

MICHIGAN ENERGY CODE 2015

PRESCRIPTIVE COMPLIANCE WORK SHEET ZONE 6A:

SITE ADDRESS: _____ CITY / TOWNSHIP: _____
 _____ DATE: _____

INSULATED AREA	MINIMUM R-VALUE	PROPOSED R-VALUE
CEILING 1: FLAT OR SCISSOR TRUSS AREA _____ SF	R-49 WITH STANDARD TRUSS OR R-38 OVER WALL PLATE	
CEILING 2: FLAT OR SCISSOR TRUSS AREA _____ SF	R-49 WITH STANDARD TRUSS OR R-38 OVER WALL PLATE	
CEILING 3: CATHEDRAL AREA _____ SF	R-30 WITH AREA < 20% OF TOTAL CEILING AND <500 SF	

INSULATED AREA	MINIMUM R-VALUE	PROPOSED R-VALUE
WOOD FRAME WALL 1:	R-20 CAVITY OR R-13 CAVITY WITH R-5 INSULATED SHEATHING. NOTE 1	
WOOD FRAME WALL 2:	R-20 CAVITY OR R-13 CAVITY WITH R-5 INSULATED SHEATHING. NOTE 1	
WOOD FRAME WALL 3:	R-20 CAVITY OR R-13 CAVITY WITH R-5 INSULATED SHEATHING. NOTE 1	

INSULATED AREA	MINIMUM R-VALUE	PROPOSED R-VALUE
FLOOR 1: OVER UNCONDITIONED SPACE	R-30 OR TO FILL CAVITY R-19 MINIMUM	
FLOOR 2: OVER UNCONDITIONED SPACE	R-30 OR TO FILL CAVITY R-19 MINIMUM	

INSULATED AREA	MINIMUM R-VALUE	PROPOSED R-VALUE
BASEMENT WALL: TOP OF WALL TO FLOOR LINE OR 10' BELOW GRADE	R-15 CONTINUOUS OR R-19 CAVITY	

INSULATED AREA	MINIMUM R-VALUE	PROPOSED R-VALUE
SLAB EDGE:	R-10 FOR 4FT PLAIN SLAB R-15 FOR 4FT HEATED SLAB	

INSULATED AREA	MINIMUM R-VALUE	PROPOSED R-VALUE
CRAWL SPACE WALL:	R-15 CONTINUOUS R-19 CAVITY	

FENESTRATION	MAXIMUM U-FACTOR	PROPOSED U- FACTOR
DOORS AND WINDOWS	0.32	
SKYLIGHT	0.55	

NOTE 1: WHERE STRUCTURAL SHEATHING COVERS LESS THAN 25% OF WALL AREA R-5 CONTINUOUS INSULATION IS NOT REQUIRED OVER STRUCTURAL SHEATHING AREAS.

NOTE 2: PLANS ARE TO INDICATE ALL INSULATION MATERIALS AND R-VALUES. VALUES INDICATED ON COMPLIANCE DOCUMENTS ARE TO COINCIDE WITH VALUES INDICATED ON THE PLANS.

NOTE 3: GENERAL AND MANDATORY REQUIREMENTS SHALL BE MET

NOTE 4: SEE CODE TEXT FOR ADDITIONAL NOTES AND ALTERNATIVES

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PRESCRIPTIVE COMPLIANCE WORK SHEET ZONE 6A:

SITE ADDRESS: _____ CITY/TOWNSHIP: _____

_____ DATE: _____

PROPOSED BUILDING

ROOF/CEILING:

$$A1 \text{ _____} / R1 \text{ _____} = UA \text{ _____}$$

$$A2 \text{ _____} / R2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} / R3 \text{ _____} = UA \text{ _____}$$

$$TOTAL \text{ ROOF/CEIL } UA = \text{ _____}$$

SKYLIGHTS:

$$A1 \text{ _____} \times U1 = UA \text{ _____}$$

$$A2 \text{ _____} \times U1 = UA \text{ _____}$$

$$TOTAL \text{ SKYLIGHT } UA = \text{ _____}$$

FRAME WALL: (25% FRAMING, 75% CAVITY)

$$A1 \text{ _____} \times .75 / R1 \text{ _____} = UA \text{ _____}$$

$$A1 \text{ _____} \times .25 / R-5 = UA \text{ _____}$$

$$A2 \text{ _____} \times .75 / R2 \text{ _____} = UA \text{ _____}$$

$$A2 \text{ _____} \times .25 / R-5 = UA \text{ _____}$$

$$A3 \text{ _____} \times .75 / R3 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} \times .25 / R-5 = UA \text{ _____}$$

$$TOTAL \text{ FRAME WALL } UA = \text{ _____}$$

BAND JOIST:

$$A1 \text{ _____} / R1 \text{ _____} = UA \text{ _____}$$

$$A2 \text{ _____} / R2 \text{ _____} = UA \text{ _____}$$

$$TOTAL \text{ BAND JOIST } UA = \text{ _____}$$

STANDARD BUILDING

ROOF/CEILING:

$$A1 \text{ _____} \times 0.026 = UA \text{ _____}$$

$$A2 \text{ _____} \times 0.026 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.026 = UA \text{ _____}$$

$$TOTAL \text{ ROOF/CEIL } UA = \text{ _____}$$

SKYLIGHTS:

$$A1 \text{ _____} \times 0.55 = UA \text{ _____}$$

$$A2 \text{ _____} \times 0.55 = UA \text{ _____}$$

$$TOTAL \text{ SKYLIGHT } UA = \text{ _____}$$

FRAME WALL:

$$A1 \text{ _____} \times 0.057 = UA \text{ _____}$$

$$A2 \text{ _____} \times 0.057 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.057 = UA \text{ _____}$$

$$TOTAL \text{ FRAME WALL } UA = \text{ _____}$$

BAND JOIST:

$$A1 \text{ _____} \times 0.057 = UA \text{ _____}$$

$$A2 \text{ _____} \times 0.057 = UA \text{ _____}$$

$$TOTAL \text{ BAND JOIST } UA = \text{ _____}$$

$$TOTAL \text{ PAGE 1 } UA = \text{ _____}$$

$$TOTAL \text{ PAGE 1 } UA = \text{ _____}$$

NOTE: FRAME WALL CALCULATION USED 25% FRAMING AND 75% CAVITY WALLS 16" O.C.
USE 22% FRAMING AND 78% CAVITY FOR WALLS 24" O.C.

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PRESCRIPTIVE COMPLIANCE WORK SHEET ZONE 6A:

SITE ADDRESS: _____

PROPOSED BUILDING

FENESTRATION, WINDOWS:

$$A1 \text{ _____} / U1 \text{ _____} = UA \text{ _____}$$

$$A2 \text{ _____} / U2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} / U3 \text{ _____} = UA \text{ _____}$$

$$TOTAL WINDOW UA = \text{_____}$$

FENESTRATION, DOORS:

$$A1 \text{ _____} \times U1 \text{ _____} = UA \text{ _____}$$

$$A2 \text{ _____} \times U2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} \times U3 \text{ _____} = UA \text{ _____}$$

$$TOTAL DOOR UA = \text{_____}$$

FLOORS OVER UNCONDITIONED SPACES: (VENTED CRAWLS AND GARAGES)

$$A2 \text{ _____} / R2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} / R3 \text{ _____} = UA \text{ _____}$$

$$TOTAL FLOOR UA = \text{_____}$$

BASEMENT WALL: (TOP OF WALL TO FLOOR)

$$A2 \text{ _____} / R2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} / R3 \text{ _____} = UA \text{ _____}$$

$$TOTAL WALL UA = \text{_____}$$

BASEMENT WINDOW:

$$A2 \text{ _____} / R2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} / R3 \text{ _____} = UA \text{ _____}$$

$$TOTAL WINDOW UA = \text{_____}$$

$$TOTAL PAGE 2 UA = \text{_____}$$

STANDARD BUILDING

FENESTRATION, WINDOWS:

$$A1 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$A2 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$TOTAL WINDOW UA = \text{_____}$$

FENESTRATION, DOORS:

$$A1 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$A2 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$TOTAL DOOR UA = \text{_____}$$

FLOORS OVER UNCONDITIONED SPACES: (VENTED CRAWLS AND GARAGES)

$$A2 \text{ _____} \times 0.033 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.033 = UA \text{ _____}$$

$$TOTAL FLOOR UA = \text{_____}$$

BASEMENT WALL: (TOP OF WALL TO FLOOR)

$$A2 \text{ _____} \times 0.050 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.050 = UA \text{ _____}$$

$$TOTAL BAND JOIST UA = \text{_____}$$

BASEMENT WINDOW:

$$A2 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.320 = UA \text{ _____}$$

$$TOTAL WINDOW UA = \text{_____}$$

$$TOTAL PAGE 2 UA = \text{_____}$$

TOTAL UA COMPLIANCE WORK SHEET, ZONE 6A:

SITE ADDRESS: _____

CRAWL SPACE WALL: (NON-VENTED CRAWLS)

$$A2 \text{ _____} / R2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} / R3 \text{ _____} = UA \text{ _____}$$

$$TOTAL \text{ WALL } UA = \text{ _____}$$

CRAWL SPACE WALL (NON-VENTED CRAWLS)

$$A2 \text{ _____} \times 0.055 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.055 = UA \text{ _____}$$

$$TOTAL \text{ WALL } UA = \text{ _____}$$

NOTE: CRAWL SPACE WALL INSULATION SHALL EXTEND DOWNWARD FROM THE FLOOR TO THE FINISHED GRADE AND THEN VERTICALLY AND/OR HORIZONTALLY AN ADDITIONAL 24". EXPOSED EARTH SHALL BE COVERED WITH A CLASS ONE VAPOR RETARDER.

MASS WALL:

$$A2 \text{ _____} / R2 \text{ _____} = UA \text{ _____}$$

$$A3 \text{ _____} / R3 \text{ _____} = UA \text{ _____}$$

$$TOTAL \text{ WALL } UA = \text{ _____}$$

MASS WALL:

$$A2 \text{ _____} \times 0.060 = UA \text{ _____}$$

$$A3 \text{ _____} \times 0.060 = UA \text{ _____}$$

$$TOTAL \text{ BAND JOIST } UA = \text{ _____}$$

NOTE: MASS WALLS SHALL BE CONSIDERED TO BE ABOVE GRADE WALLS OF CONCRETE, CONCRETE BLOCK, ICF, AND SOLID TIMBER LOGS

$$TOTAL \text{ PAGE } 1 \text{ UA} = \text{ _____}$$

$$TOTAL \text{ PAGE } 2 \text{ UA} = \text{ _____}$$

$$TOTAL \text{ PAGE } 3 \text{ UA} = \text{ _____}$$

$$PROPOSED \text{ BUILDING } TOTAL \text{ UA} = \text{ _____}$$

$$TOTAL \text{ PAGE } 1 \text{ UA} = \text{ _____}$$

$$TOTAL \text{ PAGE } 2 \text{ UA} = \text{ _____}$$

$$TOTAL \text{ PAGE } 3 \text{ UA} = \text{ _____}$$

$$STANDARD \text{ BUILDING } TOTAL \text{ UA} = \text{ _____}$$

NOTE: IF THE PROPOSED BUILDING TOTAL THERMAL ENVELOPE UA IS LESS THAN OR EQUAL TO THE STANDARD BUILDING TOTAL UA RESULTING FROM USING THE U-FACTORS IN TABLE 402.1.3, THE BUILDING SHALL BE CONSIDERED IN COMPLIANCE WITH TABLE 402.1.1.

NOTE: SLAB-ON-GRADE FLOORS WITH A FLOOR SURFACE LESS THAN 12" BELOW GRADE SHALL BE INSULATED FROM THE TOP OF THE SLAB DOWNWARD, OUTSIDE OR INSIDE THE FOUNDATION WALL. A MINIMUM OF R-10 INSULATION SHALL EXTEND A MINIMUM OF 4' VERTICALLY AND HORIZONTALLY.

NOTE: ALL MANDATORY REQUIREMENTS OF THE 2015 MICHIGAN ENERGY CODE WILL APPLY.

ENERGY CERTIFICATE

The IRC requires the builder or registered design professional to complete an energy efficiency certificate, listing the installed insulation and fenestration values. The certificate must also list the type and efficiency of installed heating, cooling, and water heating equipment. Because electric furnaces, baseboard heaters, and unvented gas-fired heaters may not provide the lowest energy consumption when compared to other methods of comfort heating and their energy efficiency ratings may be misleading, the IRC requires such appliances to be individually listed on the certificate without an efficiency designation. The permanent certificate is affixed to the electrical service panel but cannot cover the service directory or other required information governed by the electrical code. (Figure 15-10) (ref. N1101.9)

example only

Energy Efficiency Certificate		
Insulation Rating		R-Value
Ceiling/Roof	Frames	
Walls	Mass	
	Basement	
	Crawl Space	
Floors	Over Unconditioned Space	
	Slab Edge	
Ducts	Outside Conditioned Space	
Glass and Door Rating		NFRC U-Factor
	NFRC SHGC	
Window		
Opaque Door		
Skylight		
Heating and Cooling Equipment		Efficiency
	Type	
Heating System		AFUE:
Cooling System		SEER:
Water Heater		EF:
<p>Indicate if the following have been installed (an efficiency shall not be listed):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Electric furnace <input type="checkbox"/> Gas-fired unvented room heater <input type="checkbox"/> Baseboard electric heater <p style="text-align: right;">Designer: _____</p> <p style="text-align: right;">Builder: _____</p> <p style="text-align: right;">Date: _____</p>		

FIGURE 15-10 Permanent energy certificate