

September 22, 2017

Prosoco, Inc. 3741 Greenway Circle Lawrence, KS 66046

Re: Project No. 10261K, Revision 4 NFPA 285 Tables of Allowed Constructions for Prosoco Products

The code requirement for NFPA 285 testing of wall assemblies incorporating combustible components presents an enormous compliance endeavor. Considering the number of choices for each component (interior gypsum sheathing, cavity insulation, stud sizes, exterior gypsum sheathing, water resistant barrier (WRB), exterior insulations, WRB, air gap, claddings), one can calculate that the number of possible constructions can reach into the tens of thousands of assemblies.

Given that each NFPA 285 assembly test costs approximately \$20,000, a manufacturer can spend many millions of dollars achieving compliance with the code for a wide variety of combinations.

Pursuant to the discretionary provisions of the building code, the building code officials community allows assemblies which have not been tested under NFPA 285, where NFPA 285 testing has been conducted on worst-case assemblies, and where Engineering Evaluations have been performed which show that a specified alternative assembly can be assumed to perform as well or better than the tested assemblies.

Strict rules based on known fire science principles are used to determine allowances of alternate materials. In the case of WRB products, an alternate WRB can substitute for a WRB incorporated in an NFPA 285 tested assembly or approved in a previous Engineering Evaluation if the relative flaming characteristics of the alternate product is the same or better than the baseline product. This is accomplished via Engineering Evaluations such as those written for PROSOCO as discussed below.

This document is a compilation of tables of allowed constructions based on NFPA 285 tests, cone calorimeter flaming and combustion studies, and Engineering Evaluations 10261A, -B, -C, -D, -E, -F, -G, -H & -I representing assemblies incorporating XPS and polyisocyanurate exterior insulation products from Atlas, Carlisle, DOW, Hunter, Johns Manville, Owens Corning, and Rmax.

The Engineering Evaluations and the attached compilation also cover assemblies utilizing mineral wool insulation, and assemblies with no insulation. The Engineering Evaluations assume utilization of common steel stud, external gypsum sheathing, and cladding assemblies as well as assemblies with back-up walls constructed of CMU or concrete.

In each case, NFPA 285 tests were successfully conducted on various configurations of exterior wall system designs incorporating various WRB products as well as Prosoco products. The purpose of these evaluations was to determine engineering extensions for the alternative assemblies that can be expected to meet the requirements of NFPA 285.

An analysis was conducted on the components incorporated in assemblies tested under NFPA 285. This allowed the determination of a base wall system from which replacement components can be interchanged.

Cone calorimeter data was submitted to evaluate substitutions of the NFPA tested WRB products with PROSOCO WRB products. The data indicated that the WRB products tested in NFPA 285 assemblies

Solutions for the Building Materials Industry can be replaced with the PROSOCO WRB products. The tables of substitutions below outlines the allowed constructions based on the analysis of these reports.

Submitted by,

Javier Trevino Associate Engineer 210-601-0655

September 22, 2017

Reviewed and Approved,

Deg Priest President

September 22, 2017



HUNTER TABLES	
For all constructions, the window header shall consist of minimum 25 GA. sheet steel flashing.	

Wall Component		
Base Wall - Use	1)	Cast Concrete Walls
either 1, 2 or 3	2)	CMU Concrete Walls
	3)	25 GA. min. 3 ^₅ " (min.) steel studs spaced 24" OC (max.)
		a. 5/8" type X Gypsum Wallboard Interior
		b. Lateral Bracing every 4 ft
Fire-Stopping at		Any approved mineral fiber based safing insulation in each stud cavity at
floor lines		floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	1)	Any noncombustible insulation per ASTM E136
Use either: 1, 2, 3, 4,	2)	Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
5, 6 or 7.	3)	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	4)	1 ¹ / ₂ " (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
	5)	1 ¹ / ₂ " (min.) of BASF Walltite SPF (up to full cavity thickness)
	6)	Any foam plastic insulation which has been tested per ASTM E1354 (at a
		minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	7)	flammable than the ones listed above.
Extorior Shoothing	7)	None 1/2" or thicker exterior gypsum sheathing
Exterior Sheathing WRB Over Base	1) 1)	None
WRB Over Base Wall Surface – Use	2)	Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3)	Prosoco R-Guard Cat 5
WRB Membranes are	4)	Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5)	Prosoco SprayWrap MVP
sheathing or exterior	•)	
insulation but not		
both.		
Exterior Insulation –	1)	None
Use either 1, 2, 3 or 4	2)	31/2" thick Xci-286
		Any Noncombustible or fiberglass insulation (faced or unfaced)
	4)	Any exterior insulation which has been tested per ASTM E1354 (at a
		minimum of 20 kW/m ² heat flux) and shown by analysis to be less flammable (improved T \sim Dk LIDD) than these listed above
WDD Over Exterior	4)	flammable (improved T _{ign} , Pk. HRR) than those listed above.
WRB Over Exterior Insulation – Use	1) 2)	None Prosoco R-Guard VB
either 1, 2, 3, 4 or 5		Prosoco R-Guard Cat 5
WRB Membranes are	3) 4)	Prosoco R-Guard Cat 5 Prosoco R-Guard Cat 5 Rain Screen
used over exterior		Prosoco SprayWrap MVP
sheathing or exterior	0)	
insulation but not		
both.		
Exterior Cladding -	1)	Brick - Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,	,	gap behind the brick. Brick Ties/Anchors 24" OC (max.).
5, 6, 7, 8, 9, 10, 11 or	2)	Stucco – minimum ³ / ₄ " thick exterior cement plaster and lath.
12	3)	Limestone - minimum 2" thick using any standard non-open joint
		installation technique such as shiplap.
	4)	Natural Stone Veneer – minimum 2" thick using any standard non-open
	-	joint installation technique such as grouted/mortared stone.
	5)	
		using any standard non-open joint installation technique such as shiplap.
	6)	Terra Cotta Cladding – minimum 1¼" thick (solid or equivalent by
		weight) using any standard non-open joint installation technique such as
		shiplap.



7)	Any MCM that has successfully passed NFPA 285.
8)	Uninsulated sheet metal building panels including steel, copper,
	aluminum.
9)	Uninsulated Fiber-cement siding.
10)	Stone/Aluminum honeycomb composite building panels that have
	successfully passed NFPA 285 criteria.
11)	Autoclaved-aerated-concrete (AAC) panels that have successfully
	passed NFPA 285 criteria.
12)	Terra Cotta Cladding – Any Rain-screen Terra Cotta (min. ½" thick) with
	ventilated shiplap.

Wall Component	
Base Wall - Use	1) Cast Concrete Walls
either 1, 2 or 3	2) CMU Concrete Walls
	3) 25 GA. min. 3 ⁵ / ₄ " (min.) steel studs spaced 24" OC (max.)
	a. 5/8" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud cavity at
floor lines	floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	 Any noncombustible insulation per ASTM E136
Use either: 1, 2, 3, 4,	Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
5, 6 or 7.	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	 1¹/₂" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
	1¹/₂" (min.) of BASF Walltite SPF (up to full cavity thickness)
	6) Any foam plastic insulation which has been tested per ASTM E1354 (at a
	minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable than the ones listed above.
	7) None
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing
WRB Over Base	1) None
Wall Surface – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5
WRB Membranes are	4) Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5) Prosoco SprayWrap MVP
sheathing or exterior	
insulation but not both Exterior Insulation –	1) None
Use either 1, 2, 3 or 4	2) 3½" thick Xci-Class A
Use either 1, 2, 3 01 4	 3) Any Noncombustible or fiberglass insulation (faced or unfaced)
	4) Any exterior insulation which has been tested per ASTM E1354 (at a
	minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable (improved T _{ign} , Pk. HRR) than those listed above.
WRB Over Exterior	1) None
Insulation – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5.
WRB Membranes are	4) Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5) Prosoco SprayWrap MVP
sheathing or exterior	
insulation but not	
both.	
Exterior Cladding -	1) Brick – Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,	gap behind the brick. Brick Ties/Anchors 24" OC (max.).
5, 6, 7, 8, 9, 10, 11 or	 Stucco – minimum ³/₄" thick exterior cement plaster and lath.
12	3) Limestone – minimum 2" thick using any standard non-open joint
	installation technique such as shiplap.



4)	Natural Stone Veneer – minimum 2" thick using any standard non-open joint installation technique such as grouted/mortared stone.
5)	Cast Artificial Stone – minimum 1 ¹ / ₂ " thick complying with ICC-ES AC 51 using any standard non-open joint installation technique such as shiplap.
6)	Terra Cotta Cladding – minimum 1¼" thick (solid or equivalent by weight) using any standard non-open joint installation technique such as shiplap.
7)	Any MCM that has successfully passed NFPA 285.
8)	Uninsulated sheet metal building panels including steel, copper, aluminum.
9)	Uninsulated Fiber-cement siding.
10)	Stone/Aluminum honeycomb composite building panels that have successfully passed NFPA 285 criteria.
11)	Autoclaved-aerated-concrete (AAC) panels that have successfully passed NFPA 285 criteria.
12)	Terra Cotta Cladding – Any Rain-screen Terra Cotta (min. ½" thick) with ventilated shiplap.

Wall Component	
Base Wall – Use	1) Cast Concrete Walls
either 1, 2 or 3	6) CMU Concrete Walls
	 25 GA. min. 3⁵/₈" (min.) steel studs spaced 24" OC (max.)
	a. 5/8" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud cavity at
floor lines	floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	 Any noncombustible insulation per ASTM E136
Use either: 1, 2, 3, 4,	Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
5, 6 or 7	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	 1½" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
	1½" (min.) of BASF Walltite SPF (up to full cavity thickness)
	6) Any foam plastic insulation which has been tested per ASTM E1354 (at
	a minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable than the ones listed above.
	7) None
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing
WRB Over Base	1) None
Wall Surface – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4, or 5	3) Prosoco R-Guard Cat 5
WRB Membranes are	Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5) Prosoco SprayWrap MVP
sheathing or exterior	
insulation but not	
both.	
Exterior Insulation –	1) None
Use either 1, 2, 3 or 4	2) 3 ¹ / ₂ " thick (max.) Xci-CG
	3) Any noncombustible insulation (faced or unfaced) when any of cladding
	options 1-6 are used. Any unfaced noncombustible insulation may be
	used with claddings 1-12.
	4) Any exterior insulation which has been tested per ASTM E1354 (at a
	minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable (improved T _{ign} , Pk. HRR) than those listed above.
WRB Over Exterior	None
Insulation – Use	1) Prosoco R-Guard VB
either 1, 2, 3 or 4	2) Prosoco R-Guard Cat 5



WRB Membranes are	3) Prosoco R-Guard Cat 5 Rain Screen
used over exterior	4) Prosoco SprayWrap MVP
sheathing or exterior	
insulation but not	
both.	
	 Brick – Nominal 4" clay or concrete brick or veneer with maximum 2" air
Exterior Cladding -	gap behind the brick. Brick Ties/Anchors 24" OC (max.).
Use either 1, 2, 3, 4,	 Stucco – minimum ³/₄" thick exterior cement plaster and lath.
5, 6, 7, 8, 9, 10, 11 or	3) Limestone - minimum 2" thick using any standard non-open joint
12	installation technique such as shiplap.
	4) Natural Stone Veneer - minimum 2" thick using any standard non-open
	joint installation technique such as grouted/mortared stone.
	5) Cast Artificial Stone – minimum 11/2" thick complying with ICC-ES AC 51
	using any standard non-open joint installation technique such as
	shiplap.
	6) Terra Cotta Cladding - minimum 11/4" thick (solid or equivalent by
	weight) using any standard non-open joint installation technique such as
	shiplap.
	Any MCM that has successfully passed NFPA 285.
	8) Uninsulated sheet metal building panels including steel, copper,
	aluminum.
	Uninsulated Fiber-cement siding.
	10) Stone/Aluminum honeycomb composite building panels that have
	successfully passed NFPA 285 criteria.
	11) Autoclaved-aerated-concrete (AAC) panels that have successfully
	passed NFPA 285 criteria.
	12) Terra Cotta Cladding – Any Rain-screen Terra Cotta (min. ½" thick) with
	ventilated shiplap.

Wall Component	
Base Wall - Use	1) Cast Concrete Walls
either 1, 2 or 3	2) CMU Concrete Walls
	3) 25 GA. min. 3 ⁵ ⁄ ₈ " (min.) steel studs spaced 24" OC (max.)
	a. 5/8" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud cavity
floor lines	at floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	 Any noncombustible insulation per ASTM E136
Use either: 1, 2, 3, 4,	Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
5, 6 or 7	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	 1¹/₂" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
	1¹/₂" (min.) of BASF Walltite SPF (up to full cavity thickness)
	6) Any foam plastic insulation which has been tested per ASTM E1354 (at
	a minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable than the ones listed above.
	7) None
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing.
WRB Over Base	1) None
Wall Surface – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5
WRB Membranes are	Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5) Prosoco SprayWrap MVP
sheathing or exterior	
insulation but not	
both.	



Exterior Insulation –	1)	None
Use either 1, 2, 3 or 4	2)	3½" thick (max.) Xci-Foil
, ,	3)́	Any Noncombustible or fiberglass insulation (faced or unfaced)
	4)́	Any exterior insulation which has been tested per ASTM E1354 (at a
	,	minimum of 20 kW/m ² heat flux) and shown by analysis to be less
		flammable (improved Tign, Pk. HRR) than those listed above.
WRB Over Exterior	1)	None
Insulation – Use	2)	Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3)	Prosoco R-Guard Cat 5
WRB Membranes are	4)	Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5)	Prosoco SprayWrap MVP
sheathing or exterior	,	
insulation but not both		
Exterior Cladding -	1)	Brick - Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,		gap behind the brick. Brick Ties/Anchors 24" OC (max.).
5 or 6	2)	Stucco – minimum ³ / ₄ " thick exterior cement plaster and lath.
	3)	Limestone - minimum 2" thick using any standard non-open joint
		installation technique such as shiplap.
	4)	Natural Stone Veneer – minimum 2" thick using any standard non-open
		joint installation technique such as grouted/mortared stone.
	5)	Cast Artificial Stone – minimum 11/2" thick complying with ICC-ES AC 51
		using any standard non-open joint installation technique such as
		shiplap.
	6)	Terra Cotta Cladding - minimum 11/4" thick (solid or equivalent by
		weight) using any standard non-open joint installation technique such as
		shiplap.

Wall Component	
Base Wall – Use	1) Cast Concrete Walls
either 1, 2 or 3	2) CMU Concrete Walls
,	3) 25 GA. min. 3⁵⁄₃" (min.) steel studs spaced 24" OC (max.)
	a. 5⁄8" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud cavity
floor lines	at floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	1) Any noncombustible insulation per ASTM E136
Use either: 1, 2, 3, 4,	Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
5, 6 or 7	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	 1¹/₂" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
	1½" (min.) of BASF Walltite SPF (up to full cavity thickness)
	6) Any foam plastic insulation which has been tested per ASTM E1354 (at
	a minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable than the ones listed above.
	7) None
Exterior Sheathing	¹ / ₂ " or thicker exterior gypsum sheathing
WRB Over Base	1) None
Wall Surface – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5.
WRB Membranes are	Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5) Prosoco SprayWrap MVP
sheathing or exterior	
insulation but not	
both.	
Exterior Insulation –	1) None – (for claddings 1-6, or 9-14)
Use either 1, 2, 3 or 4	2) 3.6" (max.) Xci-Ply

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	3) 4)	Any noncombustible or fiberglass insulation (faced or unfaced) Any exterior insulation which has been tested per ASTM E1354 (at a minimum of 20 kW/m ² heat flux) and shown by analysis to be less flammable (improved T_{ign} , Pk. HRR) than those listed above.
WRB Over Exterior	1)	None
Insulation – Use	2)	Prosoco R-Guard VB
either 1, 2, 3, 4, or 5	,	Prosoco R-Guard Cat 5
WRB Membranes are	,	Prosoco R-Guard Cat 5 Rain Screen
used over exterior	5)	Prosoco SprayWrap MVP
sheathing or exterior		
insulation but not		
both.		
Exterior Cladding -	1)	Brick – Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,		gap behind the brick. Brick Ties/Anchors 24" OC (max.).
5, 6, 7, 8, 9, 10,	2)	Stucco – minimum ³ / ₄ " thick exterior cement plaster and lath.
11,12, 13 or 14	3)	Limestone – minimum 2" thick using any standard non-open joint
	4)	installation technique such as shiplap.
	4)	Natural Stone Veneer – minimum 2" thick using any standard non-open
	E)	joint installation technique such as grouted/mortared stone. Cast Artificial Stone – minimum 1½" thick complying with ICC-ES AC 51
	5)	using any standard non-open joint installation technique such as
		shiplap.
	6)	Terra Cotta Cladding – minimum 1 ¹ / ₄ " thick (solid or equivalent by weight) using any standard non-open joint installation technique such as
		shiplap.
	7)	Thin brick/cultured stone set in thin set adhesive and metal lath that has
		been tested to ASTM E119 (brick exposed to furnace) and remains in
		place for a minimum of 30 minutes, or has passed an NFPA 285 test.
	0)	Minimum ¾".
	8)	TABS II Panel System with $\frac{1}{2}$ " thick bricks using TABS Wall Adhesive. Any MCM that has successfully passed NFPA 285.
		Uninsulated sheet metal building panels including steel, copper,
	10)	aluminum.
	11)	Uninsulated Fiber-cement siding.
		Stone/Aluminum honeycomb composite building panels that have
	·-)	successfully passed NFPA 285 criteria.
	13)	Autoclaved-aerated-concrete (AAC) panels that have successfully passed NFPA 285 criteria.
	14)	Terra Cotta Cladding – Any Rain-screen Terra Cotta (min. 1/2 " thick)
		with ventilated shiplap.



RMax Table

Window Headers for all constructions shall incorporate 0.078 in. (min.) aluminum flashing. Flashing of window, door, and other wall penetrations may use asphalt, acrylic, or butyl based flashing tape, or R-SEAL 6000 35 mil thick woven polyethylene tape – max. 12 in. width.

Wall Component		
Base Wall – Use either	1)	Cast Concrete Walls
1, 2 or 3	2)́	CMU Concrete Walls
,	3)	20 GA. (min.) 35/ in. (min.) steel studs spaced 24 in. OC (max.)
	,	a. 🐐 in. (min.) type X Special Fire Resistant Gypsum Wallboard
		Interior
Fire-Stopping in Stud		4 pcf mineral fiber insulation installed with z-clips
Cavity at floor-lines		· ·
Cavity Insulation - Use	1)	None
either 1, 2, 3 or 4	2)	Any non-combustible insulation per ASTM E136
	3)	Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
	4)	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
Exterior Sheathing		¹ / ₂ in. or thicker exterior gypsum sheathing
WRB Over Sheathing–	1)	None
Use either 1, 2, 3, 4 or 5	2)	Prosoco R-Guard SprayWrap MVP
installed per mfr's	3)	Prosoco R-Guard VB
application instructions.	4)	Prosoco R-Guard Cat 5
	5)	Prosoco Cat 5 Rain Screen
Exterior Insulation –	1)	3 in. (max. consisting of a single panel or multiple thinner panels) Rmax
Use either 1 or 2	0)	TSX-8500
	2)	3 in. (max. consisting of a single panel or multiple thinner panels) Rmax
Exterior Cladding Llos		ECOMAXci.
Exterior Cladding - Use	1)	Brick – Nominal 4 in. clay brick or veneer with maximum 2 in. air gap behind the brick. Brick Ties/Anchors 24 in. OC (max)
either 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12	2)	Stucco – minimum $\frac{3}{4}$ in. thick exterior cement plaster and lath with an
0, 9, 10, 11 01 12	Z)	optional secondary water resistive barrier between the exterior
		insulation and lath. The secondary barrier shall not be full coverage
		asphalt or self-adhered butyl membrane.
	3)	Limestone – minimum 2 in. thick using any standard installation
	-,	technique.
	4)	Natural Stone Veneer - minimum 2 in. thick using any standard
	,	installation technique.
	5)	Cast Artificial Stone – minimum 11/2 in. thick complying with ICC-ES AC
		51 using any standard installation technique.
	6)	Terra Cotta Cladding – minimum 11/4 in. thick using any standard
		installation technique.
	7)	Any MCM (aluminum, steel, copper) (w/ $1\frac{1}{8}$ in. $\pm \frac{1}{2}$ in. air gap) that has
		successfully passed NFPA 285 using any standard installation
		technique.
	8)	Uninsulated sheet metal building panels including aluminum, steel or
	\sim	copper using any standard installation technique.
	9)	Uninsulated Fiber-cement siding using any standard installation
	10)	technique. Stone/Aluminum honeycomb composite building panels that have
	10)	passed NFPA 285 or equivalent.
		a. Stone Panels Inc. Stone Lite Panel system has been analyzed using
		mfr's standard installation technique.
	11)	
	- /	passed NFPA 285 using any standard installation technique.
	12)	Thin Set Brick - Glen Gery Thin Tech Elite has been analyzed using
	/	mfr's standard installation technique.
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ATLAS Tables

Wall Component		
Base Wall	1) Cast Concrete Walls	
Use 1, 2 or 3	2) CMU Concrete Walls	
	3) 25 GA. (min.) 3 ⁵ / ₈ " (min.) steel studs spaced 24" OC (ma	x)
	a. Any 5/8" type X Gypsum Wallboard Interior	
	b. Any $\frac{1}{2}$ " (min.) Exterior Gypsum Sheathing	
	c. Lateral Bracing Every 4 ft vertically	
Fire Stopping at floor	4 pcf mineral fiber insulation (safing) filling stud cavity	
lines		
Cavity Insulation	1) None	
Use 1, 2 or 3	2) Any Class A, B or C Fiberglass batt insulation (faced or	unfaced)
	Any noncombustible insulation	
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing	
WRB or AB Over Base	1) None	
Wall Surface	2) Prosoco R-Guard VB	
Use 1, 2, 3, 4 or 5 Use	3) Prosoco R-Guard Cat 5	
mfg. instructions for	4) Prosoco R-Guard Cat 5 Rain Screen	
application	5) Prosoco SprayWrap MVP	
Exterior Insulation	1) Atlas ThermalStar CVT 25 (25 psi product, 1.8 pcf) up to	5.4 inches
Use 1, 2, 3, 4, 5 or 6	thick.	
	2) Atlas ThermalStar CVT 15 (15 psi product, 1.35 pcf) up	to 7.2 inches
	thick.	
	3) ThermalStar LCi 15 (15 psi product, 1.35 pcf) up to 7.2 i	nches thick
	4) ThermalStar LCi 25 (25 psi product, 1.70 pcf) up to 5.4 i	
	5) ThermalStar CHROME 15 (15 psi product, 1.35 pcf) up t	
	thick	
	6) ThermalStar CHROME 25 (25 psi product, 1.70 pcf) up t	to 5.4 inches
	thick	
Exterior Cladding	1) Brick - Nominal 4" clay brick or veneer with maxim	um 2" air gap
Use either 1, 2, 3, 4, 5,	behind the cladding. Brick with ties/anchors 24" OC (ma	
6, 7 or 8	2) Concrete - Minimum 2" thick with maximum 2" air g	
	cladding.	•
	3) Concrete Masonry Units - Minimum 4" thick with maxir	num 2" air gap
	behind the cladding.	JF
	4) Limestone - minimum 2" thick with non-open join	nts installation
	technique such as shiplap	
	5) Natural Stone Veneer - minimum 2" thick with n	on-open ioints
	installation technique such as shiplap	, j
	6) Precast Artificial Stone – minimum 1½" thick complying	g with ICC-ES.
	AC 51 with non-open joint installation technique.	
	7) Terra Cotta Cladding – minimum 11/4" thick (solid) with	non-open joint
	installation technique such as shiplap.	. , ,
	8) Stucco – minimum $\frac{3}{4}$ " thick exterior cement plaster and	ath.
Window Header	1) Flashing composed of 25 GA. (min.) sheet metal (steel)	
Use either 1 or 2	pcf mineral wool over interior of sheet steel.	, -
	 Any header design deemed more robust than item 1 per 	analysis.



For the table below, the window header shall consist of minimum 25 GA. sheet steel flashing.

Wall Component		
Base Wall – Use either	1)	Cast Concrete Walls
1, 2 or 3	2)	CMU Concrete Walls
	3)	20 GA (min.) 3 ⁵ / ₈ in. (min.) steel studs spaced 24 in. OC (max.)
	,	a. ¾ in. type X Gypsum Wallboard Interior
		b. 5% in. Exterior Gypsum Sheathing
Fire-Stopping in Stud		4 inch, 4 pcf mineral fiber installed with Z-Clips
Cavity at floor lines		
Cavity Insulation - Use	1)	None
either 1, 2, 3 or 4	2)́	
		Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
	4)́	
Exterior Sheathing –	1)	5% in. or thicker exterior gypsum sheathing
Use either 1 or 2		2 in. precast concrete panels attached to structural elements of
	,	building.
WRB Over Sheathing –	1)	None
Use either 1, 2, 3, 4, or 5	2)́	Prosoco R-Guard VB
, , , , ,	,	Prosoco R-Guard Cat 5
	4)́	
	5)	Prosoco SprayWrap MVP
Exterior Insulation –	1)	2 in. or 3 in. Atlas Energy Shield Pro (or Pro2), and 4 in. EnergyShield
Use either 1 or 2	,	Pro (or Pro2) may be substituted for each-other in reports which
		utilize either of these insulations.
	2)	4 in. RBoard Pro
WRB Over Exterior	1)	None
Insulation – Use either	2)	3 in. IPG Cold Weather Foil Tape and 4 in. Atlas WRB System Tape
1, or 2		may be interchanged.
Note: Tape only used at		
panel joints.		
Exterior Cladding - Use	1)	Brick – Nominal 4 in. clay brick or veneer with maximum 2 in. air gap
either 1, 2, 3, 4, 5, 6, 7,		behind the brick. Brick Ties/Anchors 24 in. OC (max)
8, 9, 10, or 11	2)	
	3)	Limestone – minimum 2 in. thick.
	4)	Natural Stone Veneer – minimum 2 in. thick.
	5)	Cast Artificial Stone – minimum 11/2 in. thick complying with ICC-ES
		AC 51.
	6)	Terra Cotta Cladding – minimum 1¼ in. thick
	7)	Any ACM that has successfully passed NFPA 285.
	8)	Uninsulated sheet metal building panels including steel or copper.
	9)	
	10)	
		successfully passed NFPA 285 criteria.
	11)	Autoclaved-aerated-concrete (AAC) panels (min. 11/2 in. thick).



Carlisle Tables

For all constructions below, the window header shall consist of minimum 25 GA. sheet steel flashing. WRB Membranes are used over exterior sheathing or exterior insulation but not both.

Table 1: R2+ SHEATHE Exterior Insulation

Wall Component	
Base Wall - Use	1) Cast Concrete Walls
either 1, 2 or 3	2) CMU Concrete Walls
	3) 25 GA. min. 3 ⁵ / ₈ " (min.) steel studs spaced 24" OC (max.)
	a. 5/8" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud cavity at
floor lines	floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	1) None
Use either: 1, 2, 3, 4,	 1¹/₂" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
5, 6 or 7	 1¹/₂" (min.) of BASF Walltite SPF (up to full cavity thickness)
	Any noncombustible insulation per ASTM E136
	5) Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	7) Any foam plastic insulation (SPF or board type) which has been tested
	per ASTM E1354 (at a minimum of 20 kW/m ² heat flux) and shown by
	analysis to be less flammable (improved Tign, Pk. HRR) than Bayer
	EcoBay CC or BASF Walltite.
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing
WRB Over Base	1) None
Wall Surface - Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4, or 5	3) Prosoco R-Guard Cat 5.
	4) Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Insulation –	1) 3½" thick R2+ SHEATHE
Use either 1, 2, 3 or 4	2) Any Noncombustible insulation (faced or unfaced) when any of cladding
	options 1-6 are used. Any Unfaced noncombustible insulation may be
	used with claddings 1-12.
	3) Any exterior insulation which has been tested per ASTM E1354 (at a minimum of 20 kW/m^2 heat flux) and about the analysis to be
	minimum of 20 kW/m ² heat flux) and shown by analysis to be less flammable (improved T $=$ Dk HDD) than these listed above
	flammable (improved T _{ign} , Pk. HRR) than those listed above. 4) None
WRB Over Exterior	
Insulation – Use	1) None 2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5.
	4) Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Cladding -	 Brick – Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,	gap behind the brick. Brick Ties/Anchors 24" OC (max.).
5, 6, 7, 8, 9, 10, 11 or	2) Stucco – minimum $\frac{3}{4}$ " thick exterior cement plaster and lath.
12	3) Limestone – minimum 2" thick using any standard non-open joint
·-	installation technique such as shiplap.
	 4) Natural Stone Veneer – minimum 2" thick using any standard non-open
	joint installation technique such as grouted/mortared stone.
	5) Cast Artificial Stone – minimum $1\frac{1}{2}$ " thick complying with ICC-ES AC 51
	using any standard non-open joint installation technique such as shiplap.
	6) Terra Cotta Cladding – minimum 1¼" thick (solid or equivalent by
	weight) using any standard non-open joint installation technique such as
	shiplap.
	7) Any MCM that has successfully passed NFPA 285.
	8) Uninsulated sheet metal building panels including steel, copper,



-

	aluminum.
9)	Uninsulated Fiber-Cement siding.
10)	Stone/Aluminum honeycomb composite building panels that have successfully passed NFPA 285 criteria.
11)	Autoclaved-aerated-concrete (AAC) panels that have successfully
	passed NFPA 285 criteria.
12)	Terra Cotta Cladding – Any Rain-screen Terra Cotta (min. ½" thick) with ventilated shiplap.

Table 2: R2+ MATTE Exterior Insulation

Wall Component	
Base Wall – Use	1) Cast Concrete Walls
either 1, 2, or 3	2) CMU Concrete Walls
	 25 GA. min. 3⁵/₈" (min.) steel studs spaced 24" OC (max.)
	a. 🛯 5⁄8" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud cavity at
floor lines	floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	1) None
Use either: 1, 2, 3, 4,	1¹/₂" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
5, 6 or 7	3) 1 ¹ / ₂ " (min.) of BASF Walltite SPF (up to full cavity thickness)
	 Any noncombustible insulation per ASTM E136
	5) Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
	6) Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	7) Any foam plastic insulation (SPF or board type) which has been tested
	per ASTM E1354 (at a minimum of 20 kW/m ² heat flux) and shown by
	analysis to be less flammable (improved Tign, Pk. HRR) than Bayer
	EcoBay CC or BASF Walltite.
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing
WRB Over Base	1) None
Wall Surface – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5
	Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Insulation –	1) 3 ¹ / ₂ " thick (max.) R2+ MATTE
Use either 1, 2, 3 or 4	2) Any noncombustible insulation (faced or unfaced) when any of cladding
	options 1-6 are used. Any unfaced noncombustible insulation may be
	used with claddings 1-12.
	3) Any exterior insulation which has been tested per ASTM E1354 (at a
	minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable (improved T _{ign} , Pk. HRR) than those listed above.
	4) None
WRB Over Exterior	1) None
Insulation – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5
	4) Prosoco R-Guard Cat 5 Rain Screen
Exterior Cladding	5) Prosoco SprayWrap MVP
Exterior Cladding -	1) Brick – Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,	gap behind the brick. Brick Ties/Anchors 24" OC (max.).
5, 6, 7, 8, 9, 10, 11 or	 Stucco – minimum ³/₄" thick exterior cement plaster and lath. Limestance minimum ²" thick using any standard non-open isist.
12	3) Limestone – minimum 2" thick using any standard non-open joint
	installation technique such as shiplap.
	 Natural Stone Veneer – minimum 2" thick using any standard non-open init installation technique such as grouted/mortared stone.
	joint installation technique such as grouted/mortared stone.
	5) Cast Artificial Stone – minimum 1½" thick complying with ICC-ES AC 51
	using any standard non-open joint installation technique such as shiplap.



6)	Terra Cotta Cladding – minimum 1¼" thick (solid or equivalent by weight) using any standard non-open joint installation technique such as shiplap.
7)	Any MCM that has successfully passed NFPA 285.
8)	Uninsulated sheet metal building panels including steel, copper, aluminum.
9)	Uninsulated Fiber-cement siding.
10)	Stone/Aluminum honeycomb composite building panels that have successfully passed NFPA 285 criteria.
11)	Autoclaved-aerated-concrete (AAC) panels that have successfully passed NFPA 285 criteria.
12)	Terra Cotta Cladding – Any Rain-screen Terra Cotta (min. ½" thick) with ventilated shiplap.

Table 3: R2+ SILVER	Exterior Insulation
---------------------	---------------------

Wall Component	
Base Wall – Use	1) Cast Concrete Walls
either 1, 2 or 3	2) CMU Concrete Walls
	3) 25 GA. min. 3 ⁵ /₃" (min.) steel studs spaced 24" OC (max.)
	a. 5/8" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud
floor lines	cavity at floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	1) None
Use either: 1, 2, 3, 4,	 1¹/₂" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
5, 6 or 7	 1¹/₂" (min.) of BASF Walltite SPF (up to full cavity thickness)
	Any noncombustible insulation per ASTM E136
	5) Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
	6) Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	7) Any foam plastic insulation (SPF or board type) which has been tested
	per ASTM E1354 (at a minimum of 20 kW/m ² heat flux) and shown by
	analysis to be less flammable (improved Tign, Pk. HRR) than Bayer
	EcoBay CC or BASF Walltite.
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing.
WRB Over Base	1) None
Wall Surface – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5
	4) Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Insulation –	1) 3 ¹ / ₂ " thick (max.) R2+ SILVER
Use either 1, 2, 3 or 4	Any Noncombustible insulation (faced or unfaced)
	3) Any exterior insulation which has been tested per ASTM E1354 (at a
	minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable (improved T _{ign} , Pk. HRR) than those listed above.
	4) None
WRB Over Exterior	1) None
Insulation – Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5
	4) Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Cladding -	1) Brick – Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,	gap behind the brick. Brick Ties/Anchors 24" OC (max.)
5 or 6	 Stucco – minimum ³/₄" thick exterior cement plaster and lath.
	3) Limestone – minimum 2" thick using any standard non-open joint
	installation technique such as shiplap.
	4) Natural Stone Veneer – minimum 2" thick using any standard non-open
	joint installation technique such as grouted/mortared stone.



5) Cast Artificial Stone – minimum 1 ¹ / ₂ " thick complying with ICC-ES AC 51 using any standard non-open joint installation technique such as shiplap.
6) Terra Cotta Cladding – minimum 1 ¹ / ₄ " thick (solid or equivalent by weight) using any standard non-open joint installation technique such as
	shiplap.

Table 4: R2+ BASE Exterior Insulation

Wall Component	
Base Wall - Use	1) Cast Concrete Walls
either 1, 2 or 3	2) CMU Concrete Walls
	3) 25 GA. min. 35/s" (min.) steel studs spaced 24" OC (max.)
	a. 5%" type X Gypsum Wallboard Interior
	b. Lateral Bracing every 4 ft
Fire-Stopping at	Any approved mineral fiber based safing insulation in each stud cavity at
floor lines	floor line. Safing thickness must match stud cavity depth.
Cavity Insulation –	1) None
Use either: 1, 2, 3, 4,	1½" (min.) of Bayer EcoBay CC SPF (up to full cavity thickness)
5, 6 or 7	 1¹/₂" (min.) of BASF Walltite SPF (up to full cavity thickness)
	Any noncombustible insulation per ASTM E136
	5) Any Mineral Fiber (Board type Class A ASTM E84 faced or unfaced)
	Any Fiberglass (Batt Type Class A ASTM E84 faced or unfaced)
	7) Any foam plastic insulation (SPF or board type) which has been tested
	per ASTM E1354 (at a minimum of 20 kW/m ² heat flux) and shown by
	analysis to be less flammable (improved Tign, Pk. HRR) than Bayer
	EcoBay CC or BASF Walltite.
Exterior Sheathing	1/2" or thicker exterior gypsum sheathing
WRB Over Base	1) None
Wall Surface - Use	2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5
	4) Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Insulation –	1) 3.6" (max.) R2+ BASE
Use either 1, 2, 3 or 4	2) Any Noncombustible insulation (faced or unfaced) when any of cladding
	options 1-8 are used. Any Unfaced noncombustible insulation may be
	used with claddings 1-14.
	3) Any exterior insulation which has been tested per ASTM E1354 (at a
	minimum of 20 kW/m ² heat flux) and shown by analysis to be less
	flammable (improved T _{ign} , Pk. HRR) than those listed above.
	 None – None except when Thin Brick/TABS II cladding is used since these require use with B21 Base
WRB Over Exterior	these require use with R2+ Base 1) None
Insulation – Use	1) None 2) Prosoco R-Guard VB
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard VB
[1, 2, 3, 40]	 4) Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Cladding -	1) Brick – Nominal 4" clay or concrete brick or veneer with maximum 2" air
Use either 1, 2, 3, 4,	gap behind the brick. Brick Ties/Anchors 24" OC (max.).
5, 6, 7, 8, 9, 10,	2) Stucco – minimum $\frac{3}{4}$ " thick exterior cement plaster and lath.
11,12, 13 or 14	3) Limestone – minimum 2" thick using any standard non-open joint
,,	installation technique such as shiplap.
	4) Natural Stone Veneer – minimum 2" thick using any standard non-open
	joint installation technique such as grouted/mortared stone.
	5) Cast Artificial Stone – minimum $1\frac{1}{2}$ " thick complying with ICC-ES AC 51
	using any standard non-open joint installation technique such as shiplap.
	6) Terra Cotta Cladding – minimum 1 ¹ / ₄ " thick (solid or equivalent by
	weight) using any standard non-open joint installation technique such as



	shiplap.
7)	Thin brick/cultured stone set in thin set adhesive and metal lath that has
	been tested to ASTM E119 (brick exposed to furnace) and remains in
	place for a minimum of 30 minutes, or has passed an NFPA 285 test.
	Minimum $\frac{3}{4}$ " (for use with R2+ BASE).
0)	
8)	TABS II Panel System with 1/2" thick bricks using TABS Wall Adhesive.
	For use with R2+ BASE.
9)	Any MCM that has successfully passed NFPA 285.
10)	Uninsulated sheet metal building panels including steel, copper,
,	aluminum.
11)	Uninsulated Fiber-cement siding.
12)	Stone/Aluminum honeycomb composite building panels that have
, , ,	successfully passed NFPA 285 criteria.
13)	Autoclaved-aerated-concrete (AAC) panels that have successfully
13)	
	passed NFPA 285 criteria.
14)	Terra Cotta Cladding – Any Rain-screen Terra Cotta (min. 1/2 " thick) with
	ventilated shiplap.

Note 1: CCW LM 800 XL adhesive applied discontinuously at a rate of 3/8" x 3" dabs, 16" OC may be used to adhere exterior insulation to WRB over sheathing, concrete or CMU for those applications requiring this adhesive to be used.

Note 2: The following may be used as gap filler between insulation panels, FOMO HandiFoam FireBlock, and TVM FireBlock.

Note 3: CAV-GRIP[™] or Low VOC Travel-Tack may be used as an adhesive (application rate as per mfg. instructions) to attach exterior insulation panels to the WRB surface.

Wall Component	
Base Wall –	1) Cast concrete walls (min. 8" thick)
Use either 1 or 2	2) CMU concrete walls (min. 8" thick)
Exterior Coating -	 Portland cement or Lime Stucco.
Use either 1, 2, 3 or 4	Any ASTM E84 Class A Paint or Elastomeric Coating
	3) Any ASTM E84 Class A Clear Sealer
	4) None
Air/Vapor Barrier	1) None
Membrane Position	2) Prosoco R-Guard VB
1 Over Base Wall	3) Prosoco R-Guard Cat 5
Interior - Use either	 Prosoco R-Guard Cat 5 Rain Screen
1, 2, 3, 4 or 5. See	5) Prosoco SprayWrap MVP
Note 1	
Continuous	1) R2+ SHEATHE, 3½" Thick (max.)
Insulation	
Air/Vapor Barrier	1) None
Membrane Position	2) Prosoco R-Guard VB
2 Over Insulation -	3) Prosoco R-Guard Cat 5
Use either 1, 2, 3, 4,	 Prosoco R-Guard Cat 5 Rain Screen
or 5. See Note 1	5) Prosoco SprayWrap MVP
Interior Cladding	5/8" type X Interior Gypsum Sheathing installed directly over R2+
	SHEATHE insulation or installed over Metal Hat or Z Furring, 2" depth air
	gap (max.)
NI-1- A MALLINA -	d in Desition 1 or Desition 2 not both

Table 5: R2+ SHEATHE Interior Insulation (See Notes 1 & 2)

Note 1: Membrane used in Position 1 or Position 2, not both.

Note 2: R2+ SHEATHE insulation can be tacked in place with Cav-Grip or Travel-Tack during installation. Follow Instructions on Product Data Sheet.

Owens Corning Tables (with figures)



Wall Component		
Base Wall – Use	1) Cast Concrete Walls	
either 1, 2 or 3	2) CMU Concrete Walls	
,	3) 20 GA. (min.) 3 ⁵ / ^s " (min.) steel studs spaced 16 in. OC (max.) with	
	lateral bracing every 4 ft vertically.	
	5⁄8" type X Gypsum Wallboard Interior	
Fire-Stopping in	4 pcf mineral fiber insulation (mineral wool) installed with z-clips or	
Stud Cavity at floor	equivalent. Typical brand is Thermafiber.	
lines		
Cavity Insulation –	1) None	
Use either 1, 2, 3 or 4	 Any noncombustible insulation (faced or unfaced) 	
	3) Any Fiberglass Batt (faced or unfaced)	
	4) Demilec Sealection 500 (0.5 pcf) Spray Polyurethane foam (SPF) up	n to
	full cavity depth	pio
Exterior Sheathing –	1) ½" Exterior Gypsum Sheathing	
Use either 1 or 2	2) 5/8" Exterior Gypsum Sheathing	
WRB Over	1) None	
Sheathing – Use	2) Prosoco R-Guard VB	
either 1, 2, 3, 4 or 5	3) Prosoco R-Guard Cat 5	
	4) Prosoco R-Guard Cat 5 Rain Screen	
	5) Prosoco SprayWrap MVP	
Exterior Insulation –	1) ½ inch (min.) to 3 inch (max.) Foamular XPS Type IV or Type X	nor
Use either 1 or 2	ASTM C578 – must use special condition 1 (see special conditions a	
4 inch wide (max.)	drawings below) window/door header details.	unu
asphalt or butyl type	2) ½ inch (min.) to 5 inch (max.) Foamular XPS Type IV or Type X	ner
sealing tape to seal	ASTM C578 – must use special condition 2 (see special conditions a	
insulation panel joints	drawings below) window/door header details.	anu
and/or veneer tie	diawings below) window/door neader details.	
penetrations is		
allowed		
WRB Over Exterior	1) None	
Insulation – Use	2) Prosoco SprayWrap MVP	
either 1 or 2		
Exterior Cladding -	1) Brick – Nominal 4" clay brick with maximum 2" air gap between exte	rior
Use either 1, 2, 3, 4,	insulation and brick. Standard brick ties/anchors installed 24"	
5, 6, 7 or 8	(max.) vertically on each stud.	
0, 0, 1 01 0	2) Stucco – minimum $\frac{7}{8}$ " thick exterior cement plaster and lath	
	 Concrete – minimum 2" thick with maximum 2" air gap between exter 	erior
	insulation and concrete.	
	4) Concrete Masonry Units (CMU) – minimum 4" thick with maximum	n 2"
	air gap between exterior insulation and CMU.	
	5) Limestone Veneer – minimum 2" thick using any standard non-o	pen
	joint installation technique such as shiplap, etc.	P 011
	 6) Natural Stone Veneer – minimum 2" thick using any standard non-op 	pen
	joint installation technique such as shiplap, etc.	
	7) Cast Artificial Stone – minimum $1\frac{1}{2}$ " thick complying with ICC-ES	AC
	51 using any standard non-open joint installation technique such	
	shiplap, etc.	. 40
	8) Terra Cotta Cladding – minimum 1 ¹ / ₄ " thick (solid) using any stand	hard
	non-open joint installation technique such as shiplap, etc.	a a a
	non open joint installation teeningue such as simplab, etc.	

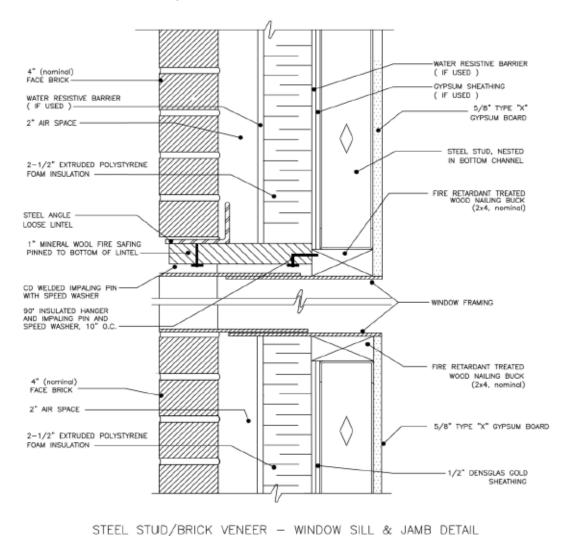


Special Conditions	1)	Use header treatments in Figures 1, 2, 3 or 4 below for all window
Use 1 or 2 depending		and door openings in wall.
on thickness of exterior	2)	Use header treatments in Figures 5, 6, 7 or 8 below for all window
insulation	,	and door openings in wall.
Note: As an option, flash		
all window, door and		
other openings with		
limited amounts of		
acrylic, asphalt or butyl		
based flashing tape –		
max. 12" wide.		

Special Conditions Header Treatments

See drawings below for Special Conditions referenced in the table above.





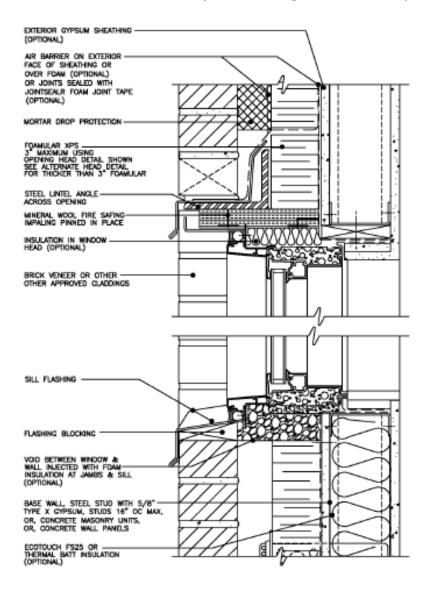
STEEL STUD/BRICK VENEER - WINDOW HEAD DETAIL

,

Figure 1 - Window / Door Opening Detail - Mineral Wool



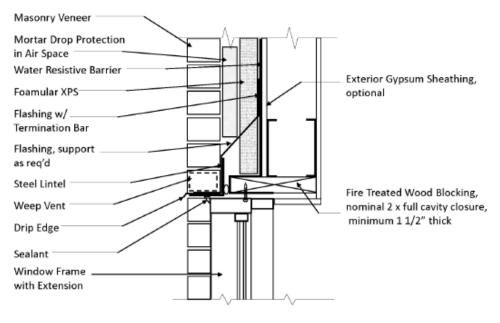
1



OWENS CORNING COMMERCIAL COMPLETE WALL SYSTEM

Figure 2 – Steel Lintel with Mineral Wool

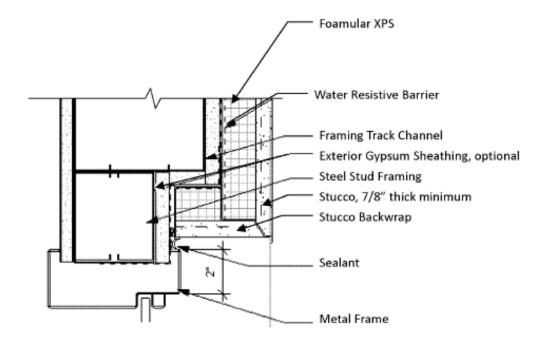




Owens Corning NFPA 285 Head Detail: FRT Firestopping

Figure 3 - FRT Wood Block Head Detail



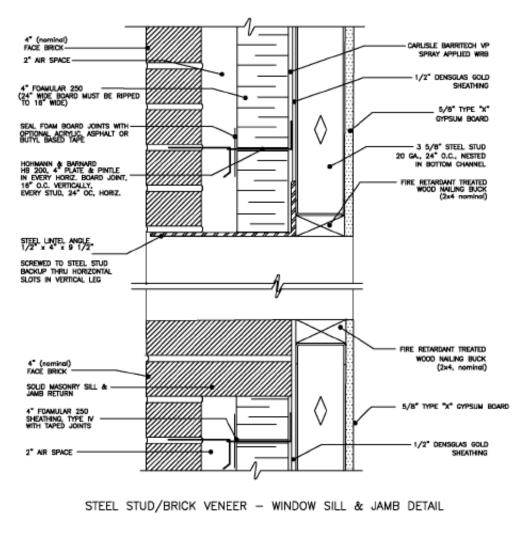


Owens Corning NFPA 285 Head Detail: Stucco Backwrap

Figure 4 - Stucco Backwrap Head Detail



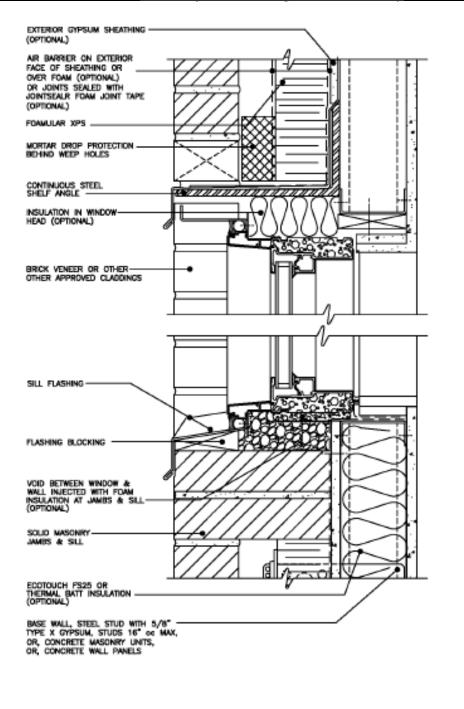




Herbert Sione, 11/04/10
NFPA 285, TEST WALL SECTION, CONSTRUCTION DETAILS
STEEL STUD, XPS, BRICK VENEER, WINDOW HEAD, SILL AND JAMB
Owens Corning November 2010

Figure 5 - Steel Shelf Angle - Window/Door Opening Detail

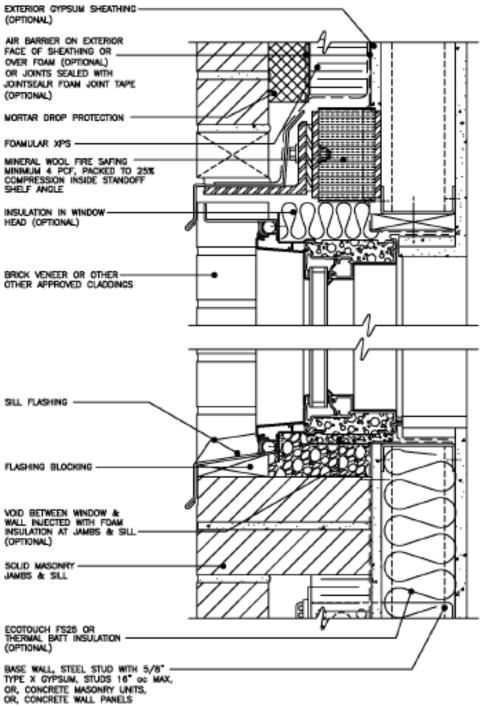




2 NFPA 285 HEAD DETAIL: CONTINUOUS SHELF ANGLE ON STEEL FRAMING OWENS CORNING COMMERCIAL COMPLETE WALL SYSTEM

Figure 6 – Continuous Shelf Angle Detail

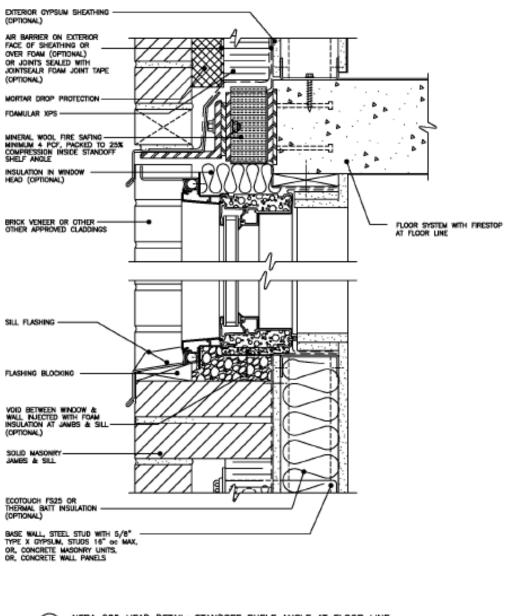




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NFPA 285 HEAD DETAIL: STANDOFF SHELF ANGLE ON STEEL FRAMING OWENS CORNING COMMERCIAL COMPLETE WALL SYSTEM

Figure 7 – Standoff Shelf Angle Detail



NFPA 285 HEAD DETAIL: STANDOFF SHELF ANGLE AT FLOOR LINE
 OWENS CORNING COMMERCIAL COMPLETE WALL SYSTEM

Figure 8 – Shelf Angle at Floor Line Detail



DOW Tables (with figures)

Wall Component	
Base Wall – Use either	1) Cast Concrete Walls
1, 2 or 3	2) CMU Concrete Walls
,	3) 20 GA. (min.) 3 ⁵ / ₄ " (min.) steel studs spaced 16 in. OC (max.) with
	lateral bracing every 4 ft vertically.
	5∕s" type X Gypsum Wallboard Interior
Fire-Stopping in Stud	4 pcf mineral fiber insulation (mineral wool) installed with z-clips or
Cavity at floor lines	equivalent.
Cavity Insulation - Use	1) None
either 1, 2 or 3	2) Any noncombustible material
	3) Any Fiberglass Batt (faced or unfaced)
Exterior Sheathing –	1) 1/2" (min.) Exterior Gypsum Sheathing
Use either 1 or 2	2) 5/8" Exterior Type X Gypsum Sheathing
WRB Over Sheathing -	1) None
Use either 1, 2, 3, 4 or 5	2) Prosoco R-Guard VB
,,,	3) Prosoco R-Guard Cat 5
	4) Prosoco R-Guard Cat 5 Rain Screen
	5) Prosoco SprayWrap MVP
Exterior Insulation –	1/2 inch (min.) to 3 inch (max.) DOW Styrofoam Type IV ASTM C578
4 inch wide (max.)	 must use special window/door header details below.
asphalt or butyl type	
sealing tape to seal	
insulation panel joints is	
allowed	
WRB Over Exterior	1) None
Insulation – Use either	2) Prosoco SprayWrap MVP
1 or 2	
Exterior Cladding -	1) Brick – Nominal 4" clay brick with maximum 2" air gap between
Use either 1, 2, 3, 4, 5,	exterior insulation and brick. Standard brick ties/anchors installed
6 or 7	24" OC (max.) vertically on each stud.
	2) Concrete – minimum 2" thick with maximum 2" air gap between
	exterior insulation and concrete.
	3) Concrete Masonry Units (CMU) – minimum 4" thick with maximum
	2" air gap between exterior insulation and CMU.
	4) Limestone- minimum 2" thick using any standard non-open joint
	installation technique such as ship lap.
	5) Natural Stone Veneer – minimum 2" thick using any standard non-
	open joint installation technique such as ship lap.
	6) Pre-Cast Artificial Stone – minimum 1½" thick complying with ICC-
	ES AC 51 using any standard non-open joint installation technique
	such as ship lap, etc.
	7) Terra Cotta Cladding – minimum 1¼" thick (solid) using any
	standard non-open joint installation technique such as ship lap, etc.
Special Conditions	Use header treatments in Figures 5, 6 & 7 below for all window and
	door openings in the wall.



Special Conditions Header Treatments

See drawings below for Special Conditions referenced in the table above (Fig 5, 6 & 7 Ref. 1).

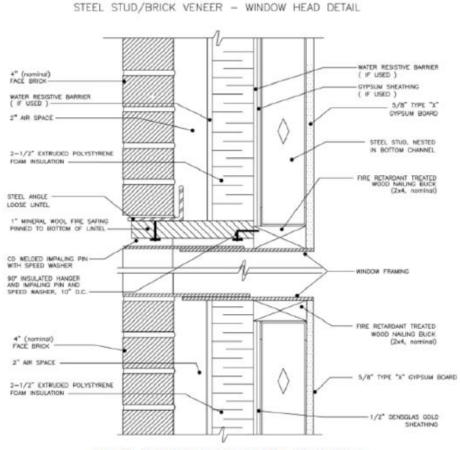
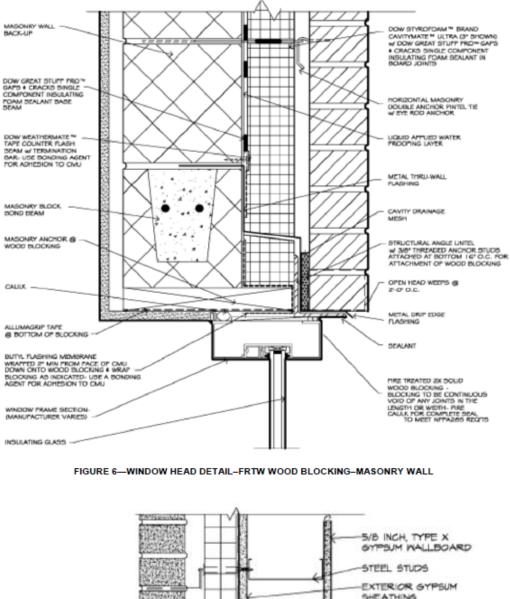


FIGURE 5-WINDOW SILL AND JAMB DETAIL-MINERAL WOOL





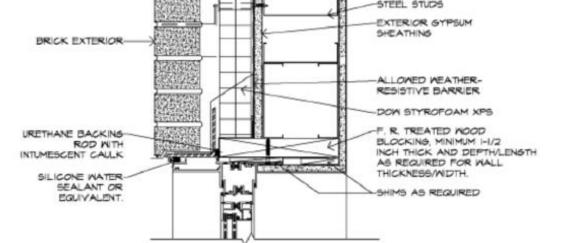


FIGURE 7-WINDOW HEAD DETAIL-FRTW WOOD BLOCKING-FRAMED WALL



For all constructions below, the window header shall consist of minimum 25 GA. sheet steel flashing.

Wall Component		
Base Wall - Use either	1)	Cast Concrete Walls
1, 2, 3 or 4	2)́	CMU Concrete Walls
	3)	
	4)́	20 GA. (min.) 35// (min.) steel studs spaced 24 in. OC (max.) with
	,	lateral bracing every 4 ft. vertically.
		5∕8" type X Gypsum Wallboard Interior
Fire-Stopping in Stud		4 pcf mineral fiber insulation (mineral wool) installed with z-clips or
Cavity at floor lines		equivalent.
Cavity Insulation – Use	1)	None
either 1, 2 or 3	2)	Full stud depth (max.) Dow Styrofoam Spray Polyurethane Foam
	_/	CM2030, 2045, or 2060 complying with ESR 2670. Apply to interior
		side of exterior sheathing.
	3)	Any Fiberglass Batt insulation (faced or unfaced) complying with
	0)	the applicable code.
Exterior Sheathing –	1)	¹ / ₂ " Exterior Gypsum Sheathing
Use either 1 or 2	2)	%" Exterior Gypsum Sheathing
WRB Over Sheathing –	1)	None
Use either 1, 2, 3, 4 or 5	2)	Prosoco R-Guard VB
03e eluler 1, 2, 3, 4 01 5	2) 3)	Prosoco R-Guard Cat 5
	3) 4)	Prosoco R-Guard Cat 5 Prosoco R-Guard Cat 5 Rain Screen
	,	
Exterior Insulation –	<u>5)</u> 1)	Prosoco SprayWrap MVP For Claddings 1-6
	1)	•
Use either a, b, c, or d		a. None (only with exterior WRB 1 or 2 below).
for cladding options 1-6.		b. % inch (min.) to 4¼ inch (max.) DOW Thermax Insulation
Use either a or e, for		c. 3 ¹ / ₂ inch (max) Dow Styrofoam Spray Polyurethane Foam
cladding options 7-11		CM2030, 2045, or 2060 complying with ESR 2670.
Flocking tong to power		d. Combination of exterior insulation 2 and 3 in any order not to
Flashing tape to cover	2)	exceed 4¼ inches.
insulation joints and/or	2)	For Claddings 7-11
cladding ties and		e. 5/2 inch (min.) to 3 inch (max.) DOW Thermax Insulation
connections consisting		
of 4 inch (max.) Dow		
Weathermate Flashing,		
or asphalt or Butyl		
based flashing tape		
(complying with AAMA		
71 or ICC-ES AC 148) is		
allowed.		A1
WRB Over Exterior	1)	
Insulation – Use either	2)	Prosoco SprayWrap MVP
1 or 2 Exterior Cladding	1)	Prick Nominal 4" clay brick with maximum 2" air gan between
Exterior Cladding –	1)	Brick – Nominal 4" clay brick with maximum 2" air gap between exterior insulation and brick. Standard brick ties/anchors installed
Use either 1, 2, 3, 4, 5 or 6 for exterior		
	2)	24" OC (max.) vertically on each stud.
insulation 1 (a-d).	2)	Stucco – ³ / ₄ inch (min.) exterior cement plaster and lath. An optional
<u>Use 7, 8, 9, 10 or 11 for</u>		secondary WRB (not full coverage asphalt or butyl based self-
exterior insulation 1a or		adhered membrane) may be applied in between the exterior
<u>2e.</u>		insulation and lath. Fasteners must attach to base wall framing and
		designed to withstand wind and cladding load per applicable code.
	3)	
		installation technique such as ship lap.
	4)	Natural Stone Veneer - minimum 2" thick using any standard non-



	open joint installation technique such as ship lap.
5)	Cast Artificial Stone – minimum 1 ¹ / ₂ " thick complying with ICC-ES
, , , , , , , , , , , , , , , , , , , ,	AC 51 using any standard non-open joint installation technique
	such as ship lap.
6)	Terra Cotta Cladding – minimum 11/4" thick (solid) using any
	standard non-open joint installation technique such as ship lap.
	Fasteners must attach to base wall framing and designed to
	withstand wind and cladding load per applicable code.
7)	Use any MCM system that has successfully passed NFPA 285
, , , , , , , , , , , , , , , , , , ,	(must have test report or ESR report)
8)	Terra Cotta Cladding – minimum 1 ¹ / ₄ " thick installed using standard
, , , , , , , , , , , , , , , , , , ,	installation technique.
9)	Metal exterior panels (steel, aluminum, copper) installed using
	standard installation technique.
10)	Cement Board Siding – Installed per manufacturer instructions or
	per ICC-ES ESR report for a specific product.
11)	StoneLite wall panels manufactured by Stone Panels per ESR 1500

Johns Manville Table For all constructions, the window header shall consist of minimum 25 GA. sheet steel flashing.

Wall Component		
Base Wall – Use either	1)	Cast Concrete Walls
1, 2, 3 or 4	2)	CMU Concrete Walls
	3)	Standard Clay Brick Walls
	4)	25 GA. (min.) 3 ⁵ / ₈ " (min.) steel studs spaced 24 in. OC (max.).
	-	5∕s" type X Gypsum Wallboard Interior
Fire-Stopping in Stud		Friction fit 4 pcf mineral fiber insulation (mineral wool such as
Cavity at floor lines		Thermafiber)
Cavity Insulation – Use	1)	None
either 1, 2, 3, 4 or 5	2)	Fiberglass Batt insulation (faced or unfaced) complying with the
		applicable code.
	3)	Spray-in Fiberglass Insulation.
	4)	Mineral Wool insulation (faced or unfaced)
	5)	Sprayed cellulose insulation complying with IBC section 702 and
		ASTM C739.
Exterior Sheathing –	1)	1/2" Exterior Gypsum Sheathing
Use either 1 or 2	2)	5/8" Type X Exterior Gypsum Sheathing
WRB Over Sheathing –	1)	None
Use either 1, 2, 3, 4 or 5	2)	Prosoco R-Guard VB
	3)	Prosoco R-Guard Cat 5
	4)	Prosoco R-Guard Cat 5 Rain Screen
	5)	Prosoco SprayWrap MVP
Exterior Insulation –		41/2 inch (max.) Johns Manville AP Foil Faced Sheathing Board
		installed with offset joints or non-staggered.
		Note: Insulation joints may be covered with 6 inch (max.) acrylic,
		asphalt or Butyl based flashing tape.
WRB Over Exterior		See Note for Flashing Tape for exterior Insulation
Insulation		
Exterior Cladding –	1)	Brick - Nominal 4" clay brick with maximum 1" air gap between
		exterior insulation and brick. Standard brick ties/anchors installed
Use either 1, 2, 3, 4, 5,		24" OC (max.) vertically on each stud.
6 or 7	2)	Stucco – ¾ inch (min.) exterior cement plaster and lath. An optional
		secondary WRB (not full coverage asphalt or butyl based, self-



	adhered membrane) may be applied in between the exterior
	insulation and lath. Fasteners must attach to base wall framing and
	designed to withstand wind and cladding load per applicable code.
3)	Natural Stone Veneer (Limestone, granite, marble, sandstone) -
	minimum 2" thick using any standard non-open joint installation
	technique such as ship lap.
4)	Cast Artificial Stone,- minimum 11/2" thick complying with ICC-ES
	AC 51 using any standard non-open joint installation technique
	such as ship lap.
5)	Terra Cotta Cladding – minimum 11/4" thick (solid) using any
	standard non-open joint installation technique such as ship lap.
	Fasteners must attach to base wall framing and designed to
	withstand wind and cladding load per applicable code.
6)	Concrete – minimum 2 inches thick with maximum 1 inch air gap
	between exterior insulation and concrete.
7)	Concrete Masonry Units (CMU) - minimum 4 inches thick with
	maximum 2 inch air gap between exterior insulation and CMU.

