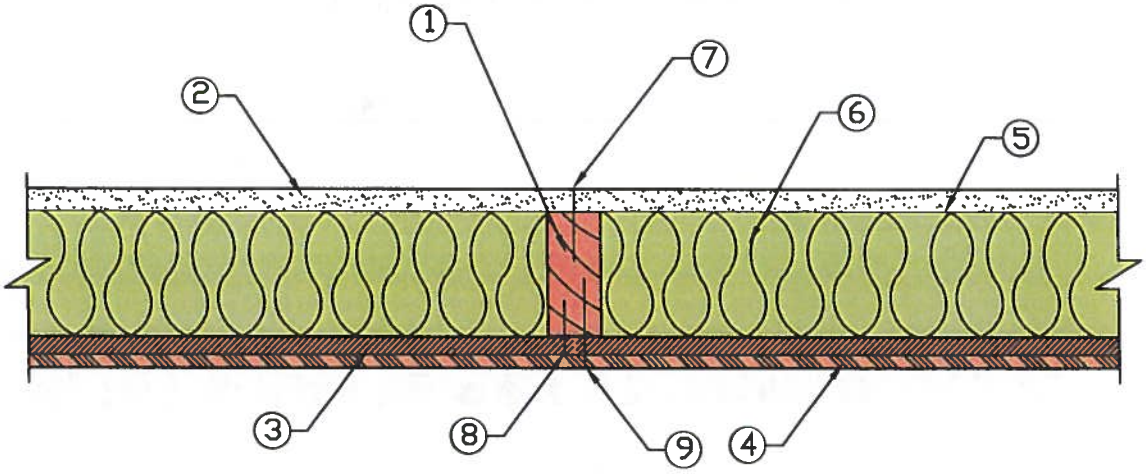
WS4-1.3 One-Hour Fire-Resistive Wood-Frame Wall Assembly

2x4 Wood Stud Wall – 78% Design Load – ASTM E 119/NFPA 251



1. Framing - Nominal 2x4 wood studs, spaced 16 in. o.c., double top plates, single bottom plate
2. Interior Sheathing - 5/8 in. Type X gypsum wallboard, 4 ft. wide, applied vertically, unblocked
3. Exterior Sheathing - 1/2 in. fiberboard sheathing. *Alternate construction - minimum 1/2 in. lumber siding or 1/2 in. wood based sheathing.*
4. Exterior Siding - 3/8 in. hardboard shiplap edge panel siding. *Alternate construction - lumber, wood based, vinyl, or aluminum siding.*
5. Vapor Barrier - 4-mil polyethylene sheeting
6. Insulation - 3-1/2 in. thick mineral wool insulation (2.5 pcf, nominal)
7. Gypsum Fasteners - 6d cement coated box nails spaced 7 in. o.c.
8. Fiberboard Fasteners - 1-1/2 in. galvanized roofing nails - 6 in. o.c. in the field, 3 in. o.c. panel edges
9. Hardboard Fasteners - 8d galvanized nails - 8 in. o.c. in the field, 4 in. o.c. panel edges
10. Joints and Fastener Heads - Wallboard joints covered with paper tape and joint compound, fastener heads covered with joint compound

Tests conducted at the Gold Bond Building Products Fire Testing Laboratory
Test No:WP-584 (Fire Endurance & Hose Stream) March 19, 1981

Third Party Witness: Warnock Hersey International, Inc.
Report WHI-690-003

This assembly was tested at 78% design load using an l_e/d of 33, calculated in accordance with the 2005 *National Design Specification® for Wood Construction*. The authority having jurisdiction should be consulted to assure acceptance of this report.

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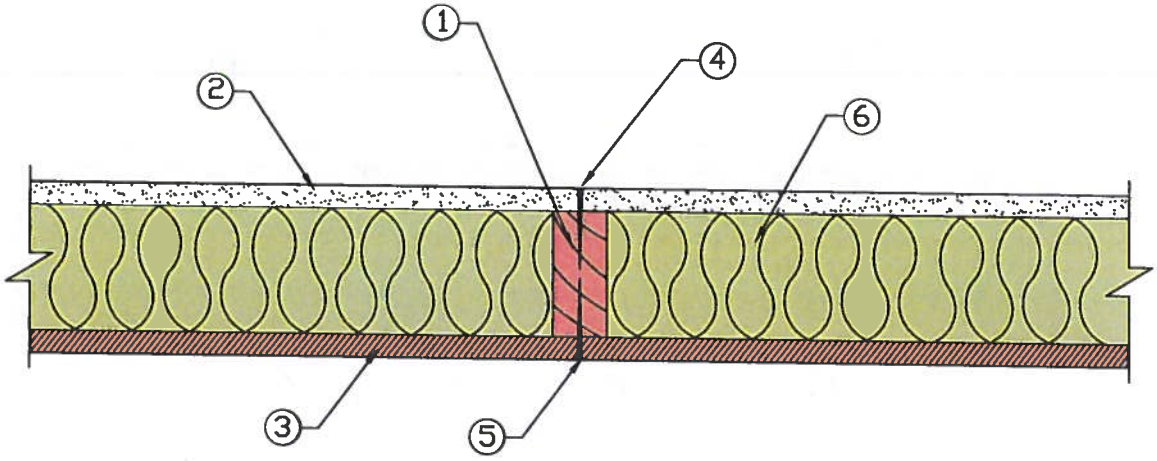
WS4-1.2 One-Hour Fire-Resistive Wood-Frame Wall Assembly

2x4 Wood Stud Wall – 100% Design Load – ASTM E 119/NFPA 251



1 Framing - Nominal 2x4 wood studs, spaced 16 in. o.c., double top plates, single bottom plate

2. Interior Sheathing - 5/8 in. Type X gypsum wallboard, 4 ft. wide, applied horizontally. Horizontal joints are unblocked. Horizontal application of wallboard represents the direction of least fire resistance as opposed to vertical application.

3. Exterior Sheathing - 3/8 in. wood structural panels (oriented strand board), applied vertically, horizontal joints blocked

4. Gypsum Fasteners - 2-1/4 in. #6 Type S drywall screws, spaced 12 in. o.c.

5. Panel Fasteners - 6d common nails (bright) - 12 in. o.c. in the field, 6 in. o.c. panel edges

6. Insulation - 3-1/2 in. thick mineral wool insulation (2.5 pcf, nominal)

7. Joints and Fastener Heads - Wallboard joints covered with paper tape and joint compound, fastener heads covered with joint compound

Tests conducted at the Fire Test Laboratory of National Gypsum Research Center
Test No: WP-1261 (Fire Endurance & Hose Stream) November 1, 2000

Third Party Witness: Intertek Testing Services
Report J20-006170.2

This assembly was tested at 100% design load, calculated in accordance with the 2005 *National Design Specification® for Wood Construction*. The authority having jurisdiction should be consulted to assure acceptance of this report.

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