BUREAU OF INDIAN STANDARDS

MINUTES

Our Ref: CED 36:WG01/A-2.12 **16 May 2024**

Working Group for IS 3614, CED 36 WG01 : 12th Meeting
Tuesday, 14th May 2024 : 10:30 am to 12:30 pm

Hybrid meeting (held physically at BIS HQ and virtually through WebEx)

Convener: Shri Satish K Dheri **Member Secretary:** Shri Rajesh Choudhary

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MEMBERS PRESENT

Dr Shorab Jain, CSIR-Central Building Research Institute, Roorkee
Shri Rakesh Kumar Arora, Pacific Fire Controls, New Delhi
Shri Mahesh Singh, *Rep.* Shakti Hormann Private Limited, New Delhi
Shri Parameswara Reddy, *Rep.* Shakti Hormann Private Limited, New Delhi
Shri Hatinder Vohra, *Rep.* Saint-Gobain India Private Limited, Chennai
Shri Nitin Chhabra, *Rep.* Saint-Gobain India Private Limited, Chennai
Shri Praveen Khemka, Tufwud Doors and Accessories Private Limited, Kolkata

INVITEE

Shri Siddharth Mahajan, Executive Engineer, Public Works Department, Delhi
Shri Atul Gupta, VP, Navair International Pvt Ltd, New Delhi
Shri Rajeev Jha, CGM, Navair International Pvt Ltd, New Delhi
Shri Rajneesh Patial, Regional Manager, Navair International Pvt Ltd, New Delhi

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Item 0 OPENING REMARKS

The Convener, Shri S K Dheri, extended his warm welcome to all the members for the 12th meeting of the Working Group for Fire Doors, CED 36:WG01. He emphasised the importance of physically meeting for more fruitful discussion. Additionally, he stressed the timely completion of the assigned work. With that, the Convener requested to take up the agenda item-wise.

Item 1 COMPOSITION OF THE WORKING GROUP

1.1 The Group considered the current composition and recommended following to CED 36:

- To withdraw the nomination of Shri Sandeep Goel, Proion Consultants, New Delhi due to continuous non-participation.

1.2 Co-option Requests

The Group considered the co-option request of Shri Atul Gupta, Navair International Pvt Ltd, New Delhi and recommended to co-opt them in the Group.

1.3 Shri S K Dheri, Chairperson of CED 36, recommended appointing Dr. Shorab Jain from CBRI as the Convener of the Group, and he kindly accepted the role.

Item 2 COMMENTS RECEIVED ON IS 3614 'FIRE DOORS AND DOORSETS — SPECIFICATION (*First Revision*)'

2.1 Shri Rajneesh Patial, Regional Manager, Navair International Pvt. Ltd has indicated the following:

7.2.5 Door Leaf

There are various constructions used for the manufacture of fire doors. These can be used in a number of configurations, which vary from single leaf and double leaf single swing, with a possible option for story-height doorsets using transoms or flush-over panels. It is important to note that doors tested in one configuration might not be suitable for another configuration.

Navair Request for Clarification:

Seeking clarification regarding Item Code **7.2.5** pertaining to the fire evidence testing report for doorsets.

As per our understanding, the requirement stipulates that a single leaf doorsets should be accompanied by a fire evidence testing report for single leaf doors, whereas a double leaf doorsets should be supported by a report applicable to double leaf doors. However, for the sake of absolute clarity and compliance.

Ensuring the correct testing report for each type of doorsets is crucial to adhere to safety standards and regulations. Therefore, I would appreciate your prompt response to this inquiry to avoid any ambiguity or misunderstanding.

Decision: The Group discussed that every component within a fire doorset or fire door assembly can have an effect on the fire performance. Making changes to any of these components, especially the door leaf, can have a significant effect on its fire performance. Therefore, single-leaf and double-leaf fire doors shall be tested separately, and different certificates shall be obtained. Some members also opined that the double-leaf door has more complexity compared to the single-leaf fire door. Therefore, if a double-leaf fire door is tested, then there is no need to test the single-leaf fire door of smaller size. Consequently, the Group requested Dr. Shorab Jain, CBRI, to provide inputs for the same and decide thereon.

7.2.6 Intumescent Seal

It is mandatory for the door manufacturer to test and supply insulated doors with intumescent seal. There are various types of intumescent seals, all of which can react differently. Intumescent seals shall be provided by the fire door manufacturer

on all three sides of the door leaf and on the meeting stile of the double leaf door or as per test evidence. Alternatively, the same can be provided on the frame and meeting stile of the double leaf door. It is essential that the intumescent seal to be used is of the same formulation, dimensions and configuration as that in the door manufacturer's fire test report.

Intumescent seal provided on the door leaf shall expand in the event of fire closing the gap between the frame and shutter. This should be independent of smoke seal, which is fixed either in the grooved frame profile or stuck with adhesive on the entire perimeter of the frame.

NOTES
1 All fire doors are required to have smoke seal and intumescent seal as standard component of the door assembly.
2 There are different types of smoke seals available, and the most appropriate type shall be chosen.

Navair Request for Clarification:

Seeking clarification on two points regarding the installation of fire and smoke seals for doors as outlined below.

a) Regarding the requirement for both UNINSULATED TYPE and PARTIALLY INSULATED TYPE doors to be equipped with both smoke seals and fire seals, we seek confirmation on the necessity of this provision. It is essential for us to understand whether this requirement applies universally to all door types or if there are any exceptions or specific conditions that should be considered.

b) Additionally, concerning the installation of fire seals around the perimeter of the main door frames, we seek clarification on whether this method is acceptable for conducting tests as per the relevant standards. Understanding the approved methods for incorporating fire seals into door installations is crucial for ensuring compliance and safety.

Clarity on these matters will enable us to proceed with our door installations in full adherence to the prescribed regulations and standards.

Decision: The Group discussed that the NOTE 1 of **7.2.6** is clearly mentioning that the smoke seal and intumescent seal are standard component of a door assembly. Therefore, smoke sear and intumescent seal is required to be provided for all type of doors i.e. uninsulated, partially insulated, and fully insulated.

The Group also discussed that according to **7.2.9** d), only EPDM smoke seals are allowed; however, there are different types of seals available in the market. Both smoke seals and intumescent seals, which are tested along with the door assembly, shall be allowed. Therefore, the Group recommended rephrasing the clause as follows:

d) All fire doors shall be equipped with proper ~~EPDM~~ smoke seals and

intumescent seals to limit the spread of smoke. Other seals like door bottoms, surface mounted and perimeter seals can be used in addition to smoke seals, subject to the requirement or for acoustic doors.

7.2.9 Builder's Hardware

k) Fire door shall not have the following hardware:

1) Tower bolts,

Navair Request for Clarification:

We seek clarification on the installation of Flush Bolts or Tower Bolts specifically for DOUBLE LEAF doorsets fitted with Mortise Locks, as per the guidance provided in the code.

We understand that according to the code, in cases where Mortise Locks are installed on double leaf doorsets, the inactive leaf of the door should be equipped with either Flush Bolts or Tower Bolts. However, we note the suggestion that Tower Bolts should not be used, and instead, Flush Bolts are typically used in Steel fire doors, while Tower Bolts are used in Wooden fire doors.

In this context, we wish to highlight a concern regarding the use of Flush Bolts in Wooden fire doors. There is a potential risk that the installation of Flush Bolts may lead to the removal of Fire Seals from both the Top and Bottom of the door. We seek clarification on whether this concern is valid and if there are alternative solutions or guidelines to address this issue without compromising the integrity of the fire door assembly.

Your clarification on these points will greatly assist us in ensuring compliance with the relevant regulations and standards while maintaining the safety and functionality of our fire door installations.

Decision: The Group considered the suggestion of Navair International Pvt Ltd to allow tower bolts in double leaf wooden fire doors if they are installed in service areas. The Group discussed that it should not dilute the broad-based standard for a specific condition and if the tower bolts are provided then it will be very difficult to open the door during the fire incident. The Group mentioned that as per **7.2.9** k) the automatic flush bolts are allowed which are a better alternative to the tower bolts. Therefore, the Group decided to maintain the clause.

2.2 PWD, Delhi has indicated the following:

This holds the reference to IS 3614:2021 and its amendment.

1. In the standard, the insulation criteria of partially insulated doors have been defined as 30 minutes, changing it from 20 minutes as per previous codes and NBC guidelines.
2. The scope of the code seems to be limited to metal and wooden fire doors.
3. Consideration for Hospital Project: Given that various types of fire doors, including metal, wooden, and glazed insulated fire doors, are being used in

hospital projects. Hence , it is requested to advice whether all fire doors within the hospital project should adhere to the EI30 rating to maintain consistent performance levels.

Decision: The Group considered the above comments and informed that the glazed fire doors were included in the draft version of IS 3614: 2021; however, the same was removed from the final version of the standard due to the unavailability of the Indian Standard for fire-rated glass, and the minimum insulation rating for glazed fire doors was 30 minutes in the draft. The CHD 10 Committee of BIS is formulating an Indian Standard on fire-rated glass, and it was decided that once the standard for fire-rated glass is available, then the glazed fire doors will be included in the IS 3614: 2021. The Group also discussed that if different kinds of fire doors are used in a compartment, then the minimum insulation rating of all the doors shall be the same. Therefore, the Group decided that since the minimum insulation rating for wooden and metallic doors was increased to 30 minutes, the minimum insulation rating for glazed fire doors shall also be 30 minutes.

Item 3 ANY OTHER BUSINESS

3.1 The Group discussed that the mass of the door is an important parameter, and the fire resistance rating depends on it. Therefore, the Group decided that the mass of the door shall also be part of the test certificate. The Group decided to include the same suitably in the sample test certificate as given in Annex C of IS 3614: 2021.

3.2 The Group discussed that the thickness of the vision pane shall also be part of the test certificate along with the width and height. The Group decided to include the same suitably in the sample test certificate as given in Annex C of IS 3614: 2021.

3.3 The Group also addressed the misconception that fully insulated doors are exclusively made of wood. The Group informed that this is a design problem, and the metallic doors can also be designed to be fully insulated. Dr Shorab Jain informed that CBRI has also tested the metallic fire doors which are fully insulated. Therefore, the Group recommended that the required performance characteristics, such as integrity and insulation should be mentioned while specifying the requirements of a fire door.

3.4 There being no other business the meeting ended with heartly thanks to each other.

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