



PROPOSAL FOR CODE CHANGE

State Form 41186 (R3 / 5-10)

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- INSTRUCTIONS:
1. Only a TYPED copy will be accepted.
 2. ~~Dashed-line through material to be deleted~~; underline or bold face material to be added.
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 4. Return this completed form to: Indiana Department of Homeland Security, Code Services, 402 West Washington Street, Room W246, Indianapolis, Indiana 46204.

FOR OFFICE USE ONLY		
Received	8/15/2018	Code
		2018 IRC
		Proposal number
		# 169

Code title		Edition
International Residential Code		2018
Section number and title		Page number
M1301.2 Identification		
Proponent	Representing (if applicable)	
Phil Gettum	Gettum Associates	
Address (number and street, city, state, and ZIP code)		Telephone number
		()

PROPOSED CODE CHANGE (check one)

- ☐ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☒ Delete without substitution

M1301.2 Identification

Each length of pipe and tubing and each pipe fitting utilized in a mechanical system shall bear the identification of the manufacturer.

REASON STATEMENT AND FISCAL IMPACT

For piping already labeled at x feet, there would be wasted materials when less than a full piece is used because you'd be limited to using the labeled section of another full piece.

REVIEW RECOMMENDATION

Approve
Reject
Approve as amended
Further study



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FOR OFFICE USE ONLY			
Received	8/7/2018	Code	2018 IRC
		Proposal number	# 170
Code title Indiana Residential Code			Edition 2020
Section number and title M1302 Approval			Page Number 1 of 1, Codebook page 497
Proponent Craig Wagner		Representing (if applicable) Indiana Association of Building Officials	
Address (number and street, city, state, and ZIP code) 220 W Van Buren St, Ste 204, Columbia City, IN 46725			Telephone number 260-248-3111, cell 260-212-2943
PROPOSED CODE CHANGE (check one)			
<input checked="" type="checkbox"/> X Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
M1302.1 Listed and Labeled. Appliances regulated by this code shall be listed and labeled for the application in which they are installed and used, unless otherwise approved in accordance with Section R104.11 <u>R106.1</u> .			
REASON STATEMENT AND FISCAL IMPACT			
This proposal sends the code user to Indiana Amendment R106.1 for approval of alternate materials, methods and equipment.			
Fiscal impact: This proposal is fiscally neutral.			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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Received	8/25/2018	Code	2018 IRC	Proposal number	# 171
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Code title International Residential Code		Edition 2018
Section number and title M1305.1 Appliance access for inspection service, repair and replacement		Page number
Proponent Phil Gettum	Representing (if applicable) Gettum Associates	
Address (number and street, city, state, and ZIP code)		Telephone number ()

PROPOSED CODE CHANGE (check one)

- ☐ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☐ Delete without substitution

M1305.1 Appliance access for inspection service, repair and replacement

Appliances shall be accessible for inspection, service, repair and replacement without removing permanent construction; ~~other appliances, or any other piping or ducts not connected to the appliance being inspected, serviced, repaired or replaced.~~ A level working space not less than 30 inches deep and 30 inches wide (762 mm by 762 mm) shall be provided in front of the control side to service an *appliance*.

REASON STATEMENT AND FISCAL IMPACT

This amendment allows for repairs of appliances in close proximity to one another.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study



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FOR OFFICE USE ONLY		
Received 8/15/2018	Code 2018 IRC	Proposal number # 172
Code title International Residential Code		Edition 2018
Section number and title M1305.1.3.1 Ground clearance		Page Number
Proponent Hank Kidwell	Representing (if applicable) RJ Builders	
Address (number and street, city, state, and ZIP code)		Telephone number
PROPOSED CODE CHANGE (check one)		
<input checked="" type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution		
M1305.1.3.1 Ground clearance <i>Equipment and appliances supported from the ground shall be level and firmly supported on a concrete slab or other approved material extending not less than 3 inches (76 mm) above the adjoining ground <u>not less than 1 1/2 inches above the finished grade</u>. Such support shall be in accordance with the manufacturer's installation instructions. Appliances suspended from the floor shall have a clearance of not less than 6 inches (152 mm) from the ground.</i>		
REASON STATEMENT AND FISCAL IMPACT		
Reason: Per Indiana Amendment to the 2005 Indiana Residential Code, Section M1308.		
Fiscal impact:		
REVIEW RECOMMENDATION		
Approve		
Reject		
Approve as amended		
Further study		

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FOR OFFICE USE ONLY			
Received	8/15/2018	Code	2018 IRC
		Proposal number	#173
Code title		Edition	
International Residential Code		2018	
Section number and title		Page Number	
M1305.1.3.2 Pit locations			
Proponent	Representing (if applicable)		
Hank Kidwell	RJ Builders		
Address (number and street, city, state, and ZIP code)		Telephone number	
PROPOSED CODE CHANGE (check one)			
<input type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input checked="" type="checkbox"/> Delete without substitution			
<p>M1305.1.3.2 Pit locations.</p> <p>Appliances installed in pits or excavations shall not come in direct contact with the surrounding soil and shall be installed not less than 3 inches (76 mm) above the pit floor. The sides of the pit or excavation shall be held back not less than 12 inches (305 mm) from the appliance. Where the depth exceeds 12 inches (305 mm) below adjoining grade, the walls of the pit or excavation shall be lined with concrete or masonry. Such concrete or masonry shall extend not less than 4 inches (102 mm) above adjoining grade and shall have sufficient lateral load-bearing capacity to resist collapse. Excavation on the control side of the appliance shall extend horizontally not less than 30 inches (762 mm). The appliance shall be protected from flooding in an approved manner.</p>			
REASON STATEMENT AND FISCAL IMPACT			
<p>Reason:</p> <ul style="list-style-type: none"> • Last sentence, text says "in an approved manner". This language is vague. • Why is this language necessary? What appliances are being installed under floors? Why limit the pit construction to masonry or concrete? 			
Fiscal impact:			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			

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FOR OFFICE USE ONLY

Received	8/15/2018	Code	2018 IRC	Proposal number	# 174
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Code title International Residential Code		Edition 2018
Section number and title M1307.3.1 Protection from impact		Page number
Proponent Phil Gettum	Representing (if applicable) Gettum Associates	
Address (number and street, city, state, and ZIP code)		Telephone number ()

PROPOSED CODE CHANGE (check one)

- ☐ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☒ Delete without substitution

M1307.3.1 Protection from impact

Appliances shall not be installed in a location subject to vehicle damage except where protected by approved barriers.

REASON STATEMENT AND FISCAL IMPACT

Unnecessary, and if a permanent barrier is installed it cannot be serviced.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study



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FOR OFFICE USE ONLY			
Received	8/15/2018	Code	2018 IRC
		Proposal number	# 175
Code title		Edition	
International Residential Code		2018	
Section number and title		Page Number	
M1411.3.1 Auxiliary and secondary drain systems			
Proponent	Representing (if applicable)		
Hank Kidwell	RJ Builders		
Address (number and street, city, state, and ZIP code)		Telephone number	
PROPOSED CODE CHANGE (check one)			
<input type="checkbox"/> Change to read as follows <input checked="" type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
Add an exception to the end of item 4 in Section M1411.3.1 to read as follows:			
Exception: When installed on a water-resistant floor with a floor drain in the same room or space.			
REASON STATEMENT AND FISCAL IMPACT			
Reason:			
Per Indiana Amendment to the 2005 Indiana Residential Code, Section M1411.3.1			
Fiscal impact:			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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FOR OFFICE USE ONLY			
Received	8/15/2018	Code	2018 IRC
		Proposal number	# 176
Code title		Edition	
International Residential Code		2018	
Section number and title		Page Number	
M1411.5 Auxiliary drain pan			
Proponent		Representing (if applicable)	
Hank Kidwell		RJ Builders	
Address (number and street, city, state, and ZIP code)		Telephone number	
PROPOSED CODE CHANGE (check one)			
<input checked="" type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
M1411.5 Auxiliary drain pan Category IV condensing appliances shall have an auxiliary drain pan where damage to any building component will occur as a result of stoppage in the condensate drainage system when installed over a finished ceiling. These pans shall be installed in accordance with the applicable provisions of Section M1411.3.			
Exception: Fuel-fired <i>appliances</i> that automatically shut down operation in the event of a stoppage in the condensate drainage system.			
REASON STATEMENT AND FISCAL IMPACT			
Reason:			
Per Indiana Amendment to the 2005 Indiana Residential Code, Section M1411.4.			
Fiscal impact:			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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FOR OFFICE USE ONLY			
Received	8/15/2018	Code	2018 IRC
		Proposal number	# 177
Code title		Edition	
International Residential Code		2018	
Section number and title		Page Number	
M1502.4.2 Duct installation			
Proponent		Representing (if applicable)	
Bill Kaufholz		Fischer Homes	
Address (number and street, city, state, and ZIP code)		Telephone number	
PROPOSED CODE CHANGE (check one)			
<input type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input checked="" type="checkbox"/> Delete without substitution			
M1502.4.2 Duct installation Exhaust ducts shall be supported at intervals not to exceed 12 feet (3658 mm) and shall be secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Exhaust duct joints shall be sealed in accordance with Section M1601.4.1 and shall be mechanically fastened. Ducts shall not be joined with screws or similar fasteners that protrude more than $\frac{1}{8}$ inch (3.2 mm) into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.			
REASON STATEMENT AND FISCAL IMPACT			
Reason: Builders commonly use a dryer vent box which requires an oblong connection.			
Fiscal impact:			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
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FOR OFFICE USE ONLY			
Received	8/7/2018	Code	2018 IRC
		Proposal number	# 178
Code title		Edition	
Indiana Residential Code		2020	
Section number and title		Page Number	
M1502.4.2 Duct installation		1 of 1, codebook page 509	
Proponent		Representing (if applicable)	
Craig Wagner		IABO	
Address (number and street, city, state, and ZIP code)		Telephone number	
220 W Van Buren St, Ste 204, Columbia City, IN 46725		260-248-3111, cell 260-212-2943	
PROPOSED CODE CHANGE (check one)			
<input checked="" type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
Change M1502.4.2 Duct Installation as follows:			
M1502.4.2 Duct installation. Exhaust ducts shall be supported at intervals not to exceed 12 feet (3658 mm) and shall be secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Exhaust duct joints shall be sealed in accordance with Section M1601.4.1 and shall be mechanically fastened <u>mechanically or by other approved methods</u> . Ducts shall not be joined with screws or similar fasteners that protrude more than 1/8 inch (3.2 mm) into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.			
REASON STATEMENT AND FISCAL IMPACT			
This proposal allows other methods other than just screws to fasten clothes dryer ducts together.			
Fiscal impact: no fiscal impact.			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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FOR OFFICE USE ONLY			
Received	8/7/2018	Code	2018 IRC
		Proposal number	# 179
Code title		Edition	
Indiana Residential Code		2020	
Section number and title		Page Number	
M1601.1.2 Underground duct systems		1 of 1, Codebook page 513	
Proponent		Representing (if applicable)	
Craig Wagner		Indiana Association of Building Officials	
Address (number and street, city, state, and ZIP code)		Telephone number	
220 W Van Buren St, Ste 204, Columbia City, IN 46725		260-248-3111, cell 260-212-2943	
PROPOSED CODE CHANGE (check one)			
<input checked="" type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
<p>M1601.1.2 Underground duct systems.</p> <p>Underground <i>duct systems</i> shall be constructed of <i>approved</i> concrete, clay, metal or plastic. The maximum design temperature for systems utilizing plastic duct and fittings shall be 150°F (66°C). Metal ducts shall be protected from corrosion in an <i>approved</i> manner or shall be completely encased in concrete not less than 2 inches (51 mm) thick. Nonmetallic ducts shall be installed in accordance with the manufacturer's instructions. Plastic pipe and fitting materials shall conform to cell classification 12454-B of ASTM D1248 or ASTM D1784 and external loading properties of ASTM D2412. Ducts shall slope to a drainage point that has access. Ducts shall be sealed according to the manufacturer's installation instructions or Section M1601.4 secured and tested prior to encasing the ducts in concrete or direct burial. Duct tightness shall be verified as required by Section N1103.3. Metallic ducts having an <i>approved</i> protective coating and nonmetallic ducts shall be installed in accordance with the manufacturer's instructions.</p>			
REASON STATEMENT AND FISCAL IMPACT			
<p>This proposal removes requirements for testing of underground duct systems. Duct joints are inspected for correct sealing by inspectors before burial and a requirement for testing would be extremely difficult and offer little in the way of enhanced energy conservation.</p> <p>Fiscal impact: This proposal will reduce the cost of construction in comparison to the 2018 IRC since testing of the underground duct system will not be required. Assuming one third of the houses are slab or partial slab type foundations then $14.068 \div 3 = 4689$, $4689 \times 150.00 = \\$703,350.00$ credit from the 2018 IRC.</p>			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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Received	8/7/2018	Code	2018 IRC
		Proposal number	# 180
Code title		Edition	
Indiana Residential Code		2020	
Section number and title		Page Number	
M1601.4.5 Fireblocking		1 of 1, Codebook page 515	
Proponent		Representing (if applicable)	
Craig Wagner		Indiana Association of Building Officials	
Address (number and street, city, state, and ZIP code)		Telephone number	
220 W Van Buren St, Ste 204, Columbia City, IN 46725		260-248-3111, cell 260-212-2943	
PROPOSED CODE CHANGE (check one)			
<input checked="" type="checkbox"/> X Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
M1601.4.5 Fireblocking. Duct installations shall be fireblocked in accordance with Section R602.8 <u>R302.11</u> .			
REASON STATEMENT AND FISCAL IMPACT			
This proposal sends the code user to the correct section for fireblocking.			
Fiscal impact: This proposal is fiscally neutral.			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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Received	8/7/2018	Code	2018 IRC
		Proposal number	# 181
Code title		Edition	
Indiana Residential Code		2020	
Section number and title		Page Number	
M1602.2 Return air		1 of 1, Codebook page 516	
Proponent		Representing (if applicable)	
Craig Wagner		Indiana Association of Building Officials	
Address (number and street, city, state, and ZIP code)		Telephone number	
220 W Van Buren St, Ste 204, Columbia City, IN 46725		260-248-3111, cell 260-212-2943	
PROPOSED CODE CHANGE (check one)			
<input type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input checked="" type="checkbox"/> Delete without substitution			
Delete Item #6 to Section M1602 and renumber Item #7 as Item #6 as follows:			
M1602.2 Return air openings.			
6. Taking return air from an unconditioned crawl space shall not be accomplished through a direct connection to the return side of a forced air furnace. Transfer openings in the crawl space enclosure shall not be prohibited.			
7. <u>6.</u> Return air from one dwelling unit shall not be discharged into another dwelling unit.			
REASON STATEMENT AND FISCAL IMPACT			
Builders have long been concerned with the potential odors from crawl spaces; allowing return air to be drawn from the unconditioned crawl space provides a direct path for potential odors into the living space of the dwelling.			
Fiscal impact: This proposal is fiscally neutral.			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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FOR OFFICE USE ONLY		
Received 8/7/2018	Code 2018 IRC	Proposal number # 182
Code title Indiana Residential Code		Edition 2020
Section number and title M1801.9 Fireblocking		Page Number 1 of 1, codebook page 519
Proponent Craig Wagner	Representing (if applicable) IABO	
Address (number and street, city, state, and ZIP code) 220 W Van Buren Street, Ste 204, Columbia City, IN 46725		Telephone number 260-248-3111, Cell 260-212-2943
PROPOSED CODE CHANGE (check one)		
<input checked="" type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution		
Change M1801.9 as follows: <u>M1801.9 Fireblocking.</u> Vent and chimney installations shall be fireblocked in accordance with Section R602.8 R302.11 and R1003.19 .		
REASON STATEMENT AND FISCAL IMPACT		
This proposal sends the code user to the correct sections for fireblocking.		
Fiscal impact: no fiscal impact		
REVIEW RECOMMENDATION		
Approve		
Reject		
Approve as amended		
Further study		



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FOR OFFICE USE ONLY			
Received 8/7/2018	Code 2018 IRC	Proposal number #183	
Code title Indiana Residential Code		Edition 2020	
Section number and title R202 Definitions		Page Number 1 of 1, codebook page 24	
Proponent Craig Wagner		Representing (if applicable) IABO	
Address (number and street, city, state, and ZIP code) 220 W Van Buren St, Ste 204, Columbia City, IN 46725		Telephone number 260-248-3111, cell 260-212-2943	
PROPOSED CODE CHANGE (check one)			
<input type="checkbox"/> Change to read as follows <input checked="" type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
<p>Add the definition for "Sill plate" after the definition for "Shingle fashion" and before the definition for "Single-ply membrane" as follows:</p> <p><u>SILL PLATE</u> The rough structural member in frame construction, attached to the foundation, which receives and transfers loads to the foundation.</p>			
REASON STATEMENT AND FISCAL IMPACT			
<p>This proposal defines sill plates and their function in frame construction.</p> <p>Fiscal impact: definition only, no fiscal impact</p>			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			



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Code title Indiana Residential Code		Edition 2020	
Section number and title R202 Definitions		Page Number 1 of 1, codebook page 24	
Proponent Craig Wagner	Representing (if applicable) IABO		
Address (number and street, city, state, and ZIP code) 220 W Van Buren St, Ste 204, Columbia City, IN 46725		Telephone number 260-248-3111, cell 260-212-2943	
PROPOSED CODE CHANGE (check one)			
<input type="checkbox"/> Change to read as follows <input checked="" type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
Add the definition for "Sole plate" after the definition for "Solar thermal system" and before the definition for "Solid masonry" as follows: <u>SOLE PLATE</u> The bottom horizontal member of a framed wall or partition that receives and transfers loads to the floor assembly, wall, or foundation below.			
REASON STATEMENT AND FISCAL IMPACT			
This proposal defines sole plates and their function in frame construction.			
Fiscal impact: definition only, no fiscal impact			
REVIEW RECOMMENDATION			
Approve			
Reject			
Approve as amended			
Further study			

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PROPOSAL FOR CODE CHANGE

State Form 41186 (R3 / 5-10)



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FOR OFFICE USE ONLY		
Received	7/25/2018	Code 2018 IRC
		Proposal number # 185

Code title Indiana Residential Code		Edition 2017
Section number and title Table R402.2		Page number 90
Proponent Christopher R. Tull	Representing (if applicable) Indiana Ready Mix Concrete Association	
Address (number and street, city, state, and ZIP code) 12045 N. Michigan Road, Zionsville, IN 46077		Telephone number (317) 270-4428

PROPOSED CODE CHANGE (check one)

- ☒ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☐ Delete without substitution
- See attached.

REASON STATEMENT AND FISCAL IMPACT

Newly created deicing agents chemically react with the cement paste in the concrete. The concrete mixture must be changed in order to create long term and durable concrete. The Indiana Department of Transportation as well as the future American Concrete Institute 332 has made similar mixture changes.

Troweling air entrained concrete can lead to blisters on the surface of the concrete and is not recommended by ACI.

Required cost impact is \$0 as concrete driveways are not required by code.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study

TABLE R402.2
MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE

TYPE OR LOCATION OF CONCRETE CONSTRUCTION	MINIMUM COMPRESSIVE STRENGTH (f' _c)		
	Weathering Potential ^b		
	Negligible	Moderate	Severe
Basement wall, foundation and other concrete not exposed to weather	2,500	2,500	2,500 ^c
Basement slabs and interior slab on grade, except garage floor slabs	2,500	2,500	2,500 ^c
Basement wall, foundation walls, exterior walls and other vertical concrete work exposed to weather	2,500	3,000 ^d	3,000 ^d
Porches, carport slabs and steps exposed to weather, and garage floor slabs	2,500	3,000 ^{d,e,f}	3,500 ^{d,e,f}
<u>Exterior driveways exposed to weather and deicing agents</u>	<u>NA</u>	<u>4,000^{d,g}</u>	<u>4,500^{d,g}</u>

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For SI: 1 pound per square inch = 6.895 Kpa.

- Strength at 28 days psi.
- See Table R301.2(1) for weathering potential.
- Concrete in these locations that is subject to freezing and thawing during construction shall be air entrained concrete in accordance with Footnote d.
- Concrete shall be air entrained. The total air content (percent by volume of concrete) shall be not less than 5 percent or more than 7 percent.
- See Section R402.2 for maximum cementitious material content.
- For garage floor with steel-troweled finish, reduction of the total air content (percent by volume of concrete) to not ~~less~~ more than 3 percent is permitted if the specified compressive strength of the concrete is increased to not less than 4,000 psi.
- Maximum water cementitious ratio not to exceed 0.45.

INDOT Class A Concrete

SECTION 702 – STRUCTURAL CONCRETE

702.01 Description

This work shall consist of furnishing and placing portland cement concrete for structures and incidental construction in accordance with 105.03.

702.02 Classes of Concrete

The following classes of concrete shall be used where specified.

0	Class of Concrete	A	B	C
	Cement content in lbs/cu yd	564	470	658
	Maximum water/cement ratio in			
	lbs of water per lbs of cement	0.450	0.620	0.443

ACI also recommends a 0.45 max w/c ratio for these environments.



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FOR OFFICE USE ONLY			
Received	8/7/2018	Code	2018 IRC
		Proposal number	#186
Code title: Indiana Residential Code			Edition 2020
Section number and title R403.1.6 Foundation anchorage			Page Number 1 of 2, Codebook pages 99 & 100
Proponent Craig Wagner		Representing (if applicable) Indiana Association of Building Officials	
Address (number and street, city, state, and ZIP code) 220 W Van Buren St, Ste 204, Columbia City, IN 46725			Telephone number 260-248-3111, cell 260-212-2943
PROPOSED CODE CHANGE (check one)			
<input type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input checked="" type="checkbox"/> X Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
Delete Section R403.1.6 and substitute as follows:			
<p><u>R403.1.6 Foundation anchorage.</u> Wood sole plates and sill plates supported directly on concrete slab, and concrete and masonry wall, foundations shall be anchored to the foundation in accordance with this section. Sill plates and sole plates shall be protected against decay and termites where required by Sections R317 and R318.</p> <p><u>Cold-formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates anchored to the foundation in accordance with Section R505.3.1 or R603.3.1, as applicable. Wood sill plates supporting cold-formed steel framing shall be anchored to the foundation in accordance with this section.</u></p> <p><u>R403.1.6.1 Anchor bolts.</u> Anchor bolts shall be located in the center one-third of the plate, shall have at least 7 inches (178 mm) embedment into concrete or grouted masonry cells, and shall have at least 1½ inches (38.7 mm) of concrete or grout surrounding the bolt shaft. Each anchor bolt shall have a washer, sized to be at least two times the diameter of the hole it covers, and a nut tightened to the plate. Except as allowed otherwise in this section anchor bolts shall be no farther than 12 inches (305 mm) from corners.</p> <p><u>Exception:</u> Approved anchors or anchor straps spaced as required to provide equivalent anchorage to 1/2-inch-diameter (12.7 mm) anchor bolts.</p> <p><u>R403.1.6.2 Sole plate anchor bolt location.</u> Anchor bolts spaced a maximum of 6 feet (1829 mm) on center shall fasten wood sole plates of exterior wall premanufactured panelized wall sections, site built wall panel sections, and braced wall panels at building interiors, when installed directly on concrete slab foundations. There shall be no fewer than two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section.</p>			

Exceptions:

1. Sole plates 24 inches (610 mm) total length or shorter supporting offset braced wall panels shall be anchored to the foundation with no fewer than one anchor bolt located in the center third of the plate section and shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1).

2. Connection of walls 12 inches (305 mm) total length or shorter connecting offset braced wall panels to the foundation without anchor bolts shall be permitted. The wall shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1).

3. Sole plates of interior bearing wall panel sections on concrete slab foundation that are not part of a *braced wall panel* shall be positively anchored with *approved* fasteners.

R403.1.6.3 Sill plate anchor bolt location. Anchor bolts shall fasten sill plates to concrete floors a maximum of 6 feet (1,829 mm) on center. Anchor bolts shall fasten sill plates to the top of concrete or masonry walls a maximum of 4 feet (1,219 mm) on center.

Exception: Sill plate anchor bolts shall be spaced a maximum of 6 feet (1,829 mm) on center when installed on foundation walls retaining less than 7 feet (2,135 mm) of unbalanced fill.

Renumber Section R403.1.6.1 Foundation anchorage in Seismic Design Categories C, D₀, D₁ and D₂ to: Section R403.1.6.4 Foundation anchorage in Seismic Design Categories C, D₀, D₁ and D₂.

REASON STATEMENT AND FISCAL IMPACT

This proposal reorganizes and brings forward text from the current rule with the addition of language for panelized wall sole plates and sill plates.

Fiscal impact: This proposal reduces construction costs by reducing the number of anchor bolts on slab-type foundations that are not supporting panelized construction. However since there are additional bolts required on basement foundation walls supporting more than 7' of unbalanced fill the fiscal impact is neutral.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study



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Received	8/15/2018	Code	2018 IRC
		Proposal number	#187
Code title		Edition	
International Residential Code		2018	
Section number and title		Page Number	
R602.10 Wall bracing			
Proponent		Representing (if applicable)	
Matthew Brown		Indiana Builders Association	
Address (number and street, city, state, and ZIP code)		Telephone number	
101 W Ohio Street, Indianapolis, IN. 46204		800-377-6334	
PROPOSED CODE CHANGE (check one)			
<input checked="" type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution			
<p>R602.10 Wall bracing. Buildings shall be braced in accordance with this section or, when applicable, Section R602.12. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1.</p> <p><u>Exception: APA Simplified Wall Bracing Method, SR-102 may be used as an alternate method of wall bracing subject to limitations in document.</u></p>			
REASON STATEMENT AND FISCAL IMPACT			
<p>Reason: The base code requirements assume WSP at 3/8 Category in our area all builders use 7/16 Category Wood Structural panels. The APA simplified method simplify' s code compliance by utilizing the extra capacity of 7/16 Category panels and reduces the amount of adjustment factors, thus reducing the time to calculate a wall bracing plan and simplifying review of wall bracing plans.</p> <p>Fiscal impact: No fiscal impact.</p>			
REVIEW RECOMMENDATION			
Approve			
Reject			
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FOR OFFICE USE ONLY		
Received	8/15/2018	Code
		2018 IRC
		Proposal number
		#188

Code title	Indiana Residential Code	Edition	2020
Section number and title	R905.1.2 Ice barriers	Page number	1 of 1
Proponent	John Cochran, Bose Public Affairs Group	Representing (if applicable)	Amos Exteriors, Inc.
Address (number and street, city, state, and ZIP code)	111 Monument Circle, Suite 2700, Indianapolis, IN 46204		Telephone number
			(317) 684-5408

PROPOSED CODE CHANGE (check one)

- ☒ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☐ Delete without substitution

R905.1.2 Ice barriers.

~~In areas where there has been a history of ice forming along the eaves causing a backup of water as designated in Table R301.2(1), an~~
An ice barrier shall be installed for asphalt shingles, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, and wood shakes. The barrier shall consist of not fewer than two layers of underlayment cemented together, or a self-adhering polymer-modified bitumen sheet shall be used in place of normal underlayment and extend from the lowest edges of all roof surfaces to a point not less than 24 inches (610 mm) inside the exterior wall line of the building, measured horizontally. On roofs with slope equal to or greater than eight units vertical in 12 units horizontal (67-percent slope), the ice barrier shall also be applied not less than 36 inches (914 mm) measured along the roof slope from eave edge of the building.

Exception: Detached accessory structures not contained conditioning floor area.

REASON STATEMENT AND FISCAL IMPACT

The proposal also clarifies that the 24" dimension is measured horizontally and not along the plane of the roof. This is not widely understood in the roofing trades. If the distance of ice barrier coverage were to be measured by the slope, the extent to which a roof is protected over the inside of the home would depend significantly on the length of the overhang as well as the slope of the roof.

The fiscal impact would be minimal, if any, depending on the home.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study



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FOR OFFICE USE ONLY		
Received	8 / 14 / 2018	Code 2018 IRC
		Proposal number # 189

Code title International Residential Code		Edition 2018
Section number and title Tables N1102.1.2 and N1102.1.4		Page number
Proponent Eric Lacey and Ian Blanding	Representing (if applicable) RECA/MEEA	
Address (number and street, city, state, and ZIP code) 1650 M Street, NW, Suite 610, Washington, DC 20036		Telephone number (202) 339-6366

PROPOSED CODE CHANGE (check one)

- ☒ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☐ Delete without substitution

Revise Tables N1102.1.2 and N1102.1.4 to incorporate 2018 IRC fenestration U-factors. See RECA-MEEA Attachment 1 for underline/strikethrough changes and additional information.

REASON STATEMENT AND FISCAL IMPACT

See RECA-MEEA Attachment 1 for Reason Statement and Fiscal Impact.

REVIEW RECOMMENDATION

Approve
Reject
Approve as amended
Further study

RECA-MEEA Attachment 1

Proposed Code Change

Revise Table N1102.1.2 as follows:

TABLE N1102.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

CLIMATE ZONE	FENESTRATION U-FACTOR
4A	0.35 <u>0.32</u>
5A	0.35 <u>0.30</u>

Revise Table N1102.1.4 as follows:

TABLE N1102.1.4
EQUIVALENT U-FACTORS

CLIMATE ZONE	FENESTRATION U-FACTOR
4A	0.35 <u>0.32</u>
5A	0.35 <u>0.30</u>

Reason Statement and Fiscal Impact:

This proposal adopts the moderate improvement to fenestration U-factors proposed by the National Association of Homebuilders and adopted into the 2018 IRC. Lower fenestration U-factors will improve comfort and reduce energy costs for homeowners, and the construction cost impact will be very small or nothing, given the widespread use of low U-factor windows in Indiana. (Note that the underlined U-factors in the proposal above are the 2018 IRC values, and the struck-through U-factors are the 2009 IRC values, which were re-adopted at the July 18 meeting through Proposal No. 151.)

Recent analyses show that Indiana homebuilders are already routinely exceeding the fenestration requirements of the 2018 IRC. The Midwest Energy Efficiency Alliance recently worked with RESNET to collect data on roughly half of all single-family homes built in Indiana from 2014-2016 (20,446 homes).¹ The data show that even though Indiana currently only requires 0.35 U-factor windows, **84% of the windows being installed in these homes meet a 0.32 U-factor and that almost half of the windows installed meet a 0.30 U-factor.** Figure 3 shows a summary of the results.²

¹ The complete presentation can be found at http://www.mwalliance.org/sites/default/files/meea-research/indiana-hers-study_0.pdf?current=/taxonomy/term/11.

² These findings are consistent with U.S. DOE's observations in its 2015 Energy Code Field Studies, which covered a broad range of homes in multiple climate zones. See U.S. Department of Energy, *Single Family Residential Energy Code Field Study* at 46 (Dec. 7, 2015), available at https://www.energycodes.gov/sites/default/files/documents/Field_Study_120715_Final.pdf.

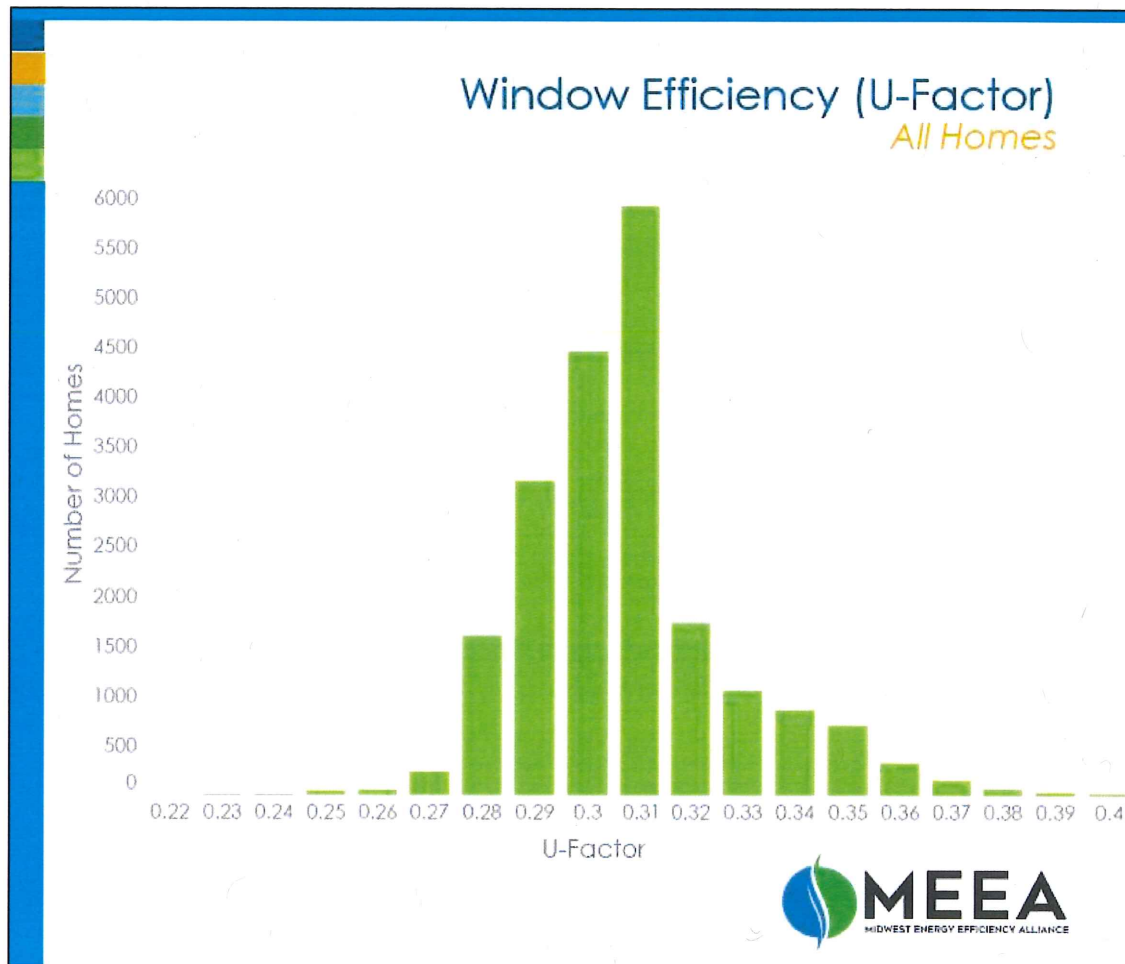


Figure 3: Fenestration U-factors from HERS-rated homes, 2014-2016

The U-factor improvements incorporated into the 2018 IRC were supported by a wide range of organizations, including the National Association of Homebuilders, the Energy Efficient Codes Coalition, and the U.S. Department of Energy. Of course, if a builder selects fenestration products with higher U-factors, the IRC has a variety of trade-off options that provide additional flexibility (e.g. Total UA Analysis, Simulated Performance Alternative, and Energy Rating Index).

The U.S. Department of Energy found the fenestration U-factor improvements to be cost-effective to the consumer. Assuming a “conservatively high” incremental cost of \$0.18/sq. ft. for the upgrade, DOE found life cycle cost savings from the 2018 fenestration U-factors to be \$134.43 in climate zone 4 and \$128.89 in climate zone 5.³ In our experience, windows meeting these U-factors are widely available from a broad range of manufacturers and suppliers. Given that most builders are already meeting or exceeding this requirement, the overall cost to Indiana will be very low, and the long-term benefits in comfort, energy cost savings, and reduced statewide need for power generation will be huge.

³ See U.S. Department of Energy, *Cost-Effectiveness of Improved Fenestration U-factors*, at 3 (Sep. 2015, Rev. Dec. 18, 2015), available at https://www.energycodes.gov/sites/default/files/documents/iecc2018_R-2_analysis_final.pdf.

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Received	8/14/2018	Code 2018 IRC
		Proposal number #190

Code title International Residential Code		Edition 2018
Section number and title Tables N1102.1.2 and N1102.1.4		Page number
Proponent Eric Lacey and Ian Blanding	Representing (if applicable) RECA/MEEA	
Address (number and street, city, state, and ZIP code) 1650 M Street, NW, Suite 610, Washington, DC 20036		Telephone number (202) 339-6366

PROPOSED CODE CHANGE (check one)

- ☒ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☐ Delete without substitution

Revise Tables N1102.1.2 and N1102.1.4 to incorporate 2018 IRC ceiling insulation requirements in climate zone 5. See RECA-MEEA Attachment 2 for underline/strikethrough changes and additional information.

REASON STATEMENT AND FISCAL IMPACT

See RECA-MEEA Attachment 2 for Reason Statement and Fiscal Impact.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study

RECA/MEEA Attachment 2

Proposed Code Change

Revise Table N1102.1.2 as follows:

TABLE N1102.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

CLIMATE ZONE	CEILING R-VALUE
5A	38 <u>49</u>

Revise Table N1102.1.4 as follows:

TABLE N1102.1.4
EQUIVALENT U-FACTORS

CLIMATE ZONE	CEILING U-FACTOR
5A	0.030 <u>0.026</u>

Reason Statement and Fiscal Impact

This proposal makes homes more comfortable in summer and winter and makes home ownership more affordable over the long-term by improving ceiling insulation in climate zone 5 from R-38 to R-49. (Note that the underlined R-values in the proposal above are the 2018 IRC values, and the struck-through R-values are the 2009 IRC values, which were re-adopted at the July 18 meeting through Proposal No. 151.)

These insulation levels are well within the range of what the U.S. Department of Energy found to be cost-effective for Indiana's climate zones.¹ We conducted an additional simple analysis of the ceiling insulation requirements in climate zone 5 using the DOE Residential Code Change Methodology for a single-family home and confirmed that the 2018 IRC insulation requirements are indeed cost-effective to the consumer. Using actual costs from retailers in Indianapolis, we found that homeowners completely recoup the first costs of these improvements within a reasonable period. More importantly, over a 30-year period, homeowners stand to save \$731.² See Figure 2 below for a summary of the results of the analysis.

Zone	Marginal Upgrade Cost	Measure Life	Annual Energy Savings	Simple Payback (Years)	Present Value Costs	Present Value Benefits	30 Year Homeowner Savings
CZ 5 Indianapolis	\$182	30	\$21	8.7	\$413	\$1,143	\$731

¹ See U.S. Department of Energy, *Insulation*, available at <https://www.energy.gov/energysaver/insulation>.

² Assumptions for this analysis, which was performed using U.S. DOE EnergyPlus software, include Current EIA energy prices for Indiana: 0.1205 \$/kWh and \$15.98 MCF/gas.

We note that these assumptions are very conservative, and we expect the energy and cost savings to be significantly higher than this simple analysis shows. Retail costs for building materials typically come down as code requirements are implemented in a state or as builders buy in bulk. And although a 30-year useful life was specified for this analysis, ceiling insulation typically lasts for 70-100 years, which means homeowners will continue to reap the savings of these improvements for decades.

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Received	Code	Proposal number
8/14/2018	2018 IRC	#191

Code title International Residential Code		Edition 2018
Section number and title Tables N1102.1.2 and N1102.1.4		Page number
Proponent Eric Lacey and Ian Blanding	Representing (if applicable) RECA/MEEA	
Address (number and street, city, state, and ZIP code) 1650 M Street, NW, Suite 610, Washington, DC 20036		Telephone number (202) 339-6366

PROPOSED CODE CHANGE (check one)

- ☒ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☐ Delete without substitution

Revise Tables N1102.1.2 and N1102.1.4 to incorporate 2018 IRC wall and ceiling insulation requirements in climate zone 4. See RECA-MEEA Attachment 3 for underline/strikethrough changes and additional information.

REASON STATEMENT AND FISCAL IMPACT

See RECA-MEEA Attachment 3 for Reason Statement and Fiscal Impact.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study

RECA-MEEA Attachment 3

Proposed Code Change

Revise Table N1102.1.2 as follows:

**TABLE N1102.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT**

CLIMATE ZONE	CEILING R-VALUE	WOOD FRAME WALL R-VALUE
4A	38 <u>49</u>	13 <u>20 or 13+5</u>

Revise Table N1102.1.4 as follows:

**TABLE N1102.1.4
EQUIVALENT U-FACTORS**

CLIMATE ZONE	CEILING U-FACTOR	FRAME WALL U-FACTOR
4 except Marine	0.030 <u>0.026</u>	0.082 <u>0.060</u>

Reason Statement and Fiscal Impact

The most cost-effective time to properly insulate a home is when it is built. A small investment today in insulation will pay solid dividends over the entire useful life of a residential building. The 2018 IRC makes homes more affordable and more comfortable by improving insulation levels in walls and ceilings in climate zone 4. These insulation upgrades are a critical first step toward building modern, affordable homes that will provide benefits to homeowners over the home's useful life. (Note that the underlined R-values in the proposal above are the 2018 IRC values, and the struck-through R-values are the 2009 IRC values currently in effect in Indiana.)

We conducted a simple analysis of the wall and ceiling insulation requirements in climate zone 4, using the DOE Residential Code Change Methodology for a single-family home, and confirmed that the 2018 IRC insulation requirements are indeed cost-effective to the consumer. Using actual costs from retailers in climate zone 4, we found that homeowners completely recoup the first costs of these improvements within a reasonable period. More importantly, over a 30-year period, homeowners stand to save \$4,464.¹ See Figure 2 below for a summary of the results of the analysis.

¹ Assumptions for this analysis, which was performed using U.S. DOE EnergyPlus software, include Current EIA energy prices for Indiana: 0.1205 \$/kWh and \$15.98 MCF/gas.

Zone	Marginal Upgrade Cost	Measure Life	Simple Payback Analysis		Life Cycle Analysis		
			Annual Energy Savings	Simple Payback (Years)	Present Value Costs	Present Value Benefits	30 Year Homeowner Savings
CZ 4 Evansville	\$936	30	\$121	7.7	\$2,119	\$6,583	\$4,464

Figure 2: Analysis of energy and cost savings for wall and ceiling insulation improvements in 2015 IRC

We note that these assumptions are very conservative, and we expect the energy and cost savings to be significantly higher than this simple analysis shows. Retail costs for building materials typically come down as code requirements are implemented in a state or as builders buy in bulk. And although a 30-year useful life was specified for this analysis, wall and ceiling insulation typically lasts for 70-100 years, which means homeowners will continue to reap the savings of these improvements for decades.

We also note that the wall insulation values in the 2015 IRC maintain the flexibility for builders to use a variety of framing techniques (2X4 or 2X6), as well as cavity-only or hybrid insulation systems. This will provide builders with multiple options to achieve maximum value for homeowners and to select the insulation option most appropriate for the home design. Given that insulation is usually a one-time decision made at construction, we urge the Committee to meet or exceed the cost-effective insulation levels set in the 2015 IRC.

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Received	8/14/2018	Code
		2018 IRC
		Proposal number
		#192

Code title		Edition
International Residential Code		2018
Section number and title		Page number
Table N1102.1.2 footnote "f"		
Proponent	Representing (if applicable)	
Eric Lacey and Ian Blanding	RECA/MEEA	
Address (number and street, city, state, and ZIP code)		Telephone number
1650 M Street, NW, Suite 610, Washington, DC 20036		(202) 339-6366

PROPOSED CODE CHANGE (check one)

- ☒ Change to read as follows ☐ Add to read as follows ☐ Delete and substitute as follows ☐ Delete without substitution

Revise Table N1102.1.2 footnote "f" to delete language that conflicts with Section N1102.2.7. See RECA-MEEA Attachment 4 for underline/strikethrough changes and additional information.

REASON STATEMENT AND FISCAL IMPACT

See RECA-MEEA Attachment 4 for Reason Statement and Fiscal Impact.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study

RECA-MEEA Attachment 4

Proposed Code Change

Revise footnote "f" from Table N1102.1.2 (as adopted in Proposal 151) as follows:

f. "13+5" means R-13 cavity insulation with an additional R-5 insulated sheathing applied to the exterior of the wall. ~~If structural sheathing covers 25% or less of the exterior, R-5 sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of the exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.~~

Reason Statement and Fiscal Impact

This proposal is an editorial change that will ensure consistency between Table N1102.1.2 (which was revised by the Committee at the July 18 meeting) and Section N1102.2.8. We would prefer that all the footnotes of the 2018 IRC prescriptive tables be adopted, but if the 2009 IRC footnotes are carried forward through Proposal 151, this footnote should be modified to remove conflicting language.

Footnote "f" in proposal 151, which was footnote "h" in the 2009 IRC, was the source of a great deal of confusion among builders and code officials. In the 2015 IRC, that footnote was modified and moved to Section N1102.2.7, where it remains in the 2018 IRC.

We believe the 2018 IRC Section N1102.2.7 language is less confusing and easier to enforce. It moves a substantive set of requirements out of the footnotes and places them into a regular code section, where they belong. While our original proposal would have adopted all the footnotes of the 2018 IRC prescriptive tables (including deleting the language above), we believe the above change is a critical editorial change that should be made.

For reference, we have included the language of Section N1102.2.7 below. Our understanding is that this section will be adopted without modification if no party submits a proposal to alter it.

N1102.2.7 Walls with partial structural sheathing. Where Section N1102.1.2 requires continuous insulation on *exterior walls* and structural sheathing covers 40 percent or less of the gross area of all *exterior walls*, the required continuous insulation R-value shall be permitted to be reduced by an amount necessary, but not more than R-3, to result in a consistent total sheathing thickness on areas of the walls covered by structural sheathing. This reduction shall not apply to the *U*-factor alternative in Section N1102.1.4 and the Total UA alternative in Section N1102.1.5.

There should be no fiscal impact, positive or negative, as a result of this proposal, since it removes a conflict with the 2018 IRC language.



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Received 8/14/2018			Code 2018 IRC				Proposal number #193																													
Code title Indiana Residential Code							Edition 2020																													
Section number and title Table N1102.1.4 Equivalent U-factors^a							Page Number 1 of 1, codebook page 480																													
Proponent Craig Wagner					Representing (if applicable) IABO																															
Address (number and street, city, state, and ZIP code) 220 W Van Buren St, Ste 204, Columbia City, IN 46725							Telephone number 260-248-3111, cell 260-212-2943																													
PROPOSED CODE CHANGE (check one)																																				
<p> <input type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input checked="" type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution </p> <p>Delete Table N1102.1.4 and substitute as follows:</p> <p style="text-align: center;"> TABLE N1102.1.2 EQUIVALENT U-FACTORS ^a </p> <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>CLI-MATE ZONE</th> <th>FENES-TRATION U-FACTOR</th> <th>SKY-LIGHT U-FACTOR</th> <th>CEILING U-FACTOR</th> <th>FRAME WALL U-FACTOR</th> <th>MASS WALL U-FACTOR</th> <th>FLOOR U-FACTOR</th> <th>BASEMENT WALL U-FACTOR</th> <th>CRAWL SPACE WALL U-FACTOR</th> </tr> </thead> <tbody> <tr> <td><u>4</u></td> <td><u>0.35</u></td> <td><u>0.60</u></td> <td><u>0.030</u></td> <td><u>0.082</u></td> <td><u>0.141</u></td> <td><u>0.047</u></td> <td><u>0.059</u></td> <td><u>0.065</u></td> </tr> <tr> <td><u>5</u></td> <td><u>0.35</u></td> <td><u>0.60</u></td> <td><u>0.030</u></td> <td><u>0.067</u></td> <td><u>0.082</u></td> <td><u>0.033</u></td> <td><u>0.059</u></td> <td><u>0.065</u></td> </tr> </tbody> </table> <p> a. Non-fenestration U-factors shall be obtained from measurement, calculation or an approved source. b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.10 in zone 4 and the same as the frame wall U-factor (0.057) in zone 5. </p>										CLI-MATE ZONE	FENES-TRATION U-FACTOR	SKY-LIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR	<u>4</u>	<u>0.35</u>	<u>0.60</u>	<u>0.030</u>	<u>0.082</u>	<u>0.141</u>	<u>0.047</u>	<u>0.059</u>	<u>0.065</u>	<u>5</u>	<u>0.35</u>	<u>0.60</u>	<u>0.030</u>	<u>0.067</u>	<u>0.082</u>	<u>0.033</u>	<u>0.059</u>	<u>0.065</u>
CLI-MATE ZONE	FENES-TRATION U-FACTOR	SKY-LIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR																												
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REASON STATEMENT AND FISCAL IMPACT																																				
This proposal lists the equivalent U-factors to match the R-value table previously approved by the committee.																																				
Fiscal impact: no fiscal impact																																				
REVIEW RECOMMENDATION																																				
Approve																																				
Reject																																				
Approve as amended																																				
Further study																																				

AUG 14 2018

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Received	Code	Proposal number																																	
8/14/2018	2018 IRC	#194																																	
Code title		Edition																																	
Indiana Residential Code		2020																																	
Section number and title		Page Number																																	
Table N1102.2.6 Steel-frame ceiling, wall and floor insulation R-values		1 of 2, codebook page 481																																	
Proponent		Representing (if applicable)																																	
Craig Wagner		IABO																																	
Address (number and street, city, state, and ZIP code)		Telephone number																																	
220 W Van Buren St, Ste 204, Columbia City, IN 46725		260-248-3111, cell 260-212-2943																																	
PROPOSED CODE CHANGE (check one)																																			
<p> <input type="checkbox"/> Change to read as follows <input type="checkbox"/> Add to read as follows <input checked="" type="checkbox"/> Delete and substitute as follows <input type="checkbox"/> Delete without substitution </p> <p>Delete Table N1102.2.6 and substitute as follows:</p> <p style="text-align: center;">TABLE N1102.2.6 STEEL-FRAME CEILING, WALL AND FLOOR INSULATION R-VALUES</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">WOOD FRAME R-VALUE REQUIREMENT</th> <th style="width: 50%;">COLD-FORMED STEEL EQUIVALENT R-VALUE ^a</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center;">Steel Truss Ceilings ^a</td> </tr> <tr> <td>R-30</td> <td>R-38 or R-30 + 3 or R-26 + 5</td> </tr> <tr> <td>R-38</td> <td>R-49 or R-38 + 3</td> </tr> <tr> <td>R-49</td> <td>R-38 + 5</td> </tr> <tr> <td colspan="2" style="text-align: center;">Steel Joist Ceilings ^b</td> </tr> <tr> <td>R-30</td> <td>R-38 in 2 × 4 or 2 × 6 or 2 × 8; R-49 in any framing</td> </tr> <tr> <td>R-38</td> <td>R-49 in 2 × 4 or 2 × 6 or 2 × 8 or 2 × 10</td> </tr> <tr> <td colspan="2" style="text-align: center;">Steel Framed Wall</td> </tr> <tr> <td>R-13</td> <td>R-13 + 5 or R-15 + 4 or R-21 + 3 or R-0 + 10</td> </tr> <tr> <td>R-15</td> <td>R-11 + 5 or R-13 + 4 or R-21 + 3 or R-0 + 15</td> </tr> <tr> <td>R-19</td> <td>R-13 + 9 or R-19 + 8 or R-25 + 7</td> </tr> <tr> <td>R-21</td> <td>R-13 + 10 or R-19 + 9 or R-25 + 8</td> </tr> <tr> <td colspan="2" style="text-align: center;">Steel Joist Floor</td> </tr> <tr> <td>R-13</td> <td>R-19 in 2 × 6 or R-19 + R-6 in 2 × 8 or 2 × 10</td> </tr> <tr> <td>R-19</td> <td>R-19 + R-6 in 2 × 6 or R-19 + R-12 in 2 × 8 or 2 × 10</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm.</p> <p>a. Cavity insulation R-value is listed first, followed by continuous insulation R-value.</p> <p>b. Insulation exceeding the height of the framing shall cover the framing.</p>				WOOD FRAME R-VALUE REQUIREMENT	COLD-FORMED STEEL EQUIVALENT R-VALUE ^a	Steel Truss Ceilings ^a		R-30	R-38 or R-30 + 3 or R-26 + 5	R-38	R-49 or R-38 + 3	R-49	R-38 + 5	Steel Joist Ceilings ^b		R-30	R-38 in 2 × 4 or 2 × 6 or 2 × 8; R-49 in any framing	R-38	R-49 in 2 × 4 or 2 × 6 or 2 × 8 or 2 × 10	Steel Framed Wall		R-13	R-13 + 5 or R-15 + 4 or R-21 + 3 or R-0 + 10	R-15	R-11 + 5 or R-13 + 4 or R-21 + 3 or R-0 + 15	R-19	R-13 + 9 or R-19 + 8 or R-25 + 7	R-21	R-13 + 10 or R-19 + 9 or R-25 + 8	Steel Joist Floor		R-13	R-19 in 2 × 6 or R-19 + R-6 in 2 × 8 or 2 × 10	R-19	R-19 + R-6 in 2 × 6 or R-19 + R-12 in 2 × 8 or 2 × 10
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R-15	R-11 + 5 or R-13 + 4 or R-21 + 3 or R-0 + 15																																		
R-19	R-13 + 9 or R-19 + 8 or R-25 + 7																																		
R-21	R-13 + 10 or R-19 + 9 or R-25 + 8																																		
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REASON STATEMENT AND FISCAL IMPACT
This proposal lists the equivalent R-values for light-gauge steel frame structures for the table previously approved by the committee.
Fiscal impact: no fiscal impact
REVIEW RECOMMENDATION
Approve
Reject
Approve as amended
Further study

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Received	8/15/2018	Code	2018 IRC	Proposal number	# 195
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Code title International Residential Code		Edition 2018
Section number and title N1102.4.1.2 Testing		Page number 482
Proponent	Representing (if applicable) Indiana Builders Association	
Address (number and street, city, state, and ZIP code) 101 W Ohio Street, Indianapolis, IN 46204		Telephone number (800) 377-6334

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N1102.4.1.2 (R402.4.1.2) Testing. The *building* or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding five air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the *building official*, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *building official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, where installed at the time of test, shall be open.
4. Exterior or interior terminations for continuous ventilation systems shall be sealed.
5. Heating and cooling systems, where installed at the time of the test, shall be turned off.
6. Supply and return registers, where installed at the time of the test, shall be fully open.

Exception: Homes complying utilizing Section N1105 Simulated Performance Alternative or Section N1106 Energy Rating Index Compliance Alternative shall be permitted to have an air leakage rate not exceeding seven air changes per hour at 50 Pascals provided the energy loss is accounted for in the energy modeling.

REASON STATEMENT AND FISCAL IMPACT

Going from our current of 7 ACH to 3 ACH would be very difficult. Most states that have adopted the 2015 IECC/IRC have amended the air leakage rate to 5 ACH to provide a step towards 3 ACH. The proposed 5 ACH while still an aggressive tightness level will provide a tight, comfortable, energy-efficient home. Additionally, homes with less than 5 ACH should be provided with mechanical ventilation.

This simplifies the performance paths and allows flexibility to the air leakage rate provided the energy loss is made up in the energy model. This doesn't weaken the energy performance of the home and has no fiscal impact.

REVIEW RECOMMENDATION

Approve

Reject

Approve as amended

Further study



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Received	Code	Proposal number
8/15/2018	2018 IRC	#196

Code title		Edition
International Residential Code		2018
Section number and title		Page number
N1103.3.3 Duct testing (Mandatory)		
Proponent	Representing (if applicable)	
	Indiana Builders Association	
Address (number and street, city, state, and ZIP code)		Telephone number
101 W Ohio Street, Indianapolis, IN 46204		(800) 377-6334

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<input checked="" type="checkbox"/> Change to read as follows	<input type="checkbox"/> Add to read as follows
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<p>N1103.3.3 (R403.3.3) Duct testing (Mandatory). Ducts shall be pressure tested to determine air leakage by one of the following methods:</p> <p>1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. Registers shall be taped or otherwise sealed during the test.</p> <p>2. Postconstruction test: Total Leakage <u>to outside</u> shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. Registers shall be taped or otherwise sealed during the test.</p> <p>Exceptions:</p> <p>1. A duct air-leakage test shall not be required where the ducts and air handlers are located entirely within the <i>building thermal envelope</i>.</p> <p>2. A duct air-leakage test shall not be required for ducts serving heat or energy recovery ventilators that are not integrated with ducts serving heating or cooling systems.</p> <p>A written report of the results of the test shall be signed by the party conducting the test and provided to the <i>building official</i>.</p>	

REASON STATEMENT AND FISCAL IMPACT

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Received	Code	Proposal number
8/15/2018	2018 IRC	#197

Code title International Residential Code		Edition 2018
Section number and title N1103.3.4 Duct leakage (Prescriptive)		Page number
Proponent	Representing (if applicable) Indiana Builders Association	
Address (number and street, city, state, and ZIP code) 101 W Ohio Street, Indianapolis, IN 46204		Telephone number (800) 377-6334

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N1103.3.4 (R403.3.4) Duct leakage (Prescriptive). The total leakage of the ducts, where measured in accordance with Section N1103.3.3 (R403.3.3), shall be as follows:

1. Rough-in test: The total leakage shall be less than or equal to 4 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3 cubic feet per minute (85 L/min) per 100 square feet (9.29 m²) of conditioned floor area.
2. Postconstruction test: ~~Total~~ Leakage to outside shall be less than or equal to 4 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area.

REASON STATEMENT AND FISCAL IMPACT

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REVIEW RECOMMENDATION

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Approve as amended
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