

Exclusively for HETAS Registrants



HETAS Technical Bulletin #10

April 2018

Welcome to the HETAS Technical Bulletin #10. One of our main aims is to support Registrants and other stakeholders to do a great job that is safe, effective & efficient. We talk to a whole range of installers, servicing businesses, chimney sweeps, retailers, manufacturers and other stakeholders every day. We are very fortunate in that we can call on technical committees, installers, training centres Inspectors and a whole host of industry professionals to help solve problems.

One of the jobs for our Technical Team is to record the subjects raised for discussion on our helplines. We look at the key areas, which receive repeated questions and create platforms to answer these queries such as the Technical Bulletins, FAQs and other support materials. We also feed these issues into the British Standards Committees for various standards that we use on our sector. We hope you find the bulletins useful and we are pleased to hear feedback.

If you have comments we would be pleased to hear from you at:

hello@hetas.co.uk

- Bruce Allen, CEO



NEW TECHNICAL TEAM MEMBER

A warm welcome to Kevin Bond, the newest member of the HETAS team, who will join us on the Technical Helpline desk. Kevin has a wealth of experience in the plumbing and heating sector after 35 years installing gas, oil and solid fuel systems and was Corgi installer of the year in 2005.

Outside of the business Kevin enjoys fishing and horse racing. His favourite holiday destination is Las Vegas.

Phone the Technical Helpline on:

01684 278194



The Importance of Hot Spillage Commissioning Testing



CALVIN MAY, TECHNICAL STANDARDS MANAGER, ON ESSENTIAL PROCEDURES FOR SUCCESSFUL INSTALLATION COMMISSIONING TESTING AND CONSUMER EDUCATION

It is always important for any installer or maintenance engineer carrying out works on a solid fuel appliance to ensure that the installation is left in a condition that poses no significant risks to the occupant of the dwelling and that the system can be operated safely by the user.

The March 2016 Technical Bulletin clarified the regulatory requirements stated in Schedule 1 of the Building Regulations which call for all solid fuel installation, replacement or alteration works to be commissioned appropriately so that the appliance when under operation uses no more fuel or power than required for the dwelling. This includes the appropriate testing to ensure the appliance & chimney system are operating effectively, dispersing the products of combustion into the outside atmosphere in compliance with regulation J2.



All installation commissioning testing should be carried out upon completion of the relevant construction works once any fire cement, sealant or mortar has had the time to dry. At this stage it is important to carry out the appropriate handover procedure ensuring the homeowner is made fully aware of the method for operating the appliance including appropriate fuels to burn, adjustment of the air controls, removal and proper disposal of ash, as well as servicing and maintenance intervals to ensure the flue-way remains clear at all times. The handover procedure is the perfect opportunity to operate the appliance and carry out the relevant smoke and spillage commissioning tests, educating the user on why and what to look out for should spillage occur. This is a good time to explain why a CO alarm has been installed and the action to take should the alarm activate whilst the appliance is in use.

The majority of smoke and extraction commissioning tests referenced within the industry to confirm compliance to J2 are carried out at an initial light up stage, when warming the flue slightly to produce a level of draw, following the prescribed methodology given in Appendix E of ADJ and referenced in BS EN 15287-1. These include both a smoke test using a suitably sized smoke pellet, for identifying the level of leakage from the system, as well as a smoke test II which gives a visual indication of the flow rate through the chimney.

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Smoke from smoke pen being visibly drawn into the appliance (above right)

Considerations and Usages for Insulation Boards



BRIAN BAILEY, SENIOR PRODUCT EVALUATION OFFICER, GIVES DETAILED GUIDANCE ON A SUBJECT WHICH RECEIVES COMMON QUERIES ON THE HETAS TECHNICAL HELPLINE

We are often asked about the use of insulation boards with solid fuel/wood burning appliances, most commonly freestanding stove installations. This can be a difficult area of work to establish a reliable and usable solution on-site. Our technical helpline is happy to offer advice and this article has been written to provide an introduction to installers where insulation boards may provide a solution.

There are two common applications. They are often used to “tidy up” an existing masonry fireplace recess and also to insulate vulnerable/combustible building components where an appliance is not installed in an existing recess. By vulnerable building components, we are talking here mainly about combustible components of the building structure constructed of wood/timber or simply wall coverings such as paint or wallpaper.

When considering what type of board to use, it is important to consider what guidance there is available to help meet the building regulations, in particular J4: Protection of building.

When being used to simply ‘smarten up’ the interior of an existing masonry fireplace recess that has been constructed in accordance with the guidance in Approved Document J (ADJ), it could be argued that there is simply a need to ensure the board manufacturer approved the product for this application and their method of installation is adhered to. Various paragraphs in Section 2 of ADJ advise that only non-combustible materials may be present in walls adjacent to hearths or within a fireplace recess. Non-combustibility is generally classed as A1 non-combustible in accordance with BS EN 13501-1. There are other descriptions given in ADJ paragraph 31.

In terms of suitable boards that will prove durable when used close to solid fuel appliances, it is the continuous working temperature (or service temperature) that must be considered, but this is unfortunately not always provided in published manufacturers’ specifications. Many boards that are based on gypsum as well as some other compounds will have a service temperature that would be unsuitable for such use.

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The service temperature or continuous working temperature may be as low as 49°C and these types of boards will suffer degradation under long term exposure to the kind of temperatures found next to a solid fuel burner (temperatures in the region of 400°C are not uncommon).

It is therefore important, before starting any installation works, to check with the board manufacturer that any proposed installed materials are suitable for use at the higher continuous working temperatures.

The type of fixing for boards should also be considered as the use of adhesives that might be flammable would be prohibited and it should also be noted that drilling and using screws and rawl plugs in a fireplace recess wall might also compromise the integrity of the structure in terms of its fire protection capabilities.



General alternatives may include some of the cement-based adhesives available on the market. Again, manufacturer's method of installation must be adhered to

The use of boards to offer protection deemed equivalent to the guidance given in ADJ is challenging. In our experience some boards are not tested under equilibrium conditions to show any equivalence in this sense.

The guidance in ADJ specifies certain thicknesses for masonry or concrete walls adjacent to hearths (around solid fuel appliances) and so not only is the material being used different but may also be of different thickness.

As this is an alternative approach from the current provided guidance in ADJ, to ensure compliance to the regulations sufficient evidence must be available to show that the different method employed provides at least an equivalent level of protection.

We understand that limited testing has been carried out on boards for use in small craft installations (small boats) and there is some guidance reference in BS EN 8511, the scope of which allows application in dwelling installation scenarios.

Further guidance on BS 8511 and guidance on ensuring careful selection of boarding is available from our Technical Helpline team on:

01684 278194

Closure Plates



STEPHEN SHEPHERD, TECHNICAL ADVISOR, ON THE SUBJECT OF CLOSURE PLATES AND HOW THESE DIFFER FROM REGISTER PLATES

A common enquiry received on the HETAS technical helpline relates to the use of closure plates in existing installations, when looking to close off the bottom of a masonry chimney, and the differences in its performance to the more widely used register plate.

A closure plate is defined as:

“ A plate used to close the bottom of a masonry chimney that includes a metal flue liner, and prevents debris falling from the void between the flue liner and masonry structure ”

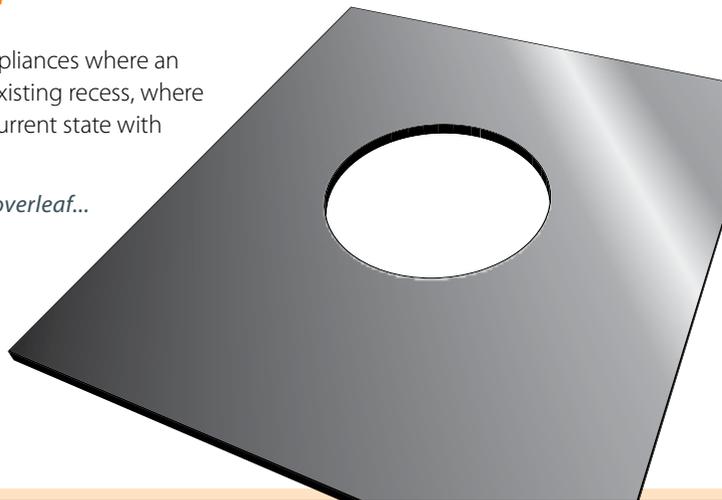
Typically the closure plate would be used where an appliance is to be installed into an existing recess where the flue requires some form of modification, either through the fitting of a flexible or liner system that is connected directly to the appliance connecting flue pipe.

In contrast, a register plate is defined as:

“ A corrosion resistant metal plate used to close the bottom of a masonry chimney and provide connection to the connecting flue pipe ”

A register plate is used in appliances where an appliance is installed in an existing recess, where the flue is to be used in its current state with no fitment of a liner.

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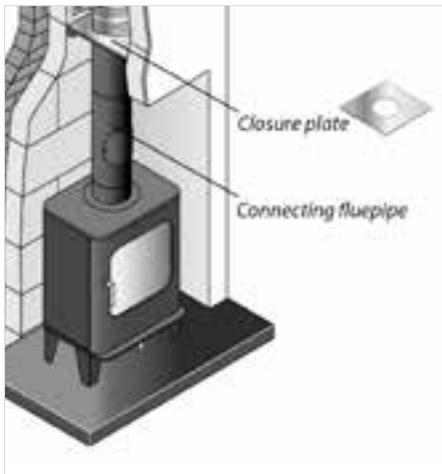
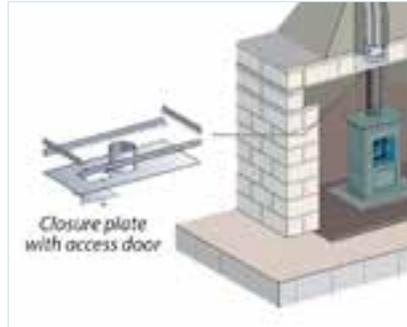


A general rule of thumb which makes identification of the plate easier is that closure plates are designed so that flue gases do not come into direct contact with a the plate, whereas gases and sooty deposits can come into direct contact with a register plate.

When specifying suitable materials to use for construction of a plate, it is important to ensure that the plate is robust enough to ensure it won't lose its overall stability during continued appliance operation. In most cases, a register plate is made from 1.5mm corrosion resistant steel or equivalent, in which case an existing register plate could be used as a closure plate.

However, if the installer is looking to fabricate a new closure plate, the following provides useful information on what to consider:

A closure plate can be made out of suitable A1 non-combustible sheet material robust enough to span the top of the opening without sagging or breaking by fall of minor debris from the chimney or insulation if installed around the liner; supported on angle iron in the same way as a register plate.



More examples of closure plates, top right and above.

Access through the plate is not usually required unless the void above is very large or debris is likely to fall onto it, or to facilitate the inspection of the liner. The closure plate would not normally be gas tight to the room and indeed some installers would leave a small gap in the closure plate to provide a small amount of air into the annular space around the liner.

It is always important to review any flue liner documentation before installation, as manufacturers may stipulate the criteria and requirements for a closure plate.

More information on A1 sheet material, suitable for construction of closure plates, can be found in the article on A1 Fire rated boards in this technical bulletin on page 5.

Introducing the new CSCS Smartcard:



The JIB-PHMES Related Occupation Card

MICHAEL HARVEY, TRAINING AND TECHNICAL SUPPORT MANAGER ON HOW HETAS REGISTERED INSTALLERS CAN GAIN THE CORRECT JIB-PHMES CSCS REGISTRATION CARD

HETAS has joined forces with the Joint Industry Board for Plumbing Mechanical Services Engineering (JIB) in recognition of installer skills, training, Continued Professional Development and robust inspection process criteria associated with HETAS Installer Registration.



This newly formed relationship will facilitate a route for HETAS Registered Installers to gain the appropriate smartcard to enable them continued access to construction sites for solid fuel relevant works. This is following recent changes to the Construction Skills Certification Scheme (CSCS), where in some cases installers across the Building Services industry have faced challenges in being granted site access on production of CSCS cards used previously, being advised that the cards are no longer deemed appropriate for the work they are intending to undertake.



The PHMES Related Occupation Card

Most HETAS installers possess a relevant NVQ qualification in plumbing and heating or a related trade, however for those that may have undertaken HETAS training and become HETAS Registered via experienced worker route or other prerequisite's relevant to the industry, then the **Plumbing, Heating and Mechanical Engineering Services (PHMES) Related Occupation card** is available (*pictured above*).

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The JIB-PMES: Joint Industry Board for Plumbing Mechanical Engineering Services in England and Wales are an independent and neutral ‘not for profit’ organisation, affiliated to the CSCS Registration scheme, a regulator, and a service provider for employers and employees in the building industry.

All JIB UK-PHMES CSCS card applicants must meet the JIB’s Health & Safety requirements. The card will only be issued on the basis that Installers have passed the CITB Health, Safety Environment Test in the Construction Industry. See the table below for guidance:

CARD	WHICH TEST TO ASK FOR
Plumbers, Heating Fitters, Mechanical Pipe Fitters, NVQ Trainees/Apprentices, Plumbing Related Gas, Gas Engineers & Fitters	Specialist Plumbing (JIB) Test
Plumbing Related Occupations (not gas), Site Visitors and Labourers	Operatives Test
Managers	Managers & Professionals Test
Supervisors	Supervisor Test

For further information visit: www.jib-pmes.org > CSCS Registration Cards



Technical Helpline Q&A

Can a dormer window or Velux window be permanently closed to allow a flue termination to remain lower than the specified metre above as per Approved Document J (ADJ) guidance diagram 17(c)?

It depends on whether the general guidance has already been met in Approved document J and that the window which is 'non-openable' is on a two storey building or a single as per Approved Document B (ADB) requirement B1, pages 15-17.

ADB suggests that a single storey building with a roof light window or two storeys with a dormer window will need means of escape and in these instances the flue termination should be at least a metre above the window when this window is the sole means of escape in the event of a fire. Thus, the window shall be openable.

Further information can be found on both ADB & ADJ following the link below:

www.planningportal.co.uk > [Building Control](#) > [Approved Documents](#)

What should I do when faced with a redundant back boiler?

HSE have particular guidance in relation to this subject, however, where practically possible, as per HETAS's statement in this guidance, we would assert that:

“ The only positively safe and reliable way to proceed, when a solid fuel back boiler is no longer needed and the customer wants to continue using the fireplace, is to totally remove the back boiler installation by breaking up the chamber that used to carry the hot water system and removing any pipe work. When an open fire is left in use (or could be brought back into use) a replacement Milner fire back needs to be installed to ensure that the fire can be safely used. ”

Similarly, a “wet” solid fuel room heater or stove with boiler should not be operated after the water supply to the boiler has been disconnected. These appliances are not designed to be used without water circulation and there could be serious safety issues if they are misused'. The HSE website guidance can be found at:

www.hse.gov.uk/services/localgovernment/boilers.htm

Fixing of Stone Fire Surrounds



CALVIN MAY, TECHNICAL STANDARDS MANAGER ON FIRE SURROUND FIXINGS, WHICH HAS BEEN THE SUBJECT OF RECENT MEDIA ATTENTION

In the 2013 edition of the technical bulletin, HETAS covered some of the essential practices that should be considered and undertaken when appropriately fixing a stone fire surround to either an open fire or closed appliance builders recess. This was in answer to a safety alert released by the Health & Safety Executive of a number of incidents where an inert stone surround came away from the wall and posed significant risk, and in some cases fatalities, to the buildings occupants, including small children.

In 2015, the technical committee responsible for the management of the open fire components standard BS 1251, revised and updated the 1987 version of the standard to include new requirements for the appropriate method for mechanically fixing of a fireplace surround, to ensure the surround can take the load of objects placed on the mantle above and won't come away from the wall should adults or small children accidentally pull on them.

This article gives a brief overview of some of the important new additions within the standard...

Materials & Structures of a Fire Surround

To understand the basic principles of fixing a fireplace surround, it is as important to understand the type of surround being fitted as to ensure the correct positioning, materials and fixings required for installation. The different types of surrounds available on the market can be summarised as:

Slabbed Surrounds – single component structure, normally constructed from marble, stone or ceramic tiles on a backing of heat insulated cement mix.

The minimum total thickness of the surround shall be no less 48mm, consisting of at least 30mm of cement mixed backing for stone & marble and at least 40mm mix for ceramic tile.

Cut Stone Surrounds – multiple component structure, typically constructed of stone formed of two vertical legs under a horizontal lintel with mantle on top.

Boxed Section Surrounds – multiple component structure, constructed from natural stone or marble, compartmentalised with back panel split to allow for thermal expansion.

IMPORTANT POINTS

- ✓ Ensure the surround is manufactured in compliance with BS 1251 requirements
- ✓ Before installation ensure manufacturer instructions are referenced and give provision for the appropriate fixing type, locations, correct methodology and any required jointing/sealing compounds
- ✓ Assess the wall and hearth structures are in a condition to accommodate the weight of any surround
- ✓ Upon completions, assess as to any forms of potential risk to the occupants and inform them of potential dangers where small/infirm persons are present

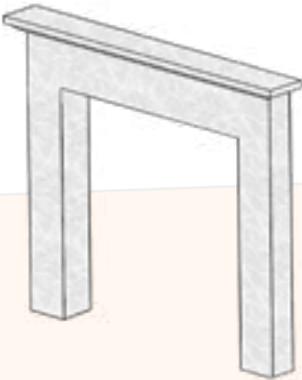
Examples of fixings for these three types of surrounds can be found overleaf



Mechanical Fixings

All surround types as described above should be manufactured in accordance with BS 1251, and in such a way that allows for the appropriate mechanical fixing of the surround to the buildings structure. If the installer of the surround is unclear whether a product conforms to the standard, then the advice is to contact the manufacturer directly and request clarification on the correct provisions to follow or seek further specialist advice and guidance from a specialist organisation such as HETAS or the Stone Federation of Great Britain.

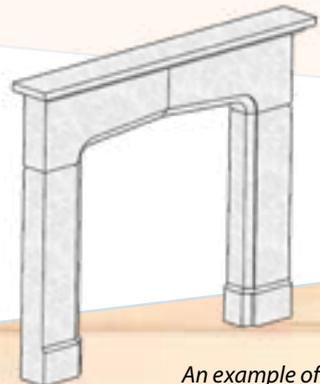
An example of a slabbed surround



Fixings at all times should be secured to the brickwork of the building, so it is important that any plasterboard or other finish materials are removed beforehand to allow for the surround to be bonded appropriately. **The installer should never use the “dot dab” adhesive method to affix a surround to the buildings internal structure.**

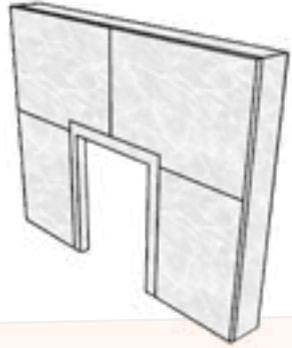
For **slabbed surrounds**, typically the manufacturer will integrate the appropriate clip or eyelet type fixing to the product directly, with two mechanical fixings positioned at each side of the surround, and further two fixings within 300mm of the top, typically either a fixed or swivel type dependent on the surrounds construction.

Cut stone surrounds are a little more complex and shall incorporate full heat-proof bracket fixings appropriate for the type and construction of the backing wall, and be fixed directly to the chimney breast wall or fixed to another stone structure which in itself is mechanically fixed to the breast wall. The manufacturer’s instructions will provide additional fixing instructions on the location, type and bedding joints needed to fix correctly.



An example of a cut stone surround

An example of a boxed section surround

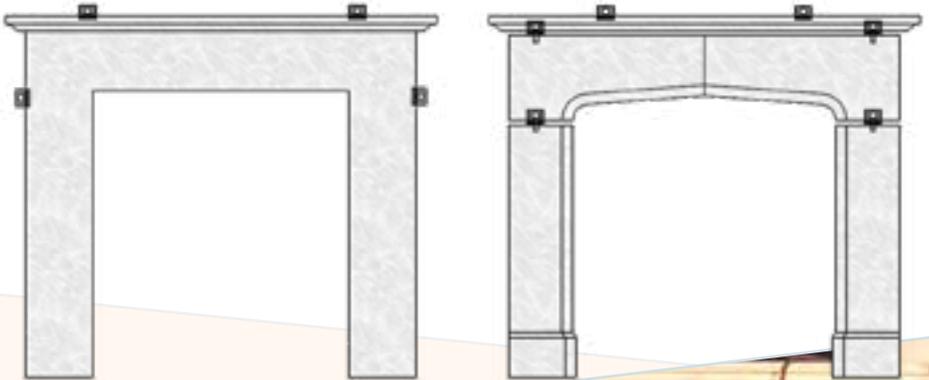


Boxed section surrounds will incorporate fixing wires at each side of the surround, similar to slabbed surrounds, with the uppermost fixings within 300mm of the top of each side. The shelf at the top will have its own fixing points to secure it to the chimney breast wall, and manufacturer's instructions should be followed at all times as installation may be dependent on the size and weight of the shelf overhang.

Fixing Locations

Fixing brackets will in most cases be supplied by the surround manufacturer, typically made of heat-proof stainless or galvanized steel and made in a way which allows them to be suitably fixed into the surround. It is important for the installer to assess the condition of the chimney breast wall to ensure it can appropriately accommodate the weight of the surround.

Typical locations in which to fix surround brackets can be found below:



FIND OUT MORE...

For further information on the appropriate requirements & guidance available for the fitting of stone fire surrounds contact the HETAS technical helpline on **01684 278194** or visit the HETAS website: www.hetas.co.uk

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