For the Attention of: Mr Ian Davies

Mideas Limited
12 Openshaw Drive
Blackburn
Lancashire
BB1 8RH

With Compliments

DATE REPORT ISSUED: 10/11/2006

PLEASE FIND ENCLOSED OUR REPORT REFERENCE ALC E : 99316 : 1006

THANK YOU FOR CHOOSING
BUREAU VERITAS CONSUMER PRODUCTS SERVICES UK LTD

SAMPLE RETENTION POLICY

Unless otherwise agreed in writing, samples will be retained for a minimum period of 28 days and then disposed of at Bureau Veritas Consumer Products Services UK Ltd's discretion.

TECHNICAL REPORT

SUBMISSION INFORMATION

ALC: E : 99316 : 1006
DATE JOB BOOKED IN: 31/10/2006
DATE REPORT ISSUED: 10/11/2006

Sample Description: Plugster

Applicant: Mideas Limited
12 Openshaw Drive
Blackburn
Lancashire
BB1 8RH

Applicant Ref. / Order:

TEST INFORMATION

Evaluation To: The General Product Safety Regulations (Limited to those aspects detailed in the accompanying report).

Standards Employed: BS 1363-1:1995, Incorporating Amendments Nos 1 and 2
BS EN 60335-1:2002, Incorporating Amendment No 1 and 2

CONCLUSIONS:

From the results of our examination we are of the opinion that the Plugster presents no immediate safety hazards when used as intended.

Signature:

Paul Harris
AUTHORISED SIGNATORY
BUREAU VERITAS CONSUMER PRODUCTS SERVICES UK LTD

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SUMMARY OF EXAMINATION

Introduction:

An examination was requested to ascertain compliance with the requirements as detailed on page one of this report and our findings were as follows:

Examination details:

Samples of the product were subjected to the following tests:

1. Dimensional checks, using the requirements of BS1363-1:1995 Rewireable and non-rewireable fused plugs and BS1363-2:1995 13A switched and unswitched socket outlets, to assess the potential risk for reducing plug pin contact.

2. Moisture resistance in accordance with clause 15 of BSEN 60335-1:2002. Household and similar Electrical appliances – Safety.

3. Insulation resistance and electric strength tests in accordance with clause 16 of BSEN 60335-1:2002

4. Resistance to ignition and spread of fire in accordance with clause 30 of BSEN 60335-1:2002

Test results:

1. **Dimensional checks in accordance with BS1363.** One sample of the Plugster was fitted to an approved BS1363 type plug. It was found to fit satisfactorily in either of the two optional length settings.
   - 1.1. The maximum permitted pull force for removal of a plug from a socket is given as 36N. The sample was therefore subjected to 50 pulls of 50N for 1 second each. It withstood this with no damage or deformation. One additional pull of 150N was applied for a period of 30 seconds again with no damage or deformation.
   - 1.2. The thickness of 5 samples was measured and found to be 0.24mm. Calculations from the maximum and minimum dimensions of the plug pins and the maximum contact depth of the socket show that in worst case conditions the overlap between plug pin and socket contact is 5.0mm. When the Plugster is fitted to the plug the depth of insertion of the plug pin will be reduced by 0.48mm (twice the thickness of the Plugster). This leaves in excess of 4.5mm of potential overlap between plug pin and socket contact under worst case conditions. This is considered to be adequate.
   - 1.3. When the Plugster is fitted to the plug, the tabs of material which are displaced by the pin will increase the thickness of the plug pins at their bases by twice the thickness of the Plugster for the earth pin and four times for the live and neutral pins. The dimensions of the socket apertures are given as 4.8 x 7.2 mm for the earth connection and 4.8 x 8.8mm for the live and neutral pins. Taking the maximum pin dimensions permitted in the standard, the Plugster will increase the earth pin width by 0.48mm giving a maximum thickness of pin and Plugster of 4.53mm. This is less than the 4.8mm specified for the socket aperture and therefore should not present a problem. In the case of the live and neutral pins, the Plugster will increase the width by 0.96mm (four times the thickness) giving a maximum thickness of 5.01mm which exceeds the specified 4.8mm for the socket aperture. This may result in the plug not fully entering the socket in some cases.
     A solution to this potential problem may be to punch holes for the plug pins rather than slots.

2. **Moisture resistance in accordance with BSEN60335-1.** Two samples were subjected to high humidity for 48hrs in an atmosphere of 93±3%RH and 23± 2°C. Examination of the samples after the test showed no damage or deformation.

3. **Insulation resistance and electrical strength test in accordance with BSEN60335-1**. Following the humidity test both samples were subjected to an insulation resistance test at 500V d.c. and an electric strength test at 3500V.a.c. The test was performed across the section of material bridging the gap between the live and neutral plug pins. The insulation resistance measured in excess of 100MΩ and no breakdown or flashover occurred during the electric strength test. The samples were considered to pass the test.

4. **The resistance to ignition and spread of fire in accordance with BSEN60335-1.** When subjected to a glow wire test at 550°C the sample did not ignite or produce flaming droplets of material. It was considered to pass the test.


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Figure 1