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KNOWLEDGE SHARE: 006

PFKG
Passive Fire Knowledge Group

TITLE: COMBINED SERVICES PENETRATION SEALS

BUILDING TYPE: ALL BUILDINGS

OVERVIEW OF THE PROBLEM

During spatial planning of MEP services and builderswork apertures, there may not always be sufficient space to provide separate apertures for specialist services such as fire-resisting ducts and dampers. This often means that they are required to share apertures with piped and/or electrical services.

Figure 1: Pipework, electrical services and fire damper located within the same penetration seal.

WHY IS THIS A PROBLEM?

This is a problem because there are no tested or certified penetration seal details which permit combined penetration seals (i.e., those which contain piped and/or electrical services together with fire-resisting ducts or dampers). This is due to industry standard test procedures requiring these systems to be tested in isolation.

This means that it may be very difficult or impossible to provide evidence of the resistance to fire performance in accordance with the requirements of the project fire strategy.

RECOMMENDATIONS

It is recommended that during RIBA Stage 2, prior to the building planning height being agreed, spatial checks for ceiling void space are undertaken to avoid any issues during RIBA Stage 3 spatial coordination, where fire-resisting duct and damper product specifications are finalised. This will allow the required builderswork aperture dimensions to be accommodated.

Wall system minimum aperture separation requirements may also need to be considered.

Accordingly, it is recommended that dampers and fire-resisting ducts are placed in their own dedicated builderswork apertures and sealed with the manufacturers tested penetration seal details.

Refer to PFKG Knowledge Share 004 for further information regarding builders work aperture positioning.