

BS8303 (2018) SPILLAGE AND INTERFERENCE TESTS

Below is a synopsis of the BS8303 spillage tests that all stove installations should undergo before it goes into general operation. These tests are especially important for stoves installed in tiny spaces which, because of the nature of the installation and likely reduced flue height, can exacerbate potential issues with smoke release into the room.

TEST 1 Cold Conditions Spillage Test

This test is used to determine that a suitable flue draught has been established in line with the stove manufacturer's requirements which will ensure that during the start-up operation, as well as refuelling, spillage does not occur.

1. Close the door and any windows, as well as any internal door(s) to the space the stove is located in and ensure all closable ventilators (eg window trickle vents) are closed and if there are any devices that extract air from the space ensure that these are also turned off.
2. Preheat the flue to establish a sufficient updraught by either lighting a small fire burning kindling or using a blow torch or electric fan heater.
3. Ensure that the stove's air-controls set to the maximum combustion air open position. Light a smoke pellet (preferably 5m³/30 sec) and place inside the stove firechamber and shut the stove door.
4. Check that all of the smoke enters the flue and none of it enters the room through any part of the stove, its connecting flue pipe or the external air supply duct joint.
5. Note: If smoke does enter the room then repeat stage 2 above. However, this time build a much greater kindling fire, or significantly increase the time the blow torch is used to warm the flue so that an improvement in the flue draught is generated. Again, light a smoke pellet and place inside the stove firechamber and close the stove door.
6. If the second spillage test still fails, then progressively open a window in the space where the stove is installed. If the flue starts to draw the smoke, then this will indicate that the stove has not previously been provided with sufficient air for the flue to function correctly and therefore a permanently open air vent, as specified in Document J (or equivalent), may be necessary to correct the problem. When the air supply has been corrected then repeat the previous tests.
7. If smoke continues to spill after opening a window, this would indicate a more serious problem (for example a flue of insufficient flue height) which must be rectified and then the commissioning process repeated.

TEST 2 Hot Conditions Spillage Test (Refuelling)

This test requires a smoke match / pen and is used to determine that the flue draught is consistent between cold and hot operation.

1. Once the initial flue draught has been verified as sufficient, light a good sized fire in the stove according to the instructions in the manufacturer's handbook, using the

recommended fuel load and air control position(s). Allow the stove to reach normal operating temperature before refuelling.

2. Close the door and any windows, as well as any internal door(s) to the space the stove is located in and ensure all closable ventilators (eg window trickle vents) are
3. closed and if there are any devices that extract air from the space ensure that these are also turned off.
4. Open the stove door, and with a smoke match / pen (15 second burn time), pass over the top and sides of the firechamber opening and observe and record if the smoke / combustion products are drawn into the chimney or spill back into the room. Once the smoke match / pen is extinguished, close the appliance door.
5. Next, if appropriate, open any internal doors which interconnect the room in which the stove is installed to spaces where any extraction fans are present and turn these on to the maximum setting and allow to run for ten minutes. Repeat the smoke match / pen test at 3 above and observe and record if the smoke / combustion products are drawn into the chimney or spill back into the room.
6. If this spillage test fails, then progressively open a window in the room where the stove is installed. Again using a smoke match / pen observe and report If the flue starts to draw the smoke, then this will indicate that the stove has not previously been provided with sufficient air for the flue to function correctly and therefore a permanently open air vent', as specified in Document J or equivalent regulations, may be necessary to correct the problem. When the air supply has been corrected then undertake the same test.
7. Fit an appropriate flue draught testing device to the connecting flue pipe and re-light the fire as previously. Repeat the test(s) in points 1 – 4 above. Check that the flue pressure meets the stove manufacturer's minimum requirements.

TEST 3 Extraction Test

This test requires a flue draught / temperature gauge. This test is to ensure that the stove manufacturer's recommended operational flue draught pressure for this stove is met. In some cases spillage can still occur, so it is important to carry out other essential smoke spillage tests as outlined above.

1. Fit a flue pressure and flue gas temperature testing device to the connecting flue or in the position indicated by the stove manufacturer.
2. Close all external doors and windows, as well as the internal doors to the room the stove is located in and ensure all closable ventilators (eg window trickle vents') are shut and any devices that extract air from the dwelling are also turned off.
3. Light the appliance and ensure the optimum operating temperature is reached according to the stove manufacturer's instructions.
4. Record the flue draught and the flue gas temperature and confirm that these are within the stove manufacturer's recommended parameters.
5. Next, if appropriate, open any internal doors which interconnect the room in which the stove is installed to spaces where any extraction fans are present and turn all of these on to the maximum setting and run for ten minutes. Record the flue draught and the flue gas temperature. These should not be lower than the previous readings obtained without the extract system(s) running and should not fall below the manufacturer's safe minimum pressure recommendations.

6. Once the tests confirm the satisfactory operation, remove the test device and if required seal any test point aperture in the flue pipe.

Please note that if at any stage during commissioning the flue draught reading taken differs from the stove manufacturer's recommended minimum, then action should be taken to improve the updraught before proceeding with further testing.