



Options for various wall system configurations with exterior insulation judged to be capable of meeting the performance requirements of NFPA 285 are summarized below. These options are based on Icnene NFPA 285 test results and related fire performance assessments detailed in Priest & Associates Consulting Engineering Evaluation (EEV) 10236A, Rev 2¹. Window and door opening details appropriate to the specific system must be used.

Table 1A. Wall Assemblies with Exterior Insulation

Wall Component	Materials
Base Wall – Use either 1, 2, 3 or 4	<ol style="list-style-type: none"> 1) Cast Concrete Walls. 2) CMU Concrete Walls. 3) 20 GA (min.), 3% in. (min.) up to 8 in. (max.) deep steel studs spaced 24 in. OC (max.). <ol style="list-style-type: none"> a. 5/8 in. type X Gypsum Wallboard Interior. b. 1/2 in. (min.) Exterior Gypsum Sheathing. c. Lateral bracing every 4 ft required for 3% in. studs. 4) FRTW studs: size and spacing as required by structural design, braced as required by code, with: <ol style="list-style-type: none"> a. 5/8 in. type X Gypsum Wallboard Interior b. 1/2 in. (min.) Exterior Gypsum Sheathing
Fire-Stopping in Stud Cavity at floor-lines	Any approved mineral fiber based safing insulation in each stud cavity at floor-line. Safing thickness must match stud cavity depth.
Cavity Insulation – Use either 1, 2, 3, 4, 5 or 6	<ol style="list-style-type: none"> 1) None 2) ProSeal ECO, MD-C-200, ProSeal, ProSeal LE, Classic, Classic Max, Classic Plus, Classic Max Select (8 in. max. thickness, max. 2 in. air gap.). 3) Any noncombustible insulation per ASTM E136. 4) Any Mineral Fiber (Board type Class A, ASTM E84 faced or unfaced). 5) Any Fiberglass (Batt Type Class A, ASTM E84 faced or unfaced). 6) Any cavity insulation which has been tested per ASTM E1354 (at a min. of 20 kW/m² heat flux) and shown by analysis to be less flammable (improved T_{ign}, Pk. HRR) than ProSeal ECO. Additionally, the cavity insulation shall represent a thickness such that the total heat release (THR) is less than or equal to the THR of the exterior insulations listed above.
Exterior Sheathing – Use either 1 or 2	<ol style="list-style-type: none"> 1) None (for base wall systems 1 or 2 above). 2) Min. 1/2 in. exterior gypsum sheathing.
WRB Membrane Over Sheathing and under Icnene SPF – Use either 1 or 2 installed per mfr's application instructions.	<ol style="list-style-type: none"> 1) None. 2) Any shown in Table 2
Exterior Insulation – Use either 1, or 2	<ol style="list-style-type: none"> 1) 5 1/2 in. thick (max.) ProSeal ECO, MD-C-200, ProSeal or ProSeal LE 2) Any exterior insulation which has been tested per ASTM E1354 (at a min. of 20 kW/m² heat flux) and shown by analysis to be less flammable (improved T_{ign}, Pk. HRR) than ProSeal ECO. Additionally, the exterior insulation shall represent a thickness such that the total heat release (THR) is less than or equal to the THR of the exterior insulations listed above.
WRB Membrane Over Exterior Insulation – Use either 1 or 2	<ol style="list-style-type: none"> 1) None 2) The WRB membrane must be tested per ASTM E1354 (at a min. of 20 kW/m² heat flux) and applied to the exterior insulation substrate. The results shall be shown by analysis to be less flammable (improved T_{ign}, Pk. HRR) than bare ProSeal ECO insulation. Additionally, the thickness of the combined system shall have a total heat release (THR) less than or equal to the THR of ProSeal ECO at the specified thickness.
Exterior Claddings - Use either 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 or 11	<ol style="list-style-type: none"> 1) Brick – Nominal 4 in. clay brick or veneer with max. 2 in. air gap behind the brick. Brick Ties/Anchors 24 in. OC (max.). 2) Stucco – min. 3/4 in. thick exterior cement plaster and lath with approved WRB over exterior insulation. 3) Limestone – min. 2 in. thick using any standard non-open joint installation technique such as shiplap, with max. 2 in. air gap behind the cladding. 4) Natural Stone Veneer – min. 2 in. thick using any standard non-open joint installation technique such as shiplap or grouted/mortared stone, with max. 2 in. air gap behind the

¹ Priest & Associates Consulting EEV 10236A, Rev 2, "Engineering Extensions for NFPA 285 Tests of Icnene Wall Designs with Exterior Insulation"

	<p>cladding.</p> <ol style="list-style-type: none"> 5) Cast Artificial Stone – min. 1½ in. thick complying with ICC-ES AC 51 using any standard non-open joint installation technique such as shiplap. 6) Terra Cotta Cladding – min. 1¼ in. thick (solid or equivalent by weight) using any standard non-open joint installation technique such as shiplap. Max. 1 in. air gap behind the cladding. 7) Autoclaved-aerated-concrete (AAC) Panels – min. 1½ in. thick using any standard non-open joint installation technique such as shiplap, with max. 2 in. air gap behind the cladding. 8) Precast Concrete Panels – min. 1½ in. thick using any standard non-open joint installation technique such as shiplap, with max. 2 in. air gap behind the cladding. 9) Stone/Aluminum honeycomb composite building panels that have successfully passed NFPA 285 criteria. 10) Fiber Cement Siding Panels (max 1.5 inch air gap) – Min. ¼ in. thick noncombustible panel siding clad to Z Girts spaced on 32 in. centers (max.), with panel joints sealed with approved sealants (see Ref. 1a). Lap siding only allowed when the surface of the exterior foam insulation is covered with 22 wet mils of DC 315. 11) Any uninsulated sheet metal building panel including steel, copper and aluminum when the surface of the exterior Icynene foam insulation is covered with 22 wet mils of DC 315.
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Table 2. Allowable Weather-resistive Barrier Membranes for Table 1 (with Icynene SPF Exterior Insulation)

WRB Membrane – Applied to Sheathing and Under Exterior Foam Insulation
W.R. Grace Perm-A-Barrier® VPS W.R. Grace Perm-A-Barrier® VPL W.R. Grace Perm-A-Barrier® Aluminum Wall Membrane (AWM) W.R. Grace Perm-A-Barrier® NPL
Carlisle (CCW) Fire Resist 705FR-A w/Primers Carlisle (CCW) Fire Resist Barritech™ NP Carlisle (CCW) Fire Resist Barritech™ VP
BASF Enershield HP BASF Enershield I
Henry Air Bloc® 31MR Henry Air Bloc® 32MR Henry Air Bloc® 33MR Henry Air Bloc® 21 FR Henry EnviroCap Henry Blueskin Henry VP™ 160 Henry Foilskin® Henry MetalClad™
Prosoco R-Guard Spray Wrap (NLA No longer Available) Prosoco R-Guard MVP (NLA) Prosoco Spaywrap MVP Prosoco R-Guard VB Prosoco R-Guard CAT-5
VaproShield RevealShield® SA VaproShield WrapShield® SA

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