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Please note: The CSA Technical Committee recently ruled that the 10 PSF in Table 4.1.6.3 of the National Building Code of Canada for attics having limited accessibility should not be treated as a short term load. The rationale for this interpretation was that maintenance workers could conceivably spend more than 7 days in the attic over the life of the structure.

Commentary on 10 PSF *Bottom Chord* Live Load in Commercial *Roof Truss* Design

The purpose of this document is to clarify the contents of section 4.1.6.3 of the National Building Code, which states as follows:

Attics having limited accessibility so that there is no storage of equipment or material shall be designed with a specified bottom chord live load of 10 PSF.

For some time this portion of the code has been debated by our industry. TPIC received a written response from Cathy Taraschuk M.Eng. of the NRC (dated June 16 1999) stating, "*the required loading was a provision for occasional access by maintenance workers*". Designing roof systems with 10 PSF Live Load over the bottom chord of all members can have a severe impact especially on the girders carrying these trusses. The impact extends further as it also affects all supporting members including lintels, etc., down to the foundation.

With this in mind, TPIC set out to determine a design procedure that is more forgiving to supporting members, but still incorporates the intent of Section 4.1.6.3. After much debate, the following procedure was established for Commercial (Part 4 NBCC) trusses:

1) Common trusses will be designed with bottom chord live load on all traditional load cases with the exception of wind load cases. However, the bottom chord dead load shall never be less than 5 PSF without ceiling, or 7 PSF with ceiling (as per TPIC Table 3.3.1). In special cases where the BCDL exceeds 7 PSF, this load shall be used on all the traditional load cases.

2) Girder trusses will be designed without bottom chord live load on all traditional load cases for the trusses being carried. From these load cases, the girder should be designed taking the worst reaction and adding to it (10*PSF* x *Design Spacing*) live load on the bottom chord. This additional live load, which will normally equal 10psf x 2ft (or 20 PLF), is divided equally by the number of girder plies.

NOTE: The above may be superseded by design authority having jurisdiction