

# KNOWLEDGE SHARE: 013

**TITLE:** PENETRATION SEAL MANUFACTURERS ADVERTISING MOVEMENT CAPACITY

**BUILDING TYPE:** ALL BUILDINGS

## OVERVIEW OF THE PROBLEM

Movement capability in MEP service penetration seals is a complex and recurring topic, and it is often not fully understood.

This can make spatial coordination of MEP services and builderswork openings more challenging and may also affect the ease of technically assuring installations. In some cases, products may be described as having movement capability, but further clarification or supporting evidence may be required to fully understand the extent of that performance.

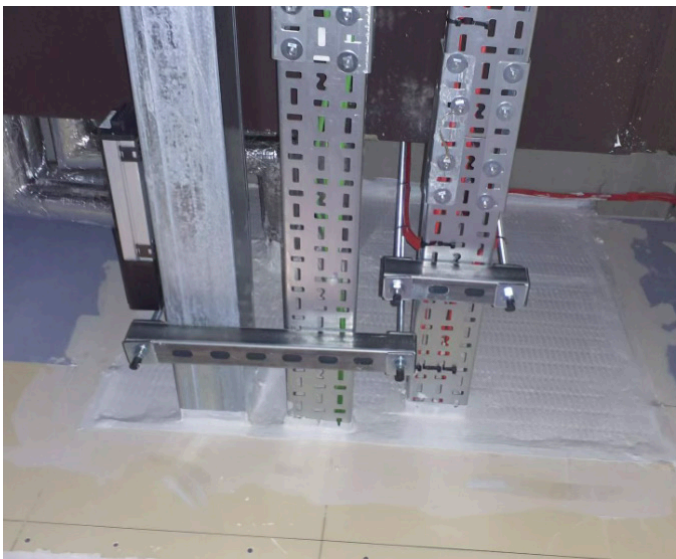


Figure 1: Image showing a common three-sided penetration seal clashing with partition deflection head

## WHY IS THIS A PROBLEM?

Currently, all of the BS EN 1366 suite of standards for MEP services fire resistance tests do not provide any mechanism to evidence the movement (compression and/or extension) capacity of penetration sealing products. Consequently, and in strict accordance with relevant standards, services penetration seal materials cannot be evidenced to provide a movement capacity. Some product manufacturers do market products which appear to accommodate movement, but only to a portion of a penetration seal (for example, at the head of a 'three-sided' aperture) but fail to consider any imposed movement on penetrating services, which are mechanically fixed to the slab above (which the 'flexible' head portion of the detail pertains to solve). Additionally, some MEP services require penetration seals which are mechanically fixed to the wall (e.g. dampers with metal flange plates) – clearly there is no differential movement capacity possible.

## RECOMMENDATIONS

It is recommended that manufacturer claims are investigated at product specification/design stages to ensure that appropriate penetration seal details are selected.

There are several factors which should be accounted for when considered building movement which could include compression, extension, and cyclic limitations. Until such time that these metrics are provided for in relevant test standards, manufacturers claims should be carefully considered by a competent person, e.g. a fire engineer.