MASONRY ASSEMBLY THERMAL CATALOG – Brick Veneer Wood Stud (BVWS)

Alberta Masonry Council

MASONRY WORKS Council Of Ontario

BRICK BLOCK STONE

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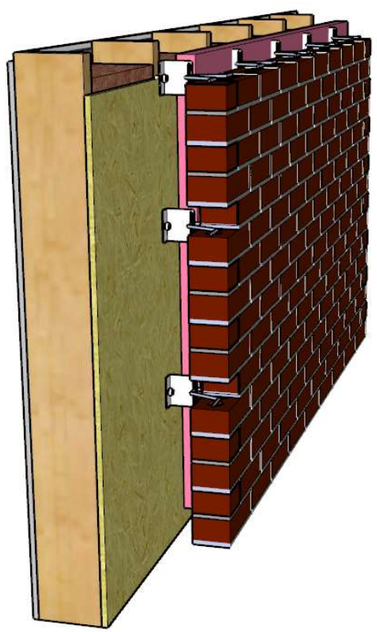
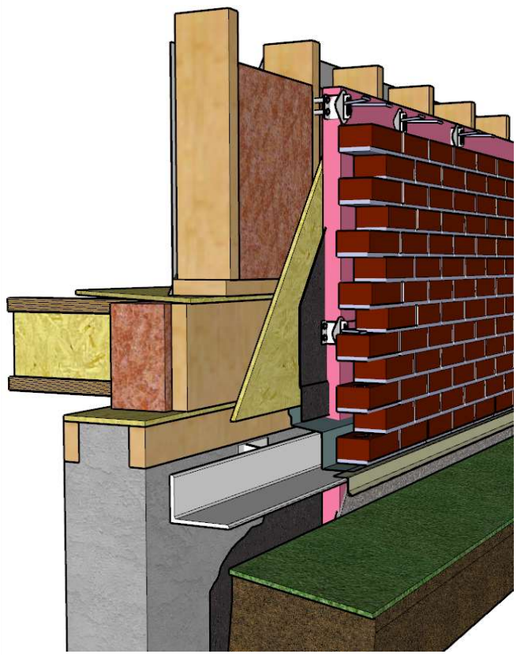
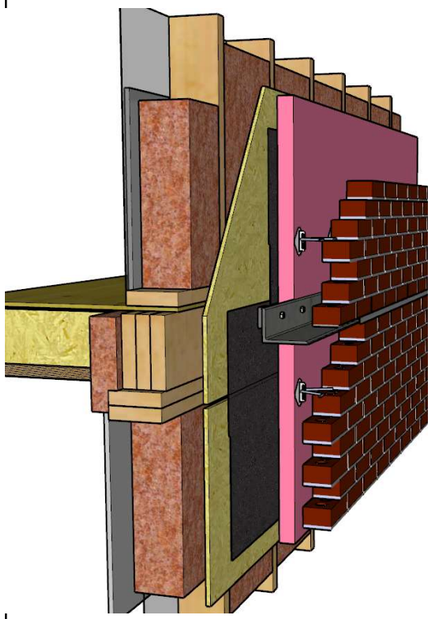
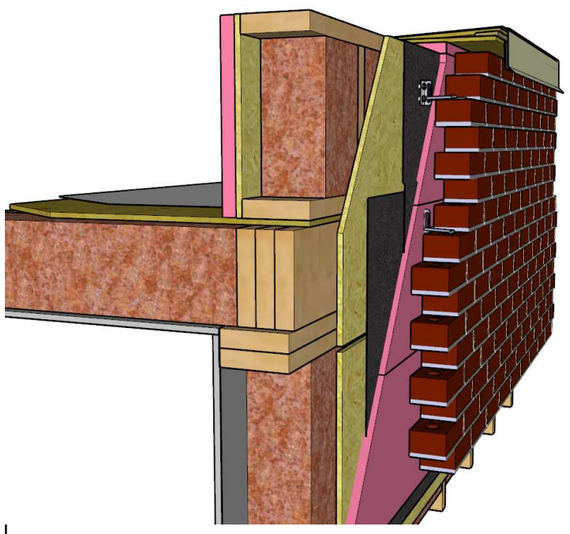
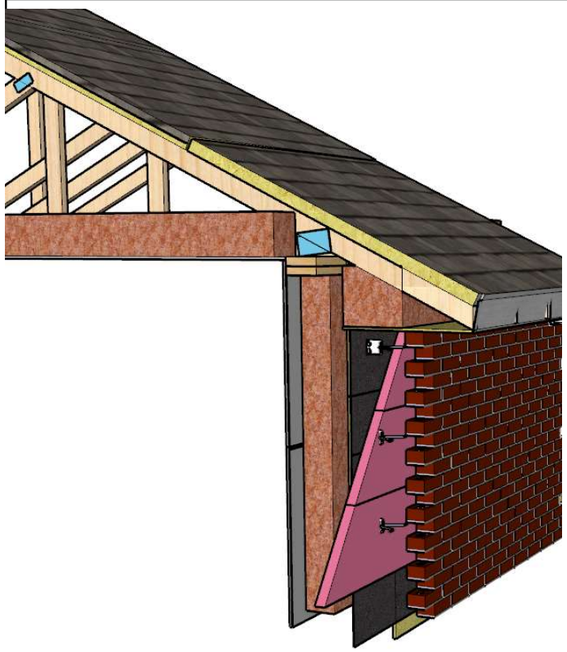
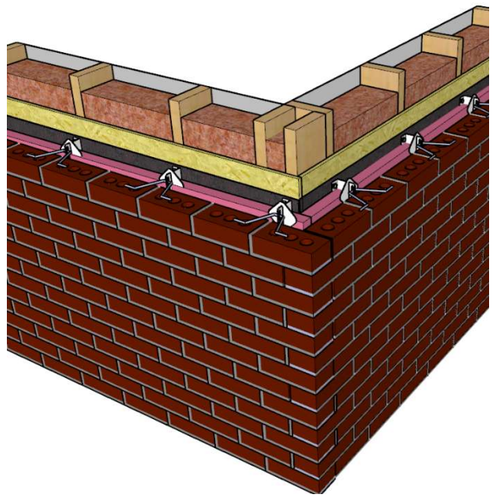
2x6 Wood-Stud & Brick - Clear Wall	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI used in model (m^2 K/W)	Exterior Insulation (R-value)	Effective U_o (W/m^2 K)	Effective Wall (R-value)
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R19 Batt.**	Exterior Film	33.33	0.03	**0**	**0.2874**	**19.8**
		Brick Veneer	1.39	0.72	**5**	**0.2294**	**24.8**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.1850**	**30.7**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.1590**	**35.7**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.1406**	**40.4**
		Exterior Insulation	varies	varies	**25**	**0.1263**	**44.9**
		Exterior Grade OSB or Plywood			**30**	**0.1147**	**49.5**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.1048**	**54.2**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.0962**	**59.0**
		Interior Film	6.25	0.16	**45**	**0.0887**	**64.0**
					50	**0.0819**	**69.3**
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R22 Batt.**	Exterior Film	33.33	0.03	**0**	**0.2659**	**21.4**
		Brick Veneer	1.39	0.72	**5**	**0.2123**	**26.8**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.1737**	**32.7**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.1506**	**37.7**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.1340**	**42.4**
		Exterior Insulation	varies	varies	**25**	**0.1209**	**47.0**
		Exterior Grade OSB or Plywood			**30**	**0.1101**	**51.6**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.1010**	**56.2**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.0930**	**61.1**
		Interior Film	6.25	0.16	**45**	**0.0859**	**66.1**
					50	**0.0795**	**71.4**

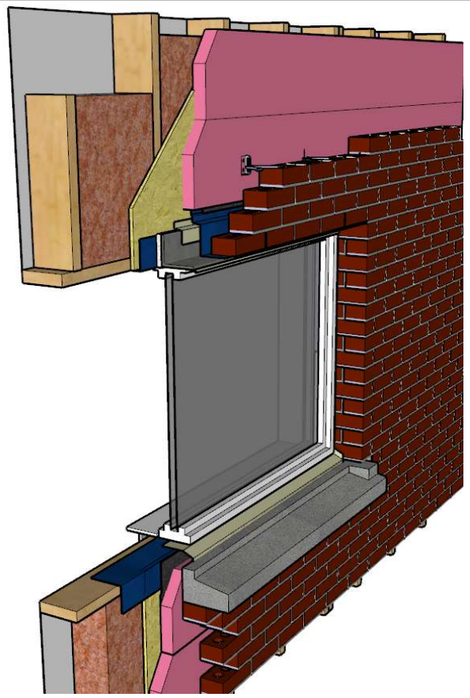
2x6 Wood-Stud & Brick - At-Grade	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI used in model (m^2 K/W)	Exterior Insulation (R-value)	Linear Transmittance ψ (W/m K)
	90 mm (4") Brick veneer Exterior Insulation **On $^1/_2$" steel knife plate or $^1/_4$" HSS** **2x6 Wood Stud with R19 Batt.**	Exterior Film	33.33	0.03	**0**	**0.325**
		Brick Veneer	1.39	0.72	**5**	**0.260**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.167**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.099**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.074**
		Exterior Insulation	varies	varies	**25**	**0.055**
		Exterior Grade OSB or Plywood			**30**	**0.039**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.034**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.031**
		Interior Film	6.25	0.16	**45**	**0.027**
		Soil	0.444	2.25	**50**	**0.024**
	90 mm (4") Brick veneer Exterior Insulation **On $^1/_2$" steel knife plate or $^1/_4$" HSS** **2x6 Wood Stud with R22 Batt.**	Exterior Film	33.33	0.03	**0**	**0.301**
		Brick Veneer	1.39	0.72	**5**	**0.240**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.157**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.094**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.071**
		Exterior Insulation	varies	varies	**25**	**0.052**
		Exterior Grade OSB or Plywood			**30**	**0.037**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.033**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.030**
		Interior Film	6.25	0.16	**45**	**0.026**
		Soil	0.444	2.25	**50**	**0.023**

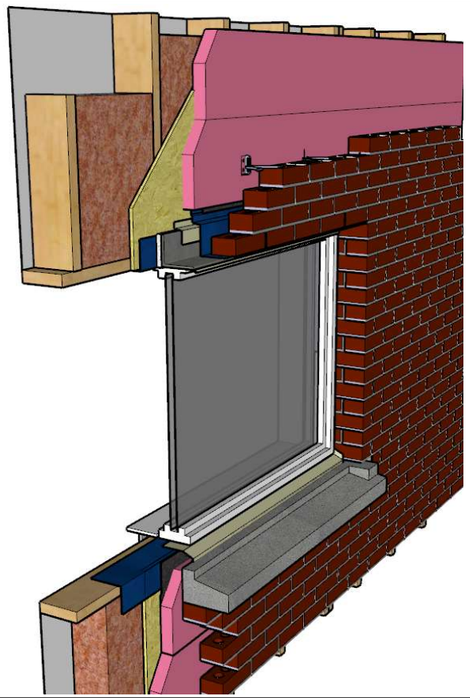
2x6 Wood-Stud & Brick - Floor	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI used in model (m^2 K/W)	Exterior Insulation (R-value)	Linear Transmittance ψ (W/m K)
	90 mm (4") Brick veneer Exterior Insulation **On $^1/_2$" steel knife plate or $^1/_4$" HSS** **2x6 Wood Stud with R19 Batt.**	Exterior Film Brick Veneer 25 mm (1") Air Gap **Suface Mounted 2 part Masonry Ties** **at 406mm x 610mm (16" x 24 ") o.c.** Exterior Insulation Exterior Grade OSB or Plywood 2x6 Wood Stud with R19 Batt. 13 mm (1/2") Gypxum Interior Film	33.33 1.39 6.25 50.0 50.0 varies 2.00 6.25 6.25	0.03 0.72 0.16 0.0000952 0.0000952 varies 0.5 0.16 0.16	**0** **5** **10** **15** **20** **25** **30** **35** **40** **45** **50**	**0.082** **0.066** **0.044** **0.032** **0.026** **0.021** **0.017** **0.015** **0.013** **0.012** **0.011**
	90 mm (4") Brick veneer Exterior Insulation **On $^1/_2$" steel knife plate or $^1/_4$" HSS** **2x6 Wood Stud with R22 Batt.**	Exterior Film Brick Veneer 25 mm (1") Air Gap **Suface Mounted 2 part Masonry Ties** **at 406mm x 610mm (16" x 24 ") o.c.** Exterior Insulation Exterior Grade OSB or Plywood 2x6 Wood Stud with R19 Batt. 13 mm (1/2") Gypxum Interior Film	33.33 1.39 6.25 50.0 50.0 varies 2.00 6.25 7.692	0.03 0.72 0.16 0.0000952 0.0000952 varies 0.5 0.16 0.13	**0** **5** **10** **15** **20** **25** **30** **35** **40** **45** **50**	**0.076** **0.061** **0.042** **0.031** **0.025** **0.020** **0.016** **0.014** **0.013** **0.012** **0.011**

2x6 Wood-Stud & Brick - Parapet	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI used in model (m^2 K/W)	Exterior Insulation (R-value)	Linear Transmittance ψ (W/m K)
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R19 Batt.**	Exterior Film	33.33	0.03	**0**	**0.0188**
		Brick Veneer	1.39	0.72	**5**	**0.015**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.048**
		Suface Mounted 2 part Masonry Ties	varies	varies	**15**	**0.067**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.081**
		Exterior Insulation			**25**	**0.091**
		Exterior Grade OSB or Plywood	2.00	0.50	**30**	**0.100**
		2x6 Wood Stud with R19 Batt.	6.25	0.16	**35**	**0.108**
		13 mm (1/2") Gypxum			**40**	**0.114**
		Interior Film			**45**	**0.120**
					50	**0.125**
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R22 Batt.**	Exterior Film	33.33	0.03	**0**	**0.017**
		Brick Veneer			**5**	**0.013**
		25 mm (1") Air Gap	1.39	0.72	**10**	**0.045**
		Suface Mounted 2 part Masonry Ties	6.25	0.16	**15**	**0.063**
		at 406mm x 610mm (16" x 24 ") o.c.	varies	varies	**20**	**0.077**
		Exterior Insulation	50.0	0.0000952	**25**	**0.088**
		Exterior Grade OSB or Plywood			**30**	**0.096**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.104**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.110**
		Interior Film			**45**	**0.116**
					50	**0.121**

2x6 Wood-Stud & Brick - Sloped Roof	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI used in model (m^2 K/W)	Exterior Insulation (R-value)	Linear Transmittance ψ (W/m K)
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R19 Batt.**	Exterior Film	33.33	0.03	**0**	**0.000**
		Brick Veneer	1.39	0.72	**5**	**0.016**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.053**
		Suface Mounted 2 part Masonry Ties	varies	varies	**15**	**0.074**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.090**
		Exterior Insulation			**25**	**0.102**
		Exterior Grade OSB or Plywood	2.00	0.50	**30**	**0.111**
		2x6 Wood Stud with R19 Batt.	6.25	0.16	**35**	**0.119**
		13 mm (1/2") Gypxum			**40**	**0.127**
		Interior Film			**45**	**0.133**
					50	**0.138**
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R22 Batt.**	Exterior Film	33.33	0.03	**0**	**0.0000**
		Brick Veneer			**5**	**0.015**
		25 mm (1") Air Gap	1.39	0.72	**10**	**0.050**
		Suface Mounted 2 part Masonry Ties	6.25	0.16	**15**	**0.071**
		at 406mm x 610mm (16" x 24 ") o.c.	varies	varies	**20**	**0.086**
		Exterior Insulation	50.0	0.0000952	**25**	**0.097**
		Exterior Grade OSB or Plywood			**30**	**0.107**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.115**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.122**
		Interior Film			**45**	**0.129**
					50	**0.134**

2x6 Wood-Stud & Brick - Corner	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI (m^2 K/W)	Exterior Insulation (R-value)	Linear Transmittance ψ (W/m K)
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R19 Batt.**	Exterior Film	33.33	0.03	**0**	**0.124**
		Brick Veneer	1.39	0.72	**5**	**0.099**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.084**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.076**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.070**
		Exterior Insulation	varies	varies	**25**	**0.065**
		Exterior Grade OSB or Plywood			**30**	**0.062**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.058**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.056**
		Interior Film	6.25	0.16	**45**	**0.053**
					50	**0.051**
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R22 Batt.**	Exterior Film	33.33	0.03	**0**	**0.115**
		Brick Veneer	1.39	0.72	**5**	**0.092**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.079**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.072**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.067**
		Exterior Insulation	varies	varies	**25**	**0.063**
		Exterior Grade OSB or Plywood			**30**	**0.059**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.056**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.054**
		Interior Film	6.25	0.16	**45**	**0.051**
					50	**0.049**

2x6 Wood-Stud & Brick - Window	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI (m^2 K/W)	Exterior Insulation (R-value)	Linear Transmittance ψ (W/m K)
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R19 Batt.** **Vinyl window frame**	Exterior Film	33.33	0.03	**0**	**0.053**
		Brick Veneer	1.39	0.72	**5**	**0.042**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.040**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.038**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.037**
		Exterior Insulation	varies	varies	**25**	**0.036**
		Exterior Grade OSB or Plywood			**30**	**0.036**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.035**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.034**
		Interior Film	6.25	0.16	**45**	**0.034**
					50	**0.034**
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R22 Batt.** **Vinyl window frame**	Exterior Film	33.33	0.03	**0**	**0.049**
		Brick Veneer	1.39	0.72	**5**	**0.039**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.037**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.036**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.035**
		Exterior Insulation	varies	varies	**25**	**0.035**
		Exterior Grade OSB or Plywood			**30**	**0.034**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.034**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.033**
		Interior Film	6.25	0.16	**45**	**0.033**
					50	**0.033**

2x6 Wood-Stud & Brick - Window	Wall Description	Wall Components Exterior to Interior	Conductance, k used in the model (W/m K)	Nominal Resistance RSI (m^2 K/W)	Exterior Insulation (R-value)	Linear Transmittance ψ (W/m K)
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R19 Batt.** **Aluminum Window Frame**	Exterior Film	33.33	0.03	**0**	**0.306**
		Brick Veneer	1.39	0.72	**5**	**0.245**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.195**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.169**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.151**
		Exterior Insulation	varies	varies	**25**	**0.137**
		Exterior Grade OSB or Plywood			**30**	**0.127**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.118**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.110**
		Interior Film	6.25	0.16	**45**	**0.104**
					50	**0.098**
	90 mm (4") Brick veneer Exterior Insulation **2x6 Wood Stud with R22 Batt.** **Aluminum Window Frame**	Exterior Film	33.33	0.03	**0**	**0.283**
		Brick Veneer	1.39	0.72	**5**	**0.226**
		25 mm (1") Air Gap	6.25	0.16	**10**	**0.183**
		Suface Mounted 2 part Masonry Ties	50.0	0.0000952	**15**	**0.160**
		at 406mm x 610mm (16" x 24 ") o.c.	50.0	0.0000952	**20**	**0.144**
		Exterior Insulation	varies	varies	**25**	**0.131**
		Exterior Grade OSB or Plywood			**30**	**0.122**
		2x6 Wood Stud with R19 Batt.	2.00	0.5	**35**	**0.114**
		13 mm (1/2") Gypxum	6.25	0.16	**40**	**0.107**
		Interior Film	6.25	0.16	**45**	**0.101**
					50	**0.096**