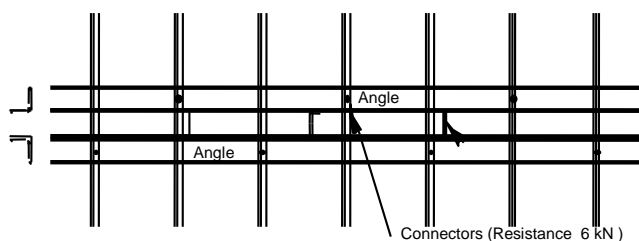


**DECK FASTENING AT EACH 2 RIBS**

### INSTALLATION IN HORIZONTAL BRACING

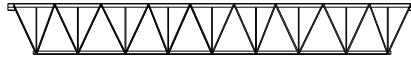
In cases where the joists will serve as a vertical or member inside horizontal bracing, the applicable calculations must be made to identify the required steel deck fasteners.

- For joists with an axial load in the compression top chord load less than 300 KN factored, standard connectors are acceptable.
- For joists with an axial load in the compression top chord load over 300 KN factored, a calculation is required to confirm that the connectors are strong enough to provide the required lateral resistance.
- For joists with an axial load in the compression top chord load over 500 KN factored, a connector at each steel deck rib is required after the calculations have been verified.



**DECK FASTENING AT EACH RIB**





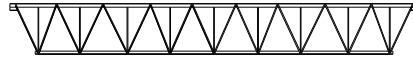
## STEEL DECK

### COMPOSITE OR FORMING STEEL DECK

The onsite slab must have a minimum thickness of 50 mm. Forming steel deck must not cause the lateral displacement of the top chords of joists when placing or pouring concrete.

### WOOD OR PLYWOOD FLOOR

Wooden floors must meet the same requirements as those specified for steel deck.



## POSITIONING ADDITIONAL LOADS ON JOISTS

### 👉 IMPORTANT: IT IS STRICTLY FORBIDDEN TO DRILL HOLES IN THE PROFILES THAT FORM THE JOISTS

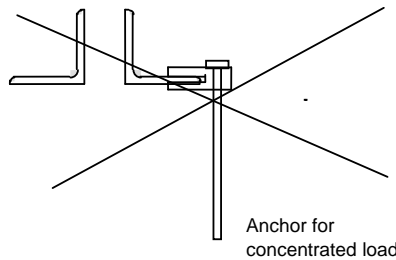
The addition of concentrated loads on joists must be made in compliance with the following specifications. Moreover, any additional loads must not cause distortion in the bottom chord.

Concentrated loads that were not calculated in the initial design can only be applied on a node only or a maximum of  $\pm 150$  mm from a node. The load must not exceed 200 kg and must remain inside the mechanical load included in the permanent load.

If the force exceeds 200 kg or if there is more than one load 200 kg along the joist, it is imperative to contact Canam for monitoring and verification.

In the case of sprinklers, fasteners can only be placed on the top or bottom chord in an off-axis position as shown in the UNAUTHORIZED METHOD below if the load is less than 60 kg.

#### UNAUTHORIZED METHOD (except sprinklers)



#### AUTHORIZED METHOD

