INTRODUCTION

This guide provides allowable load values and solutions for anchors used in conjunction with Simpson Strong-Tie® products for connections between light-frame construction and concrete. The allowable load values for the post-installed anchor products are based on testing and/or finite element analysis (FEA) into uncracked concrete and the application of a safety factor of 4.0. The allowable load values for the cast-in-place anchor products (SB and SSTB) are based on ICC-ES evaluation report ESR-2611.

This guide is limited to the determination of potential connection solutions between light-frame construction and uncracked concrete in wind and low-seismic regions (any structure in seismic design categories A and B, and detached one- and two-family dwellings in seismic design category C). The use and determination of the applicability of the information presented in this guide to specific projects is the responsibility of the Designer and is subject to approval by the authority having jurisdiction.

HOW TO USE THIS GUIDE

• Before using this guide – Connectors should be selected by the Designer using the current Simpson Strong-Tie Wood Construction Connectors catalog. Once the connector is selected, this guide may be used to select a corresponding concrete anchor solution.
• Step 1 – Determine the Application
  o Identify the Simpson Strong-Tie connector that will be anchored to the concrete.
  o Identify the foundation type - slab, stemwall or brick ledge (see drawings below).
  o Identify the concrete edge distances from the center of the anchor rod.
  o Identify the wood species used with the connector (holdowns and tension ties only): Douglas Fir-Larch (DF), Southern Pine (SP), Spruce-Pine-Fir (SPF) or Hem Fir (HF).
• Step 2 – Turn to the pages of this guide that contain the Simpson Strong-Tie connector.
• Step 3 – Select an anchor solution based on the foundation type, concrete edge distances, and wood species.
• Step 4 (if necessary) – If no solution is provided it may not be possible to design anchorage for the maximum capacity of the connector. See pages 6-11 for the allowable loads of concrete anchoring products when evaluating loading conditions below the maximum allowable load for the connector.

See the current Wood Construction Connectors and Anchoring and Fastening Systems for Concrete and Masonry catalogs for installation instructions.

When using stainless-steel connectors, use stainless-steel anchors. In applications that require the use of ZMAX/HDG galvanized connectors, use anchors with a coating that meets the specifications of ASTM A153 or equivalent.

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