

Exterior Fire Rated Wall Assemblies Analysis

Cementitious coated OSB is being promoted for use in exterior walls where a fire rating is required on the *exterior* side of the wall without the use of a gypsum board product. Reviewing UL's Directory reveals three assemblies listed for this type of product in exterior walls. There is no UL assembly listed for cementitious coated OSB with a 2-hour rating from the *exterior* side with or without a gypsum board element.

One assembly, W408, has a listing for a fire rating from the exterior side. The rating is for *one* hour. Does W408 represent a short cut to achieving a 1-hour rated exterior wall for the exterior side? Let's do a comparison:

Typical 1-hour rated wall construction requirements (fire rating from the exterior side):

- Exterior wall covering: any material permitted by the building code for type of construction
- Structural Wood Panel
- 5/8 inch Type X gypsum board
- R13 fiberglass batts
- 2X4 wood studs @ 16 inches o.c.

Construction requirements for W408:

- Exterior wall covering is limited to only those in the listing; vinyl siding *cannot* be used.
- Cementitious coated OSB
 - Cementitious coating required on *both* sides.
 - Horizontal joints must be blocked with 2X4 blocking.
 - Each 7/16 inch OSB panel will weigh 85 pounds, which is about 38 pounds more than OSB.
- Unfaced mineral fiber insulation 3-1/2 inches thick weighing 3.0 pounds per cubic foot.
- 2X4 wood studs @ 16 inches o.c.

Differences in construction:

- Limited to the exterior wall covering allowed by listing.
- Weight of the 4X8 panel.
- Horizontal joints blocked with 2X4's.
- Cannot use fiberglass insulation, must be mineral fiber of specific thickness and density.

Cementitious coated OSB has an assembly not listed with UL. The assembly has a 1-hour rating from either side for Type V construction only. This assembly requires 2X6 wood studs, 5-1/2 inch thick mineral fiber batt insulation weighing 3.0 pounds per cubic foot, and cementitious coated OSB with horizontal joints blocked with 2X4's.

Conclusion:

There are no shortcuts for achieving an hourly rating for exterior walls with fire protection from the exterior or both sides. While the gypsum board is eliminated on the exterior side of the wall, other, perhaps more costly and more labor intensive materials have been substituted.

DISCLAIMER OF LIABILITY FOR RELIANCE ON INFORMATION PROVIDED BY HOOVER TREATED WOOD PRODUCTS, INC.: The information contained herein is true and accurate to the best of our knowledge, but is provided without warranty or guarantee. Since the conditions of use are beyond our control, Hoover Treated Wood Products, Inc. ("Hoover") disclaims all liability and assumes no legal responsibility for damages resulting from use of or reliance upon the information contained herein.