

Exclusively for HETAS Registrants

HETAS Technical Bulletin #8



August 2017

We are very pleased to produce this, our 8th technical bulletin. These bulletins are produced as a result of conversations we have with installers, manufacturers, training centres, retailers, HETAS Inspectors etc. We provide this technical support service alongside our solid fuel, wood and biomass technical helpline as a benefit to HETAS registrants and others who work closely with HETAS.

We are the UK's only specialist solid fuel, wood and biomass competent persons scheme. As well as giving our stakeholders this sort of support we are very much involved with standards setting in UK and Europe. Part of our role is to support installers and manufacturers by encouraging safe, but pragmatic standards and Building Regulations guidance that is fit for purpose but not over burdensome on our industry. We hope you find the bulletins useful.

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

hello@hetas.co.uk

- Bruce Allen, CEO

How do I comply with the Energy Labelling Directive?

Calvin May, Technical Standards Manager, on how to comply with new legislation outlined in the Energy Labelling Directive



April 2017 saw the implementation of the Energy Labelling Directive for independent boiler appliances burning solid fuels, with the legislation for solid fuel roomheater appliances following suit in being regulatory in January 2018.

The new directive aims to raise consumer awareness of the importance of efficiency of heating appliances and allows for a more informed choice to be made on the selection of more efficient products available on the market today.

Manufacturers, retailers and installers of solid fuel burning appliances will all have additional responsibilities placed upon them to ensure that compliance with new legislation is met, and appliances sold and installed within the UK carry the appropriate label.

Importantly they will need to ensure the following:

Manufacturers – an appropriate energy label, of the correct size and including the required performance information should accompany each specific product upon sale to the retailer/consumer. The technical information will include the appliances model name, heat output, product identifier and energy efficiency class rating specific to the product.

Retailers – the energy label rating is referenced within all relevant marketing literature and materials, including online sales, and any showrooms will have an energy label clearly displayed. Any retailers who sell a solid fuel independent boiler as part of a complete system package will need to ensure a system package energy label accompanies the system.

Installers – where installers are responsible for installing independent boiler appliances as part of a system package where components are sourced from multiple retailer outlets, they will need to ensure that a custom system package label is generated and made available to the consumer, including the energy efficiency index rating for the complete system package.

The recognition of solid fuel appliances being both a renewable and a zero carbon fuel source is likely to mean a higher energy rating being achieved, possibly leading to an increase in selection over alternative fuel sources which may initially score a lower energy rating. It is therefore important for installers to understand their responsibilities and be clear on how to correctly apply the custom system package label.

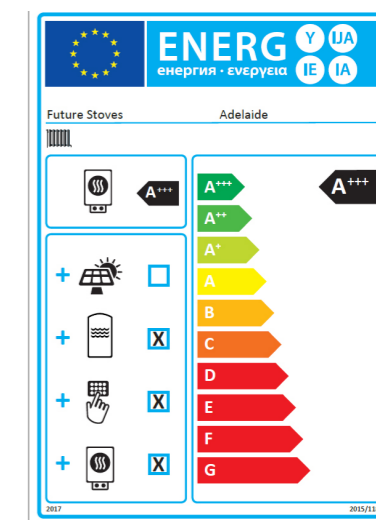
How Do I Create My Custom System Package Energy Label?

The label's pivotal requirement for independent boiler appliances is the calculation of the energy efficiency index rating. For the custom system package, this requires inputting the technical information contained within the product fiche for each of the different system components. Using this information the energy efficiency index of the package can be calculated, which incorporates the correction factors for the relevant temperature controls, supplementary heating and solar contributions. The energy rating figure given can then be inserted into the EU Commission's developed "Energy Label Generator". This provides a PDF label for installers to print and include in consumer handover documentation.

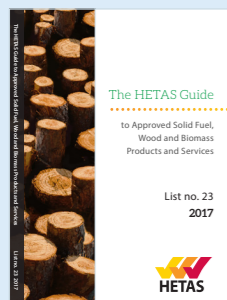
The generator can be accessed on the EU website:

www.eepf-energylabelgenerator.eu > **solid fuel boilers** > **choose package option**

When the new regulations come into force in 2018 for roomheater stove appliances, the system package label will not be required for any secondary heat sources of the property.



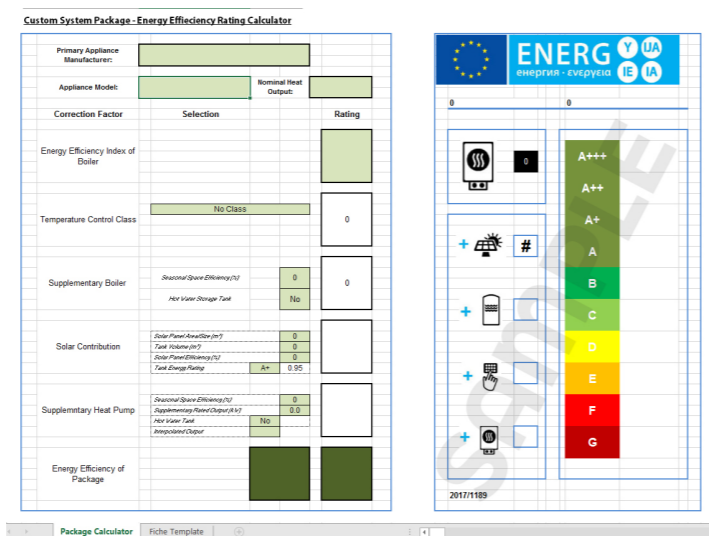
Upon purchase of products, the installer should make sure that the appliance meets all essential legal requirements, including an appropriate affixed CE mark and energy label to ensure full compliance for installation within the UK.



All HETAS Approved Appliances listed in the HETAS Guide to Approved Solid Fuel, Wood and Biomass Products and Services will have been fully verified and certification granted for those that meet both the CE marking and Energy Labelling requirements, as well as the provided technical documentation being in compliance with the UK building regulations.

To aid installers further, HETAS have developed a guidance note on the new legislation, which is supported by an energy label system package calculation tool, for installers to use and make reference against whilst working on site.

The HETAS Energy Label System Package calculation tool can be downloaded from the Technical Area of our website



The calculator document gives information on where to obtain product specific technical information, as well as example templates for completion of the system package fiche. The guidance can be obtained from the technical area of the HETAS website at:

www.hetas.co.uk/members-area > **Are you ready for Energy Labelling?** > **Installer/Manufacturer** > **Choose calculator**

or information can be obtained from the HETAS Technical Helpline on 01684 278194

Revision of the HETAS Commissioning Sheet



Alan Young, Complaints & Inspections Manager, on the improvements HETAS has added to the newly updated Commissioning Sheet.

We have revised our HETAS Commissioning Sheet in light of feedback given by installers and discussions with our inspectors. This new version includes more detail around the handover process and allows the installer to document that a consumer has understood the importance of regular maintenance. It also allows the location of the CO Alarm, Chimney/Hearth Notice Plate and Air Vent to be recorded.

It also allows a consumer signature to be recorded to accept the 'handover' and is a vital reference document should queries be raised after installation.

Effective commissioning is an essential part, if not the most crucial aspect of the installation and is often over-looked or not given enough consideration. It is really important to document commissioning and test results to ensure that if queried in the future, suitable evidence can be shown.

Building Regulations Approved Document J Paragraphs 1.54 and 1.55 make reference to commissioning, not only to ensure safe operation, but also that appliances and flues are performing efficiently (relating to Approved Document L), as well as confirming the installation is compliant to all relevant Building Regulations.

This is also echoed by other Industry Bodies such as CIBSE and documented in British Standards.

Many appliance manufacturers also require that a Commissioning Sheet is evidenced whenever a warranty claim is requested. Some have dedicated sheets in their installation instructions which need to be followed and completed. Our inspectors will look for this as evidence that you have checked the installation in accordance with Manufacturer's guidance. It can also help identify whether the installation has changed since its initial notification.

The HETAS Commissioning Sheet is a great way to document that these necessary checks have been carried out and comes in a duplicate form, so the homeowner can receive a copy on the day. It can accompany an on-line notification or a paper Certificate of Compliance (both of which do not include commissioning data).

The Commissioning Sheet is available to purchase through the HETAS Shop:

www.shop.hetas.co.uk/

or visit the www.hetas.co.uk or call us on 01684 278194 for more details.

The updated Commissioning Sheet includes extra detail on the customer handover process, and includes a customer signature area to ensure homeowners receive and understand the required safety information given to them by the installer.

HETAS Ltd. Commissioning Sheet

**Required for HETAS online notification*

Your Reference	Completion Date*
Customer Name*	
Installation Address*	
Postcode*	Contact number/email
Installing Company	Company HETAS Reg No*
Installing Engineer Name	Installer HETAS Reg No*

Installation Work Carried Out

Does the installation replace an existing appliance? Gas Oil S/F New heat source

Location* Lounge Dining Room Kitchen Other - please specify _____

Appliance Make* _____ Model* _____ Heat Output* _____

Appliance Type _____ Specified Fuel _____ Defra Approved _____ Yes / No

System type* New Heating & Hot Water Updated Existing Heating & Hot Water Dry only

Chimney* Existing New insulated factory made system Relining of existing chimney

Construction Type _____ Flue dimension _____ mm 'Designation' _____

Hearth: Hearth / Surround _____ New / Existing (Delete as appropriate) Fireguard? Yes / No

Air supply: Are permanent open air vents available? Yes / No Dedicated air supply? Yes / No
¹ Ventilation in accordance with Table 1 ADJ. ² See separate commissioning sheet if Yes

Testing & Commissioning including Approved Doc J Appendix E

Visual inspection

Test on flue including satisfactory smoke test; Flue draught reading Pa/Wg

Spillage Test performed in accordance with available guidance (as appropriate)

Check socket joints and seals on the flue and appliance

Instruct user on correct types of fuels and fuel storage

Instruct user on essential maintenance and in particular regular chimney sweeping

Hand over user instructions & Demonstrate appliance operation and all controls to the user

Ensure that a Notice Plate has been completed and fixed in position

An approved Carbon Monoxide alarm has been fitted; Location _____

For boiler installations: appropriate safety devices installed/checked & system commissioned in accordance with manufacturers guidelines

NB: This commissioning sheet does not constitute a Notification to your Local Authority but should be kept safe as your record of commissioning & handover. If applicable, details in Manufacturer's instructions for commissioning must be followed & completed. Your installer will commit to notify building control via HETAS within 30 days.

Declaration of commissioning: As the competent person responsible for the work described above, I confirm that the appliance and associated work has been installed in accordance with the HETAS rules of registration, and that the work complies with all appropriate Building Regulations in force and manufacturer's instructions.

Signed: _____ Print Name: _____ Date: _____

Customer Handover:

As the appliance end user(s) I/We confirm the installer has given advice on:

Appliance use, controls & relevant safety/installation information e.g. CO Alarm

Importance of regular maintenance

Importance of appropriate approved fuel

Signed: _____ Print Name: _____ Date: _____

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Consumer Advice

Important Safety Information

- Ensure your installer has selected and fitted a CO alarm on the wall or ceiling as specified in the Building Regulations
- Ensure your installer has fitted a Notice Plate and has supplied you with a copy of the Manufacturer's Instructions
- Always use the correct fuel for the appliance – as recommended by the Manufacturer's Instructions
- Make sure any external air ventilation grills are not blocked
- Never leave an open fire unattended without a spark guard
- Do not slow / slumber burn an appliance unless it has been specifically CE type tested for continuous operation. Unless the appliance is designed to operate in this manner there are associated problems with slumbering which include increased CO emissions and tar/soot build up in the flue which can corrode the flue lining
- Always use a securely fitted fireguard around children and the infirm
- Get your stove serviced annually by a HETAS Registered Installer / Approved Servicing technician

Do's and Don'ts

Do

to read and follow Manufacturer's Instructions

CO regularly by pressing the test button

Smoke Control Areas do use either: appliance and the fuel specified in the manufacturer's instructions or check the DEFRA website for more

vised Smokeless Fuel

sted in "The HETAS Guide to Approved Solid Fuel, Wood and Biomass Products and Services"

ut insurer about your new stove as it may affect your insurance policy

chimney swept at least once a year, although HETAS recommends twice a year when burning wood or ouse coal. The best times are just before the heating season and after prolonged period of shut-down

sture meter to test how dry your wood is. Ideally the moisture content should be less than 20% (see y's Instructions for your appliance). It is possible to dry wood yourself by "seasoning" it in a wood store unny/windy position for at least a year

Throat plates/Baffles at least monthly or as recommended in the Manufacturer's Instructions

stove serviced annually

Do not

ue to use your appliance if you or others show signs of carbon monoxide poisoning and seek medical ptions can often be confused with flu, viral infections, food poisoning or tiredness. These include:

- Headaches
- Collapse/Dizziness
- Breathlessness
- Stomach pains
- Nausea/Vomiting
- Drowsiness/Tiredness
- Erratic behaviour
- Visual problems
- Chest pains
- Tiredness
- Loss of consciousness

your CO alarm from its location and always replace the unit after the expiry date

ventilation and do not leave a fire unattended unless the appliance is designed to slumber

ags against/in close proximity to a stove: "distance to combustibles" needs to be adhered to

ur appliance if the grate or fire bricks become damaged. These can be replaced by a HETAS Registered ame applies if the stove door(s) rope seal is no longer air tight

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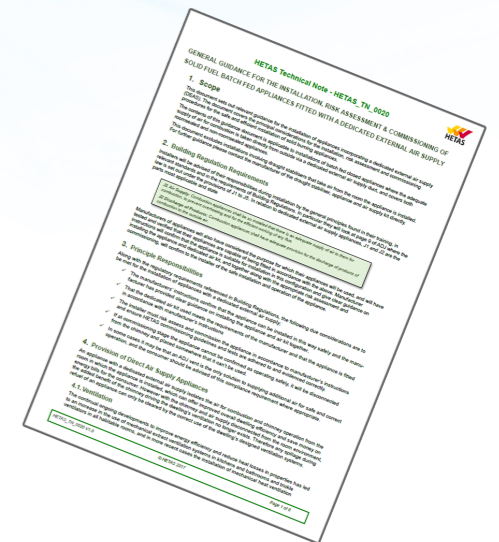
Further Guidance for Direct External Air Supply



HETAS Technical Officer Gary Heath introduces our simplified Direct Air Guidance document.

In previous editions of the bulletin, HETAS covered the various installation requirements of appliances incorporating an external supply of air for combustion direct from outside the property. Some manufacturers have comprehensive supplementary instructions but some do not. In future, standards will cover direct air supply, but currently do not.

HETAS has developed a simplified technical guidance document which covers the relevant assessment and commissioning procedures that installers can refer to in conjunction with any manufacturers requirements.



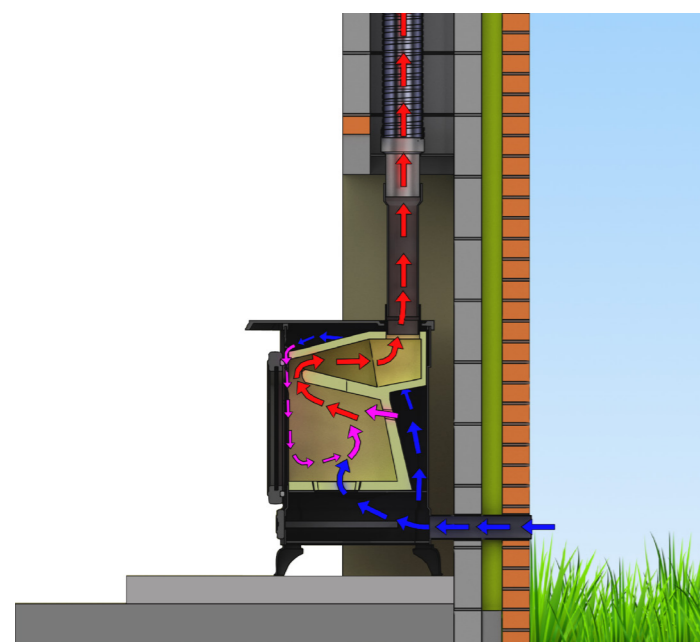
For self-certification of direct external air supply appliances, it is imperative that the installer understands the relevant safety provisions. Where a copy of the manufacturer installation instructions can be obtained this must be read and understood before work begins. If there is no information saying that the appliance can be used with a direct air supply and there is no air supply kit specified, HETAS recommends that the appliance is not fitted with a direct air kit. The following considerations should be taken into account:

- ✓ Whether the manufacturers' instructions confirm that the appliance can be safely installed in this way and the manufacturer has provided clear guidance on installing the appliance and air kit together.
- ✓ Whether the dedicated air kit used meets the manufacturer's requirements and the appliance is fitted in accordance with manufacturer's instructions.
- ✓ The installer must assess the installation and commission the appliance in accordance to manufacturer's instructions and ensure HETAS commissioning and risk assessment guidelines are adhered to and evidenced correctly.

- ✓ If at commissioning stage the appliance cannot be confirmed as operating safely, it should be disconnected from the chimney and placed somewhere that it can't be used.
- ✓ In some cases where spillage testing indicates poor flue performance, it may be that an ADJ vent is the only solution to supplying additional air for safe and correct operation. In this case the consumer should be advised of this compliance requirement and changes made to make the installation safe.

As well as manufacturer installation guidelines, it is essential that there are relevant assessments of the installation environment. These will involve assessment of the constructional attributes of the property, including any previous heat loss improvement measurements (cavity wall insulation, draft proofing etc.), as well as the current method of providing habitable and combustion ventilation, appliance type and the installation design providing efficient operation of the appliance.

Properties built after 2008 are likely to incorporate more stringent energy efficiency measures, and as a result have more airtight construction characteristics; these will need to be factored in during any assessment of the installation. Careful consideration should therefore be taken to confirm the type of appliance selected is suitable for installation and operation under roomsealed conditions, and verified by the manufacturer as taking 100% of its air for combustion directly from outside. Appliances verified by the manufacturer as non-roomsealed may require additional permanent ventilation in the room to ensure continued draw on the flue, especially under conditions of refuel. In these cases it is important to reference the applicable installation instruction guidance or seek further clarification from the appliance manufacturer on appropriate size and positioning of this additional ventilation requirement.



Checks should be made to ensure any direct air appliance is working as intended to the conditions specified in manufacturer's instructions.

As well as constructional characteristics of the property, ventilation interference should be carefully considered, particularly in cases where mechanical and heat recovery extract systems are incorporated into the dwelling. When operated, these may cause depressurisation in the room or adjoining rooms in which the appliance is installed. Assessing these areas and carrying out appropriate spillage tests during initial light up and refuel phases allows for confirmation and sign off of the safe operation of the appliance during both extraction and non-extraction scenarios.

The final area of assessment is in relation to installation design. It is imperative at this stage for the installer to follow manufacturer specifications for the design of the air supply duct to the outside atmosphere, paying particular attention to the following areas:

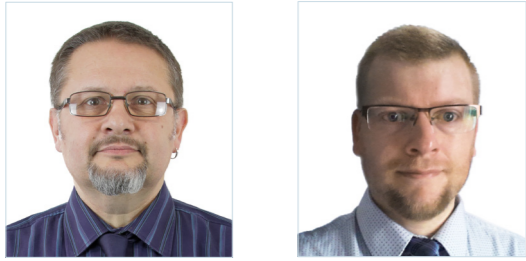
- Minimum diameter or cross sectional area of the external air duct
- Maximum total length of the duct
- Maximum number of bends permitted
- Specification of the air inlet terminal
- Measures to be taken to prevent the air supply becoming blocked from debris, flooding, insect habitats etc.

The area designated by the hearth dimensions is a non-combustible zone, and any material used for the duct within this area must be of a non-combustible material and not affected by heat. It is advised to only install a dedicated external air kit supplied or specified by the manufacturer of the appliance who will have taken this into account, ensuring the product can be installed in a way that is deemed compliant.

To aid installers further, HETAS have issued a DEAS technical note for guidance on the installation, risk assessment and commissioning of solid fuel batch fed appliances. A copy of the document can be obtained from the technical area of the HETAS website at:

<https://www.hetas.co.uk/members-area/>

Latest from the HETAS Technical Helpline



HETAS Technical Officers Garry Sweet and Gary Heath provide the latest updates from our registrant helpline

Even during the summer months the helpline continues to provide ongoing support on a number of installation scenarios. Here are some of our most common questions and clarification on what can be done should they arise;

Can any solid fuel domestic appliance (room-heater with or without boiler) be installed in the same room as an extractor fan?

The first step would be to consult the appliance manufacturer's instructions and interpret their position regarding extractors in the same room as the appliance. It is highly likely, following sample of instructions HETAS have examined, that a majority of manufacturers will assert in their instructions that 'an extractor **must not** be installed in the same room as the appliance'.

If the manufacturer does not have a strict position on an extractor fan in the same room as the appliance, and regardless of direct air (external air) ventilation, it would be pertinent to carry out a flue draught interference test as per Approved document J- page 21 clause 1.20. This test should also be carried out when an extractor or other air circulating device is positioned in other adjacent/non-connecting rooms in the same property. The reason for this is also referred to on page 21 of Approved Document J clause 1.21 & 1.22.

What size flue outlet area is the minimum requirement when working with Dovecote and other slab/hood terminals?

As per BS EN 15287-1:2007+A1:2010 clause NA.4.8.2 'For masonry chimneys an alternative type of chimney terminal incorporates a slab or hood supported on piers. The flue terminal should project 20 mm to 25 mm and where the chimney contains two or more flues, the withes between adjacent flues should be carried up to the underside of the slab.

The height of the piers should be arranged to provide a total area of opening to the atmosphere of not less than twice the area of the flue(s) in the chimney. The piers should be designed to give a stable structure. The surface of the masonry, through which the flue projects, should be flanché with cement mortar'.

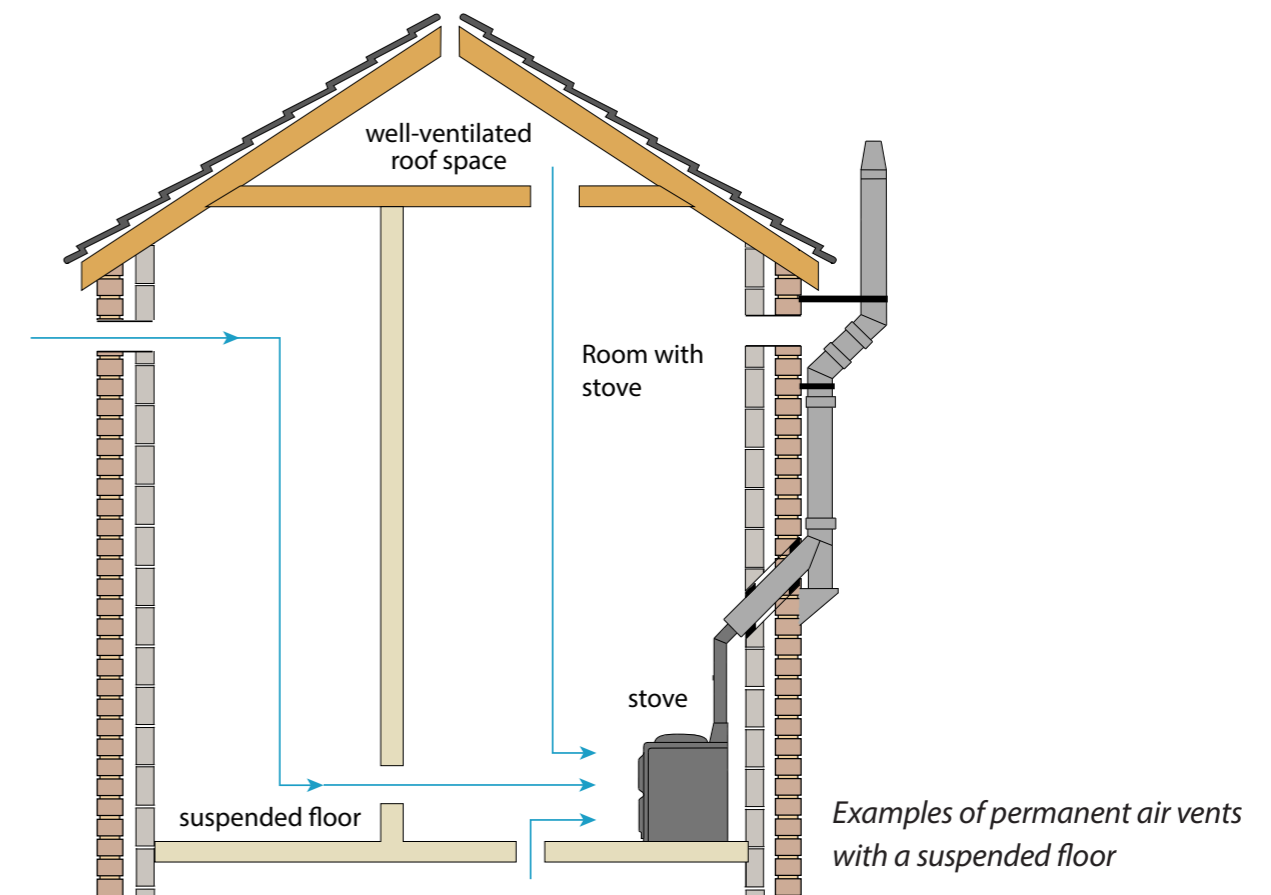
Can I install a vent in a suspended floor?

Quite frequently, the question arises if a vent could be installed in a suspended floor and if one can, what risks need to be considered.

As depicted in **Approved document J** or (ADJ) page 20- Diagram 10, there is a clear presentation of a 'suspended floor' and a 'well-ventilated space' below it. To elaborate on the term 'well-ventilated space', it is essential that enough fresh air is circulated through this space. Therefore, to facilitate complete combustion, the installer should assess if there is sufficient fresh air, ideally, with the vent source originating from an external air vent/air brick, which has a clear route to any floor vent fitted.

The above information, along with the general advice in ADJ clauses 1.10-1.17 outlining the need for the Air vent to be non-adjustable, sized to admit sufficient air and for the purpose intended and positioned where they are unlikely to become blocked (by debris, flood water etc.) or to cause discomfort from cold draughts, should be sufficient to meet the guidance.

Where Radon gas is known to be a problem, ventilation air shall not be taken from the area under the ground floor level. For areas prone to Radon gas, one of the options available is to take clean air from outside through the space underfloor and transfer into the property via a floor vent grill.



Metal System Chimneys & Clearances to Combustibles

Calvin May, Technical Standards Manager answers one of our most frequently asked technical questions...



A common topic on the HETAS technical helpline from installers surround the fundamental requirements for the internal installation of a twin wall metal system chimney.

Current UK legislation requires any chimney system to be designed and installed in a way which reduces the risk of the building catching fire or causing harm to occupants in consequence of their use. This is especially important in situations where an internal system chimney is being constructed and passing through multiple floors within the property, paying special attention to internal floor joists, skirting boards and timber stud structures.

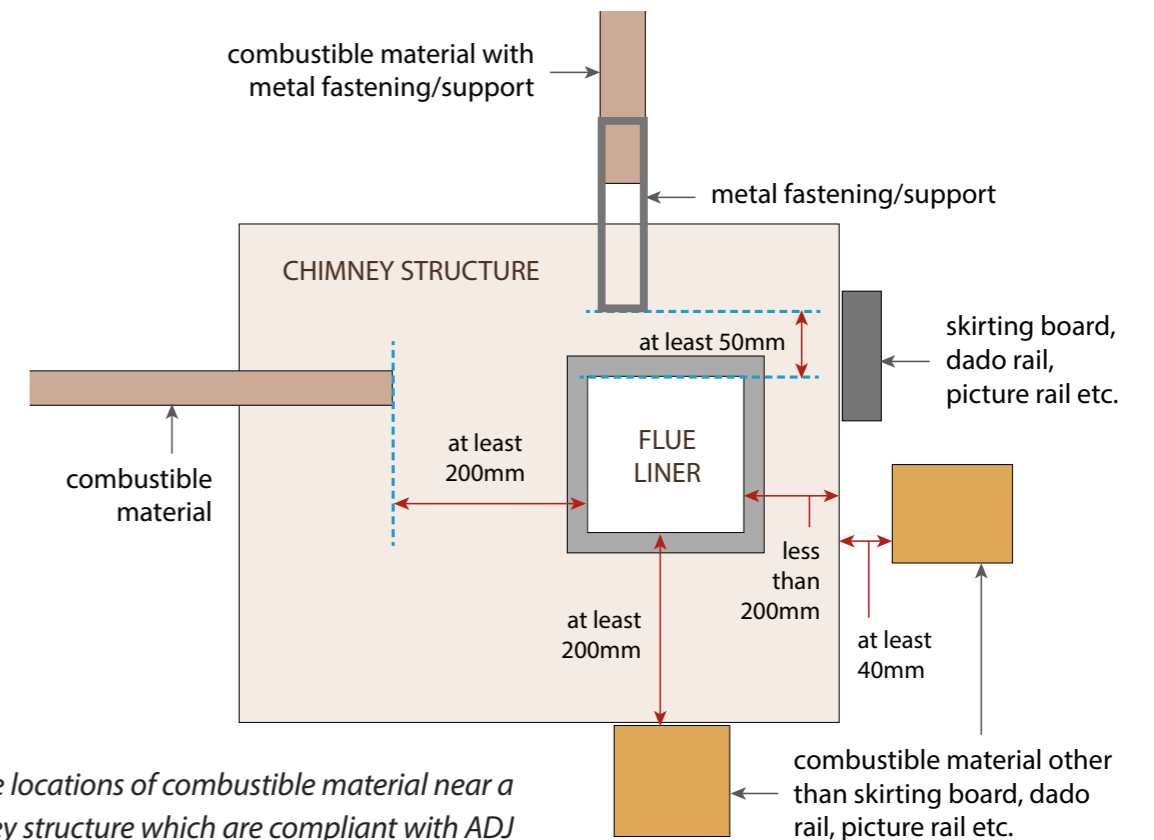
Typical Building Structures

The 1970's era saw an increase in the typical house type construction of properties from complete masonry structures to more lightweight construction properties using timber framing due to its increased advantages on cost, speed and accuracy. Although beneficial for house construction, this has led to increased awareness in ensuring ignitable timber studding and joists are not compromised by the location of either a solid fuel appliance or chimney.

Building Regulations guidelines lay down some of the essential safety requirements which installers should reference and adhere to in order to comply with the legal requirements detailed above. The requirements state the following provisions:

2.18 Combustible material should not be located where it could be ignited by the heat dissipating through the walls of fireplaces or masonry flues. A way of meeting the requirement would be to follow the guidance in Diagram 21 so that combustible material is at least;

- i. 200mm from the inside surface of a flue or fireplace recess; **or**
- ii. At least xxmm from a flue products with designated separation distance (Gxx); **or**
- iii. 40mm from the outer surface of a masonry chimney or fireplace recess unless it is a floorboard, skirting board, dado or picture rail, mantle-shelf or architrave.



Possible locations of combustible material near a chimney structure which are compliant with ADJ

For twin wall metal system chimneys, the insulation characteristics of the component have been verified against the manufacturer's claims under 1856-1 test as to not exceed 85oC when in proximity to combustible materials giving a suitable Gxx distance designation.

Chimney systems penetrating through a second floor will be need to be appropriately boxed within any habitable rooms as to ensure a reduction in risk of occupants coming into contact with the hot outer surface temperatures of the system chimney, and is typical in roof spaces and attics for the system to be enclosed by attaching a suitable protective wire mesh frame, Any enclosures in containing or in close proximity to combustibles will again need to ensure that the manufacturer declared clearance distances have been met.

Pre-installation Checks

It is important that during the design stage and before commencement of any work that the installation of the proposed chimney configuration will adhere to the Gxx separation distances to combustible materials when installed through any floor joists or timber stud walls as well as an assessment being made against the requirements within BS EN 15287-1 as appropriate. When penetrating through floors, it is pivotal that ventilated firestops certified against BS 476 are used to allow for the free flow of insulation air throughout the entire chimney enclosure configuration as verified within the manufacturer's installation instructions.

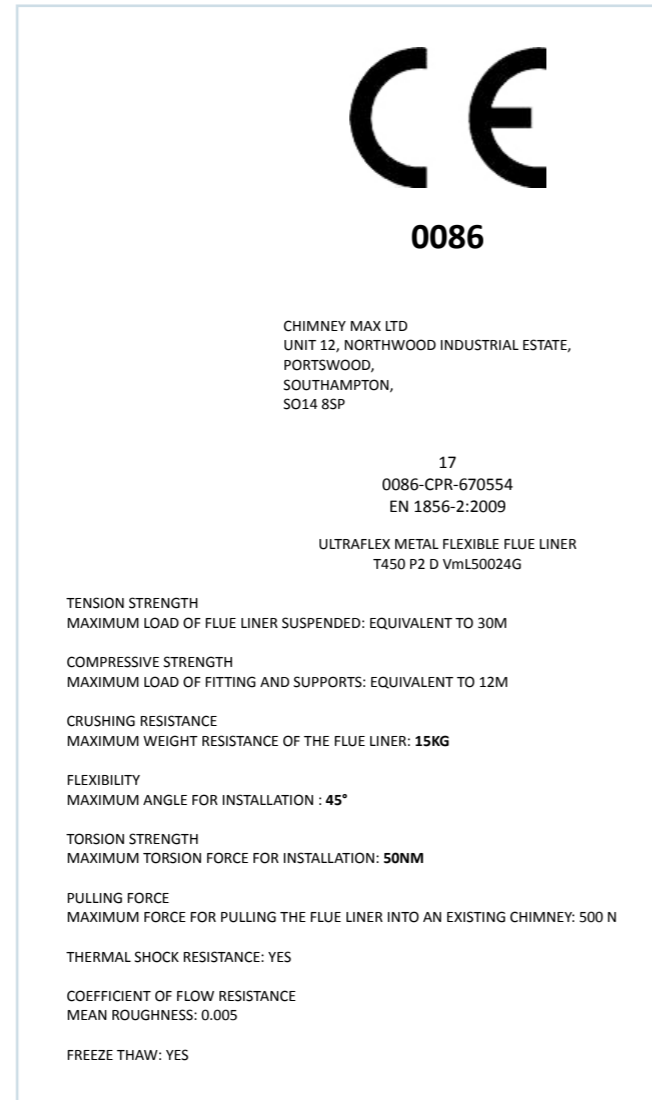
cont. on next page...

Some installations may require trimming floor/ceiling joists to achieve the appropriate clearance distances required from the chimney component designation. This must always be carried out in a safe manner so as not to weaken the structure of the property and be undertaken by a qualified person competent to undertake structural work.

CE Marking

All manufacturer metal system chimneys sold on the UK market will have undergone the appropriate testing and have affixed to them the appropriate CE mark in accordance with European legislation contain within the Construction Products Regulation. All chimney components are required to bear a CE data plate which provides installers with the essential information on their performance via the recognised designation string, including the maximum temperature rating, pressure rating and condensate and corrosion resistance characteristics. The minimum system chimney designation for solid fuel use is T400 N2 D3 Gxx tested in accordance with BS EN 1856-1 however, manufacturer installation instructions should be referenced in case a higher class performance designation is specified.

To formulate the required distances to combustible materials in which the system chimney should be situated, the data plate will give a Gxx rating,



Example CE Data Plate
for a chimney

identifying its suitability for solid fuel use and giving a minimum distance in which combustible materials should be located. It is important any specified solid fuel chimney is designated a "G" rating, which means the component is soot-fire resistant having been tested against a temperature of 1000oC. The "xx" designation will give a minimum distance in mm for the installer to ensure separation from combustibles remain compliant.



Poor air quality and the link to burning wet wood on open fires and wood stoves, have given our industry recent negative publicity.

HETAS and Woodsure have always promoted burning quality fuels, a message echoed by Defra and the Stove Industry Alliance. To support this, Woodsure and number of major wood fuel suppliers have come together to introduce a new fuel scheme: Ready to Burn. The scheme aims to promote the message to consumers' that the wood fuel they purchase is 'Ready to Burn'.

The scheme is promoted by Defra and looks for Fuel suppliers who can show they are responsibly purchasing raw materials ensuring their wood fuel is dried and "ready to burn" at the point of sale.

Our aim is for HETAS installers & retailers to help promote this message - informing their customers that burning dry, low moisture wood fuel with a "Ready to Burn" mark will ensure they get the most from their stove.

Look out for our forthcoming launch events and messaging from Government to help promote our industry www.woodsurre.co.uk



SPREAD THE WORD - THE READY TO BURN SCHEME
info@woodsurre.co.uk 01684 278 188

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HETAS Limited

Severn House,
Unit 5, Newtown Trading Estate, Green Lane, Tewkesbury, GL20 8HD

Telephone: 01684 278170

Facsimile: 01684 273929

Email: info@hetas.co.uk

Web: www.hetas.co.uk