

Our Ref: LAS/AR

25 April 2023

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Chimney Sheep
P O Box 80
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CA13 0HE

Contact: Sally Phillips

DATE RECEIVED	:	19 APRIL 2023
TEST PERFORMANCE DATES	:	19/04/2023 – 24/04/2023
QUALITY/REFERENCE	:	18" X 18" CHIMNEY SHEEP
REPUTED FIBRE CONTENT	:	100% WOOL
END-USE	:	CHIMNEY DRAUGHT EXCLUDER

REQUEST: Thermal Insulation.
Flammability.

RESULT: Test results enclosed within report.



A. ROSS
TECHNICAL DIRECTOR

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PRODUCT SAFETY ASSESSMENT**Introduction**

The item comprised a square pad of wool felt with a plastic plate in the centre to which a plastic 2-part handle could be attached. The item is intended to be placed in a chimney breast for the purpose of stopping draughts and providing insulation.

Eurofins MTS CPT UK were requested to conduct some tests to evaluate the insulation and flammability characteristics of the product

Thermal insulation

Test method: BS4745:2005 Single plate method

	<u>Tog</u>
1.	3.81
2.	4.17
3.	3.55
Mean	3.84

Note: 1 tog = 0.1 m².K / W

Comment: The sample provided a level of thermal insulation comparable with a summer-weight duvet. By comparison a typical woollen blanket will have a thermal insulation value usually in the range 1.0 tog to 1.5 tog.

Flammability characteristicsa) Resistance to ignition by small flaming ignition sources

A sample was placed on the test rig described in BS 6807:2006 and as used for the testing of mattresses and bedding articles and a flaming ignition source (ignition source 2 as defined in BS5852:Part 2:1982 and as used in the testing of filling materials in accordance with The Furniture and Furnishing (Fire) (Safety) Regulations 1988) was applied to the upper surface of the sample for 40s.

After flame time, secs	Progressive smouldering
Test 1: 5	No progressive smouldering was observed 1 hour after the removal of the ignition source.
Test 2: 6	

Comment: According to the criteria for flaming behaviour commonly used for this ignition source all flaming is required to cease within 120 seconds of the removal of the ignition source from the sample.

a) Resistance to ignition of the felt pad using large flaming ignition source from below

A sample (without the plastic handle in situ) was placed on the test rig described in BS 6807:2006 but without the presence of the mineral wool fibre pad and a large flaming ignition source (ignition source 7 – large wood crib, as defined in BS5852:Part 2:1982) was placed directly beneath the centre of the test sample. The distance between the top of the ignition source and the underside of the sample was approximately 250 mm.

Observations: The wood crib burned for 9 minutes 39 seconds but all flaming on the underside of the sample ceased before the crib had fully burned. Some afterglow was visible in the interior of the sample in the immediate aftermath of the test, but this ceased within 10 minutes of the ignition of the crib. No progressive smouldering was observed one hour after the ignition of the crib. The sample maintained its structural integrity at the end of the test. Upon final examination of the specimen, it was noted the damage caused by the ignition source had exceeded the full thickness of the chimney sheep. However, during the testing no flaming was observed penetrating through the top of the specimen during the testing.

Comment: According to the criteria for flaming behaviour commonly used for this ignition source all flaming is required to cease within 13 minutes of the ignition of the wood crib.

b) Resistance to ignition of the handle using large flaming ignition source from below

A sample complete with plastic handle and hang tag was placed on an elevated test rig (as described in BS 6807:2006 but without the presence of the mineral wool fibre pad). A large flaming ignition source (ignition source 7 – large wood crib, as defined in BS5852:Part 2:1982) was placed directly beneath the hanging handle/hang tag so that the distance between the top of the ignition source and the underside of the sample was approximately 650 mm. The distance between the top of the ignition source and the lowest point of the handle/hang tag was approximately 350 mm

Observations: The wood crib burned for 6 minutes 53 seconds in total. The lower part of the handle melted during the test but remained intact. There were no molten flaming droplets produced.

Subsequent examination of the sample indicated relatively little damage to the underside of the felt pad, to the central plastic disc or to the upper portion of the handle.

Comment: The plastic handle did not produce molten flaming droplets which could form a secondary ignition source and the extent of damage was limited to the lowest part of the handle only. As the upper part of the handle was intact, it would still be possible to use it to remove the chimney sheep from the chimney breast.

Summary

The sample chimney sheep submitted exhibited good thermal insulation properties and a good level of resistance to flaming ignition sources such that in the event that the chimney sheep was accidentally left in situ in a chimney breast and a fire lit beneath it, the chimney sheep would not represent a significant fire hazard in the first instance.

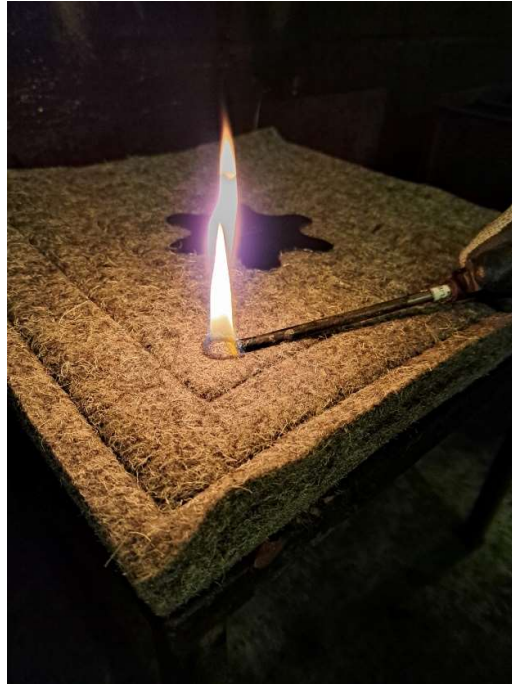
However, if a fire were to be lit in the fireplace with the chimney sheep still in situ, it is likely that the presence of the chimney sheep would result in smoke produced by the fire backfilling the room thereby alerting the user to the presence of the chimney sheep in the chimney breast. The burning characteristics of the plastic handle are such that it should still be possible to remove (with appropriate precautions and regard to the safety of the user) the chimney sheep from the chimney breast within the first 5 minutes of a fire being lit.

If a fire were allowed to burn unchecked for more than 5 minutes with a chimney sheep in situ in a chimney breast, it would be increasingly likely that there would eventually be degradation and ignition of the materials used in the construction of the chimney sheep and this could result in materials falling from the chimney sheep into the hearth of the fireplace and create a risk of ignition of secondary materials from the burning debris. However, the presence of the hang tag on the handle is intended to act as a visual alert to the user that the chimney sheep is still in situ in the chimney breast.

The samples submitted were accompanied by a user instruction leaflet which included safety information.

Appendix A includes digital photographs of the flammability testing.

Appendix A: Digital photographs



Application of ignition source #2 to upper surface



Resultant burn marks after ignition source# 2 test



Showing crib 7 ignition source below chimney sheep.



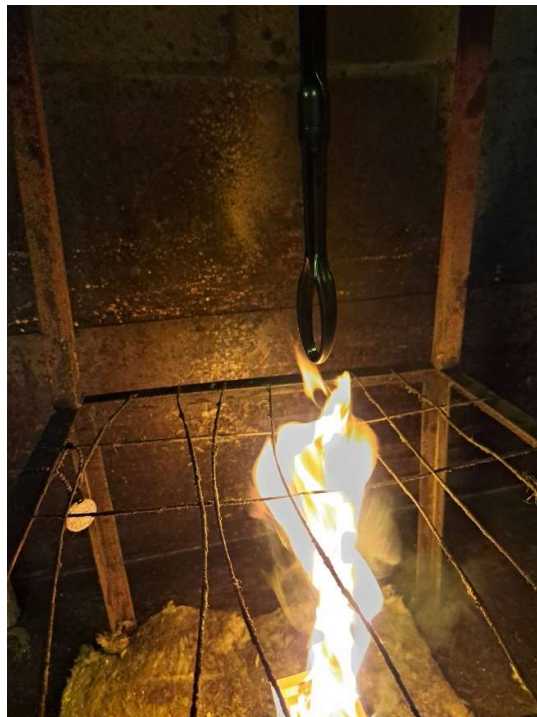
Showing crib 7 ignition source flames on underside of chimney sheep.
(without handle present)



Showing burned underside of chimney sheep after crib 7 test.



Showing crib 7 test with handle and hang tag in position.



Showing plastic handle with flame contact.



Showing undamaged handle and hang tag and damaged handle after test.

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The decision rule applicable to statements of conformity relating to the test(s) carried out is simple acceptance based on the measured test results not falling within a range either side of a specified limit that is equal to the uncertainty of measurement for the parameter measured (based on 95% confidence levels). In all other regards, the decision rule is based on simple acceptance predicated upon the conditions of testing falling within the criteria for test set out in the test method with a conformance probability of 95%. The risk of false accept or false reject is therefore not greater than 2.5%.

Uncertainty of measurement:	Timings	±0.4s
	Dimensions	±0.5mm
	Thermal Insulation	±0.3TOG