In the IRC, the contribution of the interior finish to the braced wall nominal unit shear capacity (NUSC) was considered to be 200 plf (ultimate strength). This is the same NUSC used to calculate the braced wall lengths for Method GB with sheathing on one side. However, for interior finishes fastened with screws, the fastener spacing can be more than double the fastener spacing for Method GB. For example:

\[ 7" \text{ o.c. fastener spacing per Table R602.3(1)} = 200 \text{ plf} = 16" \text{ o.c. fastener spacing per Table R702.3.5} \]

This raises the question: Why is the same NUSC used for both applications?

According to Crandell and Martin,9 the “nominal unit shear strength of 200 plf is assigned to the interior finish based in part on interior finish performance in whole building tests.” The NUSC of 200 plf came from the design values in the Special Design Provisions for Wind and Seismic10 for ½” GWB with 16” o.c. studs and 5d cooler nails spaced 7” o.c.

The Ad Hoc Wall Bracing Committee, led by Washington State Professor Dan Dolan, allowed this design value to be used for ½” GWB with 24” o.c. studs and #6 screws spaced 16” o.c. Thus, the NUSC of 200 plf used for interior GWB finish is not based on the results of individual shear wall tests; rather, it is a committee judgment of the expected performance.

Table 6 compares the different fastening requirements of IRC Table R602.3.1(1) and R702.3.5. The NUSC for all of the fastening patterns in Table 6 is 200 plf according to the IRC.

**Gypsum Shear Wall Tests**

The SBC Research Institute (SBCRI) has performed cyclic tests for a proprietary customer who has allowed this work to be published, in accordance with ASTM E2126 on ten (10) 23’ long shear walls sheathed with ½” GWB. Photos of the test fixture and test specimen are shown in Figure 1.

The walls were constructed of 2x4 SPF Stud grade vertical framing members and 2x4 SPF No.2 top and bottom plates.