

Request for Interpretation

RFI-A257TC-09-02

Standard: CSA O86 *Engineering Design in Wood*
Topic: Roller Press Reduction Factor
Submitted by: Brent Bunting
Date: December 4, 2015
Initial Review: TC Executive
Final Approval: Technical Committee on Engineering Design in Wood (A257TC)

Request for Interpretation (RFI):

Applicable clause(s)/Table(s):

Question:

There is a question as to whether or not the roller press reduction factor in 7.3, 7.5 and 9.6 of CSA S347-14 is applicable to two pass systems. I believe this requirement was added to match the ANSI-TPI requirements. ANSI-TPI does not apply a reduction factor for two pass systems, it is only applicable to single pass rollers (see 5.2.5 ANSI-TPI 2007 attached below).

Is the roller press reduction factor in 7.3, 7.5 and 9.6 of CSA S347-14 applicable to two pass systems?

5.2.5 Embedment Methods.

5.2.5.1 Design Values.

Design values intended for Metal Connector Plates pressed hydraulically shall be obtained by testing hydraulically embedded Test Specimens as shown in Figure 5.2-2. Design values intended for Metal Connector Plates pressed with a single pass roller shall be obtained by testing a Metal Connector Plates Test Specimen embedded with a single pass roller press as shown in Figure A5.2-3. Design values determined for a specific roller diameter shall be applicable to Metal Connector Plates

pressed with the same diameter roller or greater. Design values determined for single pass roller presses are not prohibited from being used for double pass roller presses and hydraulic pressing equipment.

5.2.5.2 Reduction Value.

In lieu of testing Metal Connector Plates for use with a single pass, full embedment roller press as specified in Section 5.2.5.1, a reduction value, Q_R , determined in accordance with Annex A5.2, shall be permitted. This reduction does not apply to plates embedded using full embedment hydraulic platen presses, multiple roller systems which utilize partial embedment followed by full embedment rollers, and combinations of partial embedment roller/hydraulic presses that feed Trusses into a stationary finish roller.

Recommended TC Position:

This is in response to your request to the Connections Sub Committee of CSA-086 for interpretation regarding the roller press reduction factor in S347. The exact question was did this reduction factor also apply to multi pass roller systems.

The committee went through a response on this given by Robert Baynit of Mitek Canada Inc., who was on the task group involved in rewriting this standard, in which he confirmed that the task group proposed this change in S347 to follow the lead from ANSI/TPI. He stated he thought the Section 7.3 of S347-14 does indeed say the reduction factor applies only to a single pass roller press system and that it does not apply to a multi pass roller system.

He explained further that there are four possible truss fabrication systems based on how the plates are started to embed and how they are finished:

- 1) Start and finish with a hydraulic press.
- 2) Start with a hydraulic but finish with a roller press.
- 3) Start with a travelling roller gantry and finish with a final fixed roller press.
- 4) Start by hammering in corners of plate or using staples and finish with a fixed roller.

Only the last method requires reduction of values according to ANSI/TPI and he thinks this was the intent in S347 Section 7.3, although not stated with clarity.

Request for Interpretation

RFI-A257TC-09-02

The intent of this part of the rewrite of S347 was basically to use the methodology developed and used in the US for establishing roll press values. This methodology was you either did all the tests using samples manufactured on a single pass roller and used resulting values for multiple pass rollers and hydraulic presses. This would be quite conservative for especially the hydraulic press users.

The other approach was you would do all the samples using a hydraulic press and establish values, and then do two of the four directional tests using samples produced on a single pass roller, and, then using the lowest value establish a reduction factor on the hydraulic values for all directions. As stated in ANSI/TPI Section 5.2.5.2 this reduction does not apply to plates embedded using full embedment hydraulic platen presses, multiple roller systems which utilize partial embedment followed by full embedment rollers and combination of partial embedment roller/hydraulic presses that feed trusses into a stationary finish roller.