

FIRE AND SMOKE DAMPERS



BEN TURNER

FIRE AND SMOKE DAMPER DEFINITIONS

FIRE DAMPER

: A moveable closure in a duct or opening for the passage of air, which operates automatically to restrict the passage of fire or products of combustion past it

SMOKE DAMPER

: Constructed as a fire damper where the closing action is initiated by the detection of smoke

SMOKE SPILL DAMPER

: Constructed as a air control damper with the ability to resist elevated temperatures

FRL

:FIRE RESISTANCE LEVEL

:The fire-resistance grading periods in minutes determined in accordance with as 1530.4-for –

- a) Structural adequacy
- b) Integrity
- c) Insulation

Expressed in that order
Eg -/240/-



Fire damper design and manufacture requirements AS1682.1

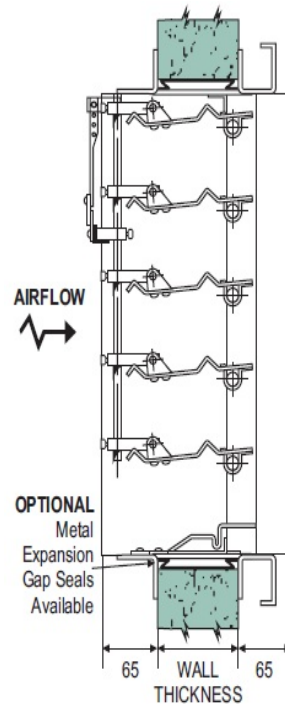
:To be securely mounted in the vertical or horizontal

:Shall be constructed so that the blade when released closes is fully contained in the penetrated element

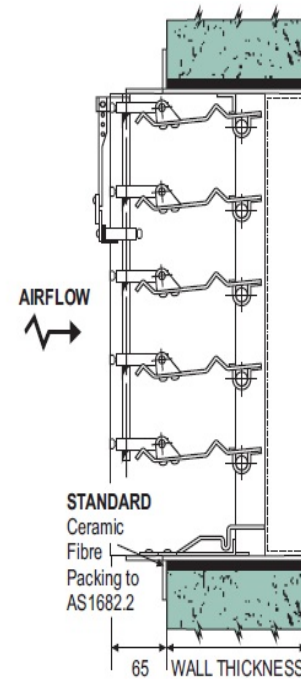
:All fire dampers must have a release mechanism that contains a thermal link.

:All fire dampers apart from curtain must combine a latch that prevents rebound

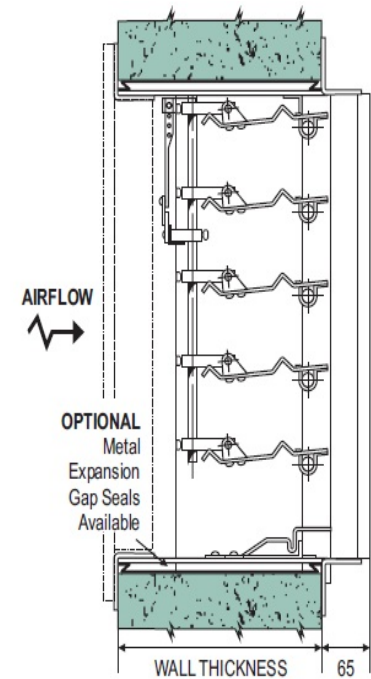
: All fire dampers must be constructed as the tested prototype



D-TYPE 1
DUCT to DUCT
Minimum 110mm Wall



GS-TYPE 2
DUCT to GRILLE
Minimum 110mm Wall



GR-TYPE 3
GRILLE to DUCT
Minimum 240mm Wall
ENERGY AUST. MODEL



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ORDERING DAMPERS AS 1682.2

:Width X Height

:Damper size or penetration size

:Wall construction (masonry ,plasterboard etc)

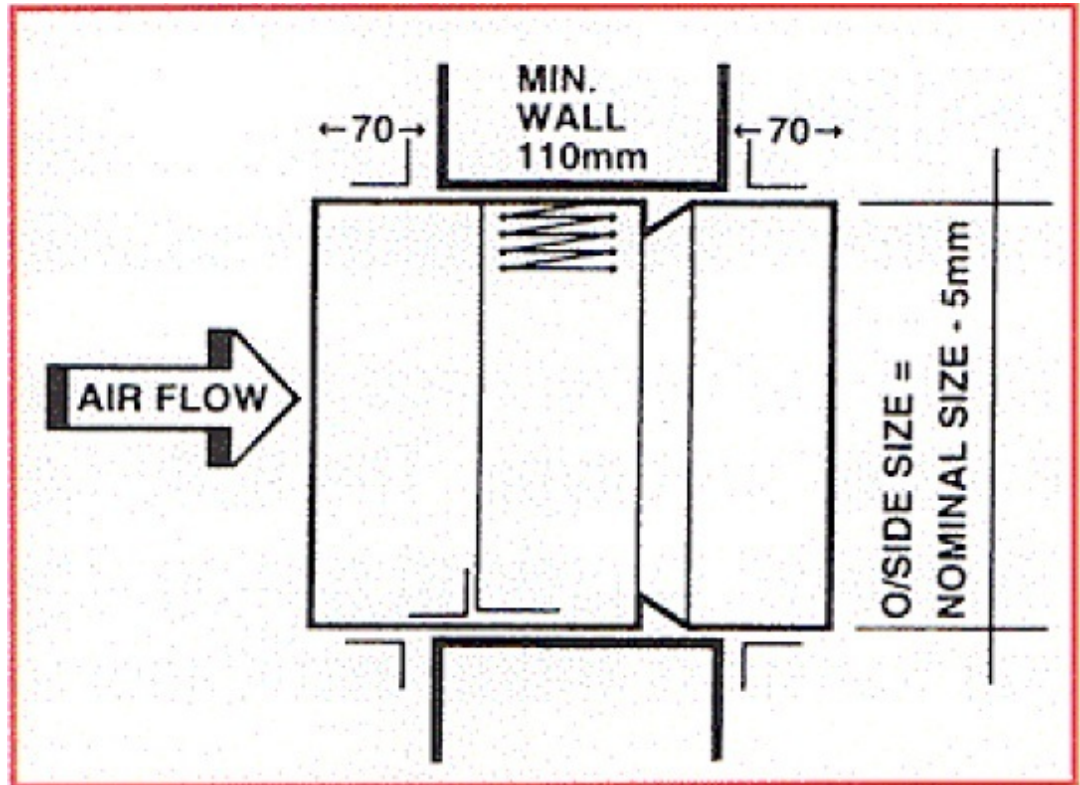
:Wall thickness

:FRL of wall

:Style of damper (duct to duct ,
duct to grill or grill to duct)

:Damper model

:Connection type slip joint ,tdf



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Installation of fire dampers 1682.2

:Fire dampers shall be installed in the same type of construction and in the same manner in which the prototype was tested.

: The fire damper may not have a FRL Less than the construction that is mounted in

:Manufacturers installation instructions must be followed

: All dampers shall be mounted in the wall in such method where it can expand in a fire without distorting the blades

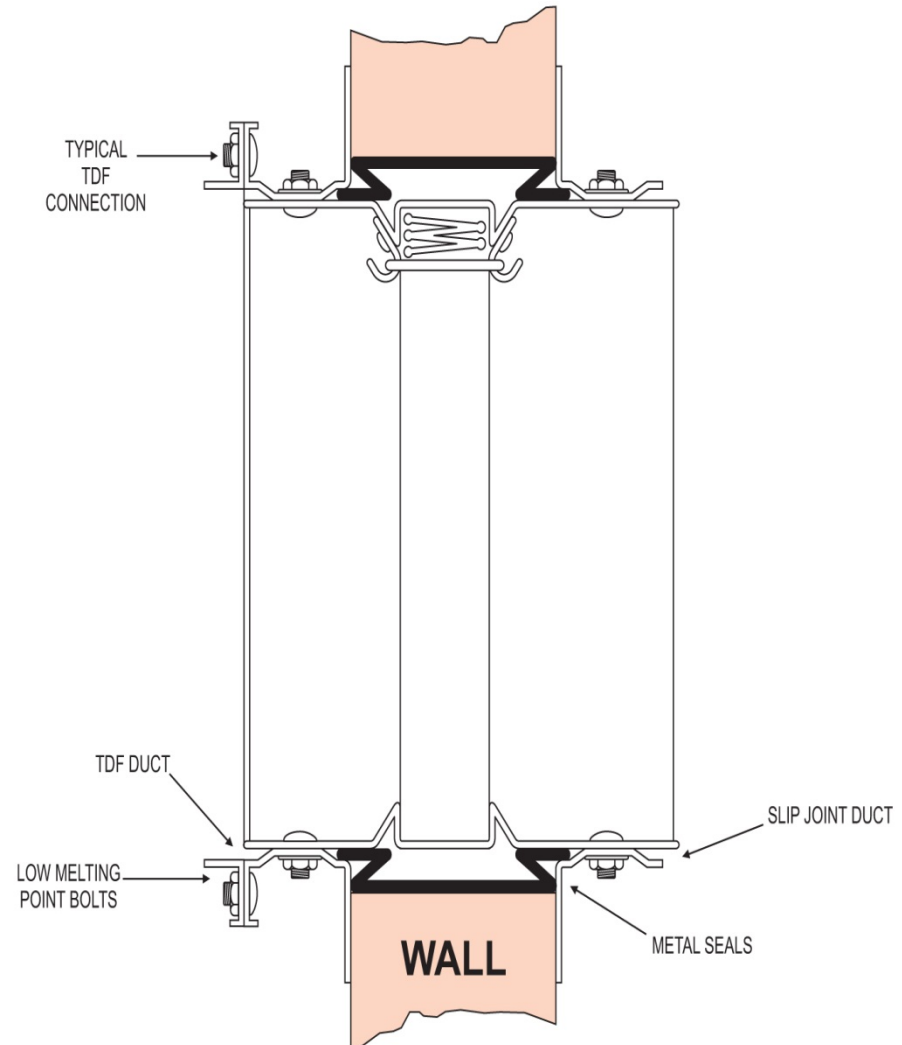
:All mounting angles must not be less than twice the width of the clearance between the penetration and fire damper

:Air flow stickers must be followed

: Connection of duct work to the fire damper shall be that if any deformation or collapse of ductwork doesn't dislodge the damper from the wall

: Damper casings shall not exceed 150 mm on each side for slip joint angles 80mm on each side for flanged duct joint

: Min clearance between damper and penetration 1.01+10mm



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SMOKE DAMPERS

:Shall be constructed as per AS1682.1

and AS1682.2 except for the following

:Thermally active device may be omitted

:Damper tip seals shall be incorporated

:The damper retaining clip may be omitted

:Where used in smoke spill systems

Smoke Spill Air control dampers shall resist high temperatures



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SMOKE ONLY/FIRE AND SMOKE

SMOKE ONLY



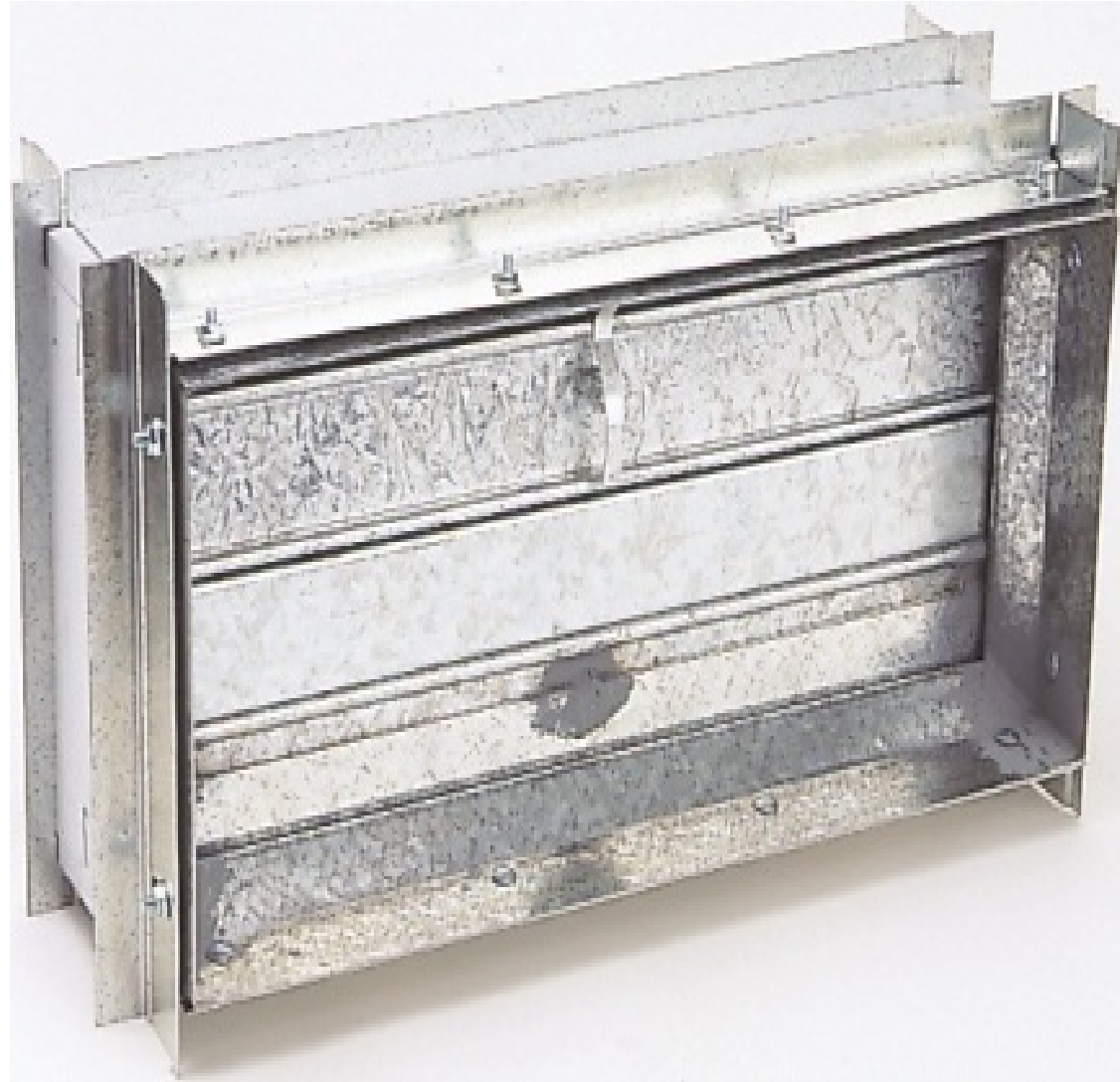
FIRE AND SMOKE



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COMMISSIONING FIRE DAMPERS

- :Check that the penetration is made correctly**
- :Check damper for correct labels**
- :Check damper is constructed and installed as per the tested prototype**
- :Check orientation of damper to label**
- :Check damper is in the fully open position**
- :Check airflow to label**
- :Check clearance between damper and penetration**
- :Check that closure is not impeded**
- :Check whether damper assumes the fully closed position in a fire**



FAQ

:How should the penetration in my plasterboard wall be constructed

:My damper isn't the correct size can we tamper with the damper to make it fit our requirements

:Does the air flow or top sticker on the fire damper need to be followed



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