

PRESSURE TEST ON DUCT ACCESS DOOR

Carried out for & on the behalf of:

KK Manufacturing & Distribution
a division of AJ Services - Established 1986
Unit 7 / 78 Hutton Road
Handsworth
Birmingham
B20 3RD

Test carried out by:

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1. INTRODUCTION

This report concerns pressure tests carried out on a duct access door and frame assembly. The sample was manufactured by KK Manufacturing, who also commissioned the test work carried out in the BSRIA laboratories during the period 3 February to 5 February 1992

2. OBJECTIVE

To determine the leakage rate from the door and frame assembly.

3. ITEMS SUPPLIED FOR TEST

The items supplied consisted of an access door and frame of overall dimensions 305mm x 305mm. This was mounted on a galvanised steel plenum 600mm x 600mm x 600mm. The whole assembly had been sealed to the plenum using a mastic sealant and the door frame using a foam strip arrangement.

4. TEST METHOD

Four sets of tests were carried out. Pressures was applied to the plenum in stages up to maximums of 2500 Pa positive and 750 Pa negative.

These were limits stated in DW142 HVCA specification for high pressure Class 'D' ductwork.

Tests were conducted with the plenum assembly "as supplied" to give gross leakage rate and with the access door assembly blanked off to give a net leakage rate. The difference between the two gave the leakage through the door assembly. Air was supplied and extracted via a centrifugal fan and venturi arrangement . Pressures being measured using digital micromanometers.

5. RESULTS

Gross Leakage (system, plenum, door assembly)

PLENUM PRESSURE Pa	VENTURI	
	DIFFERENTIAL PRESSURE Pa	LEAKAGE RATE 1/s
530	1.2	Less than 0.05
970	3.6	0.110
1500	9.2	0.175
1990	15.6	0.232
2480	25.6	0.302
-470	1.9	<0.05
-520	2.6	<0.05
-770	4.2	0.117

PLENUM PRESSURE Pa	VENTURI	
	DIFFERENTIAL PRESSURE Pa	LEAKAGE RATE 1/s
440	1.3	<0.05
650	2.5	<0.05
1050	4.7	0.128
1600	9.9	0.182
1900	15.1	0.230
2490	25.0	0.300
-490	2.1	<0.05
-740	4.0	0.115
-760	4.3	0.118

6. CONCLUSIONS

The leakage of the access door and frame was less than 0.05 1/s at all test pressures

The test pressures did not cause permanent deformation.



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