Re: Updated Simpson Strong-Tie® Strong-Drive® SDWC TRUSS Screw for Truss/Rafter-to-Top Plate Connection: Allowable Loads and Installation Requirements

To Whom It May Concern:

Simpson Strong-Tie reevaluated the rafter/truss-to-top plate installations of the Strong-Drive SDWC Truss screws (SDWC15600). This incorporated changes to installation angles and offset tolerances to better represent the multiple installation options available and highlighted through the introduction of the Quik Stik® tool, including a new installation for truss-to-top plates at gable ends. See installations 1 – 4 and the new installation for gable-end truss to top plate as shown in Figure 1.

The SDWC Truss screws are the subject of IAPMO-UES ER-262 and were tested and reevaluated for truss/rafter-to-top plate connections in accordance with ICC-ES AC233 (Acceptance Criteria for Dowel-Type Threaded Fasteners Used in Wood, Approved February 2020).

The design values listed in the table below meet or exceed the originally published design values.

This is a synopsis of the installation revisions:

- **Installation 1:** Installation angle is reduced to 0-20° from 0-30°, and the edge distance in the truss/rafter is increased to 5/8” from the 1/2” edge distance.
- **Installations 2-4:** The minimum edge distance is increased to 5/8” from 1/2”. Installation 3 angle tolerance is reduced to 0-20° from 0-30°.
- **Gable End: (NEW)** Gable-end truss-to-top plate connection.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Installation</th>
<th>Allowable Loads (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DFL</td>
<td>SP</td>
</tr>
<tr>
<td></td>
<td>Uplift</td>
<td>F1</td>
</tr>
<tr>
<td>SDWC15600</td>
<td>1</td>
<td>835</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>715</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>620</td>
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</tbody>
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**Notes:**

1. Loads have been increased for wind and earthquake (C_l=1.6); no further increases allowed. Reduce when other loads govern.
2. The SDWC is to be installed through a double 2x top plate into a minimum 2x4 truss or rafter.
3. The SDWC screws shall be driven such that the shank is fully embedded in the connection members, the head is in contact with or embedded in the side member, and the point does not protrude from the lateral surface of the main member. When embedded, the top surface of the head shall be no more than 1/8” beyond flush.
4. An SDWC screw may be used in each ply of two- or three-ply rafters or trusses. The allowable uplift load for each screw shall be multiplied by 0.90, but may be limited by the capacity of the plate or the connection between the top plate to the framing below. SDWC screws in multi-ply assemblies must be spaced a minimum of 1 1/2” o.c.
5. Screws are shown installed on the interior side of the wall. Installations on the exterior side of the wall are acceptable when the rafter/truss overhangs the top plates a minimum of 3 1/2”.
6. For Uplift Connection Load Path, the designer shall verify complete continuity of the uplift load path.
7. F1 and F2 are the directions parallel and perpendicular to the wall, respectively.
8. When a screw is loaded simultaneously in more than one direction, the allowable load must be evaluated using the unity equation: (Design Uplift ÷ Allowable Uplift) + (Design F1 ÷ Allowable F1) + (Design F2 ÷ Allowable F2) ≤ 1.0. The three terms in the unity equation represent the possible generated force directions. The number of terms that must be considered for simultaneous loading is the sole discretion of the designer and depends on the method of calculating wind forces and the utilization of the screws within the structural system.
9. Table loads do not apply to trusses with end-grain bearing.
10. Top plate-to-stud and top-plate splice connections shall be fastened per applicable Building Code.
INSTALLATION 1: Offset from Stud – Underside of Top Plate Installation

INSTALLATION 2: Offset from Stud – Top-plate Corner Installation

INSTALLATION 3: Aligned with Stud – Wide Face of Stud Installation
INSTALLATION 4: Aligned with Stud – Narrow Face of Stud (or Over Header) Installation

GABLE END: Offset from Stud – Top Plate-to-Gable End Truss Installation

FIGURE 1: Approved SDWC Truss/Rafter-to-Top Plate Installations

The information in this letter is valid until 12/31/2021 when it will be re-evaluated by Simpson Strong-Tie. Please visit strongtie.com for additional pertinent information. If you have questions or need further assistance regarding this matter, please contact the Simpson Strong-Tie Engineering Department at 800.999.5099.

Sincerely,

SIMPSON STRONG-TIE COMPANY INC.