

Structural Fire Resistance

ASTM E119

ASTM E119

ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials¹, evaluates the duration for which building elements such as the CavityComplete® Wood Stud with Masonry Veneer Wall System will contain a fire and retain its structural integrity during a fire test exposure. The test exposes a wall assembly to a controlled time/temperature fire exposure for a specified time period. The timed fire exposure is followed by the application of a fire hose stream to evaluate the ability of the fire weakened assembly to withstand both the thermal shock of a sudden cold water stream, and its retained structural integrity. The test standard measures the transmission of heat and hot gases through the wall assembly. For load bearing walls the standard also measures the load carrying ability of the wall assembly during the test exposure.

Types of Construction and Fire Resistance Ratings

The International Building Code² (IBC), Section 602, identifies building construction classifications. Some classifications require exterior wall fire resistance ratings of 1, 2 or 3 hours depending on building characteristics, including use and occupancy classification, height and area, fire separation distances, and other details. Wood frame construction (Type V) may be permitted with 0 hour rating, and generally requires no more than a 1 hour fire resistance rating on the exterior wall.

Testing Fire Resistance Ratings

IBC Section 703 specifies that the fire resistance rating of building walls be determined in accordance with one of several alternative methods including ASTM E119 testing or engineering analysis (Section 703.3.4).

CavityComplete® Wall System Fire Resistance Rating

The CavityComplete® Wood Stud with Masonry Veneer Wall System is one hour fire resistance rated for either interior or exterior fire exposure. See the table for additional details, and Underwriters Laboratories OnLine Certifications Directory, Fire Resistance Rated Design No. V317 for complete UL specifications.

CavityComplete® Wood Stud Wall System, Fire Resistance Rated System Summary

Extruded Polystyrene (XPS) Insulation	
Exterior Fire Rating	1 hour
Interior Fire Rating	1 hour
Structural	Bearing
Wood Stud Spacing	16" max. oc.
Wood Stud	2 x 4 (nominal)
Interior Gypsum Board	5/8", type X
Batt Insulation	EcoTouch® Fiberglas, faced or unfaced
Exterior Gypsum Board or Wood Structural Sheathing	Nominal 1/2" structural wood panel, or, 5/8" exterior grade gypsum board
Air/Water Resistive Barrier	PROSOCO R-Guard® Cat-5*
Continuous Insulation	4" max., FOAMULAR® 250 XPS
Air/Water Sealing Washers	Thermal-Grip®
Air Space	Varies 1" to 2"
Mortar Droppings Protection	MortarNet®
Through Wall Flashing	TotalFlash®
Masonry Anchor	Pos-I-Tie® with ThermalClip®
Masonry Anchor Spacing	24" max.*
Exterior Finish	4" face brick (nominal)

* Building code requirements for brick support may differ. See UL online certifications directory Design No. V317 for complete details. See additional system details on Page 3.

References

- 1 ASTM E 119-12a, Standard Test Methods for Fire Tests of Building Construction and Materials; ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959
- 2 International Building Code; International Code Council, Inc.; 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795



The CavityComplete® Wood Stud Wall System excludes the masonry veneer, wood studs, interior gypsum board and exterior sheathing. A detailed list of the components is available at www.CavityComplete.com.



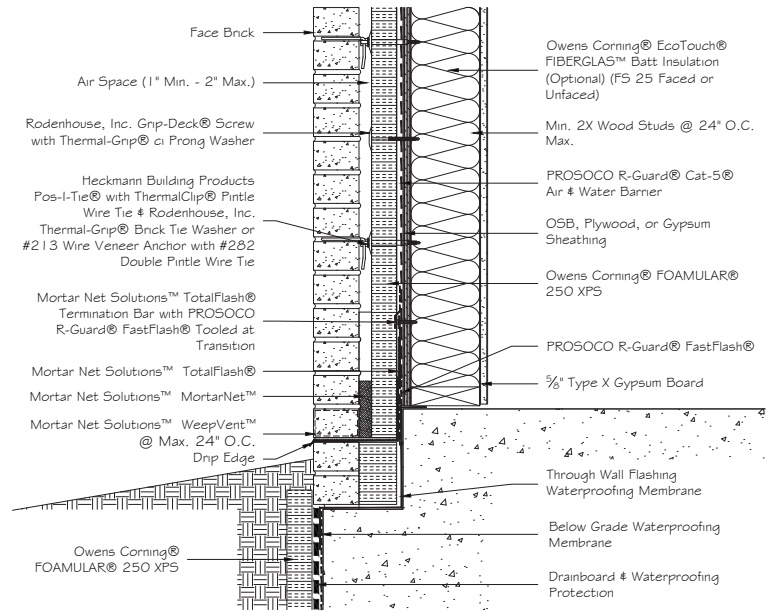
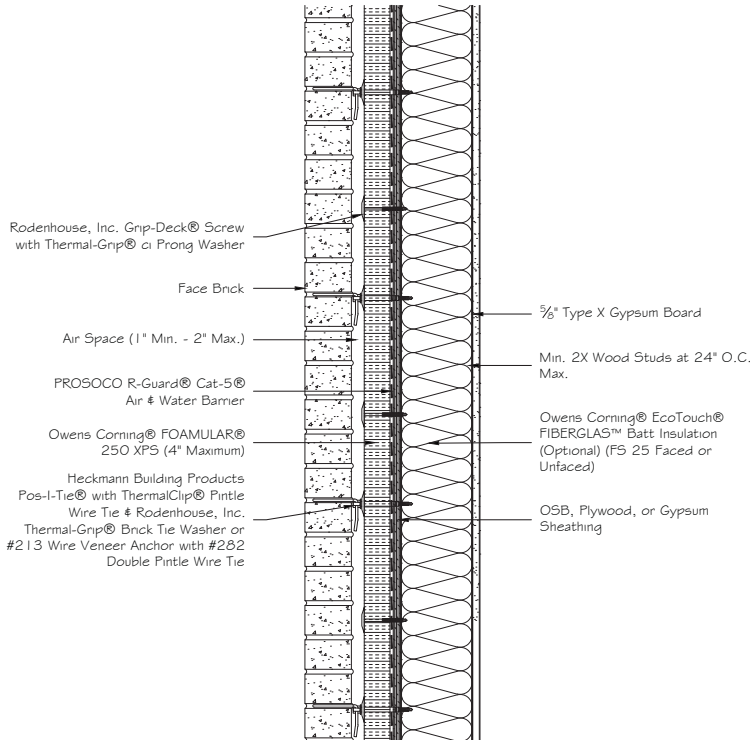
The CavityComplete® Wood Stud Wall System excludes the masonry veneer, wood studs, interior gypsum board and exterior sheathing. A detailed list of the components is available at www.CavityComplete.com.



ASTM E119 Test Assembly, Exterior Side

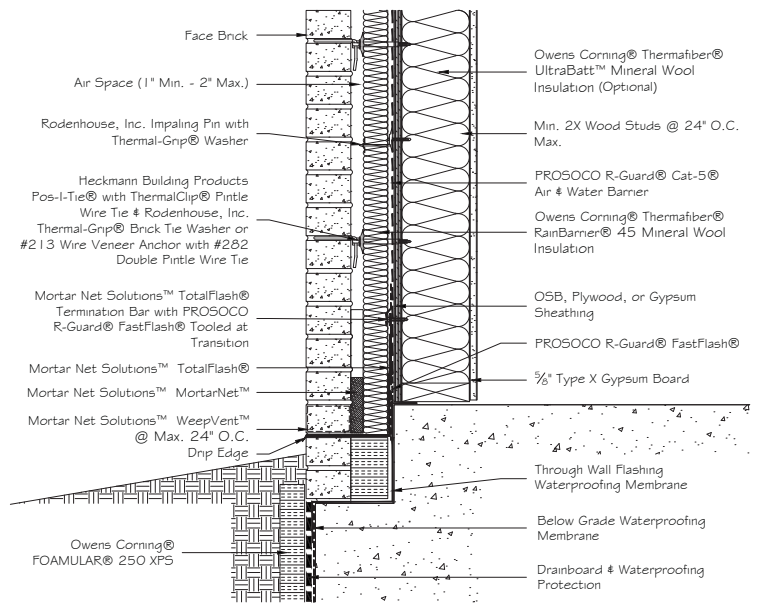
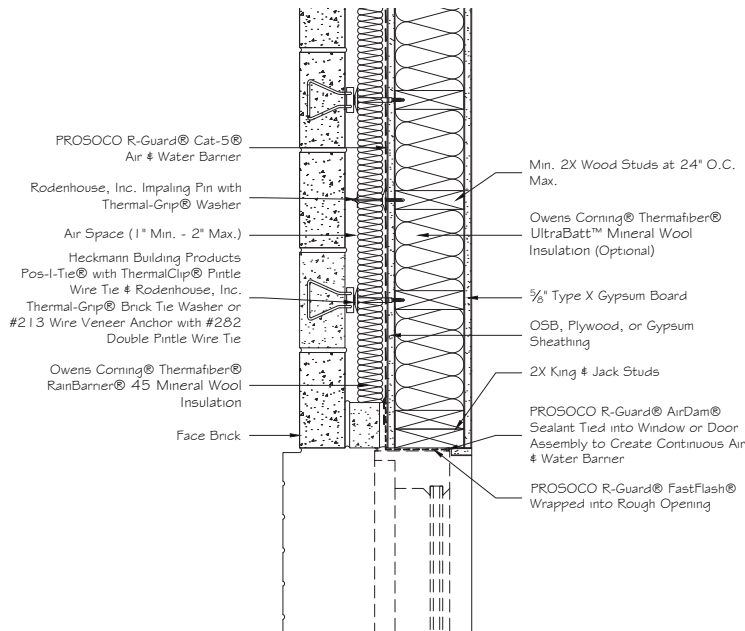


Fire Exposure Inside ASTM E119 Furnace



CavityComplete® Wood Stud, Wall Section with Extruded Polystyrene (XPS) Insulation

CavityComplete® Wood Stud, Base of Wall Section with Extruded Polystyrene (XPS) Insulation



CavityComplete® Wood Stud, Wall Section with Mineral Wool Insulation

CavityComplete® Wood Stud, Wall Section with Mineral Wool Insulation

The CavityComplete® Wood Stud Wall System excludes the masonry veneer, wood studs, interior gypsum board and exterior sheathing. A detailed list of the components is available at www.CavityComplete.com.

CavityComplete.com | 844-CAV-COMP

CavityComplete® is a registered trademark of Owens Corning.
Pub. No. 10019829-A. Printed in U.S.A. April 2017. © 2017 Owens Corning. All Rights Reserved.
© 2017 Thermafiber, Inc. All Rights Reserved. Trademarks are the properties of their respective owners.

