

TECHNICAL REPORT

No. : 42230

Client Electrical Safety Council
1.10, Canterbury Court
1-3 Brixton Road
London SW9 6DE

Client contact Stephen Curtler

Scope of report Safety Screening of Health and Beauty Products
-Hair Clippers

Sample/s tested / Condition 2 samples / new, boxed

Reference Standards **EN 60335-2-8:2003 +A1:05 +A2:08** used with
EN 60335-1:2002 +A11:04 +A1:04 +A12:06 +A2:06 +A13:08 +A14:10

Date sample received 10 January 2011

Test period 14 January 2011 to 17 January 2011

Date of issue 14 February 2011

Tests carried out at 20 ± 5°C

Testing Officer  Richard Newman

Verified by  Peter Cross

Form No: QF102-2
Issue No: 1
Issue Date: 03.08.07



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THIS REPORT APPLIES ONLY TO THE PARTICULAR SAMPLE UNIT(S) TESTED AND TO THE SPECIFIC TESTS CARRIED OUT AS DETAILED IN THIS REPORT.

Introduction

The Electrical Safety Council established a safety screening testing project for household electrical health and beauty products, (see appendix A), and commissioned Nemko Ltd to carry out electrical safety screening tests on two Hair Clippers, purchased by the Council, under the general safety provisions of the following safety standards:-

EN 60335-1:2002 +A11:04 +A1:04 +A12:06 +A2:06 +A13:08 +A14:10

Household and similar electrical appliances – Safety
Part 1: General requirements

EN 60335-2-8:2003 +A1:05 +A2:08

Household and similar electrical appliances – Safety –
Part 2-23: Particular requirements for shavers, hair clippers and similar appliances

The hair clippers tested are listed below and illustrated on page 3.

The electrical safety screening tests have been carried out under various headings taken from EN 60335-1 with some additions and consist of inspections and measurement with limited testing. Nemko engineers applied their professional judgement in deciding upon the limited tests carried out and it must be stressed that full testing to the above safety standards is outside the scope of this project.

Summary

One of the instruction leaflets did not include text contained in Clause 7.12 EN60335-1 but the product was otherwise deemed to pass. The other product was deemed to pass.

The table below contains the sample details and the assessment results.

<u>Sample Code</u>	<u>Description</u>		<u>Assessment result</u>
01	9W hair clipper	Basic model	Pass*
02	10W hair clipper	Professional	Pass

* denotes generally "PASS" but with observations in report details section

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Project Samples

The following two samples were selected for testing under this project:

Sample code 01



Sample code 02



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Electrical Safety Screening Tests – Report Details

9W hair clipper – Basic Model (Sample code 01)



Test summary

Safety Criteria	Results
Plug and fuse	Pass
Classification	Pass
Initial operation	Pass
Marking and instructions	Pass*
Protection against access to live parts	Pass
Power input and current	Pass
Leakage current and electric strength	Pass
Abnormal operation	Pass
Mechanical strength	Pass
Construction	Pass
Internal wiring	Pass
Supply connection and external flexible cords	Pass
Provision for earthing	Pass
Clearance, creepage distances and solid insulation	Pass

Additional Heading

Components	Pass
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Observations (denoted by * in above table)

Instructions The instructions do not include the substance of clause 7.12 of EN 60335-1:-

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

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10W hair clipper. Professional model (Sample code 02)



Test summary

Safety Criteria	Results
Plug and fuse	Pass
Classification	Pass
Initial operation	Pass
Marking and instructions	Pass
Protection against access to live parts	Pass
Power input and current	Pass
Leakage current and electric strength	Pass
Abnormal operation	Pass
Mechanical strength	Pass
Construction	Pass
Internal wiring	Pass
Supply connection and external flexible cords	Pass
Provision for earthing	Pass
Clearance, creepage distances and solid insulation	Pass

Additional Heading

Components	Pass
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----- End of Report -----

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Appendix A

Electrical Safety Council Screening Test for Household Health and Beauty Products

Plug and fuse

Check for fitting of approved plug and fuse link including counterfeit indications. Visual inspection and measurement of essential plug pin and fuse link dimensions.

Classification

Confirm the classification, as defined in the standard.

Initial operation

A functional test is required to establish whether the product operates, as intended by the manufacturer and as described in the user instructions.

Marking and instructions

Confirm the presence of standard markings either on the product or the rating label, or both. User instructions must also be checked for the presence of standard warnings, in particular EN 60335-1, clause 7.12, referring to the use of products by persons (including children) with reduced physical, sensory or mental capabilities etc.

Protection against access to live parts

Inspection for access to live parts particularly after removal of detachable parts.

Power input and current

Measurement required confirming that product is within standard permissible power input and current deviations.

Heating

Limited to the measurement, under steady state conditions, for hotplates of hair straightening irons and curling tongs only.

Leakage current and electric strength

Testing required determining adequate electrical insulation properties.

Abnormal operation

This may consist of very limited testing perhaps ensuring only that the thermal cut-out operates in a hairdryer as an example.

Mechanical strength

Carry out impact testing on parts liable to be weak with emphasis on mould lines. The drop test of EN 60335-2-23, clause 21.101 may also be required.

Construction

Inspection is required confirming the product can be properly assembled and connected with particular comments required in the following areas:

Construction of swivel connections with consideration to the environment in which they may be used.

Amendment A2 modifies EN 60335-1, clause 22.32 and states that *“insulating material in which heating conductors are embedded is considered to be basic insulation and not reinforced insulation”*. Hair straightening irons are to be examined and tested for evidence of adequate supplementary insulation.

Clause 22.44 states that *“appliances shall not have an enclosure that is shaped or decorated like a toy”*. A decision is required against this clause.

Internal wiring

Basic inspection only.

Supply connection and external flexible cords

Inspect for marking of cross sectional area and measure conductors in cases of doubt. For products having a swivel connection, the additional requirements in EN 60335-2-23, clause 25.14 and 25.15 may be required.

Provision for earthing

Check essential earthing requirements, although it is expected that the products will be class II in construction.

Clearance, creepage distances and solid insulation

Inspection with measurement only in cases of doubt.

Particular emphasis is required under EN 60335-1, clause 29.3, which states that *“supplementary insulation and reinforced insulation shall have adequate thickness, or have a sufficient number of layers, to withstand the electrical stresses that can be expected during the use of the appliance”*.