



Main photo courtesy of North Mill Stoves ([northmillstoves.co.uk](http://northmillstoves.co.uk))

## DISTANCE TO COMBUSTIBLES – FAQs

**One of the Frequently Asked Questions asked about chimney and flue installation is the “Distance to Combustibles”. So what does this mean?**

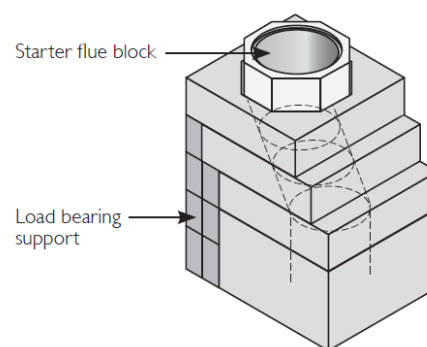
This simply means the gap needed between the chimney flue pipe or chimney flue block to a timber frame or similar material which would burn when heated (i.e. combustible). It’s a critical safety aspect which can’t be ignored and some of the confusion is that some chimney systems have differing distances, so we’ll try and explain here.

Please note that this article is about the distance to combustibles for chimneys and flues, which is different for the actual stove or other appliance. All stoves tend to have different distances to combustibles, so a careful look at the appliance instruction guide is obviously recommended.

### Schiedel’s Isokern DM Chimney System

Requires 0 or 38mm distance to combustibles. 0mm distance is only on straight rendered chimneys, when using top ring terminal. A top ring vents the gap between inner flue and outer casing block which reduces the surface temperature.

Note: When using offset systems and non-ventilated systems. A 38mm distance is needed, because it seals the air gap off, as it’s not ventilated



### Thatched Roofs

For a thatched roof a 38mm distance is required from the outer surface of the DM chimney system to the thatch.

## Schiedel Isokern Pumice Liners

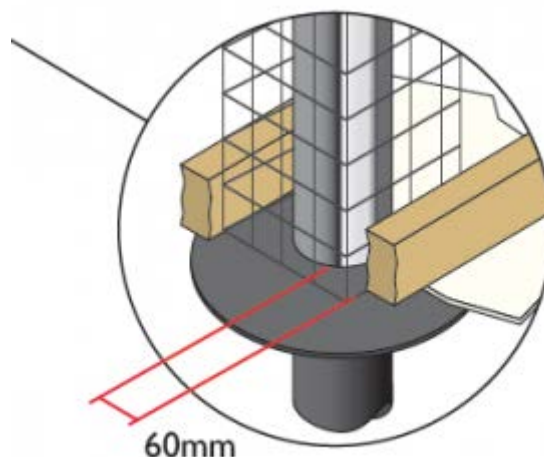
For Liners, 200mm from the inner surface of flue liner to combustibles. Isokern liners can be used inside brick or block chimneys but they require 15mm of light expanded clay aggregate between the liners and surrounding masonry.

## For steel systems such as our ICID, ICS and Flexible system

Because the insulation isn't natural, like pumice. This means when burning solid fuel such as wood in a steel chimney, you need 60mm between the steel pipe and the building frame or floor, etc. There's no need to line the floor area with plasterboard, but a ventilated fire stop plate and support plate must be used.

For Gas and Oil, a distance of 50mm can be maintained and a ventilated fire stop plate and support plate must be used. This is because the temperature is less than it would be for solid fuel.

If it's non-combustible wall, i.e. won't burn when heated up, such as a plain, un-rendered brick wall, then 50mm may be used. Remember, brickwork does heat up, but might not spurt into flames, however, a wooden beam next to it would be heated by the bricks and probably start burning. So this must be taken into account.



*From the image, you can see the distance in a bungalow. You can clearly see that the pipe gives 60mm distance between it and the wooden beams*

You can see an example, in the image on the right, of a gap of 60mm through two floors. Note that a firestop plate is designed not to heat up. For combustible surroundings, a ventilated firestop is used.

## Condensing and Non-condensing boilers distances to combustibles

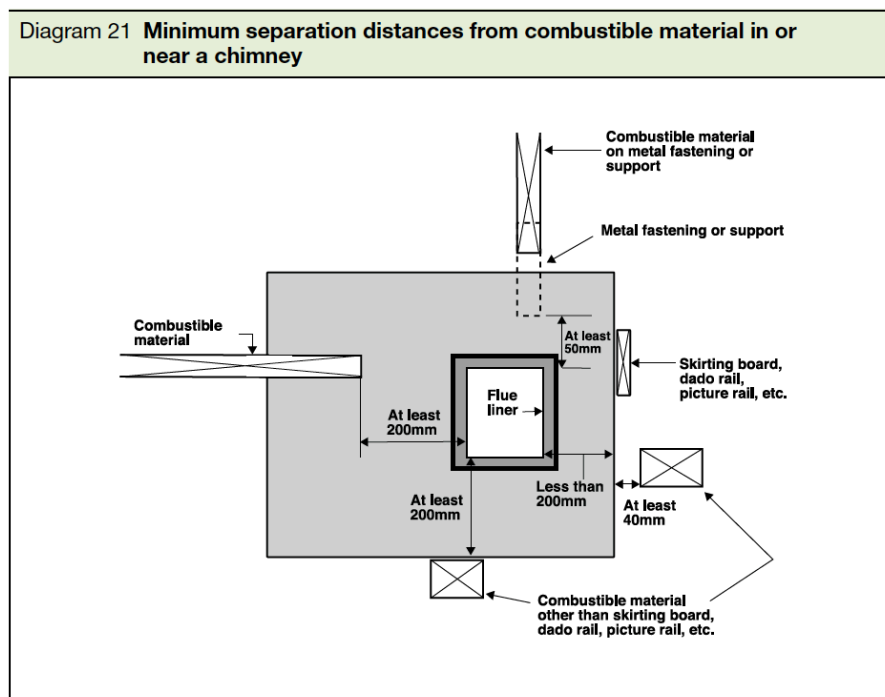
On condensing appliances where the temp will not exceed 200C, the tested approved distance to combustibles is 0 mm, because the hot gases don't pass to the flue directly and go to a second heat exchanger chamber

For reference, a **Non-condensing** boiler has a just one heat exchanger chamber, where the hot gases from the burner, pass through to heat the water, which is passing through within the walls of the exchanger chamber. The hot gases then reach the exit flue.

While a **Condensing boiler** operates similarly, but before the hot gases go through the flue, they pass through a second heat exchanger. In simple terms, this lengthens the heat transfer time, and also increases the surface area for heat transfer of gases or water. As a result this can give an increase in efficiency

## Flexible liners

Flex liners, in most cases, tend to drop down an existing non-combustible chimney, which tend to be brick built. As explained before, bricks don't burn but do heat up. For a flexible liner this reduces the need for any distance to combustibles, however, consideration has to be taken as to the layout and position of the chimney.



*Doc J of Building Regulations shows a diagram in regards to minimum separation distances from combustible material in or near a chimney*

Where the chimney is highly exposed or in a large void, then insulation should be considered. If insulation is required, granules such as Vermiculite, should be poured in around the liner from the top of the stack after fitting a suitable closure plate at the bottom of the system. Alternatively a solid tube of high quality insulation can be used.

Under all circumstances, the chimney stack must be fully weather proofed prior to the installation of the liner and any insulation material. Failure to do so will render the warranty null and void.

Flexible liners expand and contract in the heat, so the less amount of movement means a longer lasting flexible liner.

## **Ceramic liners**

High temp cement is added to the joints in ceramic liners but the gap between the liner and the surrounding wall cavity is filled with LECA insulation. At least 15mm is needed. Ceramic is also a good insulator.

## **Schiedel's Swift**

Schiedel's Swift system is similar to Isokern in the use of blocks. The three layer system adds much more insulation, to make it one of the safest systems around. The first layer is the ceramic liner, which is surrounded by the second layer: insulation board. Finally, being added into the chimney block which adds more insulation. More insulation means more safety and also less heat loss.

## **Ignis Protect**

Ignis Protect was specifically designed by Schiedel for external walls which are made of combustible materials.

The single block allows a pipe to go through an insulation block with a wall sleeve to the exterior of the building. Ignis Protect can also be painted/rendered to match the exterior and interior of the wall

## **Protect Box**

Protect box was specifically designed by Schiedel for combustible roofs. This gives zero distance as the steel pipe is passed through an insulation cylinder made of rock wool with an aluminium surface.

Protect Box is designed to meet the blower door test, which is a test with a machine used to measure the airtightness of buildings.

An EPDM kit is also available to allow for the chimney to pass through an air tight membrane at ceiling level in a cold roof construction or at roof level in a warm roof construction.



**So, hopefully, that's made it a little more clearer, but for any more information, please don't hesitate to visit [Schiedel.co.uk](http://Schiedel.co.uk).**