



Technical Bulletin No. 2009-00 0

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Revised:

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Title: Template for TFEC Technical Bulletins

Abstract

The purpose of this document is to provide a template for technical bulletins of the Timber Frame Engineering Council (TFEC). This document may be edited directly during manuscript preparation. The final manuscript should require minimal copyediting to finalize an accepted manuscript for publication.

Introduction

The TFEC sponsors publication of technical notes related to the design, construction, and maintenance of timber frame structures, including their related systems (foundations, mechanical systems, etc.). This document provides a template for development and publication of the technical notes. Use of a template will provide the TFEC technical bulletins with consistency in format, such that users will be able to recognize them as endorsements of the TFEC.

Authors who wish to submit a manuscript for review must deliver the manuscript in conformance with the format of this template. Manuscripts must be prepared in Microsoft Word. Figures, charts, and other illustrations may be prepared using other applications so long as they can be inserted into the Word document and provide clean, readable images.

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Heading 1

Main sections of the bulletin shall be delineated with “Heading 1” headings as shown here. Main sections normally include Abstract, Introduction, Summary, Conclusions, References, and other sections as required based on the topic of the technical note.

Heading 2

Subsections under main sections shall be delineated with “Heading 2” headings as shown here. If subsections are used, they must be at least two in number within a main section.

Heading 3

Sub-subsections with subsections shall be delineated with “Heading 3” headings as shown here. When used, they too must be at least two in number within a subsection. However, they are to be used sparingly to avoid fragmentation of the text. Section delineations below level 3 are not permitted.

Style

Prepare text in 12 point Times New Roman font. To the extent possible, write in third person. Active voice is preferred over passive voice.

For spelling, punctuation, and capitalization, use *Merriam Webster's Collegiate Dictionary*. For words that do not appear in that dictionary, use *Webster's Third International Dictionary*. For engineering units, either US Customary units or SI units is acceptable. If one system of units is given preference, key values should also be presented in the other system of units. Avoid exact conversion of units for approximate numerical values. For instance, if a structure contains approximately 10,000 bf of timber, the appropriate SI quantity is 24 m³, not 23.597 m³.

Do not use the expression “and/or.” For example, when “A and/or B” is truly the case, write “A or B, or both.” Also, do not use a slash (/) as a conjunction or a form of punctuation. Use “and,” “or,” commas, or semicolons as appropriate.

In general, avoid the use of symbols in text. When stating dimensions, use “by” not x, for example, “10 by 5 in. (254 by 127 mm).” Show tolerances, for example, as 10 by 5 ± 2 in. (254 by 127 ± 6 mm). Do not use a hyphen or a dash for the word “to” (e.g. 2-4 inches thick) except in tables where needed to conserve space. Do not use (') or (") for feet and inches in text, tables, or figures.

For other information on style use *Manual of Style*, The University of Chicago Press.

Lists

1. Numbered lists shall use Arabic numerals for the first level
2. Numbered list continued
 - a. Second level numbered lists shall use lowercase alpha labeling
 - b. Second level numbered list continued
- Bulleted lists shall use a solid bullet for the first level
- Bulleted lists continued
 - Second level bullets shall be indented and use an open bullet
 - Second level bullet continued

Figures and Tables

Figures

Figures, whether line drawings, photographs, or graphs, should be used to demonstrate some point or observation. Insert original, reproducible figures of professional quality directly in the manuscript in the position required. Figure elements and lettering must be legible at this size. Provide a short descriptive caption for each figure in 12 point Times New Roman Font. Place the caption below the figure. Legends and annotations in the figures may be any font of appropriate size and clarity. Number figures consecutively and cite each figure in the text by figure number (e.g. "see Fig. 1") or for figures with multiple parts use Fig. 1(a), 1(b), etc.

In charts and line drawings, use of color is encouraged, but recognize that often documents are duplicated in black and white. Hence, adjust line weight and style to provide additional distinguishing features. Figure 1 illustrates an appropriately formatted figure.

Figure 1 – Dowel Bearing Behavior of Maple Pegs

Tables

Tables should be used to present data essential to the utility of the technical note. Do not duplicate data in a table that is also illustrated in a figure or chart. The following points apply.

- Number each table with an Arabic numeral and give it a title that is complete and descriptive. In column headings, first include the quantity being tabulated, then a comma, then the units, for example: "Tensile Strength, psi."
- Do not use powers of 10 in the column heading, since it is not clear whether the numbers in the table have been or are to be multiplied by the power of ten. Instead, indicate the multiplication (for example, 1.45×10^6) in the first entry in the table, or use an expression such as "Young's Modulus, millions of psi" in the column heading.
- For footnotes that appear in tables, use the style described in the **Footnotes** section.
- Use horizontal rules under column headings. Use vertical rules only when the complexity of the table demands them for clarity. Use leaders (three periods) in any space that represents a blank entry.
- Additional information can be included in a note that appears below the title.
- When two (or more) separate systems of units are both listed in one table (for example, inch-pound and SI units), provide SI units in separate columns, in parentheses, or in brackets.
- When the size of a table and limitations of space (on the printed page) make it impractical to expand the table to include SI unit equivalents, duplicate the table.
- When it is impractical to include two or more units of measurement in the column heading because of the size and the number of tables, include the pertinent conversion factors as footnotes under each table instead of attempting to include the actual converted values within the tables.
- Do not allow a table to break between pages. If necessary, reformat it into smaller pieces, each of which fit on a single page.

Tables 1(a) and 1(b) provide examples of appropriately formatted tables.

Table 1(a) – Conversion Factors, US Customary Units to SI Units

To convert from	To	Multiply by
inches (in)	millimeters (mm)	25.400
inches (in)	meters (m)	0.025400
feet (ft)	meters (m)	0.304800
square feet (ft²)	square meters (m ²)	0.09290304
cubic feet (ft³)	cubic meters (m ³)	0.028316847
gallons (gal)	liters (l)	3.785306
miles/hour (mi/h)	meters/second (m/s)	0.44704
pounds (lb)	newtons (N = kg·m/s ²)	4.4482217

pounds/square foot (psf)	pascals (Pa = N/m ²)	47.880
kilopounds/square inch (ksi)	megapascals (MPa = N/mm ²)	6.894757
pounds/cubic foot (pcf)	kilograms/cubic meter (kg/m ³)	16.018463
inch-pounds (in·lb)	newton-meters (N·m)	0.11298483
foot-pounds (ft·lb)	netwon-meters (N·m)	1.3558179
degrees (angle)	radians (rad)	0.017453293
degrees, Fahrenheit (°F)	degrees, Celsius (°C)	$T_{°C} = (T_{°F} - 32°)/1.8$

Table 1(b) – Conversion Factors, SI Units to US Customary Units

To convert from	To	Multiply by
millimeters (mm)	inches (in)	0.039370079
meters (m)	inches (in)	39.370079
meters (m)	feet (ft)	3.2808399
square meters (m²)	square feet (ft ²)	10.7639104
cubic meters (m³)	cubic feet (ft ³)	35.3146667
liters (l)	gallons (gal)	0.26417944
meters/second (m/s)	miles/hour (mi/h)	2.23694
newtons (N = kg·m/s²)	pounds (lb)	0.22480894
pascals (Pa = N/m²)	pounds/square foot (psf)	0.020885547
megapascals (MPa = N/mm²)	kilopounds/square inch (ksi)	0.145037944
kilograms/cubic meter (kg/m³)	pounds/cubic foot (pcf)	0.062427962
newton-meters (N·m)	inch-pounds (in·lb)	8.8507456
netwon-meters (N·m)	foot-pounds (ft·lb)	0.73756215
radians (rad)	degrees (angle)	57.2957795
degrees, Celsius (°C)	degrees, Fahrenheit (°F)	$T_{°F} = 1.8T_{°C} + 32°$

Footnotes

For footnotes in tables, use superior lowercase, roman letters, beginning with “a” for each table. The footnotes should appear below the table. The first footnote(s) in the text should identify the affiliation of the author(s). For all other footnotes appearing in the text, use superior numbers. The numbering scheme should pick up from where the author affiliation footnotes left off. For example, if on the first page there are 2 author affiliation footnotes (1 and 2), then any footnotes on the following pages should pick up with number 3. Do not use footnotes in figure captions. Either cite a previous footnote or reference (for example, "see Footnote 3," or "taken from Ref [4]"), or write out the reference in the caption.

Equations

Equations should be prepared with an equation editor and numbered consecutively throughout the text. Equations shall be roughly centered on the page with the equation number against the right page margin. All variables or parameters in an equation must be defined following their first use and shall be set in italic typeface in the text. An appropriate format for a numbered equation is:

$$\sigma = Mc/I \quad (1)$$

where: σ = stress, psi or Pa

M = bending moment, lb-in or N-m

c = distance from neutral axis to extreme fiber, in or m

I = second moment of area (moment of inertia), in⁴ or m⁴

Use parentheses liberally to clearly show the precise meaning of the expression. For example, does $\log a/b$ mean $\log (a/b)$ or $(\log a)/b$? Use the parentheses to clarify.

References

Cite references in sequential order by a number in brackets, such as [1]. List references in the References section in the order in which they are cited. Use the following formats for different types of references.

Book Reference

- [1] AF&PA, 2005, National Design Specification for Wood Construction ASD/LRFD, American Forest & Paper Association, Washington, DC
- [2] Boresi, A. P. and Schmidt, R. J. 2003, *Advanced Mechanics of Materials*, 6E, John Wiley & Sons
- [3] FPS. 1999. *Wood Handbook: Wood as an Engineering Material*. Forest Products Society, Madison, WI

Journal Article Reference

- [4] Murphy, J. F. 1986, Strength and Stiffness Reduction of Large Notched Beams, *Journal of Structural Engineering*, v 112, n 9, pp. 1989-2000, Sept

- [5] Wu E M. 1967. Application of fracture mechanics to anisotropic plates. *Journal of Applied Mechanics*, v 34 n 4, pp. 967-974

Proceedings or Report Reference

- [6] Schmidt, R.J. and Scholl, G.F. Load Duration and Seasoning Effects on Mortise and Tenon Joints, August 2000
- [7] Gerhardt T D. 1984. Strength and stiffness analysis of notched, green oak pallet stringers. *FPL Research Paper 452*. US Forest Service. Madison WI