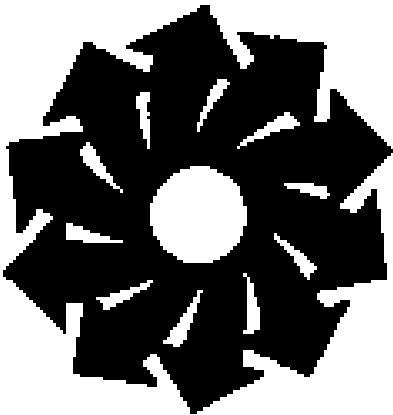


# **Installation frame for fire dampers complying with the requirements of the Greater London Council**

HEVAC 6/5/83 rev 2      March 2012

(This HEVAC specification supersedes specification *HVC 6/5/83 rev1* which was approved in 2002)

## **HEVAC Technical Specification**



## **HEVAC ASSOCIATION**

*Ref: hevac6583.doc*

This specification has been prepared by members of the HEVAC Fire and Smoke Damper technical committee. Those involved in its drafting were:

<b>Trox (UK) Ltd</b>	<b>(Chairman)</b>	<b>Mr P White</b>
<b>AirVent Systems</b>		<b>Mr I Doncaster</b>
<b>Belimo Automation UK Ltd</b>		<b>Mr W Clee</b>
<b>BSB Engineering services Ltd</b>		<b>Mr M Backham</b>
<b>Colt International Ltd</b>		<b>Mr P Compton</b>
<b>Gilberts (Blackpool) Ltd</b>		<b>Mr R Jones</b>
<b>HEVAC</b>		<b>Mr M G Duggan</b>
<b>Ruskin Air Management Ltd</b>		<b>Mr L Mills</b>
<b>Trox (UK) Ltd</b>		<b>Mr A R Green</b>
<b>Waterloo Air Products</b>		<b>Mr W ter Kuile</b>

© Federation of Environmental Trade Associations Ltd. 2012

All rights reserved. Apart from any fair dealing for the purposes of private study or research allowed under applicable copyright legislation, no part of the publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the Federation of Environmental Trade Associations, 2 Waltham Court, Hare Hatch, Reading RG10 9TH.

FETA uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in the light of available information and accepted industry practices but do not intend such Standards and Guidelines to represent the only methods or procedures appropriate for the situation discussed. FETA does not guarantee, certify or assure the safety or performance of any products, components, or systems tested, installed or operated in accordance with FETA's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

FETA disclaims all liability to any person for anything or for the consequences of anything done or omitted to be done wholly or partly in reliance upon the whole or any part of the contents of this specification.

## **1 GENERAL**

### **1.1 History**

During the early 1980's there was a need to produce specific guidance on the construction and installation of frames for fire dampers. This was largely as a result of the requirements of the Greater London Council at the time. In conjunction with the GLC and the then Heating and Ventilation Contractors Association (now the Building and Engineering Services Association, B&ES), the Fire and Smoke Damper committee within HEVAC produced the joint HEVAC/B&ES specification number HVC6/5/83.

As a result of advances in materials and production processes, the Fire and Smoke Damper committee has now produced this revision. Changes have been kept to a minimum and HEVAC consulted with the BRE Fire testing laboratory and Warrington Fire Research Centre during its drafting.

This frame is compatible with method 3 of B&ES DW145.

### **1.2 Scope**

This specification describes an installation frame for fire dampers.

### **1.3 Purpose**

The installation frame is designed to be factory assembled on to a spigotted or un-spigotted fire damper (or supplied in kit form for larger multiple units for site assembly). When fitted into a fire barrier, this frame will, under fire conditions, allow the damper to expand without distortion.

### **1.4 Principle**

The installation frame is designed to maintain integrity between it and the fire damper casing. The aluminium rivets where used in the construction of the installation frame shall not inhibit expansion of the frame components under fire conditions.

### **1.5 Testing and Assessment**

Fire dampers shall be tested to current furnace tests standards for each installation type. Where assessments/assessed is mentioned this shall be by a notified body.

## **2 MATERIAL**

Where galvanised sheet steel is referred to herein, it shall be understood to refer to strip mill cold reduced sheet, hot-dip zinc coated in accordance with BS EN 10346 DX51D to bending and profile quality, coating grade to meet the requirements of B&ES DW144. However, subject to certification/assessment, other materials can be used.

## **3 CONSTRUCTION**

3.1 Spigotted or un-spigotted type fire dampers may be provided with an installation frame, which shall be constructed from galvanised sheet steel of minimum nominal thickness of 1.5 mm, unless a thinner material has been successfully fire tested or assessed. Frames may be used to suit ductwork of sizes up to those successfully fire tested or assessed.

3.2 Any multiple arrangement above 1500mm nominal duct length (in either direction) may be supplied in optional kit form (including assembly instructions) for assembly on site up to such dimensions as have been successfully fire tested or assessed.

3.3 Each corner fixing bracket of the installation frame shall be open, with a clearance space for expansion. These corner brackets shall be preformed from galvanised sheet steel of a minimum nominal thickness of 1.5mm as tested. Each corner bracket shall be fixed to the installation frame by four 5mm diameter aluminium rivets or as tested. For small dampers, it may be necessary to modify corner bracket (reduce size) and also reduce quantity of rivets from four to three or two as required.

3.4 The installation frame shall be shaped so as to provide closely fitting flanges to cover the fire damper casing, and shall have a minimum overlap of 19mm on all sides.

3.5 The installation frame shall consist of two sub-assemblies to form a complete assembly with an upstand flange web of 15mm - 0 +5 around the periphery of the frame, positioned mid-way across the depth of the frame, such webs being joined together at the fixing tab points.

3.6 The tab fixing points will be equally spaced with maximum centres of 400 mm, using a minimum of one per side.

Note: Below 350mm high (approx) on the casing side which the actuator drive system is fixed; tabs are not fitted due to physical limitations.

3.7 Each fixing point shall consist of four tabs of minimum width of 12mm formed from galvanised sheet steel of a minimum nominal thickness of 0.9 mm or as tested, each to have not less than 75mm free length for positive fixing into the surrounding builders work to maintain structural integrity.

3.8 The fixing tabs shall be attached through holes, which may be slotted, (12mm long parallel to the frame) in the upstand flanges by 5mm steel rivets.

#### **4 EXPANSION**

To enable expansion to take place within the structural opening, minimum clearance shall be provided as follows:

- (a) 15mm between mitre corners of the installation frame.
- (b) 10mm on each side between the installation frame and the fire damper casing.

#### **5 CORNER SPACERS**

Regardless of the size of damper assembly, the clearance space on all sides shall be maintained by multi-folded corner spacer sections equal to the depth of the installation frame and formed from 0.9mm galvanised sheet steel, or as tested.

## **6 FIRE DAMPERS**

In all other respects the fire dampers installed must comply with the relevant approved engineering specifications of each manufacturer.

## **7 FRAME INSTALLATION**

7.1 The frame shall be installed centrally in the thickness of a brickwork or concrete surrounding wall or floor, or in the case of thick walls or floors, so that the centre line of the frame is at least 50mm away from the nearest face of the wall or floor in which the assembly is mounted.

7.2 Where in item 3.7. foregoing, the term "positive fixing into the surrounding builders work" is mentioned, that term shall entail:

(a) in brickwork or blockwork walls the tabs shall be bent out and solidly built into the mortar joints between the brickwork or blockwork..

(b) in the case of reinforced concrete walls and floors, the tabs shall be bent out and tied with 1.5 mm diameter (minimum) steel wire to the reinforcing bars which will be deliberately left protruding into the opening and then the gap between the installation frame and builders work backfilled with mortar or concrete on both sides of the flange.

(c) as an alternative to both (a) or (b) above, fire resisting steel anchors may be used, driven into the wall or floor and the tabs wired back to these using 1.5 mm diameter (minimum) steel wire.

(d) tested variants of installations may be available, but there must be some wiring (1.5 mm diameter (minimum) steel wire) back to anchors or similar to ensure the "securely fixed" requirement of Approved Document B, mortar alone is not sufficient.

7.3 Adjacent frame assemblies must be separated by builders work of a minimum thickness of 200 mm (between installation frame upstand flanges) unless approval has been previously obtained from the appropriate authority.

7.4 In no case shall the HEVAC frame and damper assembly be held in position merely by the adjacent ductwork, and it should be noted that in reinforced concrete structures (especially floors), it will not be sufficient to only backfill between the damper installation frame and the surrounding opening with mortar or fine aggregate concrete mix without provision for tying in the frame to the surrounding reinforced concrete structure.

7.5 The work shall be carried out to the satisfaction of the appropriate authority. Any deviation must have similar approval.