

## UI FTP6 “Testing and approval of pipe penetrations and cable transits for use in “A” class divisions (IMO FTP Code 2010 Part 3)”

### Part A. Revision History

Version no.	Approval date	Implementation date when applicable
New (Feb 2013)	13 February 2013	01 January 2014

#### • New (Feb 2013)

##### .1 Origin for Change:

Suggestion by IACS member

##### .2 Main Reason for Change:

To provide interpretation of a vague expression within an IMO instrument.

##### .3 List of non-IACS Member Classification Societies contributing through the TC Forum and/or participating in IACS Working Group:

None.

##### .4 History of Decisions Made:

The issue was raised within the Statutory Panel by DNV. After some discussion it was agreed to draft an IACS UI and associated HF and TB.

##### .5 Other Resolutions Changes

None

##### .6 Dates:

Original Proposal: *September 2011 (By a Member)*  
 Panel Approval: *24 January 2013 (By Statutory Panel)*  
 GPG Approval: *13 February 2013 (13040\_IGb)*

## **Part B. Technical Background**

Annex 1. **TB for New (Feb 2013)**

See separate TB document in Annex 1.

## Technical Background document for UI FTP6 (New, Feb 2013)

### 1. Scope and objectives

The scope of the UI is to clarify and harmonize additional design and test requirements for pipe penetrations and cable transits that do not incorporate the traditional welded structural steel sleeve with non-removable filling.

### 2. Engineering background for technical basis and rationale

IMO FTP Code 2010 Part 3 Appendix 1 item 1.13 reads:

*The designs of the specimens proposed in this appendix are considered to reflect the worst case situations in order to provide maximum usefulness of the classifications to end-use applications. However, the Administration may accept or request special test arrangements which provide additional information required for approval, especially of those types of constructions which do not utilize the conventional components of horizontal and vertical divisions, e.g., where cabins may be of a modular type construction involving continuous connections between bulkheads, decks and ceilings*

Traditionally A-class penetrations for cables and pipes have been constructed from structural steel sleeves welded into the A-class structure, and filled with materials that will prevent the passage of hot smoke and flames. These steel sleeves have been of varying length depending on what has passed fire testing, but being made from structural steel they have in addition to their fire technical properties been beneficial for maintaining structural strength in the area where the hole was made. Also, due to the thickness of the structural steel these sleeves have been easy to weld in place, also for holes that are not necessarily perfectly round and decks/bulkheads that are not perfectly flat.

Lately, a huge number of penetrations have been designed that incorporate one or more of the following properties:

- a) Penetrations that are made of thin-plated sleeves that are welded or bolted to the divisions. These sleeves will not provide stiffening of the divisions in way of the hole and they may be difficult to weld due to the thin plate thickness, and in addition pose a big challenge for the yards with respect to the requirements for perfect dimensions for the holes and deck plate or bulkhead where they are installed.
- b) Penetrations incorporating intumescent material that will swell only if exposed to high temperatures have been proposed. If these penetrations are not directly heated by the fire they may not swell enough to prevent the passage of smoke through the penetration.
- c) Penetrations packed with insulation material that can be easily removed by hand.

When installed by the manufacturer prior to testing under "perfect" conditions all the above penetrations will pass the fire test in accordance with the FTP Code and as such can be type approved under the current regime for use in A-class divisions on any SOLAS vessel.

IMO 2010 FTP Code Part 3 Appendix 1 item 1.13 leaves to the Administration to "accept or request special test arrangements which provide additional information required for approval". This UI has been developed to aid ROs in defining appropriate additional testing and design requirements to be complied with prior to issuing approvals for pipe penetrations and cable transits that do not utilize conventional components of horizontal and vertical divisions.

### **3. Source/derivation of the proposed IACS Resolution**

IMO 2010 FTP Code

*USCG NVIC 9-97*

*Transport Canada - Guide to Structural Fire Protection (1993) - TP 11469 E*

### **4. Summary of Changes intended for the revised Resolution:**

Not applicable

### **5. Points of discussions or possible discussions**

None

### **6. Attachments if any**

None