

Our ref: AMR/AMR

Date: 20 December 2012

Report 194799

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Chimney Sheep
P O Box 80
Cockermouth
Cumbria
CA13 0HE

Attention: Sally Phillips

DATE RECEIVED:	19 NOVEMBER 2012
QUALITY/REFERENCE:	15" CIRCULAR CHIMNEY SHEEP
REPUTED FIBRE CONTENT:	100% WOOL
SAMPLE REFERENCE:	MTS 32111901
ORDER NO.:	MTS-2012/109
END-USE:	CHIMNEY DRAUGHT EXCLUDER

TESTS REQUESTED:	Thermal insulation * Flammability
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*Tests indicated * were sub-contracted to another laboratory*

RESULTS:	See attached report
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PRODUCT SAFETY ASSESSMENT

Introduction

The item comprised a circular pad of wool felt with a plastic disc 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.

MTS 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.	4.38
2.	4.54
3.	4.37
Mean	4.43

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 characteristics

a) 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 6 minutes 09 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.

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 5 minutes 50 seconds in total. However after 2 minutes 30 seconds the lower part of the plastic handle melted and deformed and the hang tag detached. There were no molten flaming droplets produced.

After the ignition source has ceased burning the upper part of the handle remained intact. 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 back-filling 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 damage on top side of chimney sheep after crib 7 test



Showing assembled chimney sheep with plastic handle and hang tag



Showing crib 7 test with handle and hang tag in position



Showing melting plastic handle



Showing undamaged handle and hang tag and damaged handle after test