Test Report

[redacted]

[redacted]

Client	Electrical Safety Council 18 Buckinghamshire Gate London SW1E 6LB

[redacted]

Items tested	Various four-gang portable socket-outlets
Specifications	BS 1363: Part 2: 1995 plus Amendments 1, 2 and 3 Special / limited testing - see within for details
Results	See within for details of test results.

[redacted]

1. SAMPLES SUBMITTED

Samples received 8 February 2010.

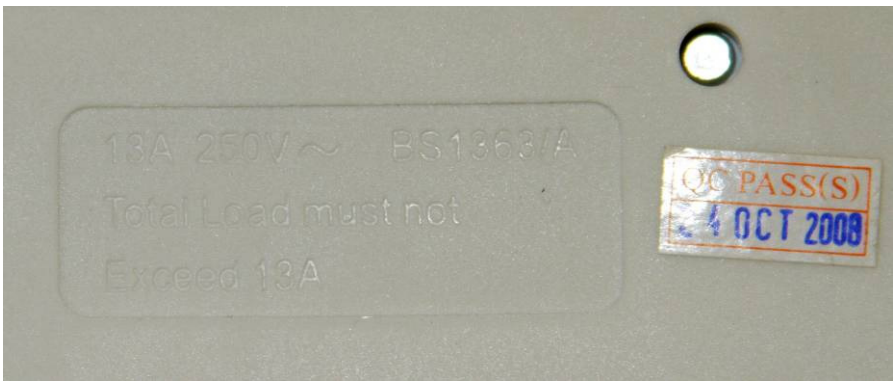
1.1 [redacted] portable socket-outlet

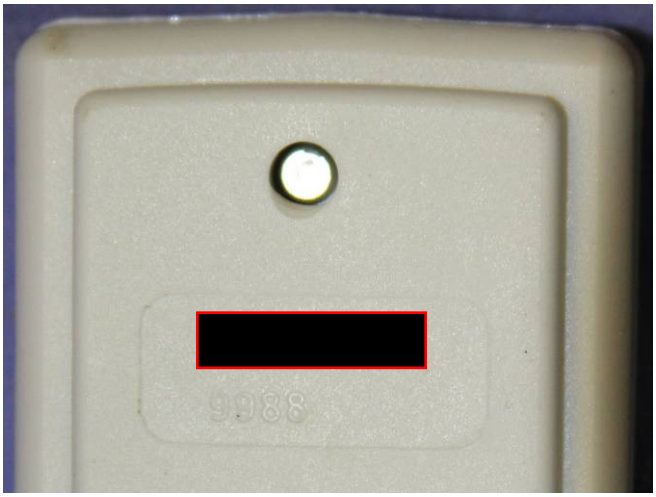
Four gang, white, non-rewireable.

3 x 1.25mm^2 (37 strands of 0.187mm diameter) [redacted]
Ltd cord. 175cm length.

[redacted] rewireable BS 1363 plug fitted with 13A SEM BS 1362 fuse link.

Samples numbered 2 and 3.



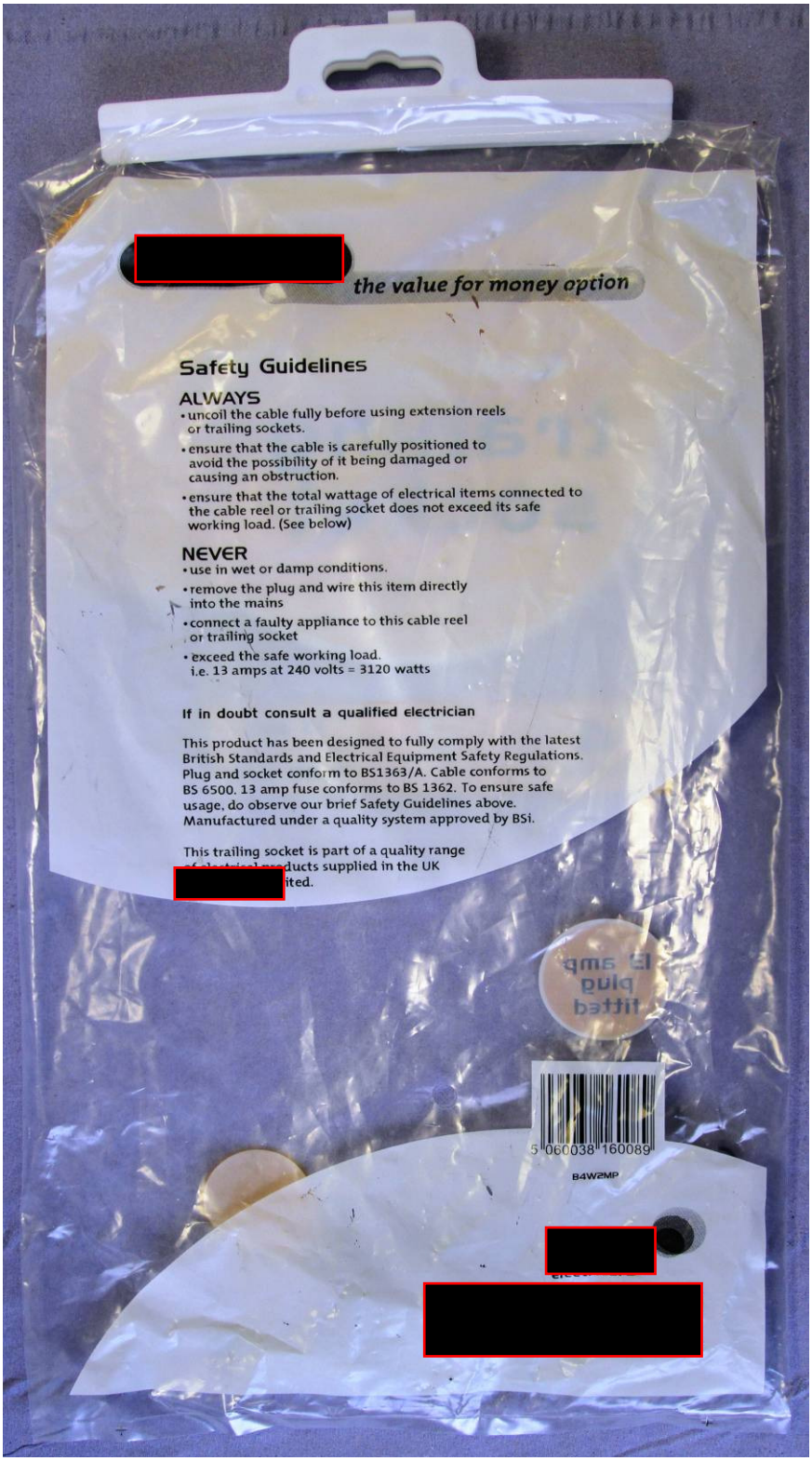


1. SAMPLES SUBMITTED (CONTINUED)

1.1 [redacted] portable socket-outlet (continued)

1. SAMPLES SUBMITTED (CONTINUED)

1.1 [redacted] portable socket-outlet (continued)



1. SAMPLES SUBMITTED (CONTINUED)

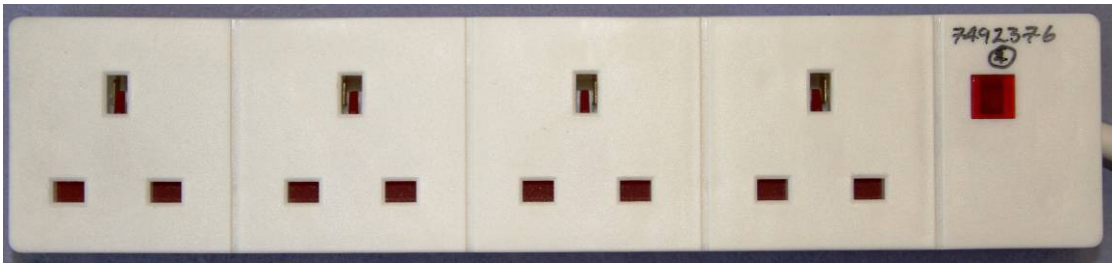
1.2 [redacted] portable socket-outlet

Four gang, white, non-rewireable.

3 x 1.25mm^2 (40 strands of 0.189mm diameter) [redacted] Co Ltd cord. 175cm length.

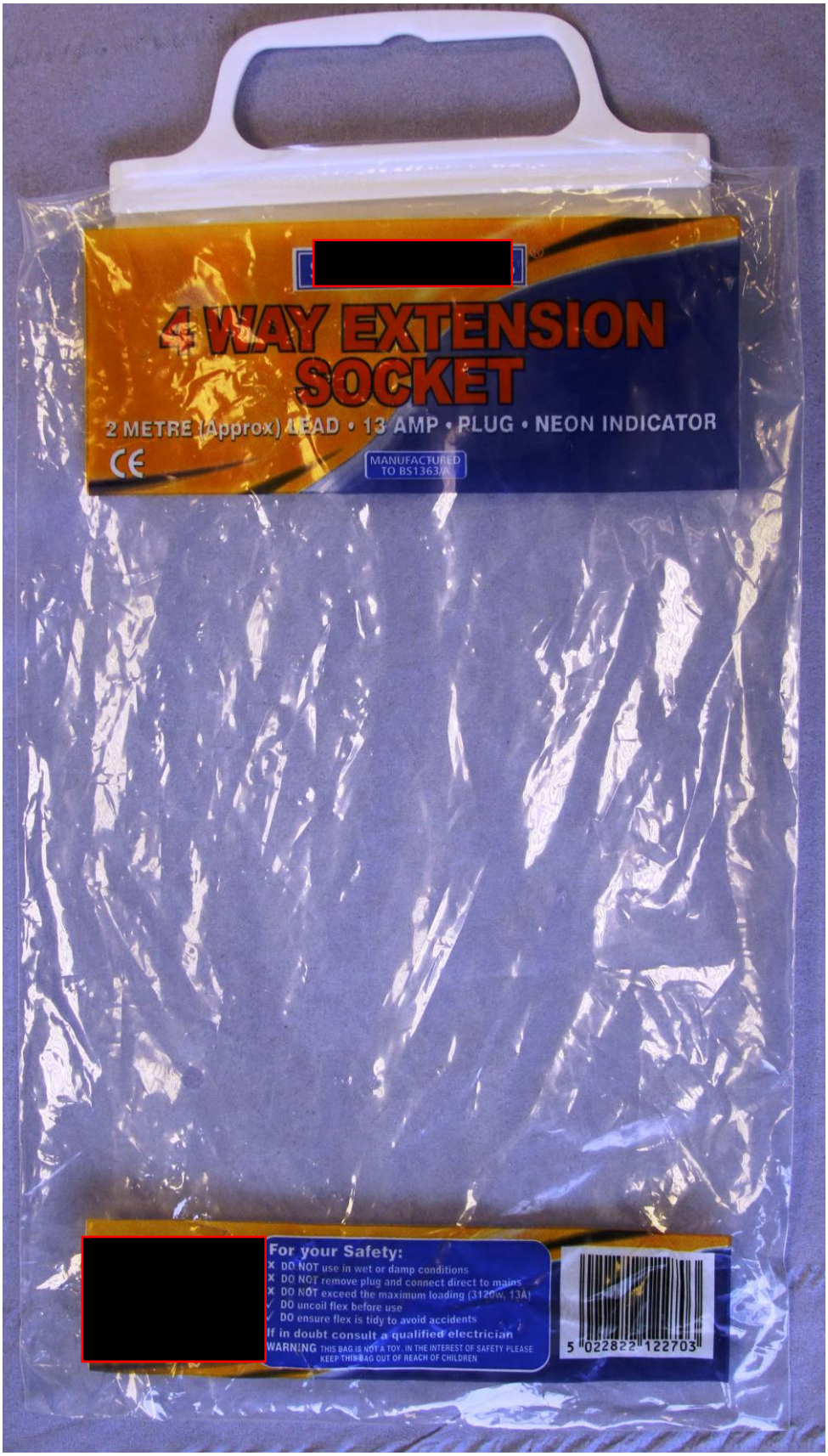
[redacted] rewireable BS 1363 plug fitted with 13A SEM BS 1362 fuse link.

Samples numbered 4 and 5.



1. SAMPLES SUBMITTED (CONTINUED)

1.2 [redacted] portable socket-outlet (continued)



1. SAMPLES SUBMITTED (CONTINUED)

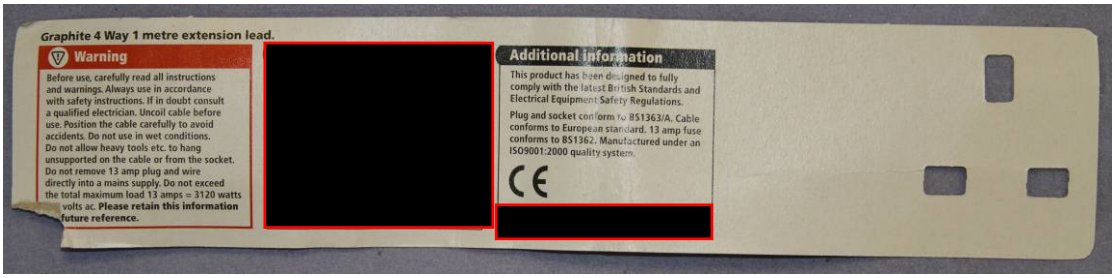
1.3 [redacted]rtable socket-outlet

Four gang, black, non-rewireable.

3 x 1.25mm^2 (40 strands of 0.188mm diameter) [redacted]) Co Ltd cord. 100cm length.

[redacted]rewireable BS 1363 plug fitted with 13A SEM BS 1362 fuse link.

Samples numbered 6 and 7.



1. SAMPLES SUBMITTED (CONTINUED)

1.4 [redacted] portable socket-outlet

Four gang, white, non-rewireable (see Comments page 32).

3 x 1.25mm^2 (40 strands of 0.193mm diameter [redacted] 4cm length.

[redacted]able BS 1363 plug fitted with 13A SAFE BS 1362 fuse link.

Samples numbered 8 and 9.

1. SAMPLES SUBMITTED (CONTINUED)

1.4 [redacted] portable socket-outlet (continued)

1. SAMPLES SUBMITTED (CONTINUED)

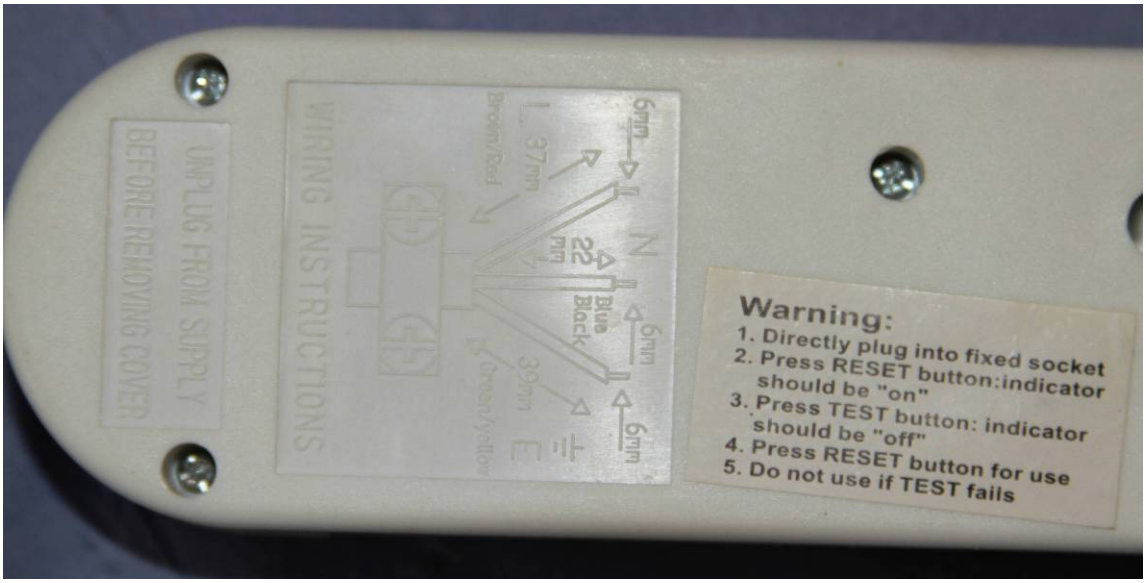
1.5 [redacted]rtable socket-outlet

Four gang, white, rewireable fitted with an RCD.

3 x 1.25mm^2 (40 strands of 0.190mm diameter) [redacted]Co Ltd cord. 190cm length.

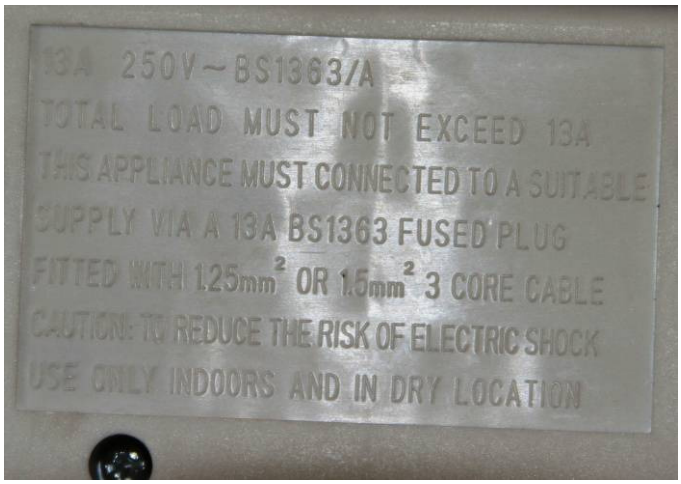
[redacted]ireable BS 1363 plug fitted with 13A SEM BS 1362 fuse link.

Samples numbered 10 and 11.



1. SAMPLES SUBMITTED (CONTINUED)

1.5 PMS R2804 portable socket-outlet (continued)



1. SAMPLES SUBMITTED (CONTINUED)

1.5 [redacted]rtable socket-outlet (continued)

PRCD (Type: R2804) OPERATING INSTRUCTIONS

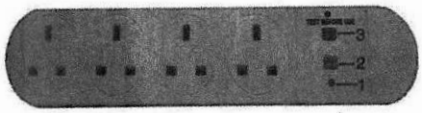
Caution: please read the user manual carefully before use

1, Technical equipment

1.Red indicator
Protection active

2.Reset
Activates the protection

3.TEST
Activate the test function



2, TEST BEFORE USE

WARNING

1). Directly plug into fixed socket.
2). Press "RESET" button: indicator should be "ON";
3). Press "TEST" button: indicator should be "off";
4). Press "RESET" button for use. Do not use if test failed

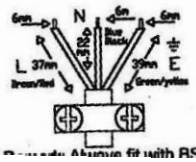
3, Advice

1: For indoor use only.
2: The maximum value of the mean daily ambient temperature is +35 °C and between –5°C to 40°C.
3: Altitude: Not exceeding 2 000 m
4: Relative humidity (maximum value at 40°C): 50%
5: Frequency: Reference value is in ±5 % (250V~ 50Hz, 13A)
6: External magnetic field: Not exceeding five times the earth's magnetic field in any direction. It also means the device should not be used in the proximity of a strong magnetic field.
7: Sinusoidal wave distortion: Not exceeding 5 %
8: After the item 1)-4), the device is ready for use. The device shall not be used if it fails to operate correctly in accordance with the test sequence listed above. In this case, please unplug the device to outlet.
9: Please make sure the device can work normally by conducting the above operation sequence at first to protect against unexpected electric leakage hazard before use. Don't misuse such as dropping, immersion, etc.
10: In case of electric leakage, the device will automatically shut off the power supply and prevent electricity reaching human bodies.
11: Seek advice from manufacturer or responsible vender or a competent electrician for solution if the device repeatedly trips with an appliance connected or if it fails to pass the test sequence listed above.
12: Misuse of electricity can be dangerous, the use of a PRCD cannot be regarded as substitute for basic electrical safety, please unplug the PRCD to achieve isolation.
13: The PRCD does not guard against electric shock resulting from contact with both circuit conductors. .

4, Technical data

Power supply	250V~50HZ
Rated current	13A
Rated output	3200W
Trip leakage current	30mA
Trip time	< 30mS

5, Wiring Instruction



Above fit with BS6500 3G1.25mm^2 or 3G1.5mm^2 cable.

1. SAMPLES SUBMITTED (CONTINUED)

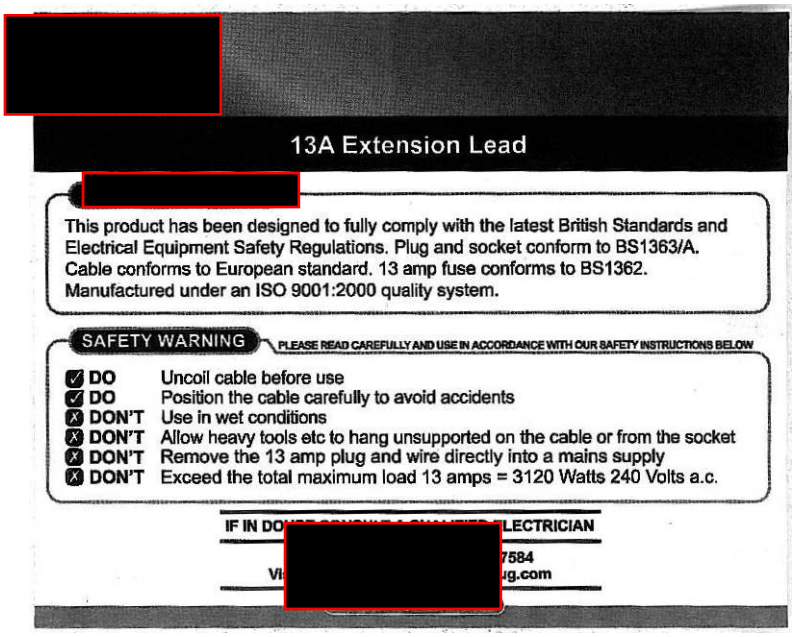
1.6 [redacted] portable socket-outlet

Four gang, white, non-rewireable.

3 x 1.25mm^2 (40 strands of 0.191mm diameter)[redacted]. 75cm length.

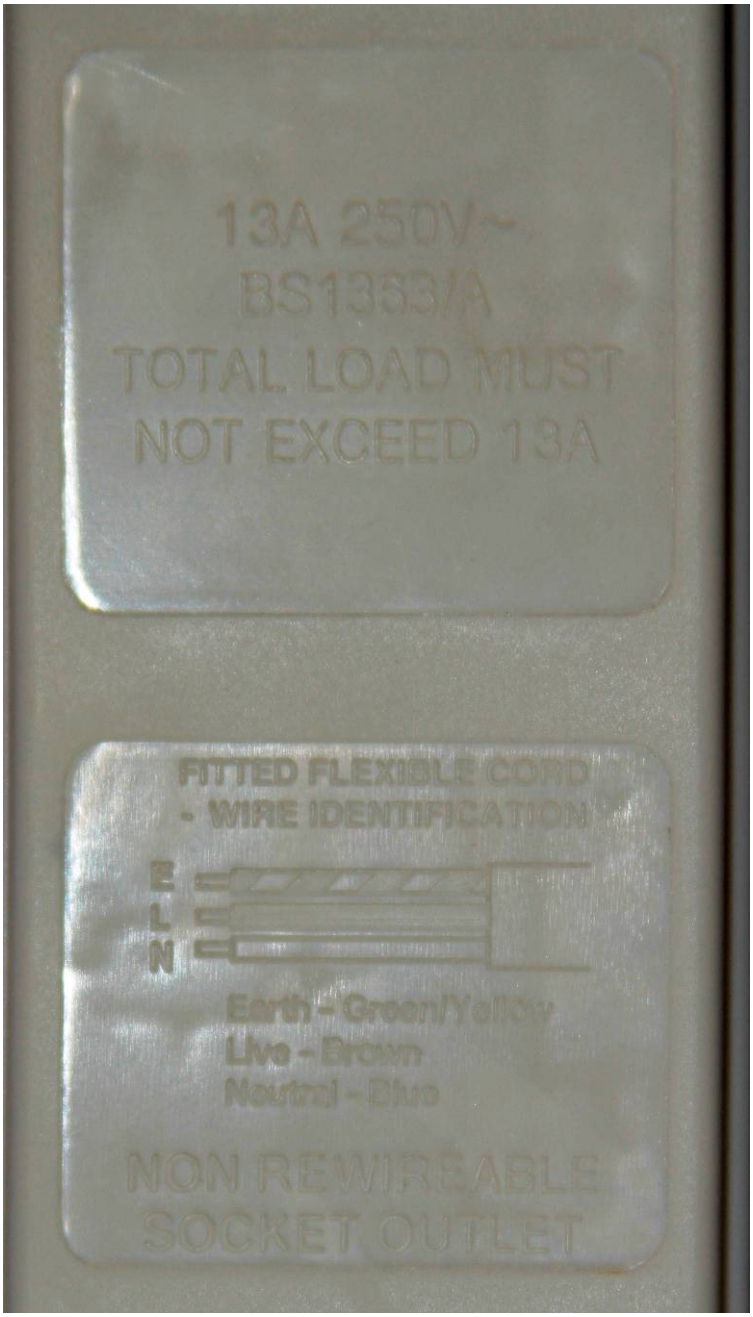
[redacted] rewireable BS 1363 plug fitted with 13A[redacted]1362 fuse link.

Samples numbered 12 and 13.



1. SAMPLES SUBMITTED (CONTINUED)

1.6 [redacted]rtable socket-outlet (continued)



1. SAMPLES SUBMITTED (CONTINUED)

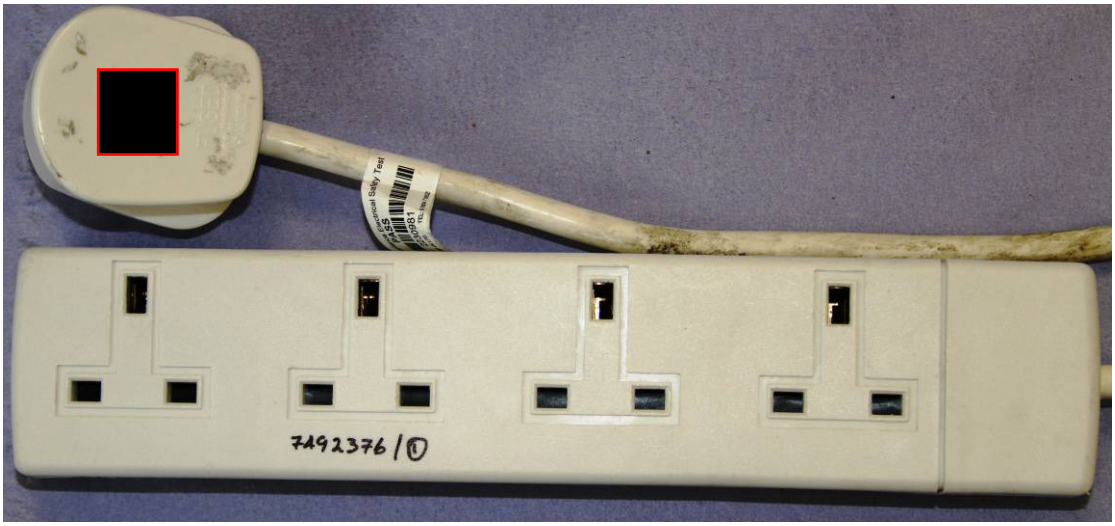
1.7 [redacted]table socket-outlet

Four gang, white, rewireable. Sample is in used condition.

3 x 1.25mm^2 (40 strands of 0.195mm diameter) [redacted]
Ltd cord. 95cm length.

[redacted] rewireable BS 1363 plug fitted with 13A [redacted]1362 fuse link.

Sample numbered 1.



2. TESTS REQUESTED

Sub-clause 18.1.2 on the six new samples, one socket per sample. 5000 Ops only.

Clause 16 at 1.6 times I_r on the above samples. The total load to split between two of the possible four outlets on each unit. Minimum test duration being the time to failure of the BS 1362 fuse link, maximum duration being four hours.

Post endurance clauses: sub-clause 9.1 and clause 15.

Measurement of cross sectional area of each cord.

Visual check and Fig 5 on plugs.

Visual check of each fitted fuse.

BS 1363: Part 2: 1995 plus Amendments 1, 2 and 3 and BS 1363: Part 1: 1995 plus Amendments 1, 2 and 3 as modified by the client above.

3. TESTS CONDUCTED

As requested in section 2 above.

Test work commenced 3 March 2010. Test work completed 17 March 2010.

3. RESULTS

3.1 [redacted]le socket-outlet

3.1.1 Sub-clause 18.1.2 Normal operation, sample number 3

5000 insertions/withdrawals of a BS 1363 approved plug at 13A 250V.

After test socket-outlet showed no damage and the shutter continued to shield the socket-outlet.

3.1.2 Clause 16 Temperature, sample number 3

Thermocouple Position	Temperature	Temp rise K
Ambient	22.9	
Line termination	117.4	97.5
Neutral termination	102.4	79.5
Accessible surface	50.2	27.3

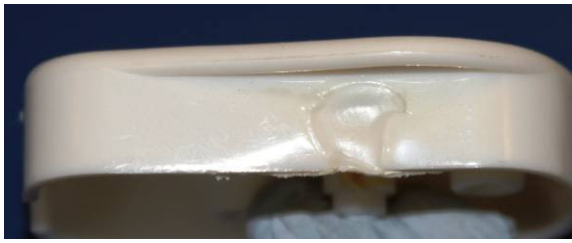
Total load: 20.4A 250V

Load one: 10.2A 250V Load two: 10.2A 250V

Test duration: 2 hours 6 minutes (fuse operated).

The socket-outlet showed no damage from the test.

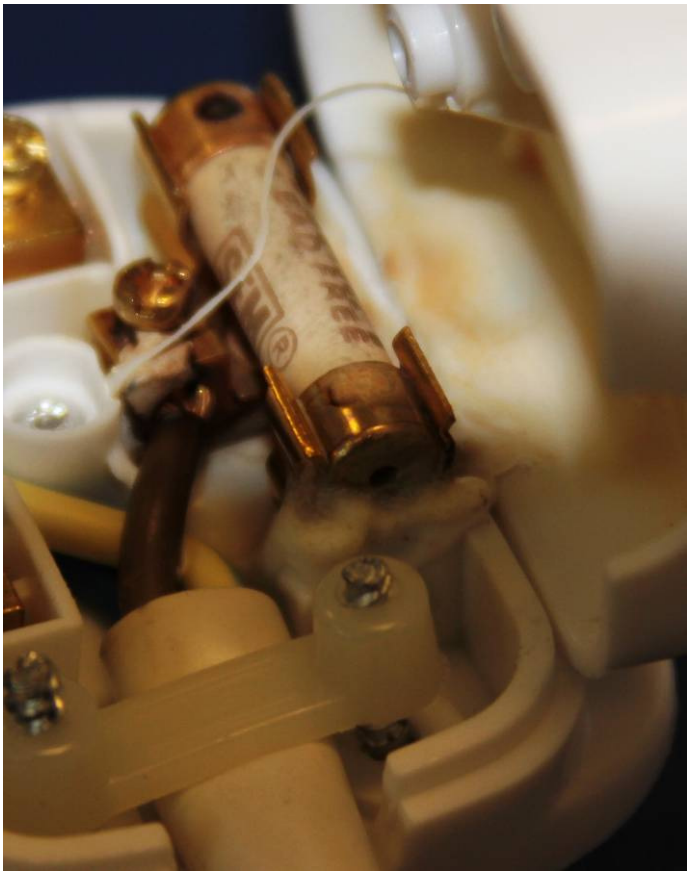
The BS 1363 fitted plug showed damage from the test as can be seen in the following images.



3. RESULTS (CONTINUED)

3.1 [redacted]rtable socket-outlet (continued)

3.1.2 Clause 16 Temperature, sample number 3 (continued)



3.1.3 Clause 15 Insulation resistance and electric strength

Sub-clause 15.1.2	Insulation resistance	Complied
Sub-clause 15.1.3	Electric strength	Complied
Sub-clause 15.2	Electric strength (6kV)	Complied

3. RESULTS CONTINUED)

3.2 [redacted]3 portable socket-outlet

3.2.1 Sub-clause 18.1.2 Normal operation, sample number 8

5000 insertions/withdrawals of a BS 1363 approved plug at 13A 250V.

After test socket-outlet showed no damage and the shutter continued to shield the socket-outlet.

3.2.2 Clause 16 Temperature, sample number 8

Thermocouple Position	Temperature	Temp rise K
Ambient	22.8	
Line termination	86.0	63.8
Neutral termination	85.0	62.8
Accessible surface	42.0	19.8

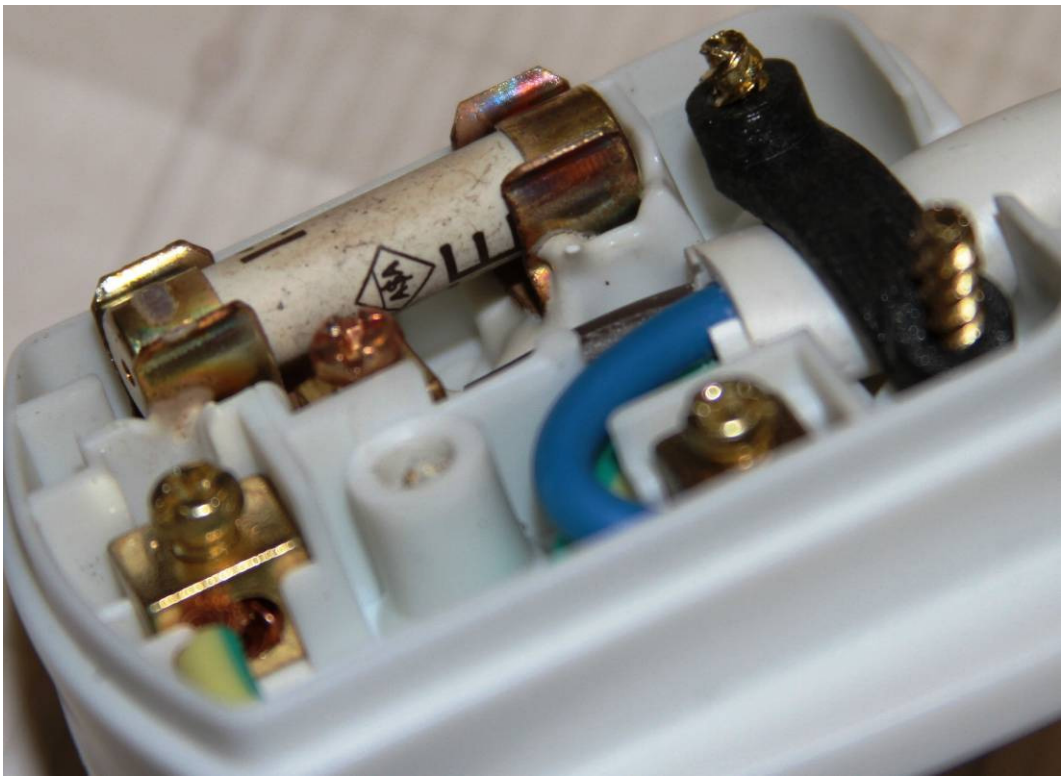
Total load: 20.3A 250V

Load one: 10.2A 250V Load two: 10.1A 250V

Test duration: 24 minutes (fuse operated).

The socket-outlet showed no damage from the test.

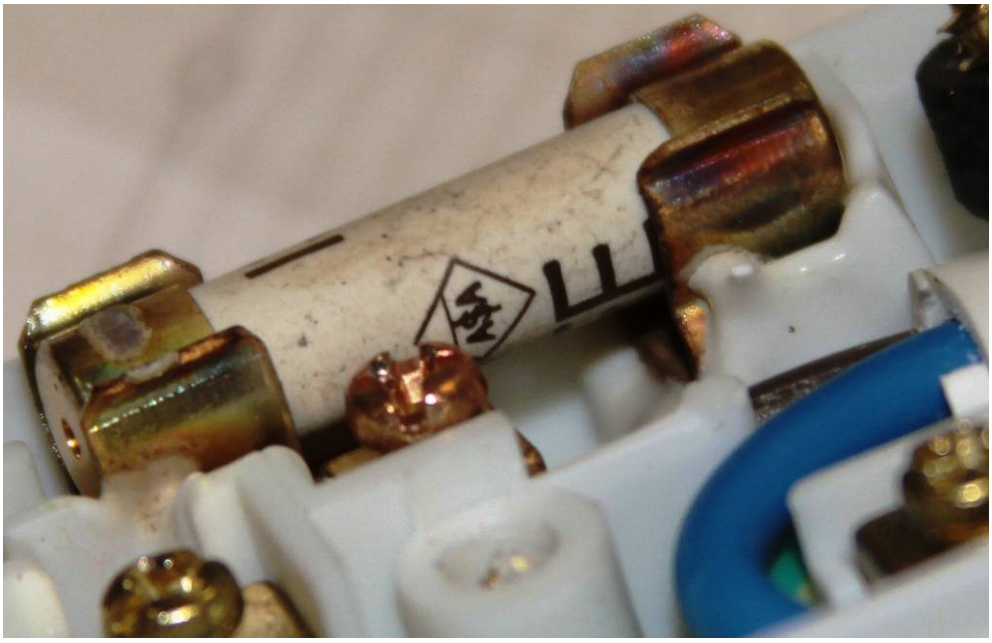
The BS 1363 fitted plug showed minor damage from the test as can be seen in the following images.

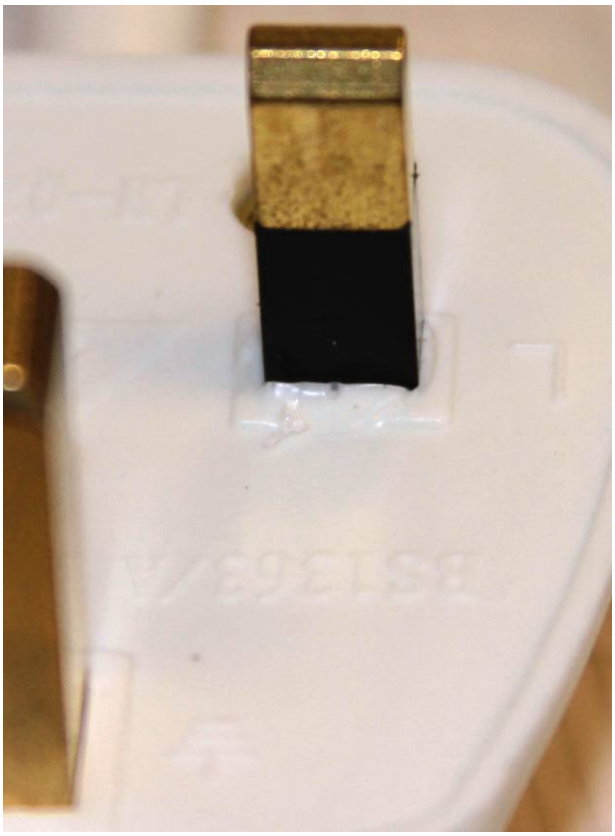


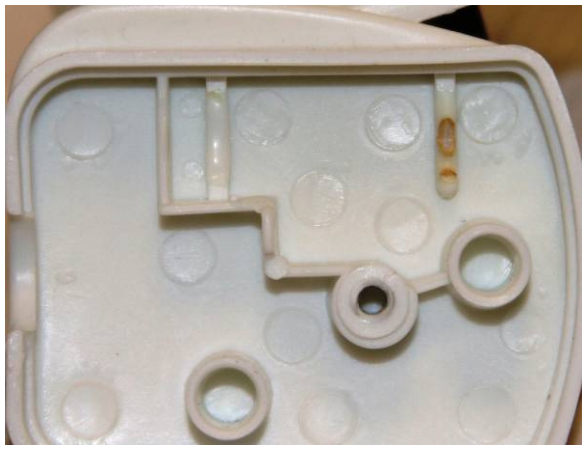
3. RESULTS (CONTINUED)

3.2 [redacted]portable socket-outlet (continued)

3.2.2 Clause 16 Temperature, sample number 8 (continued)







3. RESULTS (CONTINUED)

3.2 [redacted]ortable socket-outlet (continued)

3.2.3 Clause 15 Insulation resistance and electric strength

Sub-clause 15.1.2	Insulation resistance	Complied
Sub-clause 15.1.3	Electric strength	Complied
Sub-clause 15.2	Electric strength (6kV)	Complied

3. RESULTS (CONTINUED)

3.3 [redacted] portable socket-outlet

3.3.1 Sub-clause 18.1.2 Normal operation, sample number 4

5000 insertions/withdrawals of a BS 1363 approved plug at 13A 250V.

After test socket-outlet showed no damage and the shutter continued to shield the socket-outlet.

3.3.2 Clause 16 Temperature, sample number 8

Thermocouple Position	Temperature	Temp rise K
Ambient	23.4	
Line termination	105.7	82.3
Neutral termination	128.8	105.4
Accessible surface	53.4	30.0
Cable surface	58.2	34.8
Accessible surface of fitted plug	153.4	130.0

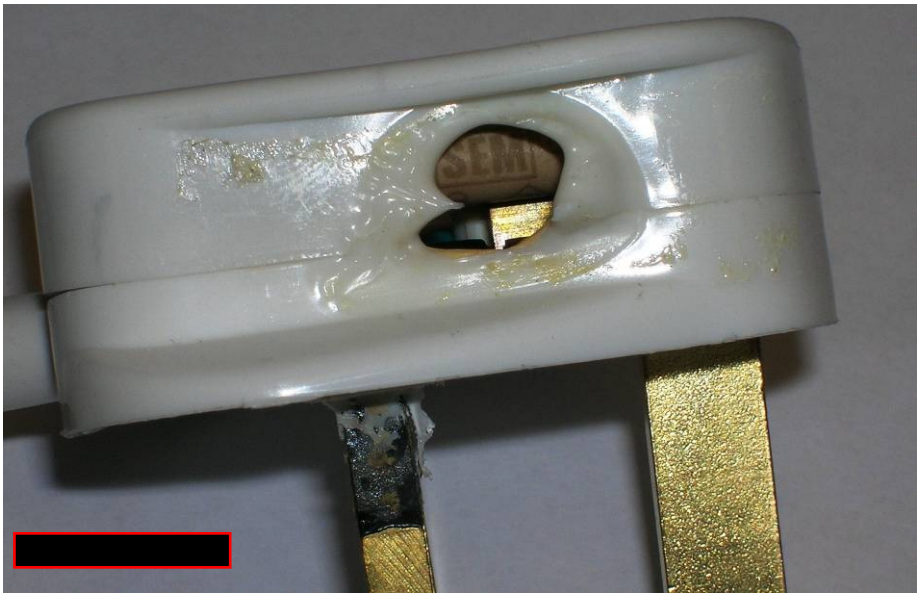
Total load: 20.1A 250V

Load one: 10.1A 250V Load two: 10.0A 250V

Test duration: 2 hours 34 minutes (fuse operated).

The socket-outlet showed no damage from the test.

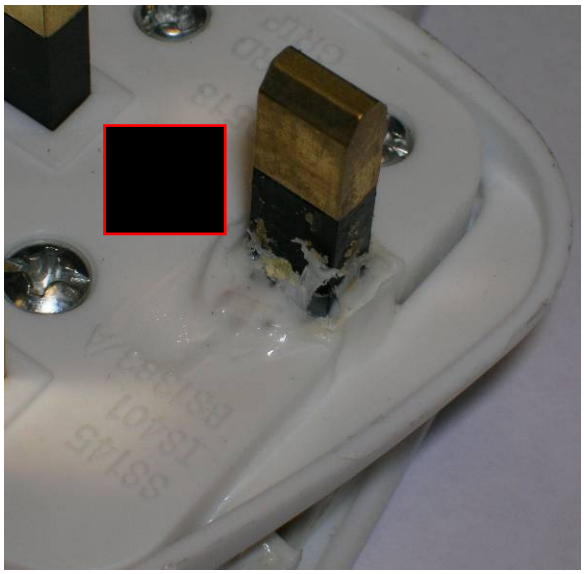
The BS 1363 fitted plug showed significant damage from the test as can be seen in the following images.

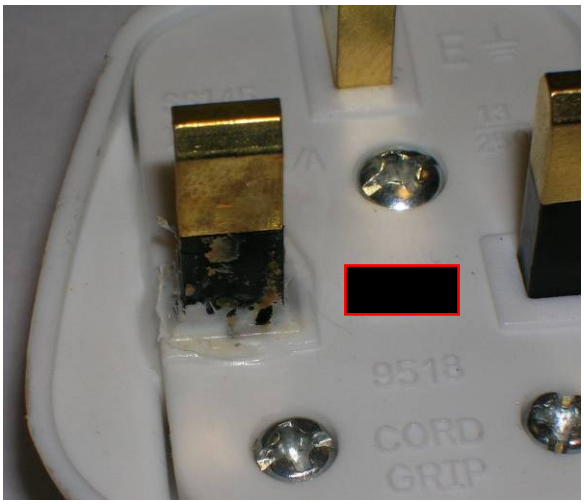


3. RESULTS (CONTINUED)

3.3 [redacted] portable socket-outlet (continued)

3.3.2 Clause 16 Temperature, sample number 4 (continued)





3. RESULTS (CONTINUED)

3.3 [redacted] portable socket-outlet (continued)

3.3.2 Clause 16 Temperature, sample number 4 (continued)

3.3.3 Clause 15 Insulation resistance and electric strength

Sub-clause 15.1.2	Insulation resistance	Complied
Sub-clause 15.1.3	Electric strength	Complied
Sub-clause 15.2	Electric strength (6kV)	Complied

3. RESULTS (CONTINUED)

3.4 [redacted] portable socket-outlet

3.4.1 Sub-clause 18.1.2 Normal operation, sample number 10

5000 insertions/withdrawals of a BS 1363 approved plug at 13A 250V.

After test socket-outlet showed no damage and the shutter continued to shield the socket-outlet.

3.4.2 Clause 16 Temperature, sample number 10

Thermocouple Position	Temperature	Temp rise K
Ambient	23.1	
Line termination	91.9	68.8
Neutral termination	92.7	69.6
Accessible surface	63.3	40.2
Cable surface	79.0	55.9
Accessible surface of fitted plug	200.0	176.9

Total load: 20.1A 250V

Load one: 10.1A 250V Load two: 10.0A 250V

Test duration: 2 hours 10 minutes (fuse operated).

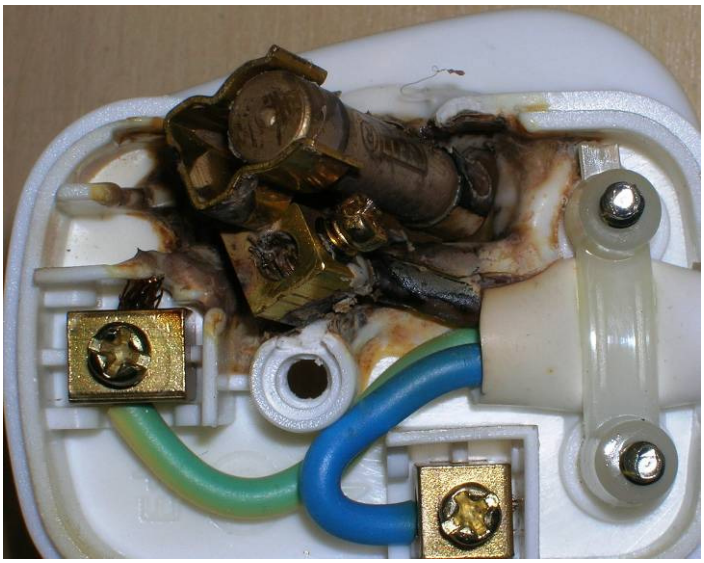
The socket-outlet showed no damage from the test.

The engineer was present at the time the fuse operated. The plug was withdrawn from the mains socket-outlet one minute after the fuse had operated with the results documented in the images below. The body of the plug was extremely soft and malleable.

3. RESULTS (CONTINUED)

3.4 STATUS 9988N portable socket-outlet (continued)

3.4.2 Clause 16 Temperature, sample number 10 (continued)



3. RESULTS (CONTINUED)

3.4 [redacted] portable socket-outlet (continued)

3.4.3 Clause 15 Insulation resistance and electric strength

Sub-clause 15.1.2	Insulation resistance	Complied
Sub-clause 15.1.3	Electric strength	Complied
Sub-clause 15.2	Electric strength (6kV)	Not applicable

3. RESULTS (CONTINUED)

3.5 [redacted]portable socket-outlet

3.5.1 Sub-clause 18.1.2 Normal operation, sample number 6

5000 insertions/withdrawals of a BS 1363 approved plug at 13A 250V.

After test socket-outlet showed no damage and the shutter continued to shield the socket-outlet.

3.5.2 Clause 16 Temperature, sample number 6

Thermocouple Position	Temperature	Temp rise K
Ambient	22.8	
Line termination	78.4	55.6
Neutral termination	77.8	55.0
Accessible surface	52.6	29.8
Cable surface	51.9	29.1
Accessible surface of fitted plug	103.4	80.6

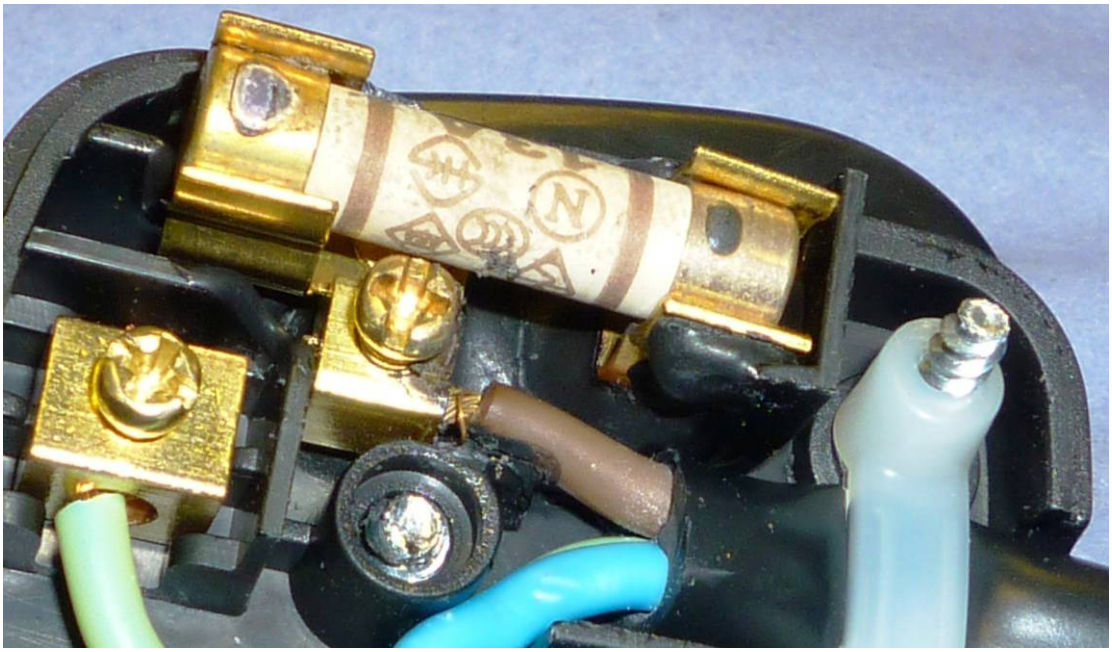
Total load: 20.2A 250V

Load one: 10.2A 250V Load two: 10.0A 250V

Test duration: 1 hour 20 minutes (fuse operated).

The socket-outlet showed no damage from the test.

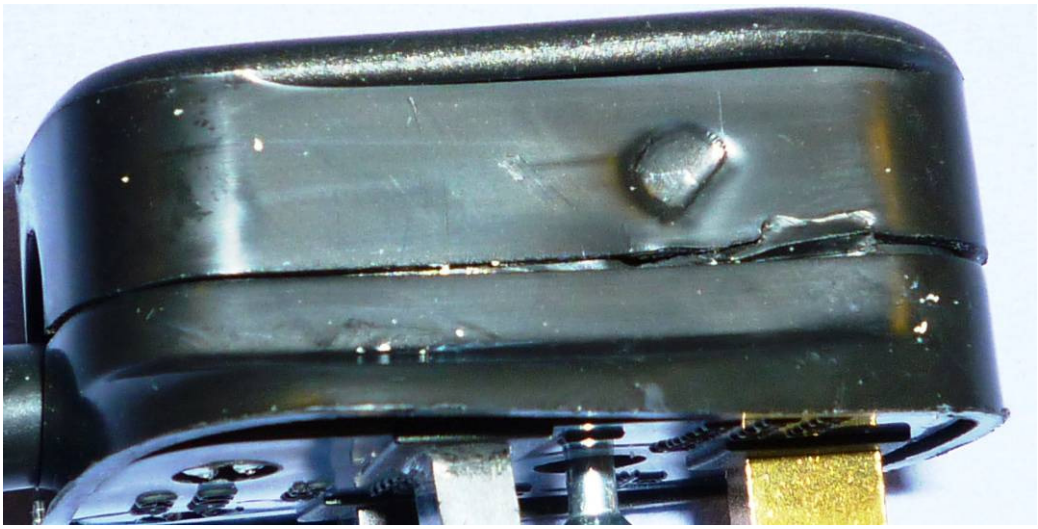
The BS 1363 fitted plug showed damage from the test as can be seen in the following images.

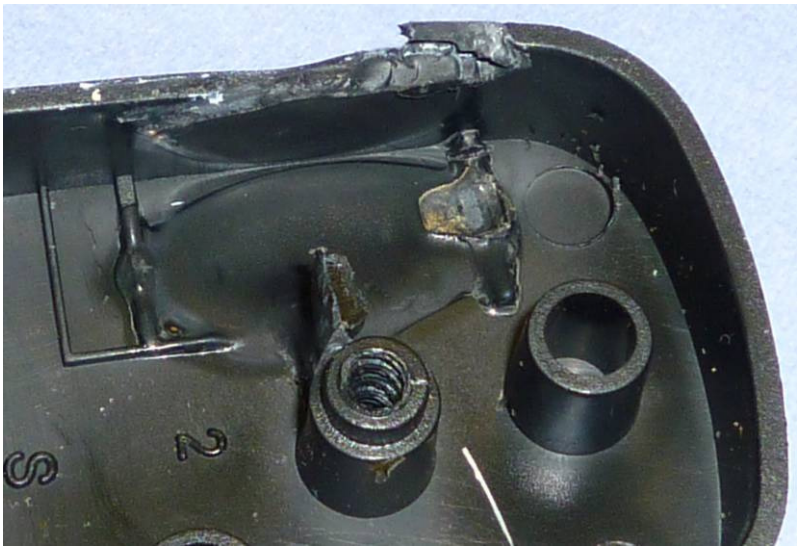


3. RESULTS (CONTINUED)

3.5 [redacted] portable socket-outlet (continued)

3.5.2 Clause 16 Temperature, sample number 6 (continued)





3.5.3 Clause 15 Insulation resistance and electric strength

Sub-clause 15.1.2	Insulation resistance	Complied
Sub-clause 15.1.3	Electric strength	Complied
Sub-clause 15.2	Electric strength (6kV)	Complied

3. RESULTS (CONTINUED)

3.6 [redacted] portable socket-outlet

3.6.1 Sub-clause 18.1.2 Normal operation, sample number 12

5000 insertions/withdrawals of a BS 1363 approved plug at 13A 250V.

After test socket-outlet showed no damage and the shutter continued to shield the socket-outlet.

3.6.2 Clause 16 Temperature, sample number 12

Thermocouple Position	Temperature	Temp rise K
Ambient	23.1	
Line termination	75.4	52.3
Neutral termination	73.5	50.4
Accessible surface	42.2	19.1
Cable surface	56.2	33.1
Accessible surface of fitted plug	102.5	79.4

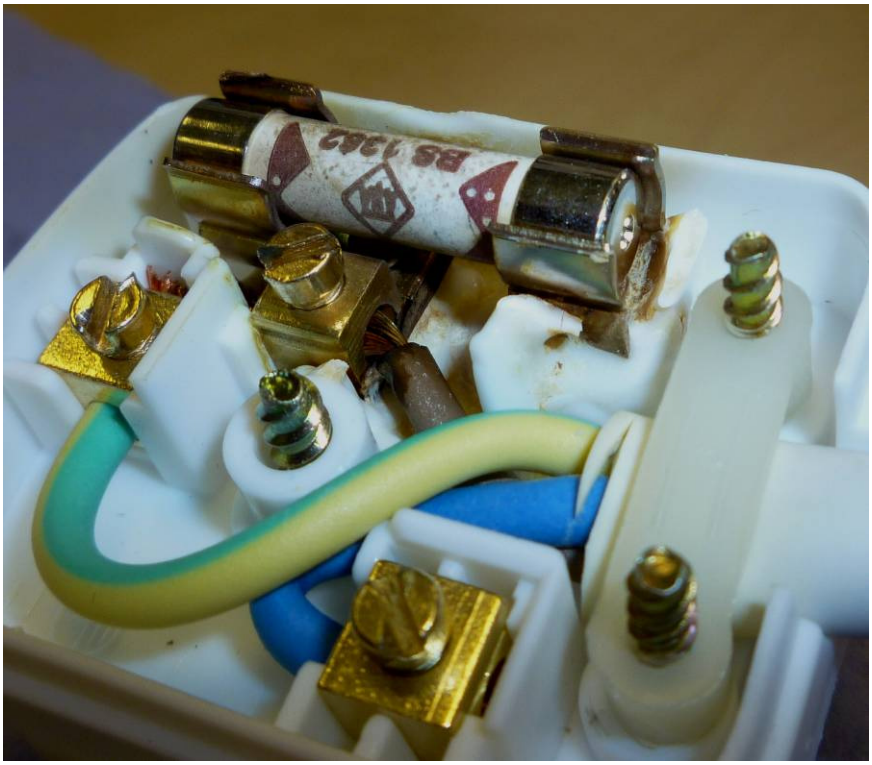
Total load: 20.1A 250V

Load one: 10.0A 250V Load two: 10.1A 250V

Test duration: 2 hours 12 minutes (fuse operated).

The socket-outlet showed no damage from the test.

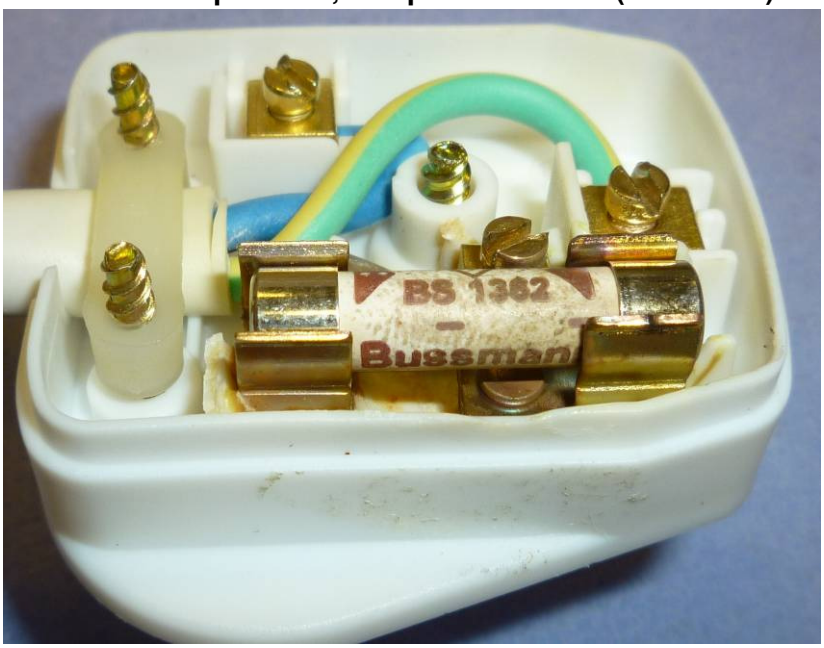
The BS 1363 fitted plug showed minor damage from the test as can be seen in the following images.

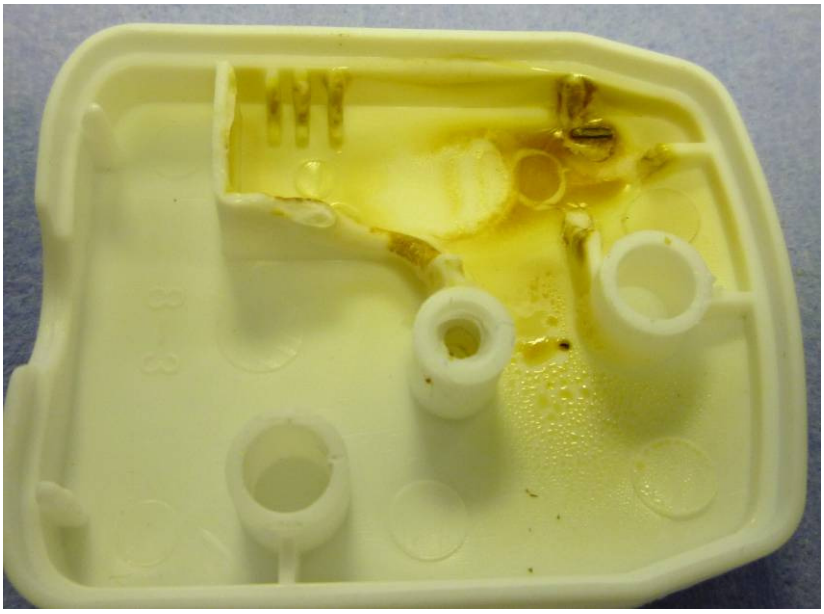


3. RESULTS (CONTINUED)

3.6 [redacted] portable socket-outlet (continued)

3.6.2 Clause 16 Temperature, sample number 12 (continued)





3.6.3 Clause 15 Insulation resistance and electric strength

Sub-clause 15.1.2	Insulation resistance	Complied
Sub-clause 15.1.3	Electric strength	Complied
Sub-clause 15.2	Electric strength (6kV)	Complied

3.7 [redacted]able socket-outlet

3.7.1 Clause 16 Temperature, sample number 1

Thermocouple Position	Temperature	Temp rise K
Ambient	22.5	
Line termination	66.4	43.9
Neutral termination	64.1	41.6
Accessible surface	36.8	14.3
Cable surface	57.6	35.1
Accessible surface of fitted plug	84.5	62.0

Total load: 20.3A 250V

Load one: 10.2A 250V Load two: 10.1A 250V

Test duration: 42 minutes (fuse operated).

The socket-outlet showed no damage from the test.

The plug showed no damage from the test.

3.7.2 Clause 15 Insulation resistance and electric strength

Sub-clause 15.1.2	Insulation resistance	Complied
Sub-clause 15.1.3	Electric strength	Complied
Sub-clause 15.2	Electric strength (6kV)	Complied

3. RESULTS (CONTINUED)

3.7 Sub-clause 12.2 Construction of plugs - Figure 5 gauge only

The plugs fitted to each socket-outlet were offered up to the Figure 5 gauge of BS 1363: Part 1: 1995 plus Amendments 1, 2 and 3.

All plugs were found to fit the gauge as required by the specification.

3.8 Sub-clause 9.1 Accessibility of live parts

Each socket-outlet was tested for access to live parts with test pin to Figure 1 of BS 1363: Part 2: 1995 plus Amendments 1, 2 and 3.

The test was conducted before and after the 5000 operations.

All samples were found to comply with the requirements of this sub-clause.

3.9 BS 1362 fuse link examination

The BS 1362 fuse link within each of the fitted plugs was visually checked for any indication of counterfeiting.

All the fuses appeared to be genuine and all contained the expected sand filler.

4. COMMENTS

4.1. [redacted] portable socket-outlet

These samples can be opened using a general purpose tool (screwdriver featuring a tri-head) to remove the assembly screws. There are no covers fitted to the apertures for the screws.

Inside the sample has welded terminations which are only for use in non-rewireable socket-outlets.

Sub-clause 13.18 of BS 1363: Part 2: 1995 plus Amendments 1, 2 and 3 states:

"The base and cover of non-rewireable portable socket-outlets shall be permanently attached to each other, such that the flexible cord cannot be separated without making the portable socket-outlet permanently useless, and the portable socket-outlet cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such. A portable socket-outlet is considered to be permanently useless when for reassembling the portable socket-outlet parts or materials other than the original have to be used."

The samples are thus not compliant with sub-clause 13.18.

End of report.