



QAI LISTING REC782-2, Edition 1
MAD Building Technologies Inc.
WALL PANELS evaluated under CSA A277 & Part 9 of Ontario Building Code

For evaluation of wall panels: W1; W2; W2a; W2b; W3; W3a; W3b; W4; W4a; W4b refer to attached Appendix A for construction details						
No.	COMPONENT	DESCRIPTION				
1.	Cladding (Optional)	Product:	Vinyl, Metal Cladding, Fiber Cement Cladding			
		Certification:	Vinyl Siding certified per CAN/CGSB-41.24			
			Sheet steel cladding (minimum thickness of 0.3mm) certified per CAN/CGSB-93.3-M			
			Aluminum sheet cladding certified per CAN/CGSB-93.1-M			
			Fiber Cement Cladding certified per CCMC TG, ASTM C1186 or equivalent			
2.	Wood Frame	Framing:	Dimensional Lumber (SPF)	Minimum 2x4	(W1; W2; W3; W4) ⁽¹⁾ (W2a; W3a; W4a) ⁽²⁾ (W2b; W3b; W4b) ⁽³⁾	
			Structural Composite Lumber (SCL)	Use of SCL, done under Part 4 of NBC, is approved by a registered professional engineer and is equivalent to the above SPF framing.		
		Certification:	SPF	Grade Stamp: Stud or better as required by design		
			SCL	CCMC report or equivalent		
		Stud spacing:	Maximum 24" (600 mm) OC			
		Stud Fasteners:	Based on SPF: 2 nails, Ø 0.131" x 3-1/4" per stud end for all dimensions, 3 nails, Ø 0.120" x 3-1/4" per stud end for all dimensions, or 2 construction screws, #8 x 3"			
3.	Insulation (Optional for W1)	Product:	Mineral Wool Batts, Glass Wool Batts, Spray Polyurethane Foam			
		R Value:	As indicated on QAI's Specification Nameplate			
		Certification:	Mineral and Glass Wool Batts certified per CAN/ULC-S702 Spray Polyurethane Foam certified per CAN/ULC-S705			
4.	Sheathing	Product:	Plywood Panel, OSB Panel, ZIP System Sheathing, Fiberboard Panel, Gypsum Board (1 or 2 layers)			
		Thickness:	Minimum 7/16" (11.11 mm)			
		Certification:	Plywood Panel certified per CSA O151			
			OSB Panel certified per CSA O325			
			ZIP System Sheathing certified per ESR-1474			
			Fiberboard certified per CAN/ULC-S706			
			Gypsum Board certified per ASTM C1178/ C1178M or ASTM C1396/ C1396M			
Fasteners:	Nails 2" (50mm) x 0.113 min; 6" (150mm) on perimeter & 12" (300mm) on intermediate studs Construction screws #8x2 in (50mm) min Drywall Screws #6 – 1.625" (15.8mm) min					
5.	Rigid Insulation (Optional)	Product:	Extruded Polystyrene (XPS) or Expanded Polystyrene (EPS) Boards, ZIP System R-Sheathing			
		R value:	Minimum R5			
		Certification:	XPS & EPS certified per CAN/ULC-S701 ZIP System R-Sheathing certified per ESR-3373			

6.	Weather Resisting Barrier (Building Wrap)	Product:	Spun-Bonded Polyolefin (SBPO); Self-Adhesive Membrane; Liquid-Applied Air Barrier Material; ZIP System Sheathing and ZIP System R-sheathing		
		Certification:	SBPO, Self-Adhesive Membrane & Liquid-Applied Air Barrier Material certified to CAN/CGSB-51.32-M or CCMC report or equivalent		
			ZIP System Sheathing certified per ESR-1474		
			ZIP System R-Sheathing certified per ESR-3373		
7.	Furring (Optional)	Product:	Wood Furring or Metal Resilient Channel		
		Location:	Interior face	all walls	
			Exterior face	W1, W4, W4a, W4b	
		Type:	Wood furring:	1" x 3" (19 x 64 mm)	
			Metal Resilient Channel:	Bailey Metal Products RC Plus and D-10001	
		Spacing:	At maximum 24" (600 mm) OC		
		Certification:	Metal resilient Channel per CSA S136		
Fasteners:	2 nails per stud: 0.113 x 2" min; Minimum penetration 1-1/2" (38mm)				
8.	Vapour Barrier	Product:	Minimum 0.15mm (6-Mil) Polyethylene Sheet		
		Certification:	Certified per CAN/CGSB-51.34-M		
ELECTRICAL INSTALLATIONS					
Structural panels included in this Listing may have electrical wiring and junction/outlet boxes installed for typical household applications. The Listing does not include the installation of appliances or equipment.					
PLUMBING INSTALLATIONS					
Structural panels included in this Listing may have plumbing pipes and connections installed. The Listing does not include the installation of appliances or equipment.					
EXCLUSIONS					
Fire resistive assemblies and acoustical performance is not covered under this listing.					
All windows, doors, gas systems components, plumbing and electrical equipment other than those described above are outside of the scope of this listing. For roof and floor panels refer to dedicated section.					
This listing does not include panels intended to be used in multi-family dwellings requiring fire and sound separation or shared egress facilities, hotels and motels. It does not address panelized products for use in commercial, and office buildings, stores, hospitals, classrooms, and daycares and/or any buildings designed with multiple major occupancies.					
CONDITIONS OF VALIDITY					
This listing is based on the assumption that no fundamental changes are made to the product described in this listing and engineering designs.					
The performance of the panels could be affected by excessive humidity. Like other wood products, these panels must be protected from exposure to moisture/rain.					
The field erection sequencing must be in strict accordance with the manufacturer's installation instructions and the applicable building code. In the event of a conflict between the manufacturer's installation instructions and code requirements, code stipulations shall govern. Approved construction documents shall be available at all times on the jobsite during installation.					

Notes:

- (1) Any design outside of Section 9.23 of OBC is done by a registered professional engineer under Part 4.
- (2) Under Part 9 of OBC, it is acceptable only for gable ends (i.e. no load on wall and no finishing on inside) or non-load bearing interior partitions. For any other uses, approval by a registered professional engineer is required.
- (3) This design is done under Part 4 of OBC and is approved by a registered professional engineer.

QAI LISTING REC782-2, Edition 1
MAD Building Technologies Inc.
FLOOR PANELS evaluated under CSA A277 & Part 9 of Ontario Building Code

For evaluation of floor panels: H1; H2; H3 refer to attached Appendix A for construction details						
No.	COMPONENT	DESCRIPTION				
1.	Finishing (Optional)	Product	Flooring finish : Hardwood, Laminate, Luxury Vinyl Plank/Tiles			
		Certification:	n/a			
2.	Subfloor	Product:	Plywood Panel T&G; OSB Panel T&G; ZIP System Sheathing			
		Thickness:	Minimum 19/32" (15 mm)			
		Certification:	Plywood Panel certified per CSA O151			
			OSB Panel certified per CSA O325			
			ZIP System Sheathing certified per ESR-1474			
Fasteners:	Nails: 2" (50mm) x 0.113 min; 6" (150mm) on perimeter & 12" (300mm) on intermediate joists					
	Floor screws #8x1-1/2" (89mm) min; 6" (150mm) on perimeter & 12" (300mm) on intermediate joists					
3.	Wood Frame	Framing:	Floor Joists	Dimensional Lumber (SPF)	Minimum 2x8 Spans as per OBC Tables A-1 & A-2	
				I-Joists	Minimum 9.25" (235mm)	
				Structural Composite Lumber (SCL)	Minimum 9.5" (241mm)	
			Rim Joist	SPF	Minimum 2x8 / to suite floor joist height	
				SCL	Minimum 9.5" (241mm) / to suite floor joist height	
		Limitation:	Design outside of NBC, art. 9.23.1.1 is done by registered professionals under Part 9 or Part 4			
		Certification:	SPF	Grade Stamp: Grade 2 or better as required by design		
			I-Joists	CCMC report or equivalent		
			SCL	CCMC report or equivalent		
		Live load:	Minimum 40 psf (1.9 KPa)			
		Joist spacing:	Maximum 24" (600 mm) OC			
		Joist Fasteners:	4-5 nails, 0.120" x 3-1/4" per joist end for all dimensions			
4.	Insulation (Optional)	Product:	Mineral Wool Batts, Glass Wool Batts, Spray Polyurethane Foam			
		R Value:	As indicated on QAI's Specification Nameplate			
		Certification:	Mineral Wool certified per CAN/ULC-S702			
			Spray Polyurethane Foam certified per CAN/ULC-S705			
5.	Bottom Sheathing (Optional for H2 & H3)	Product:	Plywood Panel; OSB Panel; Fiberboard Panel; Gypsum Board			
		Thickness:	Plywood / OSB/ Fiberboard Panel:	Minimum 7/16" (11.11 mm)		
			Gypsum Board (1 or 2 layers) :	Minimum 1/2" (12.7 mm)		
		Certification:	Plywood Panel certified per CSA O151			
			OSB Panel certified per CSA O325			
			Fiberboard Panel certified per CAN/ULC-S706			
Gypsum Board certified per ASTM C1178/ C1178M or ASTM C1396/ C1396M						

		Fasteners:	Plywood / OSB/ Fiberboard Panel:	Nails: 2" (50mm) × 0.113 min; 6" (150mm) on perimeter & 12" (300mm) on intermediate joists
			Gypsum Board:	Screws: 2" (50mm) #6 screws min; 6" (150mm) on perimeter & 12" (300mm) on intermediate joists
6.	Rigid Insulation (Optional for H3)	Product:	Extruded Polystyrene (XPS) or Expanded Polystyrene (EPS) Boards, ZIP System R-Sheathing	
		R value:	Minimum R5	
		Certification:	XPS & EPS certified per CAN/ULC-S701 ZIP System R-Sheathing certified per ESR-3373	
7.	Furring (Optional for H2)	Product:	Wood Furring or Metal Resilient Channel	
		Location:	Bottom of H2	
		Size:	Wood furring:	1" x 3" (19 x 64 mm)
			Metal Resilient Channel:	Bailey Metal Products RC Plus and D-10001
		Spacing:	At maximum 24" (600 mm) OC	
		Certification:	Metal resilient Chanel per CSA S136	
8.	Vapour Barrier (Optional for H2 ⁽¹⁾ & H3)	Product:	0.15mm (6-Mil) Polyethylene Sheet	
		Standard:	Certified to CAN/CGSB-51.34-M	
9.	Sheathing Membrane / Building Wrap (Optional for H3)	Product:	Spun-Bonded Polyolefin (SBPO); Self-Adhesive Membrane Liquid-Applied Air Barrier Material	
		Standard:	SBPO, Self-Adhesive Membrane & Liquid-Applied Air Barrier Material certified to CAN/CGSB-51.32-M or CCMC report or equivalent	
ELECTRICAL INSTALLATIONS				
Structural panels included in this Listing may have electrical wiring and junction/outlet boxes installed for typical household applications. The Listing does not include the installation of appliances or equipment.				
PLUMBING INSTALLATIONS				
Structural panels included in this Listing may have plumbing pipes and connections installed. The Listing does not include the installation of appliances or equipment.				
EXCLUSIONS:				
Fire resistive assemblies and acoustical performance is not covered under this listing.				
All gas systems components, plumbing and electrical equipment other than those described above are outside of the scope of this listing. For wall and roof panels refer to dedicated section.				
This listing does not include panels intended to be used in multi-family dwellings requiring fire and sound separation or shared egress facilities, hotels and motels. It does not address panelized products for use in commercial, and office buildings, stores, hospitals, classrooms, and daycares and/or any buildings designed with multiple major occupancies.				
CONDITIONS OF VALIDITY				
This listing is based on the assumption that no fundamental changes are made to the product described in this listing and engineering designs.				
The performance of the panels could be affected by excessive humidity. Like other wood products, these panels must be protected from exposure to moisture/rain.				
The field erection sequencing must be in strict accordance with the manufacturer's installation instructions and the applicable building code. In the event of a conflict between the manufacturer's installation instructions and code requirements, code stipulations shall govern. Approved construction documents shall be available at all times on the jobsite during installation.				

Note:

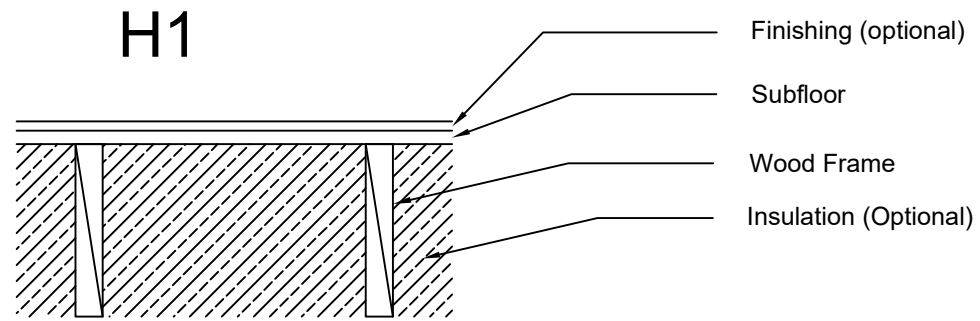
- (1) Vapour Barrier is acceptable in this location only for panels that do not separate the conditioned space from the unconditioned space, the exterior air or the ground.

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ROOF PANELS evaluated under CSA A277 & Part 9 of Ontario Building Code

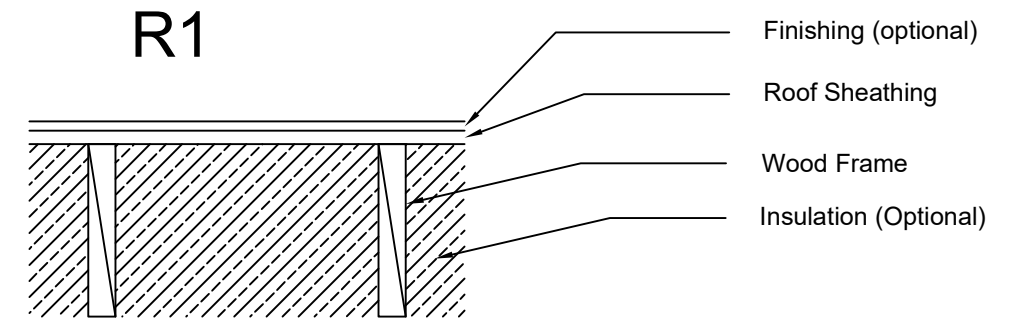
For evaluation of roof panels: R1; R2 refer to attached Appendix A for construction details					
No.	COMPONENT	DESCRIPTION			
1.	Finishing (Optional)	Product	Roofing finish : Metal or Asphalt Roofing and/or roofing underlayment		
		Certification:	Asphalt Singles certified per CSA A123.1/A123.5		
2.	Roof Sheathing	Product:	Plywood Panel; OSB Panel; ZIP System Sheathing		
		Thickness:	Minimum 7/16" (11.1 mm)		
		Certification:	Plywood Panel certified per CSA O151		
			OSB Panel certified per CSA O325		
			ZIP System Sheathing certified per ESR-1474		
Fasteners:	Nails: 2" (50mm) x 0.113 min				
	6" (150mm) on perimeter & 12" (300mm) on intermediate joists				
	Floor screws #8x1-1/2" (89mm) min				
		6" (150mm) on perimeter & 12" (300mm) on intermediate joists			
3.	Rigid Insulation (Optional for R2)	Product:	Extruded Polystyrene (XPS) or Expanded Polystyrene (EPS) Boards, ZIP System R-Sheathing		
		R value:	Minimum R5		
		Certification:	XPS & EPS certified per CAN/ULC-S701		
			ZIP System R-Sheathing certified per ESR-3373		
4.	Wood Frame	Framing:	Roof Joists	Dimensional Lumber (SPF)	Minimum 2x8 Spans as per OBC Tables A-4 & A-5
				Structural Composite Lumber (SCL)	Minimum 9.5" (241mm)
				I-Joists	Minimum 9.25" (235mm)
		Limitation:	Design outside of NBC, art. 9.23.1.1 is done by registered professionals under Part 9 or Part 4		
		Certification:	SPF	Grade Stamp: Grade 2 or better as required by design	
			SCL	CCMC report or equivalent	
			I-Joists	CCMC report or equivalent	
		Live load:	Specified roof snow load as indicated on QAI's Specification Nameplate		
		Joist spacing:	Maximum 24" (600 mm) OC		
		Joist Fasteners:	4-5 nails, 0.120" x 3-1/4" per joist end for all dimensions		
Suitable Joist Hangers for unsupported joists					
5.	Insulation (Optional)	Product:	Mineral Wool Batts, Glass Wool Batts, Spray Polyurethane Foam		
		R Value:	As indicated on QAI's Specification Nameplate		
		Certification:	Mineral Wool certified per CAN/ULC-S702		
			Spray Polyurethane Foam certified per CAN/ULC-S705		
6.	Furring (Optional for R2)	Product	Wood Furring or Metal Resilient Channel		
		Location:	Bottom of R2		
		Size:	Wood furring:	1" x 3" (19 x 64 mm)	
			Metal Resilient Channel:	Bailey Metal Products RC Plus and D-10001	
		Spacing:	At maximum 24" (600 mm) OC		

		Certification:	Metal resilient Chanel per CSA S136		
		Fasteners:	2 nails per stud: 0.113 x 2" min; Minimum penetration 1-1/2" (38mm)		
7.	Vapour Barrier (Optional for R2)	Product:	0.15mm (6-Mil) Polyethylene Sheet		
		Standard:	Certified to CAN/CGSB-51.34-M		
8.	Bottom Sheathing (Optional for R2)	Product:	Plywood Panel; OSB Panel; Fiberboard Panel; Gypsum Board		
		Thickness:	Plywood / OSB/ Fiberboard Panel:	Minimum 7/16" (11.11 mm)	
			Gypsum Board (1 or 2 layers) :	Minimum 1/2" (12.7 mm)	
		Certification:	Plywood Panel certified per CSA O151		
			OSB Panel certified per CSA O325		
			Fiberboard certified per CAN/ULC-S706		
Gypsum Board certified per ASTM C1178/ C1178M or ASTM C1396/ C1396M					
Fasteners:	Plywood / OSB/ Fiberboard Panel:	Nails: 2" (50mm) x 0.113 min; 6" (150mm) on perimeter & 12" (300mm) on intermediate joists			
	Gypsum Board:	Screws: 2" (50mm) #6 screws min; 6" (150mm) on perimeter & 12" (300mm) on intermediate joists			
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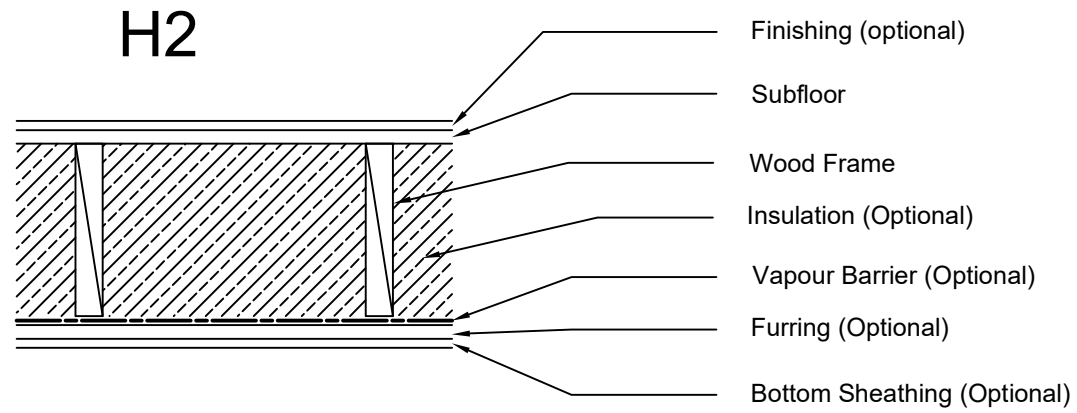
Types of floor and roof panles



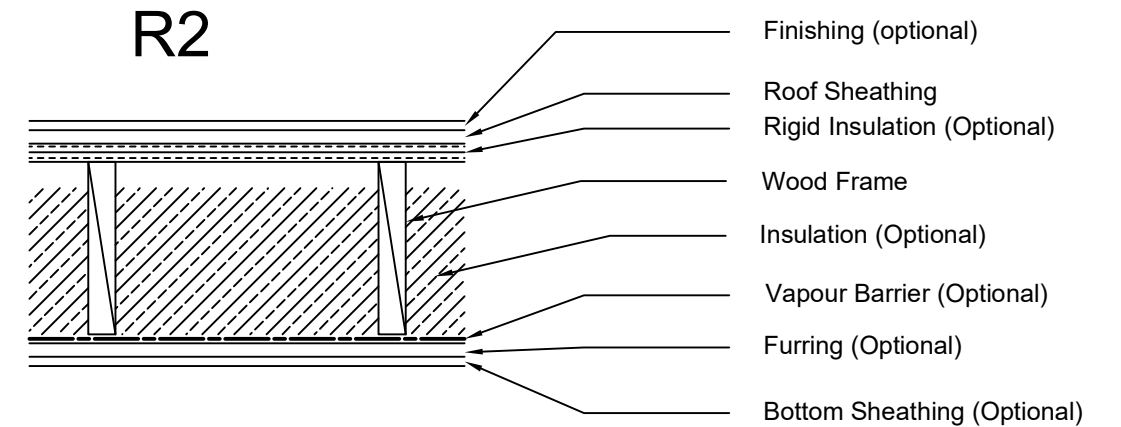
- Finishing (optional)
- Subfloor
- Wood Frame
- Insulation (Optional)



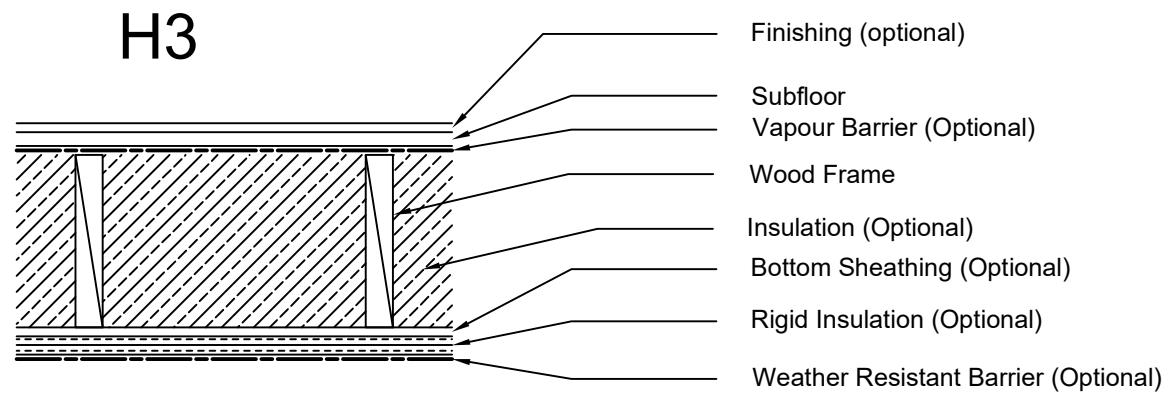
- Finishing (optional)
- Roof Sheathing
- Wood Frame
- Insulation (Optional)



- Finishing (optional)
- Subfloor
- Wood Frame
- Insulation (Optional)
- Vapour Barrier (Optional)
- Furring (Optional)
- Bottom Sheathing (Optional)



- Finishing (optional)
- Roof Sheathing
- Rigid Insulation (Optional)
- Wood Frame
- Insulation (Optional)
- Vapour Barrier (Optional)
- Furring (Optional)
- Bottom Sheathing (Optional)



- Finishing (optional)
- Subfloor
- Vapour Barrier (Optional)
- Wood Frame
- Insulation (Optional)
- Bottom Sheathing (Optional)
- Rigid Insulation (Optional)
- Weather Resistant Barrier (Optional)