MEMORANDUM

TO: NFPA Technical Committee on Fire Tests
FROM: Tracy Golinveaux, Staff Liaison
DATE: April 22, 2011
SUBJECT: NFPA 285 ROC TC Letter Ballot (F2011)

The ROC letter ballot for NFPA 285 is attached. The ballot is for formally voting on whether or not you concur with the committee’s actions on the comments. Reasons must accompany all negative and abstention ballots.

Please do not vote negatively because of editorial errors. However, please bring such errors to my attention for action.

Please complete and return your ballot as soon as possible but no later than Friday, May 13, 2011. As noted on the ballot form, please return the ballot to Jill McGovern either via e-mail to jmcgovern@nfpa.org or via fax to 617-984-7110. You may also mail your ballot to the attention of Jill McGovern at NFPA, 1 Batterymarch Park, Quincy, MA 02169.

The return of ballots is required by the Regulations Governing Committee Projects.

Attachments: Comments
Letter Ballot
This standard shall be used to evaluate the fire propagation characteristics of exterior non-load-bearing wall assemblies and panels used as components of curtain wall assemblies that are constructed using combustible materials or that incorporate combustible components within the wall assemblies as specified in the following:

(1) The ability of the wall assembly to resist flame propagation over the exterior face of the wall assembly
(2) The ability of the wall assembly to resist vertical flame propagation within the combustible core components or within other combustible components from one story to the next
(3) The ability of the wall assembly to resist vertical flame propagation over the interior surface of the wall assembly from one story to the next
(4) The ability of the wall assembly to resist lateral flame propagation from the compartment of fire origin to adjacent compartments or spaces

Substantiation: “Core Component” is a newly defined term which should be used as appropriate.

Final Action: Accept in Principle

Revise item (2) as follows:

(2) The ability of the wall assembly to resist vertical flame propagation within the combustible core or within other combustible components from one story to the next

Committee Statement: Based on action from 285-2 (Log #1), the Committee has revised the submitter’s comment to eliminate the reference to “core components” so that the reference is to “combustible components.” This will make the text of this section consistent with the rest of the standard.
285-2     Log #1
(Chapter 2 through 5)

Final Action: Accept in Principle in Part

Submitter: Rodney A. McPhee, Canadian Wood Council
Comment on Proposal No: 285-1
Recommendation: The proposed definition for ‘core component’ introduces confusion relative to other terminology used within the document. SEE COMMENTS for examples.

No wording is suggested to address these issues as the intent of the committee is not known as to when or where the concept of ‘core component’ applies, or not.

EDITORIAL Comments (not related to this change):
In looking at the current 4.2.14, it should be deleted or the wording changed with the reference to ‘wall assemblies’ changed to ‘test specimens’. However, with that, it would seem that the wording would repeat what is said in 5.1.

Figure 5.2(c) and Details B, C, and D of Figure 6.1(b) need to be removed and placed in the Appendix. Alternatively, the reference to ‘steel studs’ in these Figures/Details should be changed to ‘framing supports’. There are no requirements stated elsewhere in this standard that steel stud framing must be used with the movable test frame or test specimen. If the ‘test specimen’ otherwise includes combustible framing elements, this Figure could be construed as requiring an additional set of steel stud framing elements.

Substantiation: The introduction of the definition in 3.3.2 for the concept of ‘core component’ necessitates other changes in the document. Currently, confusion is created in light of the similar, but not exact references used in the text, including, ‘core’, ‘core space’, ‘combustible core’, ‘combustible core material’, ‘combustible component’ and ‘core component’. This becomes critical especially when reading the provisions of Sections 9.4, 10.2.2 and 10.2.3. If it is only ‘combustible materials’ that can be considered ‘core components’, as per the definition, then use of the complex terms ‘combustible core’ or ‘combustible core material’ would seem inappropriate.

The proposed definition of ‘core component’ refers to ‘outer skins’ and ‘facings’. Neither of these concepts are defined in the document. Figure 6.1(b) refers to ‘facings’ but also refers to exterior ‘face’ (veneer in new details). There is no other reference in the document to ‘outer skin’ and, as such, it is impossible to understand what the difference is between a facing and an outer skin. Also, based on this proposed definition, it is unclear whether the references to ‘exterior face’ in 10.2.1 and 10.2.3.2 should instead refer to ‘exterior facing’.

For further clarification, Figure 5.2(c) and Details B, C, and D of Figure 6.1(b) need to be removed and placed in the Appendix. Alternatively, the reference to ‘steel studs’ in the Figure/Details should be changed to ‘framing supports’. There are no requirements stated elsewhere in this standard that steel stud framing must be used with the movable test frame. If the ‘test specimen’ otherwise includes combustible framing elements, this Figure could be construed as requiring an additional set of steel stud framing elements.

Committee Meeting Action: Accept in Principle in Part
Delete the definition for “Core Component” in Section 3.3.2 of the ROP:

3.3.2 Core Component: Combustible material used in the manufacture of an exterior wall panel or contained within either the outer skins or the facings of the panel.

Delete Section 4.2.14:

4.2.14 Wall assemblies shall be constructed directly onto the exterior face of the test apparatus or onto a movable test frame that can be fastened to the exterior face of the test apparatus

Committee Statement: The Committee agrees with the submitter’s concerns about the proposed new definition for “Core Component”. The Committee also agrees with the submitter’s concerns regarding Section 4.2.14 because it is redundant and contains terminology that is not consistent with other terminology used in this standard.

The Committee also recognizes that there needs to be a clarification regarding the issue of steel stud framing for the system used to support the wall assembly that makes up the test specimen. It is clearly the intent of this standard that the curtain wall assembly be constructed using noncombustible materials as it allows testing of other components of the exterior wall system constructed of combustible materials and components to qualify the exterior wall assembly for use where noncombustible exterior wall construction is required. In response to this concern, the Committee has created a Committee Comment 285-4 (Log #CC#2) to add a new Section 5.7.2.1.

Model code provisions clearly indicate that the exterior walls of buildings of Types I, II, III, and IV construction are required to be of noncombustible construction but allow combustible components to be utilized if the wall assembly has been tested successfully in accordance with NFPA 285. The model codes also allow the use of fire-retardant-treated wood framing in such walls provided they do not have a required fire-resistance rating and they are non-loadbearing. So there would be no need to test fire-retardant-treated wood stud framed exterior walls in accordance with NFPA 285 to...
qualify them for use in the exterior walls of buildings of Types I, II, III, or IV construction.

285-3 Log #CC1 (Chapter 3) Final Action: Accept

Submitter: Technical Committee on Fire Tests,
Comment on Proposal No: 285-2
Recommendation: Add new definition of Exterior Wallcovering and annex note as follows:

3.3.XX Exterior Wallcovering. A material or assembly of materials applied on the exterior side of exterior walls for the purpose of providing a weather-resisting barrier, insulation or for aesthetics.

A.3.3XX Examples include but are not limited to veneers, siding, exterior insulation and finish systems.
Substantiation: This is a new term being introduced in 285-7 (Log #4). Defining the term reduces confusion.
Committee Meeting Action: Accept

285-4 Log #CC2 (new) Final Action: Accept

Submitter: Technical Committee on Fire Tests,
Comment on Proposal No: 285-1
Recommendation: Add a new Section 5.7.2.1 to read as follows:

5.7.2.1 The framing system used to support the wall assembly that makes up the test specimen shall consist of steel studs.
Substantiation: See committee statement in 285-2 (Log #1).
Committee Meeting Action: Accept
Report on Comments – November 2011

285-2 Log #2 (Chapter 6) Final Action: Accept in Principle

Submitter: Rodney A. McPhee, Canadian Wood Council

Comment on Proposal No: 285-2

Recommendation: The proposed definition for ‘core component’ introduces confusion relative to other terminology used within the document and Figures/Details. SEE COMMENTS for examples.

No wording is suggested to address these issues, as the intent of the committee is not known as to when or where the concept of ‘core component’ applies, or not.

In the proposed new Details B to I in Figure 6.1(b), these need to be removed and placed in the Appendix. Alternatively, the reference to ‘steel studs’ in these Figures/Details should be changed to ‘framing supports’. There are no requirements stated elsewhere in this standard that steel stud framing must be used with the movable test frame or test specimen. If the ‘test specimen’ otherwise includes combustible framing elements, this Figure could be construed as requiring an additional set of steel stud framing elements.

(The issue of referring only to steel studs also implicates Figure 5.2(c), which should also be moved or revised, but presumably that would be a matter of new business, unless it was considered editorial.)

Substantiation: The inclusion of the new definition of ‘core component’ raises a number of concerns regarding the specificity of the references throughout the proposed new text and figures. There are numerous places in the new text and Figures where reference is being made specifically to combustible ‘insulation’. It is possible that a combustible framing element may be another or, the only, combustible core component in the test specimen. The text and diagrams should be revised to address this possibility.

In new proposed Details, the reference to ‘combustible core’ and/or ‘combustible material’ should be changed to refer to ‘combustible core component’ or just ‘core component’

There are a number of places in the new Figures where reference is made specifically to steel studs. It is possible that a combustible framing element may be used instead of the steel stud, i.e., Detail E, Detail F. The figures should be updated (or new ones added) to address this possibility.

Committee Meeting Action: Accept in Principle

1) Refer to the actions taken on Comment 285-2 (Log #1).

2) Revise Details A and B in Figure 6.1(b) of the ROP by changing “combustible core” to “combustible insulation” in two locations on each Detail and by deleting “Combustible insulation” including the arrow to the left of the panel in both Details.

3) Define Combustible Insulation in Chapter 3 as follows:

3.3.XX Combustible Insulation. Combustible material used as insulation

Committee Statement: The actions taken on Comment 285-2 (Log #1), as well as the revisions proposed by the Committee, should satisfy the submitter’s concerns regarding the issue of “core components” and the reference to combustible materials and combustible components in order to be consistent with the text throughout the standard. The committee added a definition of Combustible Insulation to clarify that not all combustible materials are intended to have thermocouples inserted into them.
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1) Exterior wall surface of the test specimen as shown in Figure 6.1(a)
2) Core of the exterior wall panel of the test specimen, where applicable, as shown in Figure 6.1(a) and Figure 6.1(b). Details A and B in the cavity air space or the insulation or both as shown in Figure 6.1(a) and Figure 6.1(b). The thermocouple layouts in Figure 6.1(b) Detail A through Detail I shall be used as appropriate for the test specimen construction being tested.
3) Cavity air space within the test specimen, where applicable, as shown in Figure 6.1(a) and Figure 6.1(b), Detail C and Details E through I.
4) Wall cavity insulation and stud cavity insulation, where applicable, as shown in Figure 6.1(a) and Figure 6.1(b), Details C through I.
5) (3) Interior wall surface of the test specimen as shown in Figure 6.1(c)
6) (4) Below the first-story test room ceiling as shown in Figure 6.1(d)
7) For any other locations refer to Figures 6.1(a) and Figure 6.1(b) Details A through I, as applicable, for the test specimen construction being tested.

Substantiation: The purpose of these proposed revisions is to provide additional detail to the user of the test method on where to take appropriate temperature measurements based on the construction of the test specimen being tested. The new wording identifies the key components of the exterior wall construction where thermocouples may be required by Figure 6.1(a) and the applicable Detail shown in Figure 6.1(b). A new Item (7) is provided as a catch-all to direct the user to the specific Figures to identify any other thermocouples that may be required based on the construction details for the test specimen. This should make this standard more user friendly and easier to determine where thermocouples are to be provided in order to take the required temperature measurements.

Committee Meeting Action: Accept in Principle

Revise the following items:
1) Item (2) of Section 6.1 in this Comment by changing “Core of” to “Combustible insulation in”.
2) Item (3) of Section 6.1 in this Comment by changing Detail C to Detail D and changing Details E through I to Details F through I.
3) Item (4) of Section 6.1 in this Comment by changing Details C through I to Details B through I.
4) Revise the notes to Figure 6.1(a) as follows:
   ● Thermocouples – 1 in. (25 mm) from exterior wall surface
   ○ Thermocouples – In the wall cavity air space or the insulation or both as shown in Figure 6.1 (b) Details A through I.
   ( ) Thermocouples – Additional thermocouples in the insulation or the stud cavity or both where required for the test specimen construction being tested as shown in Figure 6.1 (b) Details C through I.

Committee Statement: The Committee agrees with the submitter’s proposed revisions to Section 6.1 of the ROP. However, the Committee has made some additional revisions to address the issue dealt with in 285-2 (Log #1) and 285-5 (Log #2) regarding “core components”. Further revisions have been made to correct the reference to the Details based on revisions accepted by the Committee to Figure 6.1(b) in 285-7 (Log #4). Additionally, the notes to Figure 6.1(a) have been revised to be consistent with the actions taken on this Comment and 285-10 (Log #3).
Submitter: Jesse J. Beitel, Hughes Associates, Inc.
Comment on Proposal No: 285-2
Recommendation: Revise Figures 6.1(b) Details A through I and new Figure 6.1(b) Detail J

***Insert Figures 6.1(b) and Figure 6.1(b)***

Substantiation: Provide clarity and revise Figures to address editorial items and encompass new types of wall systems. Add new Figure to address new types of wall systems.

Committee Meeting Action: Accept in Principle in Part
Further revise Figure 6.1(b) Details A through J in this Comment in accordance with the revised Details A through I.

*****Insert 285 ARTWORK for Figure 6.1(b) Here*****

Revise Sections 10.2.2 and 10.2.3 as follows:

10.2.2 Vertical Flame Propagation: Core Combustible Components and Insulation. Flame propagation shall not occur vertically through the core combustible components and/or the combustible insulation installed within the test specimen as determined in accordance with the following:

10.2.2.1 Details A and B. (+) For test specimens constructed of exterior wall coverings panels greater than ¼ in. (6.4 mm) thick containing combustible insulation components, temperatures in the combustible insulation components shall not exceed 750°F (417°C) above their temperature as measured immediately after the start of the test by Thermocouples Nos. 28 and 31 through 40 as shown in Figure 6.1(a) and Figure 6.1(b), Details A and B.

10.2.2.2 Detail C. For test specimens, without a wall cavity air space, constructed of exterior wall coverings of any thickness containing combustible components other than insulation, installed over combustible sheathing or containing combustible insulation in the stud cavity, temperatures in the stud cavity or in the stud cavity insulation, as applicable, shall not exceed 750°F (417°C) above their temperature measured immediately after the start of the fire test by Thermocouples Nos. 28, 31 through 40 and 55 through 65, as applicable, as shown in Figure 6.1(a) and Figure 6.1(b), Details A and B.

10.2.2.3 Details D, F, G and H. (+) For test specimens constructed of exterior wall coverings panels of any thickness containing combustible components and having a wall cavity with an air space as shown in Figure 6.1(a) and Figure 6.1(b), Details D, E, F, G and H, the following conditions shall be met:

(a) Temperatures in the wall cavity air space shall not exceed 1000°F (538°C) as measured by Thermocouples Nos. 28 and 31 through 40.

(b) Temperatures in the insulation in the wall cavity or and stud cavity or both, as applicable, insulation shall not exceed 750°F (417°C) above their temperature as measured immediately after the start of the fire test by Thermocouples Nos. 55 through 65 and 68 through 78, as applicable.

10.2.2.4 Detail E (+) For test specimens constructed of exterior wall coverings panels of any thickness that are ¼ in. (6.4 mm) thick or less containing combustible components other than insulation and having a wall cavity without an air space, temperatures in the insulation in the wall cavity or and stud cavity or both, as applicable, insulation shall not exceed 750°F (417°C) above their temperature as measured immediately after the start of the fire test by Thermocouples Nos. 28, 31 through 40 and 55 through 65, as applicable, as shown in Figure 6.1(a) and Figure 6.1(b), Detail E.

10.2.2.5 Details G, H and I. (+) For test specimens constructed of noncombustible or limited-combustible exterior wall coverings panels of any thickness and having a wall cavity with an air space as shown in Figure 6.1(a) and Figure 6.1(b), Details G, H and I, the following conditions shall be met:

(a) Temperatures in the wall cavity air space shall not exceed 1000°F (538°C) as measured by Thermocouples Nos. 28 and 31 through 40.

(b) Temperatures in the insulation in the wall cavity and or stud cavity or both, as applicable, insulation shall not exceed 750°F (417°C) above their temperature as measured immediately after the start of the fire test by Thermocouples Nos. 55 through 65 and 68 through 78 as applicable.

10.2.2.6 Details B, C, F, G and H. For test specimens containing sheathing, where the sheathing is combustible or where combustible insulation is installed in the stud cavity, temperatures in the stud cavity or the stud cavity insulation,
1 in. ± 0.5 in. (25 mm ± 13 mm)

TCs

Exterior facing

Combustible insulation

Combustible core > ¼ in. (6.4 mm) thick

TC – 1 in ± 0.5 in. (25 mm ± 13 mm) into core or ½ the thickness for panels < 2 in. (51 mm) thick

Detail A
TC = 1 in. ± 0.5 in. (25 mm ± 13 mm) into core or ½ the thickness for panels < 2 in. (51 mm) thick

1 in. ± 0.5 in  
(25 mm ± 13 mm)

Noncombustible or limited-combustible sheathing

TCs

Combustible insulation

Exterior veneer

Steel stud

Additional TC required where insulation is combustible (TCs No. 55-67)

Interior wall membrane

Stud cavity with or without noncombustible or limited-combustible insulation (no TCs required)

Combustible core > ¾ in. (6.4 mm) thick

Detail B
1 in. ± 0.5 in (25 mm ± 13 mm)

TC placed at ½ the depth of the cavity air space

TCs

Exterior surface

1 in. ± 0.5 in (25 mm ± 13 mm)

Steel stud

Interior wall membrane

Additional TC required (TCs No. 55-67)

Cavity air space

Stud cavity insulation

Combustible material ≤ ¼ in. (6.4 mm) thick

Detail C
1 in. ± 0.5 in
(25 mm ± 13 mm)

1 in. ± 0.5 in
(25 mm ± 13 mm)

½ thickness of combustible
Insulation

Steel stud

Additional TC required
where insulation is
combustible (TCs No.
55-67)

Interior wall
membrane

Stud cavity with or
without
noncombustible or
limited-combustible
insulation (no TCs
required)

Combustible material
other than insulation –
any thickness

Wall cavity with
insulation

Exterior surface

TCs

Detail D
1 in. ± 0.5 in (25 mm ± 13 mm)

TC placed at ½ the depth of the cavity air space

Exterior surface

Combustible material other than insulation - any thickness

½ thickness of combustible insulation

Steel stud

Interior wall membrane

Additional TC required where insulation is combustible (TCs No. 55-67)

Noncombustible or limited - combustible sheathing

Stud cavity with or without noncombustible or limited-combustible insulation (no TCs required)

Detail E
1 in. ± 0.5 in. (25 mm ± 13 mm) into core or 
½ the thickness for combustible 
insulation < 2 in. (51 mm) thick

TC placed at ½ the 
depth of the cavity 
air space

TC - 1 in. ± 0.5 in. 
(25 mm ± 13 mm)

Noncombustible 
or limited-combustible 
Sheathing

Exterior 
surface

Any material other than 
insulation — any thickness

½ thickness of combustible 
insulation

Steel stud

Interior wall 
membrane

Additional TC required 
where insulation is 
combustible 
(TCs No. 55-67)

Additional TC required 
where insulation is 
combustible 
(TCs No. 68-80)

Stud cavity with or 
without 
noncombustible or 
limited-combustible 
insulation (no TCs 
required)

Noncombustible or limited — 
combustible insulation (no TC required)

Detail F
1 in. ± 0.5 in. (25 mm ± 13 mm) into core or ½ the thickness for combustible insulation < 2 in. (51 mm) thick

½ thickness of combustible insulation

Steel stud

Interior wall membrane

Additional TC required where insulation is combustible (TCs No. 55-67)

Additional TC required where insulation is combustible (TCs No. 68-80)

Stud cavity with or without noncombustible or limited-combustible insulation (no TCs required)

TC placed at ½ the depth of the cavity air space

TC - 1 in. ± 0.5 in. (25 mm ± 13 mm)

Exterior surface

Noncombustible or limited-combustible material – Any thickness

Noncombustible or limited – combustible insulation (no TC required)  

Detail H
TC placed at ½ the depth of the cavity air space

TC - 1 in. ± 0.5 in (25 mm ± 13 mm)

Noncombustible or limited-combustible sheathing

Exterior surface

Any material - Any thickness

Steel stud

Interior wall membrane

½ thickness of combustible insulation

Additional TC required where insulation is combustible (TCs No. 55-67)

Stud cavity with or without noncombustible or limited-combustible insulation (no TCs required)

Cavity air space

Combustible material, other than foam plastic insulation – ≤ ⅜ inch (6.4 mm) thick

Detail 1
1 in. ± 0.5 in  
(25 mm ± 13 mm) 

1/2 thickness of combustible insulation 

Steel stud 

Interior wall membrane 

Additional TC required where insulation is combustible 
(TCs No. 55-67) 

Noncombustible or limited - combustible sheathing 

Stud cavity with or without noncombustible or limited-combustible insulation (no TCs required) 

Detail J 

TC 

Exterior surface 

Combustible material other than insulation - any thickness
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1 in. ± 0.5 in. (25 mm ± 13 mm)

TCs

Exterior facing

TC – 1 in ± 0.5 in. (25 mm ± 13 mm) into combustible insulation or ½ the thickness for panels < 2 in. (51 mm) thick

Interior facing

Combustible insulation > ¼ in. (6.4 mm) thick

Detail A
TC – 1 in. ± 0.5 in. (25 mm ± 13 mm) into combustible insulation or ½ the thickness for panels < 2 in. (51 mm) thick

Additional TC required where insulation or sheathing is combustible (TCs No. 55-67)

Stud cavity without insulation or with noncombustible or limited-combustible insulation (no TCs required)
Committee Action

1 in. ± 0.5 in
(25 mm ± 13 mm)

TC placed at ½ the depth of the cavity air space

TCs

Exterior surface

1 in. ± 0.5 in
(25 mm ± 13 mm)

Steel stud

Interior wall membrane

Additional TC required (TCs No. 55-67)

Cavity air space

Combustible material other than insulation - Any thickness

Stud cavity insulation

Detail D
1 in. ± 0.5 in (25 mm ± 13 mm)

TC placed at ½ the depth of the cavity air space

TCs

Exterior surface

Combustible material other than insulation - any thickness

½ thickness of combustible insulation

Steel stud

Interior wall membrane

Additional TC required where insulation or sheathing is combustible (TCs No. 55-67)

Sheathing

Stud cavity without insulation or with noncombustible or limited-combustible insulation (no TCs required)
TC placed at ½ the depth of the cavity air space

TC - 1 in. ± 0.5 in (25 mm ± 13 mm)

Sheathing

Exterior surface

Any material other than insulation – Any thickness

½ thickness of combustible insulation

Steel stud

Interior wall membrane

Additional TC required where insulation or sheathing is combustible (TCs No. 55-67)

Stud cavity without insulation or with noncombustible or limited-combustible insulation (no TCs required)

Combustible material – ≤ ¼ inch (6.4 mm) thick

Detail G
1 in. ± 0.5 in. (25 mm ± 13 mm) into combustible insulation or ½ the thickness for combustible insulation < 2 in. (51 mm) thick

TC placed at ½ the depth of the cavity air space

TC - 1 in. ± 0.5 in. (25 mm ± 13 mm)

Sheathing

Exterior surface

Any material other than insulation – any thickness

½ thickness of combustible insulation

Steel stud

Interior wall membrane

Additional TC required where insulation is combustible (TCs No. 55-67)

Additional TC required where insulation or sheathing is combustible (TCs No. 68-80)

Stud cavity without insulation or with noncombustible or limited-combustible insulation (no TCs required)

Noncombustible or limited-combustible insulation (no TC required)
1 in. ± 0.5 in. (25 mm ± 13 mm) into combustible insulation or 
½ the thickness for combustible insulation < 2 in. (51 mm) thick

TC placed at ½ the depth of the cavity air space

TC - 1 in. ± 0.5 in. (25 mm ± 13 mm)

Exterior surface

Noncombustible or limited-combustible material – Any thickness

½ thickness of combustible insulation

Steel stud

Interior wall membrane

Additional TC required where insulation is combustible (TCs No. 55-67)

Additional TC required where insulation is combustible (TCs No. 68-80)

Stud cavity without insulation or with noncombustible or limited-combustible insulation (no TCs required)
as applicable, shall not exceed 750°F (417°C) above their temperature measured immediately after the start of the fire test by Thermocouples Nos. 55 through 65 or 68 through 78, as applicable, as shown in Figure 6.1(a) and Figure 6.1(b), Details B, C, F, G, and H.

10.2.3.1 Details A and B. (†) For test specimens constructed of exterior wall coverings panels greater than ¼ in. (6.4 mm) thick containing combustible components or the combustible insulation installed within the test specimen as determined in accordance with the following:

10.2.3.2 Detail C. For test specimens, without a wall cavity air space, constructed of exterior wall coverings of any thickness containing combustible components, other than insulation, installed over combustible sheathing or containing combustible insulation in the stud cavity, temperatures in the stud cavity, as applicable, shall not exceed 750°F (417°C) above their temperature measured immediately after the start of the fire test by Thermocouples Nos. 18 and 19 as shown in Figure 6.1(a) and Figure 6.1(b), Details A and B.

10.2.3.3 Details D, E, G and H. (‡) For test specimens constructed of exterior wall coverings panels of any thickness containing combustible components and having a wall cavity with an air space as shown in Figure 6.1(a) and Figure 6.1(b), Details E, F, G and H, the following conditions shall be met:

(a) Temperatures in the wall cavity air space shall not exceed 1000°F (538°C) as measured by Thermocouples Nos. 18 and 19.

(b) Temperatures in the insulation in the wall cavity and or stud cavity or both, as applicable, insulation shall not exceed 750°F (417°C) above their temperature as measured immediately after the start of the fire test by Thermocouples Nos. 66 and 67 and 79 and 80, as applicable.

10.2.3.4 Detail E. (††) For test specimens constructed of exterior wall coverings panels of any thickness that are ¼ in. (6.4 mm) thick or less containing combustible components other than insulation and having a wall cavity without an air space, temperatures in the insulation in the wall cavity and or stud cavity or both, as applicable, insulation shall not exceed 750°F (417°C) above their temperature measured immediately after the start of the fire test by Thermocouples Nos. 18 and 19 and 66 and 67, as applicable, as shown in Figure 6.1(a) and Figure 6.1(b), Detail E.

10.2.3.5 Details G, H and I. (†‡) For test specimens constructed of noncombustible or limited-combustible exterior wall coverings panels of any thickness and having a wall cavity with an air space as shown in Figure 6.1(a) and Figure 6.1(b), Details G, H and I, the following conditions shall be met:

(a) Temperatures in the wall cavity air space shall not exceed 1000°F (538°C) as measured by Thermocouples Nos. 18 and 19.

(b) Temperatures in the insulation in the wall cavity and or stud cavity or both, as applicable, insulation shall not exceed 750°F (417°C) above their temperature as measured immediately after the start of the fire test by Thermocouples Nos. 66 and 67 and 79 and 80, as applicable.

10.2.3.6 Details B, C, F, G and H. For test specimens containing sheathing, where the sheathing is combustible or where combustible insulation is installed in the stud cavity, temperatures in the stud cavity or the stud cavity insulation, as applicable, shall not exceed 750°F (417°C) above their temperature measured immediately after the start of the fire test by Thermocouples Nos. 66 and 67 or 79 and 80, as applicable, as shown in Figure 6.1(a) and Figure 6.1(b), Details B, C, F, G, and H.

Committee Statement: Further revisions were made to the revisions to Figure 6.1(b) Details A through J based on additional information being provided by the submitters. Because of these additional revisions to the Details, the Committee has also made revisions to Sections 10.2.2 and 10.2.3 to correlate the text of those sections with the revisions made to the Details. These revisions will make the standard more user friendly which should result in more reproducible and repeatable test results. The revisions to the Details represent the vast majority of the curtain wall systems currently being designed and constructed using combustible components including combustible materials and combustible insulations.
Comment on Proposal No: 285-3
Recommendation:  7.1 Calibration Test Procedure. A calibration test shall be performed in accordance with this Chapter to determine the gas flow rates of the gas burners to be used in the fire test procedure prescribed in Chapter 8.
Substantiation: This will provide charging language for the application of Chapter 7 for performing the calibration test.
Committee Meeting Action: Accept
During the initial 5 minute burn period for the window burner between 6 and 9 minutes after the start of a successful calibration test, the average height of the fluctuating window burner flame shall be measured at the approximate midpoint of the burner slot and at points approximately 6 in. (153 mm) from each end of the burner slot. The measurements shall be recorded. While the measurements are being taken, a video recording shall be made of the window burner flame for the purpose of using the video recording as a reference when the window burner is required to be recalibrated by 7.1.20.

When the ceramic blanket covering the window burner is replaced or the burner output has been adversely affected by the accumulation of burning or melting debris or the impact of falling debris on the blanket during the fire test, the window burner flame height shall be adjusted after the ceramic blanket has been replaced or cleared of any debris so that the flame height and distribution of the flame are consistent with the measurements and observations made as specified in 7.1.19 for the initial 5 minute burn period for the window burner (between 5 minutes and 10 minutes after the start of the fire test.)

It has been my experience in witnessing and observing tests conducted in accordance with NFPA 285 that it is not uncommon for melting or burning debris to fall onto and directly impact the window burner during the fire test. Obviously, this can affect the distribution and height of the flame during the test but, more importantly, if the burner is not adjusted and the ceramic blanket covering the window burner is not cleaned off, replaced, or otherwise adjusted, then the next test may not reproduce the calibration test required by Chapter 7. At least this proposed Public Comment provides a means for requiring that the test lab make an effort to properly adjust the flame height and distribution of the window burner based on the first 5 minute burn period for the window burner which occurs between 5 and 10 minutes into the fire test. The burner height and flame distribution is not only sensitive to the accumulation of melting or burning debris on the ceramic blanket, but also to the manner in which the ceramic blanket is attached to cover the window burner pipe. Therefore, if the ceramic blanket itself is simply replaced, the readjustment of the flame height and distribution should also be conducted to assure appropriate reproducibility of the calibration test.

Revise sections 7.1.19 and 7.1.20 as follows:

7.1.19 After the calibration test detailed in Chapter 7 has been successfully completed, the window burner shall be relocated to a minimum of 5-ft away from the calibration test specimen and the gas flow rate to the window burner used for the 5-10 minute calibration time period shall be reestablished and the burner ignited.

7.1.19.1 The average height of the fluctuating window burner flame shall be measured at the approximate midpoint of the burner slot and at points approximately 6 in. (153 mm) from each end of the burner slot.

7.1.19.2 The measurements shall be recorded.

7.1.19.3 A video recording shall be made of the window burner flame during this 5-10 minute period for the purpose of using the video recording as a visual reference when the window burner is required to be recalibrated by 7.1.20.

7.1.20 The window burner shall be recalibrated prior to the next test to be consistent with the flame height measurements and visual observations taken in 7.1.19 when any of the following occurs:

1. The ceramic blanket covering the window burner is replaced
2. The burner output distribution has been adversely affected by the accumulation of burning or melting debris causing a change in the flamegeometry
3. The burner output distribution has been adversely affected by the impact of falling debris on the blanket causing a change in the flame geometry

7.1.20.1 The same flow rate as in the full scale calibration test during the 5-10 minute time period shall be used.

7.1.20.2 The ceramic blanket shall be adjusted so that the flame heights at the three specified locations are measured to the same nominal height and visually look similar to that as measured and video recorded respectively in 7.1.19.

Committee Statement: The language has been revised to create clarity and to comply with the manual of style. The revised procedure for relocating and re-calibrating the window burner provides an adequate and more easily performed testing technique.
<table>
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<tr>
<th>285-10</th>
<th>Log #3</th>
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<td>(Chapter 10)</td>
<td>Final Action: Accept in Principle</td>
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**Submitter:** Rodney A. McPhee, Canadian Wood Council  
**Comment on Proposal No:** 285-4  
**Recommendation:**  The proposed definition for ‘core component’ introduces confusion relative to other terminology used within the document and Figures/Details. SEE COMMENTS for examples.

No wording changes are suggested to address these issues, as the intent of the committee is not known as to when or where the concept of ‘core component’ applies, or not.

In the proposed new Details D and I in Figure 6.1(b), the details conflict in some manner with the new text proposed in Chapter 10 (10.2.2 and 10.2.3). These inconsistencies or gray areas should be corrected/clarified.

**Substantiation:**  The inclusion of the new definition of ‘core component’ raises a number of concerns regarding the specificity of the references throughout the new text. With such, the reference to ‘insulation’ proposed to be added to the title of 10.2.2 and the more specific reference to ‘combustible insulation’ in the introductory paragraph would seem redundant. Also, adding the specific reference to ‘combustible insulation’ seems to suggest that the previous version of the test method did not limit temperature increases in noncombustible or limited combustible insulation used in such cavities, i.e., those shown in current Details C and D.

With the more specific reference to ‘combustible insulation’ in the introductory paragraphs of both 10.2.2 and 10.2.3, in new Detail D, if the insulation in the cavity is noncombustible or limited combustible, it is not totally clear that the thermocouple in the ‘wall cavity’ would still be required and that the temperature inside the NC/LC insulation is still limited. This needs to be clarified in the wording of (3) in both 10.2.2 and 10.2.3. The reference to ‘Any material/any thickness’ in Detail I is not consistent with the text of (4) in both 10.2.2 and 10.2.3.

**Committee Meeting Action:**  Accept in Principle  
Revise Section 10.2.2 as follows:

**10.2.2 Vertical Flame Propagation:**  **Core Combustible Components and Insulation.** Flame propagation shall not occur vertically through the core combustible components and the combustible insulation installed within the test specimen as determined in accordance with the following:…

Revise Section 10.2.3 as follows:

**10.2.3 Horizontal Flame Propagation:**  **Core Combustible Components and Insulation.**  
Revise Section 10.2.3.1 as follows:

**10.2.3.1 Flame propagation shall not occur horizontally through the core combustible components or the combustible insulation installed within the test specimen as determined in accordance with the following:**…

**Committee Statement:**  The actions taken on Comments 285-7 (Log #4) and 285-6 (Log #7), as well as the proposed revisions to Sections 10.2.2 and 10.2.3, address the concerns expressed by the submitter regarding the use of the term “core component”.

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Flame propagation shall not occur vertically through the core components and/or the combustible insulation installed within the test specimen as determined in accordance with the following:

(2)(b) Temperatures in the wall cavity and stud cavity insulation... immediately after the start of the fire test by Thermocouples Nos. 55 through 65 and 68 through 78, as applicable.

(3) For test specimens... immediately after the start of the fire test by Thermocouples Nos. 28 and 31 through 40 and 55 through 65.

(4) For test specimens constructed of noncombustible or limited-combustible exterior wall panels... immediately after the start of the fire test by Thermocouples Nos. 55 through 65 and 68 through 78, as applicable.

10.2.3 Horizontal Flame Propagation: Core Components and Insulation.

(2)(b) Temperatures in the wall cavity and stud cavity insulation... immediately after the start of the fire test by Thermocouples Nos. 66 and 67 and 79 and 80, as applicable.

(3) For test specimens... immediately after the start of the fire test by Thermocouples Nos. 18 and 19 and 66 and 67, as applicable, as shown in figure 6.1(a) and Figure 6.1(b), Detail D.

(4) For test specimens constructed of noncombustible or limited-combustible exterior wall panels... immediately after the start of the fire test by Thermocouples Nos. 66 and 67 and 70 and 80, as applicable.


Committee Meeting Action: Accept

Submitter: Marcelo M. Hirschler, GBH International

Comment on Proposal No: 285-5

Recommendation: Revise text as follows:

B.1.2.2 ICC Publications, International Code Council, 5203 Leesburg Pike, Suite 600, Falls Church, VA 22041.

B.1.2.2 ICBO Publications, International Conference of Building Officials, 5360 Workman Mill Road, Whittier, CA 90601-2298


B-1.2.3 ICC Publications, International Code Council, 5203 Leesburg Pike, Suite 600, Falls Church, VA 22041:


Renumber B.1.2.4 as B.1.2.3.

Substantiation: B.1.2.2 and B.1.2.3 need to be combined. ICBO is now a part of ICC and is no longer a separate entity. ICC sells all ICBO documents. All of the UBC tests are contained within and are a part of the UBC 1997 code.

Committee Meeting Action: Accept