

FIRE STOP TECHNICAL JUDGEMENTS

PURPOSE

This bulletin provides guidance for an Engineering Judgement for Firestop Systems as an acceptable solution under Division B or as an alternative solution under Division A of the National Building Code - 2019 Alberta Edition (NBC(AE)). For the purpose of this bulletin, Engineering Judgements will be referred to as Technical Judgements (TJ).

DISCUSSION

There are a number of manufacturers whose fire stop systems are listed for use in Canada to the CAN/ULC-S115, "Fire Tests of Firestop Systems" standard. However, due to the nature of the product and its application, manufacturers cannot anticipate the countless number of configurations encountered in the field.

The issue is whether a TJ can be accepted by a Safety Codes Officer (SCO) as an acceptable solution under Division B of the NBC(AE) or if a TJ is considered to be an alternative solution under Division A using the NBC(AE) alternative solution process.

In order to be considered an acceptable solution under Division B of the NBC(AE) documentation, as noted in Table 1, the fire stop system must be submitted in addition to those required within Article 2.3.1.1. of Division C. These documents may be submitted at various stages such as the permit application stage, prior to installation or prior to occupancy. The TJ must be submitted through the Registered Professional of Record as they are the party assuming responsibility, as set out in the Schedules of Professional Involvement required in Division C. Table 1 of this bulletin lists the minimum information to be submitted with a TJ to be deemed an acceptable solution under Division B (types 1, 2, 3).

To be considered for an Alternative Solution under Division A of the NBC(AE) documentation, as noted in Table 1, the fire stop system must be submitted to the Authority Having Jurisdiction (AHJ). These documents can be submitted at various stages, such as the permit application stage, prior to installation or prior to occupancy. The AHJ should be consulted about the document submission process after the permit application has been made to ensure there are no delays within the process. The alternative solution TJ must be submitted through the Registered Professional of Record, as they are the party assuming responsibility as set out in the Schedules of Professional Involvement in Division C. Table 1 provides an example of a TJ submitted as an alternative solution under Division A (types 4 and 5) providing documentation, showing compliance with the Engineering Judgement guidelines provided by the National Research Council in their *Best Practice Guide on Fire Stops and Fire Blocks and their Impact on*

Unless stated otherwise, all Code references in this STANDATA are to Division B of the National Building Code-2019 Alberta Edition

Issuance of this STANDATA is authorized by
the Provincial Building Administrator

[Original Signed]
Paul Chang

The logo for the province of Alberta, featuring the word "Alberta" in a stylized, cursive font with a small blue square at the end of the word.

Sound Transmission (June 2007) or the International Firestop Council’s *Recommended IFC Guidelines for Evaluating Firestop Systems in Engineering Judgments (EJ’S)*.

CODE REFERENCES

Article 1.4.1.2. of Division A states:

1.4.1.2. Defined Terms
Fire stop means a system consisting of a material, component and means of support used to fill gaps between *fire separations* or between *fire separations* and other assemblies, or used around items that wholly or partially penetrate a *fire separation*.

Article 1.2.1.1. of Division A states:

1.2.1.1. Compliance with this Code
 1) Compliance with this Code shall be achieved by
 a) complying with the applicable acceptable solutions in Division B (see Note A-1.2.1.1.(1)(a)), or
 b) using alternative solutions that will achieve at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the applicable acceptable solutions (see Note A-1.2.1.1.(1)(b)).

Clause 3.1.9.1.(1)(a) of Division B states:

3.1.9.1. Fire Stops
 1) Except as provided in Sentences (2) to (5) and Article 3.1.9.4., penetrations of a *fire separation* or a membrane forming part of an assembly required to have a *fire-resistance rating* shall be
 a) sealed by a *fire stop* that, when subjected to the fire test method in CAN/ULC-S115, “Fire Tests of Firestop Systems,” has an F rating not less than the *fire-protection rating* required for *closures* in the *fire separation* in conformance with Table 3.1.8.4., ...

TABLE 1

| Table 1 – Summary | | | |
|--------------------------|--|--------------------------------------|---|
| TJ Type | System Type Details | Type of NBC(AE) Solution | Documentation Details |
| 1. System Pending TJ | Test done of the system to the ULC standard but the listing has not yet been issued (3.1.9.1. of Division B) | Acceptable solution under Division B | <ul style="list-style-type: none"> • Communication from testing agency to confirm testing for the listing to CAN/ULC S-115 is completed but not yet posted • Copy of the system submitted for testing (expected to be similar to the final listing) |
| 2. TJ backed by a test | Tested to and meets the requirements of the ULC standard but a listing is not done (3.1.9.1. of Division B) | Acceptable solution under Division B | <ul style="list-style-type: none"> • Copy of the system submitted for testing • Copy of the test report and results indicating testing |

| Table 1 – Summary | | | |
|---|---|---|---|
| TJ Type | System Type Details | Type of NBC(AE) Solution | Documentation Details |
| | | | <p>done</p> <ul style="list-style-type: none"> to CAN/ULC S-115 |
| 3. TJ reviewed by a Fire Protection Engineer (FPE) | Reviewed by a professional engineer specializing in fire protection (may or may not be engineer of record for the project) who takes responsibility for the system compliance with the NBC(AE). This TJ is based on listed systems that are similar to the one proposed or other testing information available. | Acceptable solution under Division B | <ul style="list-style-type: none"> Copy of the submitted system Copy of listed systems that submitted system is based on Cover letter from Fire Protection Engineer (FPE) verifying that an evaluation of compliance with CAN/ULC S-115 has been done based on same or similar tested or listed systems by the same manufacturer Show compliance with the points from the NRC or IFC guidelines |
| 4. TJ | Designed by the system manufacturer without testing or engineer review. The system is based upon other listed systems that are reasonably close in construction to the EJ and/or other testing information. | Requires alternative solution process of Division A, Article 1.2.1.1. AHJ site specific | <ul style="list-style-type: none"> Document showing compliance with the EJ guidelines provided by the National Research Council in their <i>Best Practice Guide on Fire Stops and Fire Blocks and their Impact on Sound Transmission</i> (June 2007) or the International Firestop Council's <i>Recommended IFC Guidelines for Evaluating Firestop Systems in Engineering Judgments (EJ'S)</i> |
| 5. Qualified TJ | Designed by the system manufacturer without testing or engineer review. The system is based upon other listed systems that are reasonably close in construction to the TJ and or other testing information. Conditions of use and any limitation(s), to be clearly stated. | Requires alternative solution process of Division A, Article 1.2.1.1. AHJ site specific | |

References

National Research Council

Best Practice Guide on Fire Stops and Fire Blocks and their Impact on Sound Transmission

<https://nrc-publications.canada.ca/eng/view/ft/?id=8911dfb5-7276-45da-931b-076d58d2af71>

International Firestop Council

Recommended IFC Guidelines for Evaluating Firestop Systems in Engineering Judgments (EJs)

http://a.firestop.org/~firestp5/files/7.ifc_guidelines_for_evaluating_firestop_systems_in_engineering_judgments.pdf

Disclaimer:

The information in this bulletin is not intended to provide professional design advice. If professional expertise is required with respect to a specific issue or circumstance, the services of a professional should be sought.