Screening Report

Report: 071-75924520-101 **Date:** 18/12/2013

Client: The Electrical Safety Council
Unit 331 Great Guildford Business
Square 30 Great Guildford Street
London
SE1 0HS

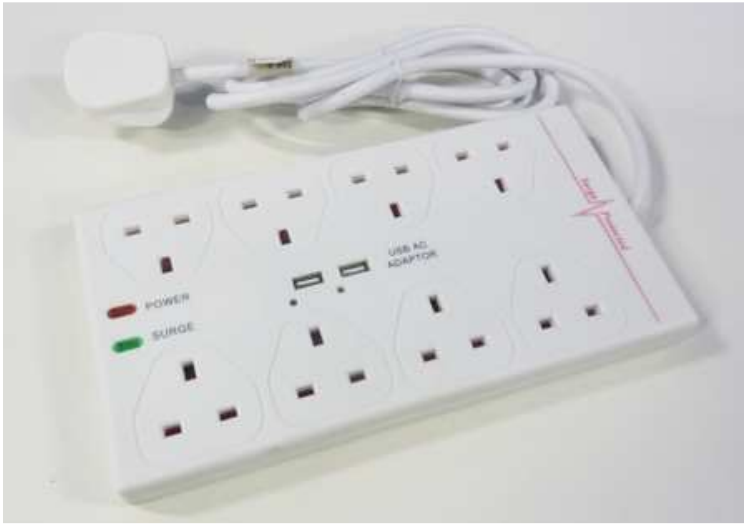
Product: Electrical Accessory **ESC Sample Number:** 8

Summary: TÜV SÜD Product Service was commissioned by The Electrical Safety Council to evaluate an Electrical Accessory (see figure 1). The aim of the assessment is to assess the product against the clients Safety Screening Test Plan.

Summary

The product was of adequate construction and requires some attention to the user instructions. The product failed on markings, terminal and terminations and screws, current carrying parts and connections and also gave twice the rated output current and was deemed to fail its own stated specification.

Figure 1



Assessed by:

Anna Jeeves
Consumer Product Technician

Reviewed by:

Greg Plummer
Consumer Product Test Engineer

Colour Code

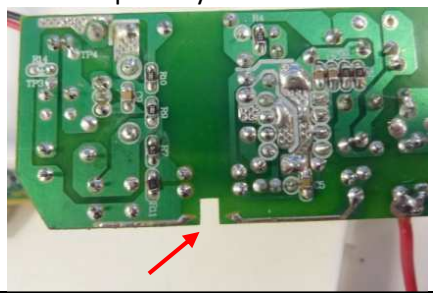
Red = Fail/Major Fault **Amber** = Improvements Required **Green** = Pass

Product Service

Testing Information	
Testing Laboratory:	TÜV SÜD Product Service
Location:	Octagon House, Concorde Way, Segensworth North, Fareham, Hampshire, PO15 5RL. UK.
Client:	The Electrical Safety Council
ESC Sample Number:	8

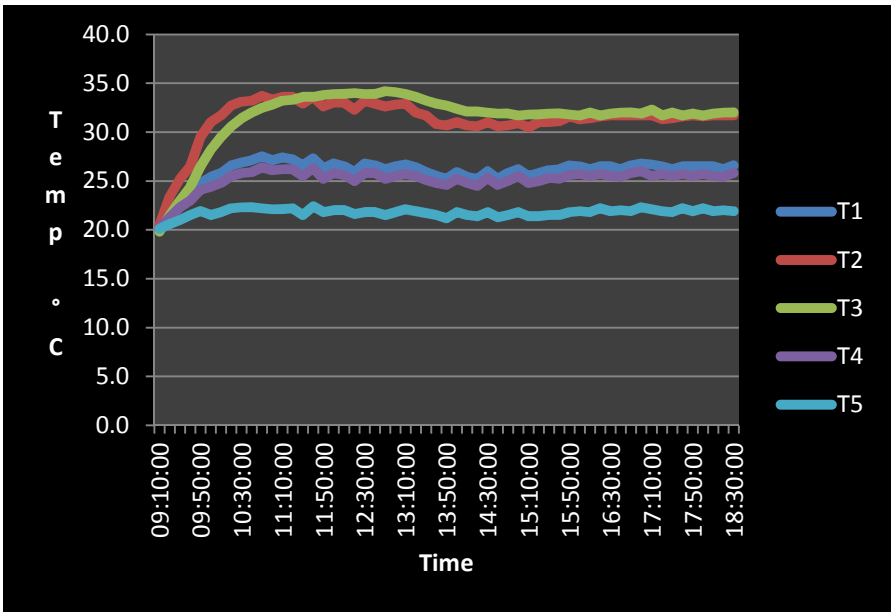
Product Information	
Product Description:	Trailing socket with Integrated USB Ports
Rated Input Voltage:	250VAC
Rated Output:	USB – 2 x 5VDC / 500mA
Protection Class:	Class I

Findings			
Markings/Warnings BS 5733, Clause			
Marking of Product	☒-Inadequate ☐-Poor ☐-Adequate ☐-Good ☐-Very Good ☐-N/A		
Comments	The product was marked with the model reference, electrical ratings (low voltage / SELV) and applicable standards (BS 1363 / BS 5733). A known manufacture's trademark was present; however there was no information relating to the distributor (on packaging only) and this must be added. The WEEE logo and CE marking were also missing. There was no standard stated to suggest conformity of the USB outputs. There were some brief instructional / safety information provided on the packaging's carded insert which state that the product is suitable for charging items such as MP3 players, mobile phones, and digital cameras; however this was non-specific. The safety information covered the extension as a whole (including surge protection). There were no compatibility warnings directly related to the USB interface.		
Markings/Photo	☒-Yes ☐-No *If yes see last page of report*	**CE Marking**	☐-Yes ☒-No
External Construction (BS 5733, Clause 13)			
Product Build Quality	☒-Pass ☐-Fail		
Comments	The external construction was of an adequate standard however the mouldings were considered to be of a lesser quality compared to similar products already on the market. No sharp edges, burrs or pinch points were found.		
Accessibility of Live Parts (BS 5733, Clause 8)			
Constructional Quality	☒-Pass ☐-Fail		
Comments	The casings had been adequately secured with rivets. Access to internal live parts could not be achieved when applying a 1.0mm calibrated test pin to potential areas of access.		

Terminals & Terminations (BS 5733, Clause 14)	
Constructional Quality	☒-Pass ☐-Fail
Comments	The product was fitted with an approved 13A, BS 1363 plug and a BS 6500 marked (superseded by BS EN 50525) 3*1.25mm supply cord, both parts were registered to a known manufacturer. It was noted that the cord measured at 1.87M, not 2.0M as stated on the packaging. A quick check revealed that some resistance was felt when an approved BS 1363 plug was inserted into the socket.
Internal Wiring / Separation (BS EN 61558-1, Clause 21)	
Constructional Quality	☒-Pass ☐-Fail
Comments	The output (SELV) circuit was found to be adequately separated from the input circuit. The Live parts of the SELV circuit were not in contact or exposed to the earth.
Screws, Current Carrying Parts & Connections (BS 5733, Clause 14 & 15)	
Constructional Quality	☒-Pass ☐-Fail
Comments	The connections to the both the control and surge circuits had been mechanically secured / soldered. The input connections to the conductor strip was found to be suitably retained by crimping; however this method had not been employed to any of the other conductor connections, these were soldered only. It is recommended that two forms of security are used. 
Creepage Distances, Clearances & Distances Through Insulation (BS EN 61558-1, Clause 26)	
Constructional Quality	☐-Pass ☒-Fail
Comments	The minimum clearance distance measured between the primary and secondary sides of the circuit board (4.4mm) was close to the limit required by the standard (>5mm). The transformer was adequately constructed with a triple insulated secondary winding, providing an adequate barrier from the primary side. 

Short Circuit, Overload and Thermal Protection (BS EN 61558-1, Clause 15)	
Constructional Quality	☒-Pass ☐-Fail
Comments	A cartridge fuse was fitted to the primary side of the control circuit. A thermal protection device was also found on the surge protection circuit. The VDE marking seen was verified online.
Mechanical Strength (BS 5733, Clause 21)	
Result	☒-Pass ☐-Fail
Comments	The product was subjected to an impact test. This was carried out with the free end of the cable held against a wall with the cable held horizontally at 400mm above a hard floor then allowed to drop. This was repeated with the cord rotated through 45˚ at its fixing eight times. No damage was observed. Standard USB connectors were placed into each socket then subjected to an impact test of 5Nm to all sides. Some deformation of the sockets metal casing was noted; however this did not affect the mechanical fit of a USB plug.
Insulation Resistance / Leakage Current (BS EN 61558-1, Clause 18.2)	
Result	☒-Pass ☐-Fail
Comments	The product was subjected to an insulation resistance test with a voltage of 500VDC applied. This was measured between live / neutral and the USB output. A measurement of >999MΩ was recorded across each path; therefore meeting the requirement of >5MΩ.
Electric Strength (BS 5733, Clause 19 / BS EN 61558-1, Clause 18)	
Result	☒-Pass ☐-Fail
Comments	The product as a whole was subjected to an electric strength test to 2121VDC. The output was tested to 4242VDC. No breakdown or flashover occurred.
Output Voltage & Current Under Load (BS EN 62684, Clause 5)	
Result	☒-Pass ☐-Fail
Comments	The device was plugged in and the open circuit voltage measured across the USB ground and supply. It was found to be 4.89VDC for either socket and was between the limits of 4.75 – 5.25VDC. The stated output current was 500mA for each USB socket which is below the required limit of 1500mA. Under short circuit conditions both USB sockets gave an output current of <50mA at <50mV. The drop in output appeared to be caused by some current limiting device. The device gave approximately 1A from each channel before the limiting circuit was enabled which is twice the stated output. The device was setup with a load bank and the load slowly increased until the voltage output dropped significantly. The load was then backed off until the voltage remained stable at a current of approximately 1A on both USB

socket and left to run. The temperature was monitored at five points around the device and the plug. After approximately 8 hours the test was stopped.



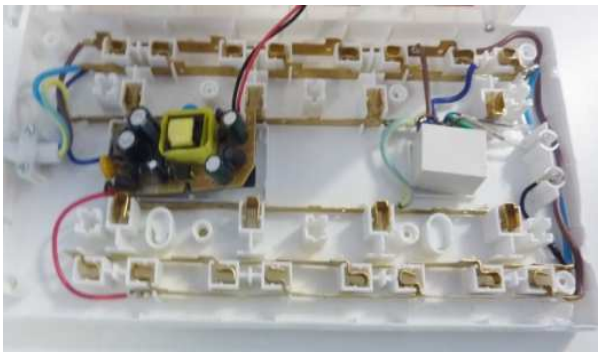
T1=Left of USB socket
T2=Right of USB socket
T3=Base under USB socket
T4=Right of power switch
T5=Plug

The maximum recorded temperature was 34.2°C.

Product Service

Product Images

Internal Overview (Main Assembly)



Control PCB

Markings

Warnings

Plug

Fuse

The findings expressed in this report are our considered opinions and are based on our assessment of the samples and / or documentation supplied to us at the time of the assessment. A full or further investigation of the product and / or documentation may result in additional findings.