



PUBLIC CODE CHANGE PROPOSAL FORM FOR PUBLIC PROPOSALS IN THE INTERNATIONAL CODES

2006/2007 CODE DEVELOPMENT CYCLE

CLOSING DATE: All Proposals Must Be Received by March 24, 2006

The 2006/2007 Code Development Hearings are scheduled for
September 20 to 30, 2006 in Orlando, FL

- 1) **Name:** William M. Connolly **Date:** March 21, 2006
Jurisdiction/Company: State of New Jersey, Department of Community Affairs, Division of Codes and Standards
Submitted on Behalf of: International Code Council Ad Hoc Committee on Terrorism Resistant Buildings
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- 2) ***Signature:** _____
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Signature for electronic submittal: When submitting proposals electronically, to complete the submittal process, print a copy of the ICC Electronic [Copyright Release](http://www.iccsafe.org) form found at www.iccsafe.org, fill in the requested information, send to ICC. One completed form is required. This must be done for each code change cycle and can be used for code changes and public comments.

- 3) Indicate appropriate International Code(s) associated with this Public Proposal – Please use Acronym: IBC
 If you have also submitted a separate coordination change to another I-Code, please indicate the code: _____
 (See section below for list of names and acronyms for the International Codes).

- 4) **Be sure to format your proposal and include all information as indicated on Page 2 of this form.**

- 5) Proposals should be sent to the following offices via regular mail or email. An e-mail submittal is preferred, including an electronic version, in either Wordperfect or Word. The only formatting that is needed is **BOLDING**, ~~STRIKEOUT~~ AND UNDERLINING. Please do not provide additional formatting such as tabs, columns, etc., as this will be done by ICC

Please use a separate form for each proposal submitted. Note: All code changes received will receive an acknowledgment.

Please check here if separate graphic file provided.

Graphic materials (Graphs, maps, drawings, charts, photographs, etc.) must be submitted as separate electronic files in .CDR,.IA,.TIF or .JPG format (300 DPI Minimum resolution; 600 DPI or more preferred) even though they may also be embedded in your Word or Wordperfect submittal.

Code	Send to:	Acronym	ICC Code Name
IBC	International Code Council	IBC	International Building Code
ICC EC	Chicago District Office	ICC EC	ICC Electrical Code–Administrative Provisions
IEBC	Attn: Diane Schoonover	IECC	International Energy Conservation Code
IFC	4051 West Flossmoor Road	IEBC	International Existing Building Code
IFGC	Country Club Hills, IL 60478-5795	IFC	International Fire Code
IPC	Fax: 708/799-0320	IFGC	International Fuel Gas Code
IPSDC	codechanges@iccsafe.org	IMC	International Mechanical Code
IPMC		ICC PC	ICC Performance Code
IWUIC		IPC	International Plumbing Code
IZC		IPSDC	International Private Sewage Disposal Code
		IPMC	International Property Maintenance Code
IECC	International Code Council	IRC	International Residential Code
ICC PC	Birmingham District Office	IWUIC	International Wildland-Urban Interface Code
IMC	Attn: Annette Sundberg	IZC	International Zoning Code
IRC	900 Montclair Road		
	Birmingham, AL 35213-1206		
	Fax: 205/592-7001		
	codechangesbhm@iccsafe.org		

CODE CHANGE PROPOSAL

Please provide all of the following items in your code change proposal. Your proposal may be entered on the following form, or you may attach a separate file. However, please read the instructions provided for each part of the code change proposal. The sections identified in parentheses are the applicable sections from CP #28 Code Development. The full procedures can be downloaded from www.iccsafe.org.

Code Sections/Tables/Figures Proposed for Revision (3.3.2): Section 714.8 (new)

Note: If the proposal is for a new section, indicate (new).

Name/Company/Representing (3.3.1): William M. Connolly, Chairman, International Code Council Ad Hoc Committee on Terrorism Resistant Buildings

Note: You must indicate your name and the full name of who you are representing. Do not use acronyms.

Proposal:

(Add new text as follows) 714.8 Spray-Applied Fire Resistive Materials (SFRM). Spray-applied fire resistive materials shall comply with the 714.8.1 through 714.8.4.

714.8.1 Fire Resistance Rating. The application of SFRM shall be consistent with its fire resistance rating listing including, but not limited to, minimum thickness and dry density of the applied SFRM, method of application, substrate surface conditions, the use of bonding adhesives, sealants and reinforcing or other materials.

714.8.2 Manufacturer's Installation Instruction. The application of SFRM shall be in accordance with the manufacturer's installation instruction. The instructions shall include, but are not limited to, substrate temperatures and surface conditions, and SFRM handling, storage, mixing, conveyance, method of application, curing and ventilation.

714.8.3 Substrate condition. The SFRM shall be applied to a substrate in compliance with 714.8.3.1 through 714.8.3.2.

714.8.3.1 Surface Conditions. Substrates to receive SFRM shall be free of dirt, oil, grease, release agents, loose scale or paint, primers, paints and encapsulants other than those fire-tested and classified by a recognized testing agency, and any other condition that may prevent adequate adhesion. Primed, painted or encapsulated steel shall be allowed provided that testing has demonstrated that required adhesion is maintained.

714.8.3.2 Primers, Paints and Encapsulants. Where the SFRM is to be applied over primers, paints, or encapsulants other than those specified in the listing, the material shall be field tested in accordance with ASTM E 736. Where testing demonstrates that required adhesion is maintained, SFRM shall be permitted to be applied to primed, painted or encapsulated wide flange steel shapes in accordance with the following conditions:

1. The beam flange width does not exceed 12 in. (300 mm); or
2. The column flange width does not exceed 16 in. (400 mm); or
3. The beam or column web depth does not exceed 16 in. (400 mm).
4. The average and minimum bond strength values shall be determined based on a minimum of five bond tests conducted in accordance with ASTM E736. Bond tests conducted in accordance with ASTM E 736 indicate a minimum average bond strength of 80 percent and a minimum individual bond strength of 50 percent, when compared to the bond strength of the SFRM as applied to clean uncoated 1/8-in. (3-mm) thick steel plate.

714.8.4 Temperature. A minimum ambient and substrate temperature of 40°F (4.44°C) shall be maintained during and for a minimum of 24 hours after the application of the SFRM, unless the manufacturer's installation instructions allow otherwise.

714.8.5 Finished Condition. The finished condition of SFRM applied to structural members or assemblies shall not, upon complete drying or curing, exhibit cracks, voids, spalls, delamination or any exposure of the substrate. Surface irregularities of spray-applied SFRM shall be deemed acceptable.

Supporting Information (3.3.4 & 3.4):

This code change proposal is one of fourteen proposals being submitted by the International Code Council Ad Hoc Committee on Terrorism Resistant Buildings.

Purpose:

The purpose of this proposal is to increase the in-place durability of Spray Applied Fire Resistant Material (SFRM) by established code requirements for the application of the material. The Code currently lacks such provisions.

Reasons:

The National Institute of Standards and Technology’s (NIST) investigation of the World Trade Center (WTC) tragedy documented that the proximate cause of the actual collapse was the action of a building contents fire on light steel members in the absence of spray applied fire resistive material, which had been dislodged. Events far less dramatic than an airplane attack have been known to dislodge SFRM. Events as simple as an elevator movement, building sway or maintenance activities can dislodge SFRM if it is not adhered properly.

Recommendation 6 of the NIST WTC Report calls for improvement of the in-place durability of SFRM. This proposal is one of three that seeks to achieve that objective. The other two are a proposal for a new Section 403.15 requiring higher bond strengths for SFRM in taller buildings, and a strengthened Section 1704.10 dealing with special inspections of SFRM installations.

Substantiation:

The proposed new Section 714.8 establishes for the first time in the Code specific requirements governing the application of SFRM.

Sections 714.8.1 and 714.8.2 require that application be in accordance with all terms and conditions of the listing and the manufacturer’s instructions.

Section 714.8.3 deals with the very important issue of substrate. The in-place adhesion of SFRM can be reduced by a factor of 10 when applied over certain primers when compared to the adhesion obtained by the rated material applied on bare clean steel. The section specifies to a field test that must be performed to determine adhesion whenever the field substrate differs from that contemplated by the listing.

Section 714.8.4 specifies a minimum temperature for the application of SFRM.

Section 784.8.5 establishes requirements for the finished condition of SFRM.

These proposals are based upon existing industry guidelines that are presently being followed by many installers.

Bibliography:

Association of the Wall and Ceiling Industries International. Technical Manual 12-A: Standard Practice for the Testing and Inspection of Field Applied Sprayed Fire-resistive Materials; an Annotated Guide. Falls Church, Virginia: Association of the Wall and Ceiling Industries International. 1997, Third Edition.

National Institute of Standards and Technology. Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

Referenced Standards (3.4 & 3.6):

None.

Cost Impact (3.3.4.6):

Costs:

This proposal will not increase cost since these procedures are already being followed in responsible installations. This code text is needed to ensure that they are always followed.