

Fire dampers must be adequately fire tested and installed in accordance with the manufacturer's instructions.

CE marked fulfilling the requirements of EN 15650

Fire tested to EN 1366-2

Classified to EN 13501-3

Factory production control including a continuous program of cyclic & leakage testing.

The benchmark for fire safety products involves CE marking, evidence of performance in standard tests, classification reports from notified bodies, third party certification including factory production control, and ongoing random sampling and auditing. This is the most appropriate way of demonstrating the performance of fire protection products in the market.

Introduction

Fire Dampers are used to inhibit the spread of fire and smoke through heating, ventilation and air-conditioning systems. Fire dampers must be adequately fire tested and installed in accordance with the manufacturer's instructions. These instructions must be supported by relevant test data.

CE Marking

Following the introduction of the new Construction Products Regulation (CPR) on the 1st July 2013, manufacturers of construction products which are covered by harmonized European standards (hENs) are required to affix the CE mark and make a Declaration of Performance (DoP) for their products. CE marked fire dampers must fully comply with the product standards: EN 15650:2010 Ventilation for Buildings - Fire Dampers and compliance is verified through assessment by a "Notified Body".

CE involves

Fire testing to European standards EN 1366-2
Classified to EN 13501-3
Corrosion testing to EN 60068-2-52
Thermal fuse testing to ISO 10294-4
Factory production control including a continuous program of cyclic & leakage testing

Companies must be quality management accredited (ISO 9001). Products must be supplied with comprehensive installation, operation and maintenance instructions. There is a legal responsibility for ensuring compliance with the harmonized standards for manufacturers, importers, distributors, specifiers, builders and installers.



Fire Damper Fire Resistance Test

EN 1366-2 (Test standard) gives requirements for testing dampers to the following performance characteristics;

E (Integrity) - the ability to resist the transmission of fire (no cracks, openings or sustained flaming).

S (Smoke Leakage) – the ability to resist the passage of gases or smoke. < 200m³/hr/m²

I (Insulation) – the ability to withstand exposure without the transmission of significant heat. So that unexposed surfaces or any material in close proximity are not ignited. <140°C mean <180° max.

Performance of any of the above characteristics shall be declared in minutes using one of the following periods; 30, 60, 90, 120.

Classifications should indicate if the performance criteria are satisfied by;

fire from one side only or from both sides with the additions of : "i → o", "o → i" or "i ↔ o"

In respect to vertical or horizontal orientations or both with the additions of: "ve" and/or "ho"

For example, **EI 120 (ve ho I ↔ o) S**

indicates a damper capable of satisfying 120 integrity, insulation and smoke leakage from both sides in both vertical and horizontal applications

Who is responsible for Installation?

As more than one party is usually involved in damper installation it requires integrated installation practices with each party accountable for their element of work. An installation and handover check sheet should be completed for each damper ([download here](#)).

Benchmark (First of Kind) installations

Installing contractors should request detailed instructions and support from the damper manufacturer on how the damper should be installed to ensure that the method specified is practical for site conditions and satisfies classification requirements. A first of kind or benchmark installation should be reviewed on every project by all invested and accountable parties.

Separation distances between fire dampers & between fire dampers & construction elements *

EN1366-2:2015 references separation distances as;

200 mm between fire dampers installed in separate ducts.*

75 mm between fire damper and a construction element (wall/floor) – e.g. for a damper in a wall, this is the distance between the damper casing (largest dimension) mounted in the supporting construction and a wall or floor adjacent to that supporting construction.*

Structural openings*

A fire damper should normally be installed in its' own unshared structural opening. Not shared with other dampers or other services.*

*EN1366-2 refers only to standard test installations. Where a product is successfully tested and classified to an installation method that contradicts this, for example up against a ceiling slab or 2 dampers close together then these successful tests will take precedence. These are often referred to as **Minimal Distances Installations** which are CE compliant.

Other Guidance**Breakaway Joints**

A joint connecting a fire damper to the attached duct work which will allow movement or collapse of the ductwork during a fire without disturbing the integrity of the fire damper. Consisting of non-fire resisting material with a low melting point – examples include flexible connections, slip joints and plastic or nylon fixings. More guidance on this can be found in DW/145 'guide to good Practice for the installation of Fire and Smoke Dampers'.

Damper Supports & Fixings

Dampers should be sufficiently fixed and independently supported to manufacturers recommendations and relevant guidance documents such as DW145.

Access Hatches in Duct

Adequate means of access should be provided to allow inspection, testing and maintenance of both the fire damper and it's actuating mechanism. Fire damper guide - DW/145 recommends at least one duct work access point is required but access to both sides may be required for cleaning (refer to the relevant ductwork cleaning standard such as DW144).