

Introduction

Technical guidance notes serve to validate and elaborate on the proven fire stop systems offered by FSi Limited. These notes offer valuable advice to specifiers, designers, and installers, focusing on specific applications, configurations, and aspects relating to fire stopping systems and materials. The document provides guidance on practical and effective recommendations, aiding in the selection criteria for firestopping products and systems for a project. Furthermore, this insightful advice is instrumental for building owners and individuals responsible for the maintenance and installation of fire stopping systems.

The purpose of this document is to address the scenarios on projects in which shaft walls are present. Ordinarily, when dealing with service penetrations, we expect symmetrical flexible substrates, as identified within the BS EN 1366-3 test standard. However, in the instance of shaft walls, asymmetry is inherent, due to the requirement for single sided installation, also leading to an exposed stud.

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Unfortunately, the shaft walls that are considered within the EN 1366-3 test standard for penetration seals, are single sided flexible walls, which do not reflect the asymmetrical layers of boarding within shaft walls seen on sites all over the industry. This absence of the consideration for typical asymmetrical shaft wall constructions, poses challenges in identifying appropriate testing protocols for various systems and penetration services. For instance, if you were to test a standard partition wall of 100mm thickness, which holds classification according to EN 13501-2 (a requirement of EN 1366-3), it would yield a defined scope. This scope ensures that if the wall installed on-site meets the same classification standard and fire resistance, the tested system would be transferable.

However, this is not the case with shaft walls. Without a specific test conducted on a particular shaft wall with designated services penetrating it, data transfer from other tests wouldn't be usable. Regrettably, this is an issue that is industry wide and causes a variety of issues.

In this situation, it is recommended that checks are carried out in relation to the compatibility of walls and the testing that has been carried out with fire stopping systems to be applied, considering the service types present. If there are service penetrations in a shaft wall and no suitably tested fire stopping system can be supplied, possible alternative solutions may be investigated.

One solution would be to divert the services away from the shaft walls to ensure they penetrate through a substrate which can obtain appropriate supporting test evidence. Another option is to change the wall type to a standard symmetrical drylining, or blockwork wall supported within the EN 1366-3 test standard for which a directly tested system is readily available.

If these options are unsuitable and/or unavailable, a 3rd option would be to support the application through direct testing thorough a UKAS accredited test lab considering the site conditions or to obtain a 3rd party assessment of the system by an independent body. These options typically require a lengthy period to obtain, so should be considered at the earliest opportunity during the project design stage.

If the above solutions have been exhausted and deemed not appropriate or unattainable, then at FSi Promat, we can issue technical evaluations which will be project specific and conducted in line with the principles of the 'PFPF guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence'. Please see FSi Promat Technical Guidance Note – 007 for technical evaluations.

It is important to note that this solution would constitute a non-tested scenario. As a result, there will be the requirement to consult the suitably appointed authority having jurisdiction on the project, as they will have comprehensive knowledge of site conditions, best placing them to provide informed guidance and sign-off on the proposed approach.

To provide further clarification, our recommendation would be to adhere as closely as possible to a tested solution aligned with EN 1366-3 for your project. This will consist of following minimum spacing guidelines for services, among other parameters. By doing so, you'll adopt a system wherein the specific seal has undergone testing to achieve the desired fire resistance level within a symmetrical partition wall of equivalent thickness to the shaft wall. This approach facilitates a swift and informed approval of the system by the fire engineer.