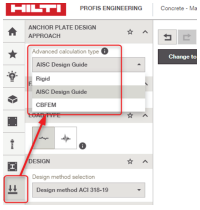
RISAConnection vs. Hilti PROFIS
Anchorage Comparison Guide

When making a Hilti Profis model for comparison, the default method is set to Rigid, update this to AISC Design Guide for best comparison with RISAConnection.

Go to “Loads / calculation type” tab and update Advanced calculation type to AISC Design Guide.



Design Method

AISC Design Guide Method	Rigid Method
• Available in both RISAConnection and Hilti Profis • Assumes rigid base plate with rectangular stress block on compression side • Anchor tension demand typically a little smaller than Rigid Method • Does not consider the combined effects of two-way bending	• Only available in Hilti Profis • Assumes rigid base plate with a more spread-out triangular stress distribution on compression side • Anchor tension demand typically a little larger than AISC Design Guide Method • Does consider the combined effects of two-way bending

Shear Force in Anchors

RISAConnection	Hilti Profis
• Considers the recommendation of AISC Design Guide 1 section 3.5.3 to use only two anchor rods to transfer shear (when not using welded plate washers). • Follows this consideration through on the concrete check side as well by considering various combinations of which two anchors become engaged and reporting the worst case. • When using welded plate washers, shear is distributed evenly to all anchors.	• Does not consider the recommendations of AISC Design Guide 1 section 3.5.3 for steel checks and concrete checks. • Hilti PROFIS always checks Case 3 of ACI 318-19 Fig. R17.7.2.1b for concrete breakout in shear, regardless of whether s<ca1,1 or not. This means it assumes full shear is delivered to the front anchors for the concrete breakout in shear check.

Tension Capacity in Anchors

RISAConnection	Hilti Profis
• Side-Face Blowout: Checks group anchor and single anchor effects, either of which could control the design. • Breakout: Considers both equations for Nb: 17.6.2.2.1 and 17.6.2.2.3 (ACI 318-19)	• Side-Face Blowout: Checks only the group anchor effect, doesn’t check the single anchor effect which could control the design. • Breakout: Considers only one equation for Nb: 17.6.2.2.1 (ACI 318-19)