

# TPIC Technical Bulletin #10

Revision date: Jul. 20 2015

## LONG SPAN TRUSSES : GOOD PRACTICES

### Introduction

Due to their higher-risk design, long span trusses should be looked at with special care. In fact, these trusses develop higher member and joint forces, higher bearing reactions and higher bracing forces to be distributed in the building.

In addition to the actual usage loading, these trusses are often deformed a lot during handling, causing unaccounted and unwanted stress in the joints and in the members.

Therefore, the designer should use special consideration when designing this type of truss.

### 1a – LONG SPAN TRUSSES

Long span trusses are trusses that have a clear span (between bearings) larger than 24.4m (80'-0"), but less than 30.5m (100'-0").

### 1b – Design consideration for long span trusses

For long span trusses, the next special design considerations should be followed:

#### *Service condition:*

- Long span trusses shall be used only in dry service condition.

#### *Lumber:*

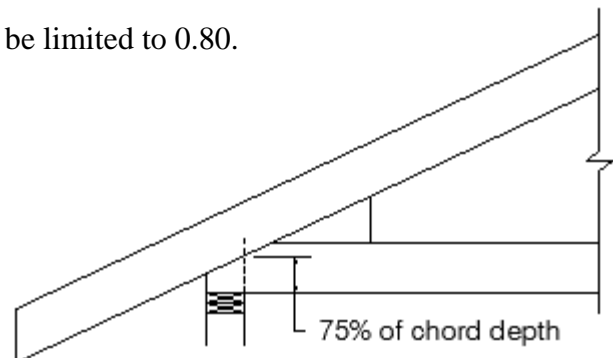
- The minimum web size for long span trusses shall not be less than 38x89 (2x4);
- Long span trusses shall be manufactured using lumber of 19% or less moisture content.

#### *Plates:*

- The maximum grip JSI of connector plates shall be limited to 0.80.

#### *Heels:*

- The height of the bottom chord of a truss at the interior side of bearing of a heel joint shall be at least 75% of chord depth.

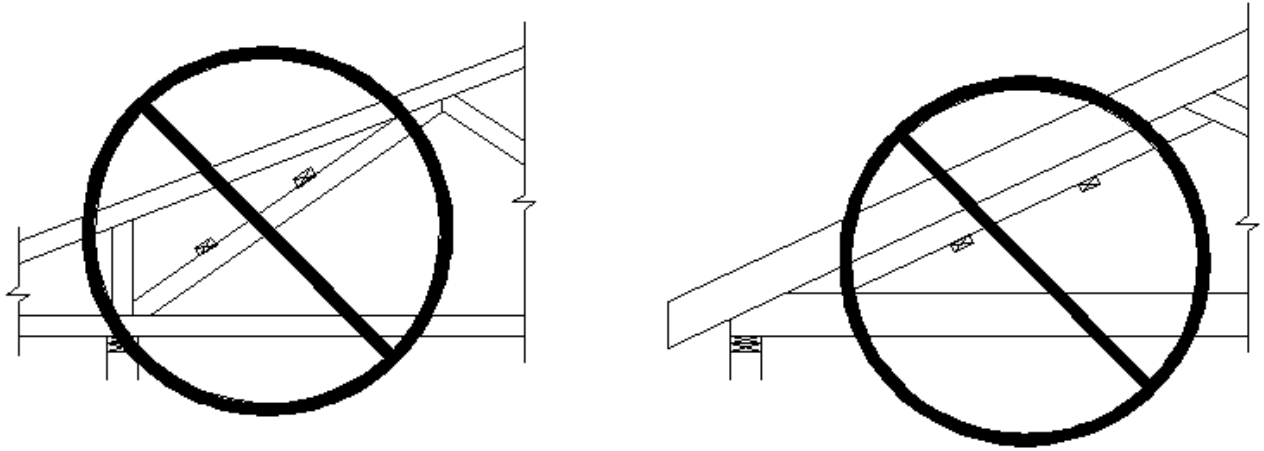


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### *Lateral braces:*

- The designer may want to avoid lateral braces in high compression members near supports.



### **2a – VERY LONG SPAN TRUSSES**

Very long span trusses are trusses that have a clear span (between bearings) larger than 30.5m (100'-0").

### **2b – Design consideration for very long span trusses**

In addition to the specifications in *1b – Design consideration for long span trusses*, very long span trusses should follow these special design considerations:

#### *Configuration:*

- Very long span trusses shall always have 2 ply;
- The ply-to-ply nail spacing shall not exceed 229mm (9") in compression members.

#### *Lumber:*

- The maximum CSI for lumber shall be limited to 0.90.