


**Test Report 9634474 Part 1 of 6.**  
Rexton Technologies Middle East  
(FZE)

## Introduction.

This report has been prepared by Lucie McGill and relates to the activity detailed below:

Job/Registration Details	Client Details
<b>Job number:</b> 9634474 Job type: Testing Samples Submitted Start Date: 04/09/2018 Test type: Direct Sample ID: 10179593 <b>Registration:</b> NA Protocol: NA Quality system: NA <b>Registration:</b> NA Protocol: NA Quality system: NA	Rexton Technologies Middle East (FZE) Plot No M4-18, Sharjah Airport Free Zone PO Box 8080 Sharjah United Arab Emirates

The report has been approved for issue by Mark Manito – Team Manager

Approved For Issue	
	Issue Date: 13 September 2018

## Objectives.

Direct test – The results shown in BS 4662:2006+A1:2009 5.1, 5.2, 5.3, 5.4, 7.1, 8.1, 8.2, 10.2, 10.3 and 16 and BS EN 60670-1:2005 9, 10, 11 and 20 were taken from BSI Report Number 8898743.

## Product Scope.

- 1 Gang 35 - 0.9mm Thickness REXTON Brand
- 1 Gang 35 - 1.1mm Thickness REXTON Brand
- 2 Gang 35 - 0.9mm Thickness REXTON Brand
- 2 Gang 35 - 1.1mm Thickness REXTON Brand

## Report Summary.

The samples were received on 05 May and the 03 September 2018 and the testing was started on 25 May and the 05 September 2018.

The samples submitted complied with the requirements of the test work conducted.

## Test Samples.

Sample Id	ER Number	Description
1	10176641	Switch Boxes GI Flush with adjustable lugs
2	10179593	Switch Boxes GI Flush with adjustable lugs (1 Gang 35 – 0.9mm)

## Description of Test Samples.

Sample Description
1 Gang 35 - 0.9mm Thickness REXTON Brand Switch Boxes GI Flush with Adjustable Lugs
1 Gang 35 - 1.1mm Thickness REXTON Brand Switch Boxes GI Flush with Adjustable Lugs
2 Gang 35 - 0.9mm Thickness REXTON Brand Switch Boxes GI Flush with Adjustable Lugs
2 Gang 35 - 1.1mm Thickness REXTON Brand Switch Boxes GI Flush with Adjustable Lugs

# Test Requirements.

BS 4662:2006 and BS EN 60671-1 + Results Table - Boxes for electrical accessories

Clause	Requirements	
<b>Standard</b>	<b>BS 4662:2006+A1:2009</b>	
<b>5</b>	<b>Dimensions and construction of boxes</b>	
<b>5.1</b>	<b>General</b>	PASS
<b>5.2</b>	<b>Mounting lugs</b>	PASS
<b>5.3</b>	<b>Fixing holes</b>	PASS
<b>5.4</b>	<b>Cable entry</b>	PASS
<b>5.5</b>	<b>Knockouts</b>	PASS
<b>7</b>	<b>Provision for earthing</b>	
<b>7.1</b>	<b>Metallic boxes</b>	PASS
<b>7.2</b>	<b>Non-metallic boxes</b>	N/A
<b>7.4</b>	<b>Terminals in architrave boxes</b>	N/A
<b>8</b>	<b>Requirements for terminals</b>	
<b>8.1</b>	<b>General</b>	PASS
<b>8.2</b>	<b>Earthing terminals</b>	PASS
<b>10</b>	<b>Mechanical strength</b>	
<b>10.2</b>	<b>Performance of screw threads of mounting lugs</b>	PASS
<b>10.3</b>	<b>Strength of mounting lugs</b>	PASS
<b>16</b>	<b>Marking</b>	PASS

## Test Requirements (Continued).

BS 4662:2006 and BS EN 60671-1 + Results Table - Boxes for electrical accessories

Clause	Requirements	
<b>Standard</b>	<b>BS EN 60670-1:2005</b>	
<b>7</b>	<b>Classification</b>	N/AS
<b>8</b>	<b>Marking</b>	N/AS
<b>9</b>	<b>Dimensions (See BS 4662:2006+A1:2009 Clause 5)</b>	PASS
<b>10</b>	<b>Protection against electric shock</b>	PASS
<b>11</b>	<b>Provision for earthing</b>	PASS
<b>12</b>	<b>Construction</b>	PASS
<b>13</b>	<b>Resistance to ageing, protection against ingress of solid objects and against harmful ingree of water</b>	N/A
<b>14</b>	<b>Insulation resistance and electric strength</b>	N/A
<b>15</b>	<b>Mechanical strength</b>	N/A
<b>16 a</b>	<b>Resistance to heat</b>	N/A
<b>17</b>	<b>Creepage distancs, clearances and distances through sealing compound</b>	N/A
<b>18</b>	<b>Resistance of insulating material to abnormal heat and fire</b>	N/A
<b>19</b>	<b>Resistance to tracking</b>	N/A
<b>20</b>	<b>Corrosion</b>	PASS
<b>Results table</b>	<b>Actual test results</b> <i>See Table A - BS 4662:2006+A1:2009 &amp; BS EN 60671-1:2005</i>	

## Glossary of Terms.

PASS: Complies. Tested by BSI engineers at BSI laboratories.

N/A: Not applicable to type of product.

N/AS: Information was not provided by the customer

## Conditions of Issue.

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**Table A - BS 4662:2006+A1:2009 & BS EN 60671-1:2005**

**Test Results.**

**BS 4662: 2006+A1:2009**

**CLAUSE**

**5. DIMENSIONS AND CONSTRUCTION OF BOXES**  
**5.1 General**

The dimensions and construction of the box shall conform to one of the type shown in figures 1 to 11.

**1 Gang 35 – 0.9mm thickness Switch and Socket box**

**Figure 1 - Standard box: 1 Gang**

<b>Dimension</b>	<b>Specified</b>	<b>Actual</b>
D (mm)	35.0 ( <sup>+1.5/</sup> <sub>-1.0</sub> )	35.0
E (mm)	5.0 ( <sup>+4.00</sup> <sub>/-1.00</sub> )	5.1
Internal width (mm)	68.3 min	69.9
Distance between lugs (mm)	52 min	52.2
Lug centres (mm)	60.8 ± 0.8	60.7
External width (mm)	75 max	72.4
Tapped hole size	M3.5	M3.5
Bottom Radius (mm)	R4 max	2.0
Top Radius (mm)	R8 max	0.8
Gauge - Figure 14	Gauge A	Gauge A accepted

**1 Gang 35 – 1.1mm thickness Switch and Socket box**

**Figure 1 - Standard box: 1 Gang**

<b>Dimension</b>	<b>Specified</b>	<b>Actual</b>
D (mm)	35.0 ( <sup>+1.5/</sup> <sub>-1.0</sub> )	35.3
E (mm)	5.0 ( <sup>+4.00</sup> <sub>/-1.00</sub> )	5.1
Internal width (mm)	68.3 min	70.0
Distance between lugs (mm)	52 min	52.1
Lug centres (mm)	60.8 ± 0.8	60.8
External width (mm)	75 max	72.9
Tapped hole size	M3.5	M3.5
Bottom Radius (mm)	R4 max	1.8
Top Radius (mm)	R8 max	0.8
Gauge - Figure 14	Gauge A	Gauge A accepted

## Test Results (Continued).

**BS 4662: 2006+A1:2009**

### CLAUSE

**5. DIMENSIONS AND CONSTRUCTION OF BOXES (CONTINUED)**  
**5.1 General (Continued)**

The dimensions and construction of the box shall conform to one of the type shown in figures 1 to 11.

**2 Gang 35 – 0.9mm thickness Switch and Socket box**

**Figure 2 - Standard box: 2 Gang**

<b>Dimension</b>	<b>Specified</b>	<b>Actual</b>
D (mm)	35.0 ( <sup>+1.5/</sup> <sub>-1.0</sub> )	35.2
E (mm)	5.0 ( <sup>+4.00</sup> <sub>/-1.00</sub> )	5.4
Internal width (mm)	68.3 min	69.7
Distance between lugs (mm)	112.3 min	112.4
External width (mm)	75 max	72.3
External length (mm)	135 max	129.5
Internal length (mm)	128.5 min	129.5
Tapped hole size	M3.5	M3.5
Bottom Radius (mm)	R4 max	2.0
Top Radius (mm)	R8 max	0.8
Gauge - Figure 14	Gauge B	Gauge B accepted

**2 Gang 35 – 1.1mm thickness Switch and Socket box**

**Figure 2 - Standard box: 2 Gang**

<b>Dimension</b>	<b>Specified</b>	<b>Actual</b>
D (mm)	35.0 ( <sup>+1.5/</sup> <sub>-1.0</sub> )	35.0
E (mm)	5.0 ( <sup>+4.00</sup> <sub>/-1.00</sub> )	5.3
Internal width (mm)	68.3 min	70.2
Distance between lugs (mm)	112.3 min	112.4
External width (mm)	75 max	72.4
External length (mm)	135 max	131.5
Internal length (mm)	128.5 min	129.0
Tapped hole size	M3.5	M3.5
Bottom Radius (mm)	R4 max	2.0
Top Radius (mm)	R8 max	0.8
Gauge - Figure 14	Gauge B	Gauge B accepted



## Test Results (Continued).

### BS 4662: 2006+A1:2009 (CONTINUED)

#### CLAUSE

#### 5. DIMENSIONS AND CONSTRUCTION OF BOXES (CONTINUED)

##### 5.2 Mounting lugs

5.2.1 The boxes shall contain mounting lugs conforming to 10.3, see page 11 for details.

Each box shall be provided with a minimum of two mounting lugs on opposite sides. Where a greater number of mounting lugs are provided their numbers and positions shall be as specified in figures 1 to 11. See 5.1 General, on pages 7 & 8 for details.

Each mounting lug shall be tapped with an M3.5 thread. See 5.1 General, on pages 7 & 8 for details.

##### Comments

1 Gang 35 switch and socket boxes were supplied with four mounting lugs as shown in figure 1.

2 Gang 35 switch and socket boxed were supplied with two mounting lugs as shown in figure 2.

##### 5.3 Fixing holes

A hole, or holes, shall be made in the back of the box for securing it to a mounting surface. The hole(s) shall be not less than 4.8 mm diameter.

Box	Actual size of hole (mm)
1 Gang 35 - 0.9mm	5.59
1 Gang 35 - 1.1mm	5.63
2 Gang 35 - 0.9mm	5.36
2 Gang 35 - 1.1mm	5.55

##### 5.4 Cable Entry

Each type of box shall have at least one cable entry.

##### Comments

The 1 Gang 35 and 2 Gang 35 Boxes had knockouts which would allow cable entry.

# Test Results (Continued).

## BS 4662: 2006+A1:2009 (CONTINUED)

### CLAUSE

#### 5. DIMENSIONS AND CONSTRUCTION OF BOXES (CONTINUED)

##### 5.5 Knockouts

##### 5.5.1 Dimensions and location

The dimensions of knockouts for the reception of a conduit shall be greater than the nominal conduit size by  $0.25^{+0.5}_0$ mm

Box	Actual size of knockouts (mm)
1 Gang 35 - 0.9mm	20.43, 20.53, 20.44, 20.47, 20.62, 20.33, 20.63, 20.51, 25.59, 25.50, 25.56, 25.64
1 Gang 35 - 1.1mm	20.54, 20.58, 25.54, 20.48, 20.62, 20.52, 25.39, 25.56, 20.57, 20.42, 20.40, 20.48
2 Gang 35 - 0.9mm	20.56, 20.48, 20.51, 20.35, 25.40, 25.56, 20.47, 20.52, 25.12, 20.62, 25.30, 25.36, 20.32, 25.36, 20.49, 20.32
2 Gang 35 - 1.1mm	20.51, 20.42, 25.52, 25.30, 20.58, 25.42, 20.37, 20.36, 25.30, 25.38, 20.49, 20.45, 20.46, 20.50, 25.29, 20.58

## Test Results (Continued).

### BS 4662: 2006+A1:2009 (CONTINUED)

#### CLAUSE

#### 5. DIMENSIONS AND CONSTRUCTION OF BOXES (CONTINUED)

##### 5.5 Knockouts (Continued)

##### 5.5.3 Removal

After removal of the knockouts the mounting lugs shall accept the appropriate gauge shown in figures 12 to 15.

Box	Observations
1 Gang 35 - 0.9mm	After removal gauge A of figure 14 was accepted
1 Gang 35 - 1.1mm	After removal gauge A of figure 14 was accepted
2 Gang 35 - 0.9mm	After removal gauge B of figure 14 was accepted
2 Gang 35 - 1.1mm	After removal gauge B of figure 14 was accepted

#### 7 PROVISION FOR EARTHING

##### 7.1 Metallic boxes

Metallic boxes were provided with one permanent earthing terminals that were capable of taking two conductors of 2.5mm<sup>2</sup>.

#### 8 REQUIREMENTS FOR TERMINALS

##### 8.1 General

Terminals for use with boxes shall be pillar terminals or terminals formed from the body of a box where a conductor is clamped by the end of a screw.

**Comments:**

The terminals in 1 Gang 35 and 2 Gang 35 boxes were pillar terminals.

##### 8.2 Earthing terminals

The body of the earthing terminal shall be made of brass or other metal no less resistant to corrosion, unless it is a part of the metallic box in which case the screw or nut shall be made of brass or another metal no less resistant to corrosion.

**Comments:**

The body of the terminals in 1 Gang 35 and 2 Gang 35 boxes were made of brass.

## Test Results (Continued).

### BS 4662: 2006+A1:2009 (CONTINUED)

#### CLAUSE

#### 10 MECHANICAL STRENGTH

##### 10.2 Performance of screw threads of mounting lugs.

When the mounting lugs had finished the testing detailed in 15.4.2, the screw threads were examined for visible signs of damage with normal or corrected vision without magnification.

Note: The screws and lids used for testing was supplied by the client.

After the test the screw threads on the 1 Gang 35 and 2 Gang 35 boxes showed no damage which would impair any further use.

##### 10.3 Strength of mounting lugs

Testing in accordance with 15.4.3.

Box	Observations
1 Gang 35 - 0.9mm	After testing the box accepted gauge A shown in figure 14.
1 Gang 35 - 1.1mm	After testing the box accepted gauge A shown in figure 14.
2 Gang 35 - 0.9mm	After testing the box accepted gauge B shown in figure 14.
2 Gang 35 - 1.1mm	After testing the box accepted gauge B shown in figure 14.

The mounting lugs did not show any signs of damage that would impair their further use.

The screws and lids used for the testing were supplied by the client.

**Marking.****BS 4662: 2006+A1:2009 (CONTINUED)****CLAUSE****16 MARKING**

Boxes shall be indelibly marked with the following information, which shall be visible after the boxes are installed.

The number of this British Standard, i.e. BS 4662;  
The name and/or trade mark of the manufacturer or responsible vendor;  
Marking in accordance with IEC 60417, symbol 5019 in the vicinity of the earthing terminal, where provided.

**Actual Marking:**

**1 Gang 35 - 0.9mm:** 'Trademark' REXTON BS 4662 Made In UAE  CE

**1 Gang 35 - 1.1mm:** 'Trademark' REXTON BS 4662 Made In UAE  CE

**2 Gang 35 - 0.9mm:** 'Trademark' REXTON BS 4662 Made In UAE  CE

**2 Gang 35 - 1.1mm:** 'Trademark' REXTON BS 4662 Made In UAE  CE

## Test Results (Continued).

**BS EN 60670-1:2005**

**CLAUSE**

**9 DIMENSIONS**

See pages 7 & 8 for details.

**10 PROTECTION AGAINST ELECTRIC SHOCK**

The 1 Gang 35 and 2 Gang 35 boxes were tested in accordance with this clause. In no case test probe 11 according to IEC 61032, did not enter the enclosure where live parts were to be installed.

**11 PROVISION FOR EARTHING**

**11.1 Boxes and enclosure with exposed conductive parts**

The boxes were tested in accordance with this clause. In no case shall the resistance exceed 0.05 Ω

<b>Box</b>	<b>Actual resistance (Ω)</b>
1 Gang 35 - 0.9mm	0.0002
1 Gang 35 - 1.1mm	0.0002
2 Gang 35 - 0.9mm	0.0002
2 Gang 35 - 1.1mm	0.0001

## Test Results (Continued).

### BS EN 60670-1:2005

#### CLAUSE

#### 12 CONSTRUCTION

#### 12.8 Knock-out inlets (outlets) intended to be removed by mechanical impact.

For boxes 1 Gang 35 -0.9mm, Gang 35 - 1.1mm, 2 Gang 35 - 0.9mm and 2 Gang 35 - 1.1mm it was possible to remove knock-outs inlets (outlets) intended to be removed by mechanical impact without damaging the box.

#### 12.8.1 Knock-out retention

For boxes and enclosures having knock-outs accessible after installation, a force of  $(30 \pm 1)$  N shall be applied to a knock-out for  $(15 \pm 1)$  s by means of a 6 mm diameter mandrel with a flat end. The force is to be applied without a blow in a direction perpendicular to the plane of the knock-out and at a point most likely to cause movement

The knock-out shall remain in place and the degree of protection of the enclosure shall be unchanged when measured 1 h after the force has been removed.

Box	Pre IP	Post IP
1 Gang 35 - 0.9mm	IP40	IP40
1 Gang 35 - 1.1mm	IP40	IP40
2 Gang 35 - 0.9mm	IP40	IP40
2 Gang 35 - 1.1mm	IP40	IP40

Note: IP40 according to BS EN 60529:1992 +A2:2013 was used.

After the test there were no sharp edges and the boxes were not damaged.

#### 20 CORROSION

Ferrous parts of boxes and enclosures shall be adequately protected against rusting. After tested in accordance with the test method all surfaces shall show no sign of rust.

Test Item	Comments
1 Gang 35 - 0.9mm	No signs of rust were displayed
1 Gang 35 - 1.1mm	No signs of rust were displayed
2 Gang 35 - 0.9mm	No signs of rust were displayed
2 Gang 35 - 1.1mm	No signs of rust were displayed

\*\*\* End of Report \*\*\*