



## STRUCTURAL TRUSS SYSTEMS

### 4 X 2 FLOOR TRUSS SYSTEM

4 X 2 floor trusses are custom built pre-fabricated floor components that have been used in Canada for over 30 years. Despite being on the market for as long as they have been they are relatively unheard of in certain areas of the country. Regions such as Lethbridge AB have been using the floor truss for many years with an estimated 75% of residential units using them.

Listed below are points of consideration when selling the floor trusses to first time or skeptical users:

- Many hangers typically used in an I-joist system are eliminated by incorporating top chord bearing details into a floor design.
- Extremely friendly to mechanical trades - no cutting required. Care must be taken for truss placement around toilet/tub drains.
- Longer spans allow for more efficient use of bearing walls/beams.
- Wider nailing surface for floor sheeting
- Fast installation and less waste.
- Floor truss details are very flexible depending on design/customer requirements (dropped floor areas, hidden beam details, built-up block)
- All trusses are engineered for loading requirements and vibration control.

Listed below are general limitations for the 4 x 2 floor system:

- Maximum span to depth ratio of 1 to 20 (example - 14" truss should not exceed 23'-4" span - spacing may be adjusted to accommodate longer spans)
- Maximum 24" duct chase on flat-wise trusses
- Minimum duct chase offset from the bearing is  $\frac{1}{4}$  of the span - subject to final design
- Maximum cantilever is  $\frac{1}{4}$  of the total span
- Maximum cantilever without a concentrated load at the end of the cantilever is 4 times the depth of truss.
- Maximum cantilever with a concentrated load at the end of the cantilever is 2 times the depth of truss
- 2-ply girder trusses maximum
- Commercial applications will change many of the above details based on loading requirements.

Being a pre-fabricated system more attention needs to be spent at the start to ensure details meet customer and builder requirements. Items for consideration could be:

- Do trusses need to be cut back for sheeting or insulated rim board
- Flush headers over basement windows
- Confirmation of beam/bearing details - flush or dropped