



Since the Grenfell tragedy in 2016, there has been an increased focus on fire-safety compliance in all communal buildings.

This focus sharpened even more when, early in 2018, the media unearthed evidence of some non-compliant products having been installed there, including internal fire doors that had been fitted without smoke seals.

As a result, there has been heightened attention on every aspect of safety, not least on fire doors. Fire officers and building management personnel understandably want to ensure they have covered every possible safety angle. To this end, they are now often insisting on going beyond the specifications required by regulations.

However, in trying to ensure doors provide the maximum protection against fire and smoke, another potential problem can arise that, if not addressed, can undermine those good intentions.

The problem:

One of our customers, a door manufacturer and installer, had recently supplied doors but then been informed by their customer that they were not successfully self-closing as they were meant to.

The assumption was that the door closer was not performing correctly, so the 'fault' was relayed to Rutland with a request for a resolution. We agreed to visit the site swiftly to assess the situation.

Our inspection found that the door closer was correctly specified for the width and weight of the door, but that the smallest possible door gaps had been specified. These, coupled with substantial smoke seals around the doors, were causing significant resistance to the doors closing. Although the resistance was due in part to the physical aspects of the small gaps and the seals, the main problem was actually the build-up of differential air pressures on either side of the doors.

Given the increased focus on maximum fire defence at doorways on all new-builds and building refurbishments, this problem is arising ever more frequently. Tighter door seals have the effect of creating separate, near air-tight pockets within a building, each holding air at slightly different pressures. The bigger the building, the more such pockets and the greater the pressure differentials that can potentially build up.

These pressure differentials can have a significant additional effect on the amount of force needed to close each door and must be taken into account when choosing and setting closers.



The Rutland response:

Rutland's technical team attended the site as required to support the customer in achieving a solution, first to identify the issues with air pressures and then recommend and implement a solution to the problem.

Initially, we made hinge and latch adjustments to the door sets to overcome some of the resistance. This proved to be insufficient to ensure all the doors correctly closed first time, so we advised upgrading to stronger door closers. This recommendation was supported by supplying the door manufacturer with relevant data from previous tests on an equivalent door set to verify the product's suitability.

The new closers were delivered to the site and our technical team remained on hand to provide extensive assistance with the installation. Rutland created a bespoke jig to aid the door manufacturer's installers in fitting the replacement door closers, significantly cutting down the time it took to rectify the problem.

Outcome and key learning points:

The project was successfully brought back on track, to the full satisfaction of the property owner and the door set manufacturer. All doors now function as they should and are delivering the intended fire safety for all building occupants.

This case highlights that, due to heightened protective sealing around doors, there is an increasing likelihood of air locks forming in buildings, which means that specifying of door closers cannot be based simply on weight and width of doors, as has traditionally been the case. The pressure differentials that result vary building by building, based on each one's layout, so it necessitates careful assessment to ensure that appropriate closers are specified.

Rutland at your service.

If you aren't sure what impact air pressure will have on the ability of your fire doors to close properly, we are here to help. We recommend seeking our early assistance in your project so that we can identify and rectify potential problems you might otherwise encounter later.

Rutland support:

- We can supply test data to help determining the suitability of various closers for your door sets.
- We can provide jigs, even custom-made set-ups for specific projects, to aid correct installation of door closers.
- We offer free technical advice, whether over the phone, by video call or through site visits.

Get in touch:

sales@rutlanduk.co.uk
+44 (0) 1246 261491

