

Summary of Changes
2018 Wood Frame Construction Manual (WFCM) for One- and Two-Family Dwellings

Section	Description of Change
<p>Chapter 1 General Information</p>	<p>1) Updated design load reference from <i>ASCE 7-10</i> to <i>ASCE 7-16 Minimum Design Loads and Associated Criteria for Buildings and Other Structures</i>.</p> <p>2) Revised Figure 1.1 Basic Wind Speeds for One- and Two-Family Dwellings Based on 3-second Gust Basic Wind Speeds for Risk Category II Buildings to coordinate with updated reference to <i>ASCE 7-16</i>.</p> <p>3) Added requirements for identification and description of wood structural panels to recognize "Performance Category" consistent with the <i>International Building Code</i>. <i>WFCM</i> reference to wood structural panel (WSP) thickness appears in several forms. Reference to WSP thickness were revised throughout the standard to consistently describe wood structural panels and more accurately describe thickness as a nominal value to coordinate with the change to Section 1.2.1.8. For example: 15/32" Wood Structural Panel becomes Nominal 15/32" Wood Structural Panel; 7/16" becomes Nominal 7/16"; Minimum Panel Thickness (in.) becomes Minimum Nominal Panel Thickness (in.).</p>
<p>Chapter 2 Engineered Design</p>	<p>1) Revisions to coordinate with <i>ASCE 7-16</i> wind pressures and lower wind speed categories (e.g. 90, 95, 100, and 105 mph) include the following:</p> <p style="padding-left: 20px;">Section 2.1.3.1 Adjustments for Wind Exposure and Mean Roof Height Table 2.1.3.1 Adjustment for Wind Exposure and Mean Roof Height Table 2.1 Lateral Framing Connection Loads from Wind Table 2.2A Uplift Connection Loads from Wind Table 2.2B Ridge Connection Loads from Wind Table 2.2C Rake Overhang Outlooker Uplift Connection Loads Table 2.4 Roof and Wall Sheathing Suction Loads Table 2.5A Lateral Diaphragm Loads from Wind – Perpendicular to Ridge Table 2.5B Lateral Diaphragm Loads from Wind – Parallel to Ridge Table 2.5C Lateral Diaphragm Loads from Wind – Parallel to Ridge (For Attic Floor or Ceiling Diaphragm When Bracing Gable Endwall) Table 2.9A Exterior Wall Stud Bending Stresses from Wind Loads Table 2.10 Exterior Wall Stud Wind Loads (Normal to the Wall Surface). This wind pressure table replaces previously tabulated "induced moments" to facilitate checking deflection per building code deflection criteria. Table 2.14A Rafter Spans for 20 psf Live Load. Revisions remove footnote for wind design based on addition of new Table 2.16 and new Table 3.26M. Table 2.15A Roof Framing Capacity Requirements for 20 psf Roof Live Load. Revisions remove footnote for wind design based on addition of new Table 2.16. Table 2.16 Roof Framing Wind Loads (Normal to the Roof Surface). This new table provides wind pressures for rafter design for wind. Coordinating change to charging text is in 2.5.1.1 Rafters. Existing Table 2.16 and Table 2.17 are re-numbered Table 2.17 and Table 2.18, respectively.</p> <p>2) Revised Section 2.1.5.6 Fasteners incorporates fastener criteria from the <i>2018 National Design Specification® (NDS®) for Wood Construction</i> including provisions for roof sheathing ring shank (RSRS) nails and fastener head pull through design values.</p>

	<p>3) Revised Section 2.5.1.1.3 Rake Overhangs clarifies terminology and limits rake overhang lookout blocks to 9 inches based on increased wind pressures as follows: Revised Figure 2.1h to reflect the 9 inch limit. Revised Figure 2.1g Rake Overhang limits – Outlookers clarifies call-outs for the rake overhang detail.</p> <p>4) Revised Figure 2.3 title and figure labels clarify applicability of the detail to floor and roof construction.</p>
<p>Chapter 3 Prescriptive Design</p>	<p>1) Revisions to coordinate with <i>ASCE 7-16</i> wind pressures and lower wind speed categories (e.g. 90, 95, 100, and 105 mph) include the following list of tables:</p> <p>Table 3.2 Sill or Bottom Plate to Foundation Requirements for Wind Table 3.2A Sill Plate to Foundation Connections Resisting Shear Loads from Wind Table 3.2C Sill or Bottom Plate to Foundation Connections (Anchor Bolts) Resisting Uplift from Wind Table 3.4 Rafter/Truss Framing to Wall Connection Requirements for Wind Loads Table 3.4A Rafter and/or Ceiling Joist to Top Plate Lateral and Shear Connection Requirements Table 3.4B Shear Walls Resisting Uplift and Shear Table 3.4C Rake Overhang Outlooker Uplift Connection Requirements. Revisions include new prescribed connection and framing requirements to enable sheathing to span with strong axis across support provided by blocking and fly rafter. Table 3.5 Top and Bottom Plate to Stud Lateral Connection Requirements for Wind Loads Table 3.5A Top and Bottom Plate to Stud Lateral Connections for Wind Loads Revisions also remove Footnote 2 since it is a carryover from Footnote 1 in Table 3.5 (Unit Framing Loads) where the footnote is more applicable. There is also never a case in Table 2.5A where footnote 2 would reduce the number of nails required. Table 3.6 Ridge Connection Requirements for Wind Table 3.7 Header Connection Requirements for Wind Table 3.8 Window Sill Plate Connection Requirements for Wind Table 3.10 Roof Sheathing Attachment Requirements for Wind Loads. Table 3.10 is a replacement of the former table and includes both requirements for uplift load per nail and fastener uplift capacity. Fastener uplift capacity is in accordance with NDS and based on nail type, sheathing thickness, and framing specific gravity (G). Table 3.10A Roof Sheathing Attachment Requirements for Wind Loads (Prescriptive Alternative to Table 3.10). Table 3.10A is similar to former Table 3.10 and provides prescriptive nailing at panel edges and in the panel field for assumed 7/16 nominal panel thickness and framing $G=0.50$. Table 3.11 Wall Sheathing and Cladding Attachment Requirements for Wind Loads Table 3.12A Roof Sheathing Requirements for Wind Loads. Revisions for WSP sheathing address recommended inclusion of panel span rating, associated with sheathing grades, to potentially avoid misapplications based on specifying nominal thickness only. Table 3.13A Wall Sheathing Requirements for Wind Loads. Revisions for WSP sheathing with strength axis parallel to supports are in accordance with revised panel capacities in <i>SDPWS 2015</i> and address recommended inclusion of panel span rating to potentially avoid misapplications based on specifying nominal thickness only. Potentially smaller required span ratings and nominal thickness for Structural I Sheathing with greater cross-bending properties is addressed by footnote 5. Table 3.13B Wall Cladding Requirements for Wind Loads</p>

	<p>Table 3.15 Minimum Attic Floor/Ceiling Lengths When Bracing Gable Endwall for Wind Loads</p> <p>Table 3.16A1-A4 Roof Diaphragm Limits for Wind</p> <p>Table 3.16B Floor Diaphragm Limits for Wind</p> <p>Table 3.17A Segmented Shear Wall Sheathing Requirements for Wind</p> <p>Table 3.20 A1-A6 Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths Resisting Interior Zone Wind Loads</p> <p>Table 3.20 B1-B6 Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths Resisting Interior Zone Wind Loads</p> <p>Table 3.23A Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls Resisting Wind Loads</p> <p>Table 3.23B Laterally Unsupported (Dropped) Header Spans for Exterior Non-Loadbearing Walls and Window Sill Plate Spans Resisting Wind Loads</p> <p>Table 3.26M Rafter Spans for Wind Loads. New span tables for roof rafters based on wind pressures. Table 3.26M replaces footnote 3 of Table 3.26A which is removed.</p> <p>2) Revised Section 3.1.3.4c and Section 3.5.1.1.3 Rake Overhangs – clarify terminology used for rake overhangs and limit rake overhang lookout blocks to 9 inches.</p> <p>3) Revised Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments incorporate updated aspect ratio adjustments consistent with <i>SDPWS 2015</i>.</p>
<p>Appendix</p>	<p>1) Revisions to coordinate with <i>ASCE 7-16</i> lower wind speed categories (i.e. 90, 95, 100, and 105 mph) include the following:</p> <p>Table A-3.4 Uplift Strap Connection Requirements (Roof-to-Wall, Wall-to-Wall, and Wall-to-Foundation)</p> <p>Table A-3.6 Ridge Tension Strap Connection Requirements for Wind</p> <p>2) Revised Table A-3.4 and A-3.6 incorporates a check of strap capacity and removes cases where strap load exceeds the tension capacity of the strap based on calculations in accordance with <i>AISI S100 North American Specification for the Design of Cold-Formed Steel Structural Members</i>.</p>