Technical Bulletin

Installation: Horizontal flue terminals

SEALING TO THE BUILDING FABRIC

Note: For the purpose of this document, "sealed to" shall mean with a suitable building material or purpose made product. Suitable materials should adhere to the flue and the building fabric and must set firm. Sand & cement is preferred, but expanding foam, silicone sealant and other similar products are suitable.

Non-setting compound is not a suitable material for sealing the annular space.

The requirement for sealing flues to the building fabric, where the flue passes through an external wall, is for the flue to be sealed onto at least one surface of the wall.

Whilst the external rubber wall sealing rings which we provide may well be adequate to prevent rainwater or products of combustion from entering the building, they will not secure the final section of flue to the building fabric, which will prevent lateral movement and provide better protection against disconnection of flue sections.

The advice in our manuals is what we consider to be best practice and should be followed.

Our horizontal flue manuals have been updated to contain the following advice.

4.2 Installing the telescopic flue through the wall

WARNING:

Products of combustion!

To ensure products of combustions do not enter the property through the flue hole.

- Where possible the flue hole should be sealed to the building fabric on the inner and outer face using a suitable building material. As a minimum, the flue must be sealed to the inner wall using a suitable building material and the rubber collar fitted to the flue against the outside face. Providing the face of the outside wall is flat then the rubber collar is considered to be an adequate seal.

Fig. 1 Manual extract

This guidance essentially asks for any flue which passes through an external wall, and is accessible from both sides, to be sealed to the building on the inner and outer surfaces.

For installations where:

- Access to the terminal may be difficult to inspect behind the external sealing ring.
- The flue may have been installed from within the building without sealing the flue to the outer surface.
- It cannot be confirmed that the flue is sealed to the outside surface with a suitable building material.

The flue must be sealed to the inner surface of the wall and the outer rubber flue sealing ring must be fitted.

The rubber sealing ring provided for the outer surface is deemed an adequate weather seal to a flat, smooth surface. It will prevent rainwater or products of combustion from entering the building through the annular gap around the flue. It must be fitted as it helps to create a waterproof seal between the final section of flue pipe and the flue terminal.

The plastic ring provided for the inner wall is mainly for cosmetic purposes and does not have to be fitted, the inner wall can be finished using suitable building materials.

Our appliance installation manuals state that in the absence of specific guidance from the manufacturer, BS5440 must be followed.

Note: Up until now, the Installation Manuals have not been specific in detailing that the annular space must be sealed, and an installer may question a GIUSP classification. However, the IM also states that BS 5440-1 must be complied with, so the following applies,

BS5440-1:2008 10.2.2 Jointing and weatherproofing.
Where flue duct components are required to be joined, the jointing methods and materials specified by the appliance manufacturer shall be used.
The annular space between the flue duct and air supply duct and their respective surrounding structures shall be sealed.
Any ingress of moisture shall be prevented from affecting the internal wall face.

Please refer to *Fig 2* for further guidance in classifying flue sealing situations. *Fig 2* refers specifically to methods applied when the standard Worcester sealing rings are provided. Please read Note 2 for specific guidance when sealing rings that are purpose made for sealing the annular gap around the flue are installed.

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Fig. 2 Table

Wall sealing ring - Outer 8-716-111-212- 0	Wall finishing ring - Inner 8-716-111-211- 0	Sealed to external wall	Sealed to internal wall	Outcome
N	N	N	N	GIUSP
Y	N	N	N	GIUSP
Y	Y	N	N	GIUSP
N	Y	N	N	GIUSP
N	Y	N	Y*	GIUSP
N	N	N	Y*	GIUSP
Y	Y	Y	Y	acceptable
Y	Y	Y	N	acceptable
Y	Y	N	Y	acceptable
Y	N	Y	Y	acceptable
Y	N	N	Y	acceptable
Y	N	Y	N	NCS/Advice note
N	Y	Y	N	NCS/Advice note
N	Y	Y	Y	NCS/Advice note
N	N	Y	N	NCS/Advice note
N	N	Y	Y	NCS/Advice note

Note Ref Fig 2: Y* - GIUSP applies to cavity walls. Solid walls can be categorised as NCS/Advice note.

Flue terminal guards must always be fitted if the flue is less than 2m above pedestrian access or where there is a risk of vandalism or accidental damage.

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Due to the position of the flue turret/adaptor on some Worcester boilers, certain flue configurations mean that it is impossible to avoid having an elbow socket partially buried within the building fabric.
This would apply to high level horizontal and left or right extended horizontal rear fluing configurations. This guidance must not be applied to any other configurations.

For standard rear horizontal flue installations on appliances where the joint between the appliance flue adaptor and terminal section will naturally be sited within the wall. There is no requirement to make this joint accessible for inspection. The flue must be assembled as described in the manufacturer's instructions. The joint between the flue adaptor and flue terminal section must be secured with the screws provided.
The wall can be made good around this joint which means that this joint may not be accessible for visual inspection. When this flue joint cannot be visually inspected, a flue integrity check must be carried out at each annual inspection.
If any flue extension is fitted between the flue adaptor and flue terminal section, then the information provided in the guidance section of this Technical Bulletin must be followed.
The one exception would be if **only** an elbow were fitted between the flue turret/adaptor and the flue terminal section. In that case, the installation would be treated as a standard rear horizontal flue terminal.

The following information should be used as guidance. Any of the following solutions are permitted providing the guidance is adhered to.

To make good the inner wall face, either the decorative finishing ring provided with the flue, or fire stop plates can be used.

Note: If accessible, it is acceptable for a visual inspection of a joint to a terminal section which is concealed within a wall to be carried out by using a torch from the terminal end. You should be able to observe that the terminal section is properly inserted into the flue pipe socket and that the retaining screws are present.
Visual signs of a poor joint or damaged seal are corrosion of the air duct below the joint or signs of rust around and below the flue connection at the appliance.
Any flue other than what is described in this Technical Bulletin as a standard rear horizontal, that is assembled with a joint within a cavity wall, that is not either sleaved through the wall or sealed to the cavity will be categorised as At Risk.

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Guidance:

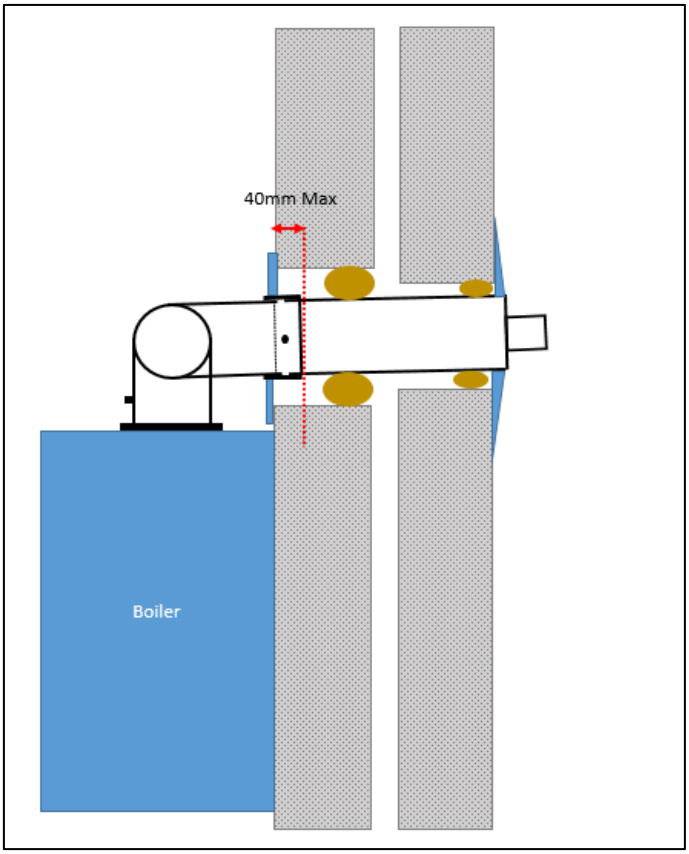

Fig. 3
Flue joints buried up to 40mm into the wall.

- Must have a core (or stitch drilled) hole through the inner wall large enough to allow sealing of the inner wall to the flue pipe beyond the made joint and allow visual inspection at future visits.
- The socket must be no deeper than 40mm into the wall and must not be buried more than half of the wall skin thickness.
- Joint securing screws must be fitted and visible.
- The inner wall finishing ring must be moveable to allow inspection of the joint.
- **Cavity walls:**
- 1)The flue pipe must be sealed to the inner wall skin with a suitable building material.
- 2) The flue pipe should be sealed to the outer wall skin with a suitable building material.

Solid walls:

- The flue pipe must be sealed to the wall with a suitable building material.
- Any flue extensions must be bracketed. The last extension must be bracketed within 150mm of the final elbow.

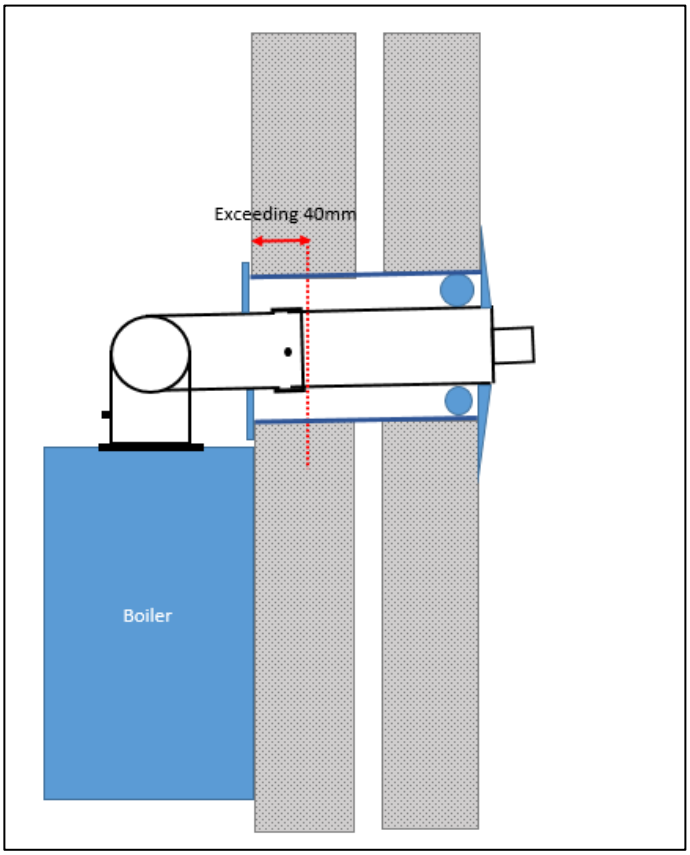

Fig. 4
Flue joints buried further than 40mm into the wall.

Cavity walls:

- Must be sleeved from the finished inner to finished outer wall faces with a suitable oversized duct.
- The duct must be made good to the inner and outer wall with a suitable building material.

Cavity/Solid walls:

- The flue must be sealed to the duct/wall beyond the joint socket with a suitable building material.
- The joint securing screws must be fitted and visible.
- The wall finishing ring must be moveable to inspect the joint.
- Any flue extensions must be bracketed. The last extension must be bracketed within 150mm of the final elbow.

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There are now products available which are specifically designed for sealing flues to the building fabric. They **can** remove the need for any further sealing or making good.
We accept that these products can be used with our Oilfit & Condensfit II flues providing they are installed in place of, and in the situations described for our own wall sealing rings.

For flue terminals finished at the face of the external wall, the sealing ring must be fitted into the locating groove on the terminal. (Ref TB 0148b)

Whilst these products meet the requirements for providing weather sealing and will prevent the ingress of flue gases from the terminal, they will not provide protection against lateral movement of the flue.

If a FlueSnug is used in this situation, and a flue extension is installed between the boiler flue adaptor and the final flue elbow, the flue extension must be securely bracketed within 150mm of the elbow. The elbow to terminal joint must be secured with screws, and the terminal section must either be sealed to the building using a suitable building material or a FlueSnug must be used on both the internal and external faces.

Fig. 5
Using FlueSnug to seal the flue to the building fabric.

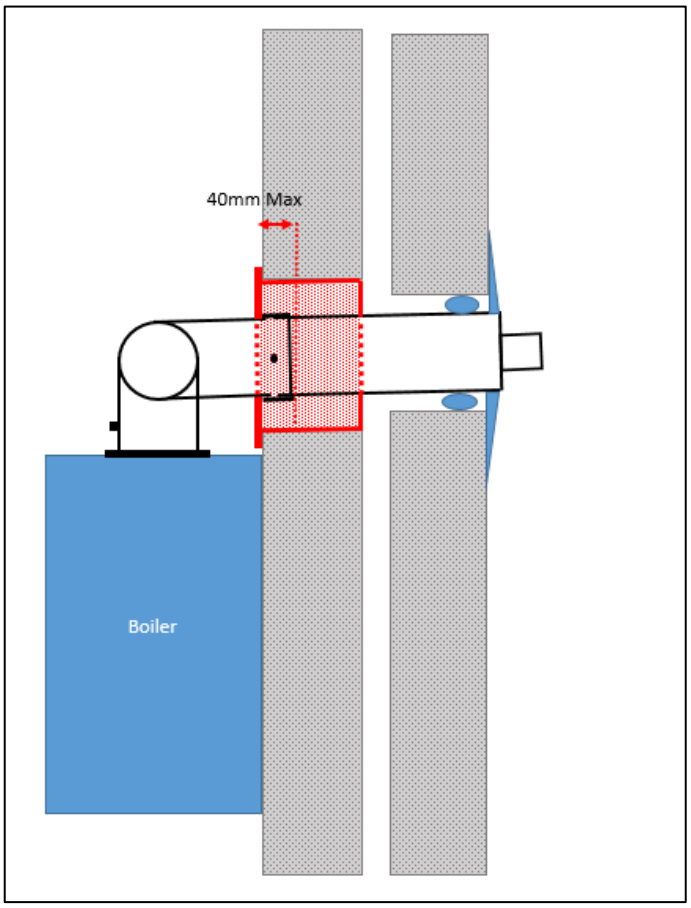

Fig. 6
Shows a FlueSnug used on the internal wall and the flue sealed to the outer wall.

- Manufacturer's guidance must be followed when fitting third party products. A suitably sized core hole must be drilled for the application.
- Flue joint securing screws must be fitted and visible.
- There must be sufficient space to slide the wall seal back to inspect the flue joint.
- Any flue extensions must be bracketed. The last extension must be bracketed within 150mm of the final elbow.

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The internal white decorative ring which we provide with horizontal flue terminals will not slide onto the socket section of our flues. If the socket is partially buried within the wall and you wish to use the decorative ring for making good, the inner lip can be carefully trimmed off with a sharp knife as shown below.

Alternatively, fire stop plates can be used:

60/100 8-718-006-907-0
80/125 8-716-110-276-0

Fig. 7

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