

LABELING OF FIRE-RATED GLAZING
STUDY GROUP REPORT TO CTC – JUNE 28-29, 2012
PROPOSED PUBLIC COMMENTS

CTC Code Change Proposal Committee Action summary:

FS84-12 was “Disapproved” and a public comment is recommended for “As Submitted” as shown below.

FS83-12, FS85-12 and FS95-12 were either “Approved as Submitted” or “Approved as Modified” and no public comments are recommended by this Study Group on these items. The original proposals and committee actions are shown at the end of this report for your information.

FS84 – 12

716.3.1, 716.3.2 (New), 716.5.8.3, 716.5.8.3.1 and 716.6.8

Proposed Change as Submitted

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

Revise as follows:

716.3 Marking fire-rated glazing assemblies. *Fire-rated glazing* assemblies shall be marked in accordance with Tables 716.3, 716.5, and 716.6.

716.3.1 Identification. For fire-rated glazing, the *label* shall bear the identification required in Table 716.3 and Table 716.5. “D” indicates that the glazing is permitted to be used in *fire door* assemblies and that the glazing meets the fire protection requirements of NFPA 252. “H” shall indicate that the glazing meets the hose stream requirements of NFPA 252. “T” shall indicate that the glazing meets the temperature requirements of Section 716.5.5.1. The placeholder “XXX” represents the fire -rating period, in minutes.

716.3.2 Identification. For fire-protection-rated glazing, the *label* shall bear the following identification required in Table 716.3 and Table 716.6: “OH – XXX.” “OH” indicates that the glazing meets both the fire protection and the hose-stream requirements of NFPA257 or UL9 and is permitted to be used in *fire window openings*. The placeholder “XXX” represents the fire-rating period, in minutes.

716.3.4 716.3.3 Fire-rated glazing that exceeds the code requirements. *Fire-rated glazing* assemblies marked as complying with hose stream requirements (H) shall be permitted in applications that do not require compliance with hose stream requirements. *Fire-rated glazing* assemblies marked as complying with temperature rise requirements (T) shall be permitted in applications that do not require compliance with temperature rise requirements. *Fire-rated glazing* assemblies marked with ratings (XXX) that exceed the ratings required by this code shall be permitted.

716.5.8.3 Labeling. Fire-protection-rated glazing shall bear a *label* or other identification showing the name of the manufacturer, the test standard and information required in Section ~~716.3.1~~ ~~716.5.8.3.4~~ that shall be issued by an *approved agency* and shall be permanently identified on the glazing.

~~**716.5.8.3.1 Identification.** For fire protection rated glazing, the *label* shall bear the following four part identification: “D– H or NH– T or NT– XXX.” “D” indicates that the glazing shall be used in *fire door* assemblies and that the glazing meets the fire protection requirements of NFPA 252. “H” shall indicate that the glazing meets the hose stream requirements of NFPA 252. “NH” shall indicate that the glazing does not meet the hose stream requirements of the test. “T” shall indicate that the glazing meets the temperature requirements of Section 716.5.5.1. “NT” shall indicate that the glazing does not meet the temperature requirements of Section 716.5.5.1. The placeholder “XXX” shall specify the fire protection rating period, in minutes.~~

716.6.8 Labeling requirements. Fire-protection-rated glazing shall bear a label or other identification showing the name of the manufacturer, the test standard and information required in Section 716.3.2 and Table 716.6 that shall be issued by an approved agency and shall be permanently identified on the glazing.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty two meetings - all open to the public.

This proposed change is a result of the CTC’s investigation of the area of study entitled “Labeling of Fire Rated Glazing”. The scope of the activity is noted as:

Identify root causes of problems selecting, specifying, installing, and inspecting fire protective and fire resistive glazing and other assembly components including the frames. Propose identification requirements and other related code changes.

The proposed changes to Section 716.3 (the addition of Section 716.3.1 and 716.3.2) clarify the requirements for marking of fire-rated glazing assemblies. No technical changes are being introduced.

Section 716.3.1 was moved from Section 716.5.8.3.1. The language was modified to clarify that the provisions of the section apply to fire-rated glazing used in fire door assemblies. Additionally, consistent with Tables 716.3 and Table 716.5, the language was modified to reflect the fact that fire-rated glazing assemblies that do not meet the temperature or hose stream requirements of this section are not required to be labeled as “NT” and “NH” respectively.

Section 716.3.2 was added to clarify that Tables 716.3 and 716.6 are the appropriate tables to be used for fire-protection-rated glazing, and to provide details of the required label and standards for performance, consistent with such tables. This section essentially reflects the same language as contained in Section 715.5.9.1 of the 2009 IBC.

The remaining changes are made to update cross-references to reflect the new section numbers.

Cost Impact: The code change proposal will not increase the cost of construction.

FS84-12

Public Hearing:	Committee:	AS	AM
	D		
	DF	Assembly:	ASF AMF

716.3-FS-BALDASSARRA-CTC

Public Hearing Results

FS84-12

Committee Action: **Disapproved**

Committee Reason: The committee felt that not all necessary information was relocated from Section 716.5.8.3.1, specifically the descriptions of what NH and NT are with respect to the glazing label.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee, requests Approval as Submitted.

Commenter's reason: In the development cycle leading up to the 2012 IBC, the CTC submitted an extensive set of code changes calculated to provide IBC users with a comprehensive methodology for marking all types of fire rated glazing and a means of determining when and where those markings were to be used. These proposals were adopted and became a part of the 2012 IBC. However, following publication of the 2012 IBC, it became evident that several corrections were required. As a result, the CTC submitted four (4) proposals in this development cycle, namely, FS83-12, FS84-112, FS85-12, and FS95-12, to make needed corrections.

At the Technical Committee's fire safety hearings earlier this year, the committee recommended FS83-12 and FS85-12, as submitted; FS95-12, as modified; and disapproval of FS84-12. Unfortunately, the adoption of FS-84-12, as submitted, is critical to correcting the methodology adopted in the 2012 IBC for marking fire rated glazing.

FS84-12 does several things. First, it moves the text of section 716.5.8.3.1 to section 716.3.1. Second, in making that move, it deletes "NH" and "NT" as designations used in the marking of fire rated glazing. Third, it modifies section 716.3.1 and 716.3.2 to clarify that Tables 716.3, 716.5 and 716.6 are the primary sources for determining the markings to be used and the relationship of those markings to the various fire rated glazing applications that are provided for in the Code.

According to its reason statement, the Committee recommended that FS84-12 be disapproved solely on the basis that it deletes the "NH" and "NT" designations.

The cornerstones of the CTC's comprehensive methodology for marking fire rated glazing as adopted in the 2012 IBC are the marking designations set out in Table 716.3 and the inclusion of those designations for every fire rated glazing application set out in Tables 716.5 and 716.6. The reason FS84-12 proposes to delete the "NH" and "NT" designations is, simply, because they were inadvertently left in section 716.5.8.3.1 when the comprehensive marking system proposed by the CTC was adopted as a part of the 2012 IBC as they do not appear anywhere in the operative IBC Tables, namely, Tables 716.3, 716.5 or 716.6.

As a part of the comprehensive changes proposed by the CTC to the 2012 IBC, the "NH" and "NT" designations were never included in Tables 716.3, 716.5 and 716.6 because they are unnecessary in that the "H" or "T" markings on a fire rated glazing assembly label means that the glazing assembly meets the hose stream test or the temperature rise criteria, respectively, and the simple absence of an "H" or a "T" marking is sufficient to alert the user that the assembly has not been hose stream tested ("NH") or temperature rise tested ("NT").

In short, the "NH" and "NT" designations are unnecessary and were inadvertently left in section 716.5.8.3.1 when the 2012 IBC marking provisions were adopted. They should now be deleted from the Code and FS84-12 should be adopted as submitted.

Therefore, at the Final Action hearings, the CTC urges you to vote against the standing motion to disapprove FS84-12 and, following that, to vote in favor of a motion to approve FS84-12 as submitted.

FS83-12, FS85-12 and FS95-12 were either “Approved as Submitted” or “Approved as Modified” and no public comments are recommended by this Study Group on these items. The original proposals and committee actions are shown below for your information.

FS83 – 12

716.2

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

Revise as follows:

716.2 Fire-resistance-rated glazing. Fire-resistance-rated glazing tested as part of a fire-resistance-rated wall or floor/ceiling assembly in accordance with ASTM E 119 or UL 263 and labeled in accordance with Section 703.6 ~~shall be permitted in fire doors and fire window assemblies where tested and installed in accordance with their listings and~~ shall not otherwise be required to comply with this section when used as part of a wall or floor/ceiling assembly. Fire-resistance-rated glazing shall be permitted in fire door and fire window assemblies where tested and installed in accordance with their listings and when in compliance with the requirements of this section.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty two meetings - all open to the public.

This proposed change is a result of the CTC’s investigation of the area of study entitled “Labeling of Fire Rated Glazing”. The scope of the activity is noted as:

Identify root causes of problems selecting, specifying, installing, and inspecting fire protective and fire resistive glazing and other assembly components including the frames. Propose identification requirements and other related code changes.

The changes proposed for Section 716.2 clarify how the code currently provides fire-resistance-rated glazing. The modifications to the first sentence clarify that when fire-resistance-rated glazing tested in accordance with ATM E119 and used as part of a wall or floor/ceiling assembly, it is not subject to the provisions of Section 716.

However, the second sentence clarifies that when fire-resistance-rated glazing is used as part of a fire door or fire window assembly there are provisions in Section 716 that apply to its use. As currently worded the user could be misled as to the application of the additional requirements for applications involving fire door and window assemblies.

Cost Impact: The code change proposal will not increase the cost of construction.

FS83-12

Public Hearing: Committee:

AS

AM

D

Assembly:

ASF

AMF

DF

716.2-FS-BALDASSARRA-CTC

FS83-12

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed that this proposal clarifies that when fire-resistance-rated glazing is tested in accordance with ASTM E118 and used as part of a wall or floor/ceiling assembly, the glazing is not subject to the provisions of Section 716.

Assembly Action:

None

FS85 – 12

Table 716.5

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

Revise as follows:

**TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS**

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE ^b	FIRE RATED GLAZING MARKING DOOR VISION PANEL ^{e,d}	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELITE/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	Not Permitted See note <u>b</u>	Not Permitted <u>D-H-W-240</u>	Not Permitted	4	Not Permitted	W-240
	3	3 ^a	Not Permitted See note <u>b</u>	Not Permitted <u>D-H-W-180</u>	Not Permitted	3	Not Permitted	W-180
	2	1½	100 sq. in. ^{c,e}	□100 sq.in. = D-H-90 >100 sq.in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	1½	1½	100 sq. in. ^{c,e}	□100 sq.in. = D-H-90 >100 sq.in.= D-H-W-90	Not Permitted	1½	Not Permitted	W-90
<u>Horizontal exits in fire walls</u> ^e	<u>4</u>	<u>3</u>	<u>100 sq. in.</u>	□100 sq.in. = D-H-180 > 100 sq.in.= <u>D-H-W-240</u>	<u>Not Permitted</u>	<u>4</u>	<u>Not Permitted</u>	<u>W-240</u>
	<u>3</u>	<u>3^a</u>	<u>100 sq. in.</u>	□100 sq.in. = D-H-180 > 100 sq.in.= <u>D-H-W-180</u>	<u>Not Permitted</u>	<u>3</u>	<u>Not Permitted</u>	<u>W-180</u>
Shaft, exit enclosures and exit passageway walls	2	1½	100 sq. in. ^{c,e}	□100 sq.in. = D-H-90 > 100 sq.in.= D-H-T or D-H-T-W-90	Not Permitted	2	Not Permitted	W-120

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE ^b	FIRE RATED GLAZING MARKING DOOR VISION PANEL ^{e,d}	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELITE/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures for shafts, exit access stairways, exit access ramps, interior exit stairways, interior exit ramps and exit passageway walls	1	1	100 sq. in. ^{c-d}	□ 100 sq.in. = D-H-60 >100 sq.in. = D-H-T-60 or D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					Fire protection			
Other fire barriers	1	³ / ₄	Maximum size tested	D-H-NT-45		³ / ₄	D-H-NT-45	
Fire partitions: Corridor walls	1	¹ / ₃ ^b	Maximum size tested	D-20		³ / ₄ ^b	D-H-OH-45	
	0.5	¹ / ₃ ^b	Maximum size tested	D-20		¹ / ₃	D-H-OH-20	
Other fire partitions	1	³ / ₄	Maximum size tested	D-H-45		³ / ₄	D-H-45	
	0.5	¹ / ₃	Maximum size tested	D-H-20		¹ / ₃	D-H-20	

(continued)

TABLE 716.5—continued
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE ^b	FIRE RATED GLAZING MARKING DOOR VISION PANEL ^{e,d}	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELITE/TRANSOM PANEL		
					Fire protection	Fire resistance	Fire protection	Fire resistance	
Exterior walls	3	1½	100 sq. in. ^{e,b}	□100 sq.in. = D-H-90 >100 sq.in = D-H-W-90	Not Permitted	3	Not Permitted	W-180	
	2	1½	100 sq. in. ^{e,b}	□100 sq.in. = D-H-90 >100 sq.in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120	
						Fire Protection			
	1	¾	Maximum size tested	D-H-45	¾		D-H-45		
Smoke barriers						Fire protection			
	1	1/3 ^b	Maximum size tested	D-20	¾		D-H-OH-45		

For SI: 1 square inch = 645.2 mm.

- a. Two doors, each with a fire protection rating of 1½ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.
- b. For testing requirements, see Section 716.6.3.
- b.e. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.
- c.d. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.
- d.e. Under the column heading “Fire-rated glazing marking door vision panel,” W refers to the fire-resistance rating of the glazing, not the frame.
- e. See Section 716.5.8.1.2.1.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty two meetings - all open to the public.

This proposed change is a result of the CTC’s investigation of the area of study entitled “Labeling of Fire Rated Glazing”. The scope of the activity is noted as:

Identify root causes of problems selecting, specifying, installing, and inspecting fire protective and fire resistive glazing and other assembly components including the frames. Propose identification requirements and other related code changes.

Table 716.5 was heavily modified for the 2012 edition of the International Building Code to serve as a reference summary of current code requirements, i.e., the items located in the table are specified by technical language found in the code. Based upon a review of the table as currently depicted in the 2012 IBC as compared to the current language of the IBC additional items require inclusion and some items require modification to reflect the current code as modified by other proposals during the last cycle.

There are no technical changes to current code requirements proposed, the changes are editorial.

A section was added to the table for "Horizontal Exits in Fire Walls" to provide for a summary of current glazing requirements for openings in those assemblies.

Note b, (formerly note c), has been relocated to the top of the column "Door Vision Panel Size" because the allowance for fire-resistance rated glazing in the maximum size tested applies in all cases depicted.

Specific reference is added to Note b for door vision panels in fire doors located in 3 and 4 hour fire walls because only fire-resistance rated glazing is permitted to be utilized, fire protection rated glazing is not permitted in any size. The appropriate marking requirements have been added as well in the next column, "Fire Rated Glazing Marking Door Vision Panel".

"D-H-T" or and "D-H-T-60 or" have been stricken from 2 hr "Shaft, exit enclosures and exit passageway walls" and from 1 hr "Fire barriers having a required fire-resistance rating of 1 hour." requirements since fire-protection rated glazing is limited to the 100 sq. in. size and only fire-resistance rated glazing can be utilized in larger proportions.

NT has been stricken in several locations as the requirement for marking glazing as "not tested" for a particular feature has been eliminated as a code consideration. Glazing is simply required to be marked for those attributes it has been tested and listed for.

Existing Note b is being deleted as no longer accurate or necessary for application of the table.

Note e is added to provide guidance on where the requirements for the horizontal exit in fire walls glazing requirements are located and to highlight that there is a dimension restriction in addition to the maximum size limitation.

Cost Impact: The code change proposal will not increase the cost of construction.

FS85-12

Public Hearing: Committee:

AS

AM

D

Assembly:

ASF

AMF

DF

716.5-FS-BALDASSARRA-CTC

FS85-12

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed that the changes to Table 716.5 were appropriate and were editorial in that they did reflect the code requirements accurately and more completely.

Assembly Action:

None

FS95 – 12

716.5.8.4, 716.6.3

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

Revise as follows:

716.5.8.4 Safety glazing. ~~Fire-protection-rated glazing installed in *fire doors assemblies in areas subject to human impact in hazardous locations* shall also comply with the safety glazing requirements of Chapter 24 where applicable.~~

716.6.3 Safety glazing. ~~Fire-protection-rated glazing installed in *fire window assemblies in areas subject to human impact in hazardous locations* shall also comply with the safety glazing requirements of Chapter 24 where applicable.~~

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty two meetings - all open to the public.

This proposed change is a result of the CTC's investigation of the area of study entitled "Labeling of Fire Rated Glazing". The scope of the activity is noted as:

Identify root causes of problems selecting, specifying, installing, and inspecting fire protective and fire resistive glazing and other assembly components including the frames. Propose identification requirements and other related code changes.

The proposed changes to Section 716.5.8.4 and 716.6.3 are needed to clarify the code changes approved in the last code cycle to ensure that there is no question that Chapter 24 language covers both fire-protection-rated glazing and fire-resistance-rated glazing. Proposed language also addresses requirements for safety glazing not defined as hazardous locations by referencing compliance with Chapter 24. No technical changes are being introduced.

Cost Impact: The code change proposal will not increase the cost of construction.

FS95-12

Public Hearing: Committee:

AS

AM

D

Assembly:

ASF

AMF

DF

716.5.8.4-FS-BALDASSARRA-CTC

FS95-12

Committee Action:

Approved as Modified

Modify proposal as follows:

716.5.8.4 Safety glazing. Fire-protection-rated glazing and fire-resistance-rated glazing installed in *fire doors* assemblies shall also comply with the safety glazing requirements of Chapter 24 where applicable.

716.6.3 Safety glazing. Fire-protection-rated glazing and fire-resistance-rated glazing installed in *fire window assemblies* shall also comply with the safety glazing requirements of Chapter 24 where applicable.

Committee Reason: The committee agreed that the proposal clarified that both fire-resistance-rated glazing and fire-protection-rated glazing used as a safety glazing need to meet Chapter 24. The modification is for consistency with FS94-12 for further clarification.

Assembly Action:

None
