



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
Address: 101 S. Broad Street, Post Office Box 802
City: Trenton **State:** New Jersey **Zip Code:** 08625-0802
Phone: (609) 292-7898 **Ext.Fax:** (609) 633-6729 **E-mail address:** wconnolly@dca.state.nj.us

- 2) ***Signature:** _____
** I hereby grant and assign to ICC all rights in copyright I may have in any authorship contributions I make to ICC in connection with this proposal. I understand that I will have no rights in any ICC publications that use such contributions in the form submitted by me or another similar form and certify that such contributions are not protected by the copyright of any other person or entity.*

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 403.15 (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) 403.15 Structural integrity of exit stair enclosures. For all buildings that are more than 420 feet (128 m) in height, exit stair enclosure wall surfaces, from the top of the floor to the underside of the floor or roof above and connections to supporting members, shall be capable of resisting a static load expressed as a uniform pressure of not less than 2 pounds per square inch (psi) applied perpendicular to the exterior of the enclosure. This load need not be assumed to act concurrently with the loads specified in Chapter 16.

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 change is to establish a standard for the structural robustness of exit stairway enclosures. It implements Recommendation 18 of the National Institute of Standards and Technology (NIST) report on the World Trade Center (WTC) tragedy.

Reason:

The Code has traditionally looked upon a stair enclosure as a place of relative safety. There are any number of carefully crafted code provisions designed to ensure that goal, but they are based upon only one hazard – fire. The enclosures of these stairs are made fire resistive through the traditional rating and listing system, but the Code does not establish a criterion for structural robustness. The proponents do not believe that the existing “hose stream” test addresses this issue. The hose stream does not and cannot represent the real world impact of blast loads that a stair shaft might encounter. Neither does the ongoing industry work designed to develop an impact resistance test standard. That work relates to durability rather than safety. The proponents believe that a structural standard is needed.

The stair enclosures of the WTC were destroyed by an aircraft impact. Far lesser events, such as a gas explosion or a vehicle impact (on lower floors) can destroy a stair enclosure, especially when one considers that the Code contains no structural criteria at all. Any structural robustness that existing stair shaft enclosures have is a by-product of the fire rating process; a process that was never intended to provide structural integrity.

A new criterion is needed for exit stair enclosures – a structural one.

Substantiation:

The NIST WTC Report suggests a standard based upon resistance to over-pressure. This approach has two real advantages. It reflects one possible damage scenario and can represent others as well. Secondly, it is a performance standard. All materials can be analyzed and engineered to comply.

Compliance with this standard is determined by engineering analysis, not a test. This is a simple and direct approach that can be implemented immediately.

The requirement is expressed as a simple static load of 2 psi acting perpendicular to the shaft. The criterion is very similar to that already established for guardrails. It is expressed in the same way as the existing guardrail structural requirement so that the manner in which it is to be applied is clear. The proponents believe that traditional forms of enclosure, such as 8” full

mortar bedded and reinforced CMU walls, will meet the requirement. There is no question that less traditional and more lightweight systems can be designed to meet it as well.

Bibliography:

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 increase the cost of construction but the continued absence of structural criteria for exit stairway enclosures is not possible. This is a cost that must be met for safety's sake.