"Armourlight"

toughened
glass
insulators

PILKINGTON BROTHERS LIMITED
ST. HELENS LANCASHIRE ENGLAND
General information on “Armourlight” toughened glass insulators

1 MANUFACTURE AND TESTING
2 TECHNICAL PAPER
3 INSULATOR INSTALLATIONS

“Armourlight” is the registered trade mark of Pilkington Brothers Limited.
“Armourlight” toughened glass insulators in use

132 kV Suspension Sets. River Orwell Crossing.
By courtesy of the Eastern Division of British Electricity Authority
33 kV. Strain Sets at Blackrod.
By courtesy of North-Western Area.
British Electricity Authority.

132 kV. Strain Sets River Clyde Crossing High Pylon.
By courtesy of South-West Scotland Electricity Board.
British Electricity Authority.
132 kV. Suspension Sets at Loch Sloy.
By courtesy of North of Scotland Hydro-Electric Board.

66 kV. Suspension Sets—Large Angle Tower.
By courtesy of North-Eastern Area.
British Electricity Authority.
380 kV. Suspension Sets—Harspranget-Hallsberg Line, Sweden.
By courtesy of Swedish State Power Board.

33 kV. Strain Sets.
By courtesy of Brisbane City Council, Australia.
132 kV. Suspension Sets—Urdrumsdal-Jarberg Line, Norway.
By courtesy of Vestfold Power Co., Norway.

88 kV. Strain Sets—The Rand, South Africa.
By courtesy of City of Johannesburg Electricity Department.
380 kV. Suspension Set Conductor Running—Harspranget-Hallsberg Line, Sweden.
By courtesy of Swedish State Power Board.

66 kV. Strain and Suspension Sets—Mardan-Wah-Haripur Line, Pakistan.
By courtesy of North-West Frontier Province, Pakistan, and J. Stone & Co. (Pakistan) Ltd.
66 kV. Strain and Suspension Sets—Mardan-Wah-Haripur Line, Pakistan.
By courtesy of North-West Frontier Province, Pakistan, and J. Stone & Co. (Pakistan), Ltd.

110 kV. Suspension Sets—Meander-Railton Line, Tasmania.
By courtesy of Hydro-Electric Commission, Tasmania, Australia.
88kV Strain Sets—West Witwatersrand Distribution Station, The Rand, South Africa.
By courtesy of City of Johannesburg Electricity Department.
"ARMOURLIGHT"

Toughened Glass

DISC TYPE

Insulators

"ARMOURLIGHT" is the registered trade mark of Pilkington Brothers Limited.
"Armourlight" Toughened Glass
DISC TYPE Insulators

Introduction

IN THIS SECTION will be found technical and physical data for the complete range of "ARMOURLIGHT" toughened glass disc type insulators.

Catalogue Numbers

The catalogue numbers of the different insulators have the following significance:

Prefix C.T. or C.T.A. denotes clevis/tongue coupling, the clevis and tongue being dimensioned as shown on the insulator leaflets.

Prefix B.S. or B.S.A. denotes ball/socket coupling designed to work with the sizes shown in B.S.137.

Prefix A.B.S. or A.B.S.A. denotes ball/socket coupling designed to work with the sizes shown in Australian Specification C.67.

The first group of figures after the prefix denotes the electro-mechanical strength in thousands of pounds, as defined in B.S.137, and the second group of figures, the spacing or centre to centre distance in inches. Thus, the B.S.A.10.5\(\text{½}\) is an insulator with ball/socket coupling, with an electro-mechanical strength of 10,000 lbs., and spacing of 5\(\text{½}\)\".

The exception to this nomenclature is that of the B.S.30 and B.S.A.30. These are insulators with a 20,000 lb. electro-mechanical strength, but with higher ultimate strengths than the B.S.A.20, which has the same electro-mechanical strength.

Mechanical Load

All insulators are designed for maximum working loads which require a factor of safety of 2\(\frac{1}{2}\) to 1 on the electro-mechanical strength, as defined in B.S.137, based on the elastic limit strength of the metal fittings.

There are three standard sizes—3,000 lbs., 4,000 lbs. and 8,000 lbs.—and it follows that the elastic limit strength of the metal fittings is, therefore, 8,000 lbs., 10,000 lbs. and 20,000 lbs. respectively. These are the electro-mechanical strength figures which are quoted in the various leaflets.
Metal Fittings
The insulator metal fittings are of the ball/socket or clevis/tongue interconnection types. In the case of the former, the balls and sockets of the B.S.8, B.S.A.10 and B.S.F.10 types are dimensioned so as to be interchangeable and work satisfactorily with the 4,000 lb. size shown in B.S.137, and on the B.S.F.20, B.S.A.20, B.S.30 and B.S.A.30 types, the 8,000 lb. size shown in B.S.137.

The material of which the caps are made is whiteheart malleable cast iron of a quality which experience has shown to be suitable for the duty. The pins are steel forgings, the quality of steel used being appropriate to the mechanical loading of the insulator.

All metal fittings are galvanised by the hot-dip process and will meet the tests laid down in B.S.729.

For locking the discs with ball/socket coupling a ‘W’ shaped security clip in phosphor bronze is provided as standard.

The connecting through pins in the clevis/tongue type insulators are held by stainless steel split pins.

Construction
No elastic layers or similar devices are used in the construction of "ARMOUR-LIGHT" disc insulators. They are neither necessary nor desirable, due partly to the very high mechanical strength of the glass and partly because the coefficient of expansion of the glass approaches that of the metal fittings, the relative values being glass 8 and iron and steel 12.

The fittings are secured to the glass by an aluminous cement which is water cured for a period of 24 hours after assembly. It is advantageous that it does not adhere to the glass, thereby avoiding any local disturbances to the system of stresses in the glass which might conceivably arise if the cement adhered to the glass.

Assembly of the metal fittings is jigged throughout to ensure accurate alignment.

Testing
As already described on pages 4 and 5 of the general introduction to the catalogue, every insulator glass is subjected to two thermal tests prior to assembly with the metal fittings. These tests are as follows, carried out in the order given:

The first test is a combination of ‘upshock’ and strain release, the cold glasses being placed into a hot atmosphere to increase momentarily the value of the toughening tension, while at a later stage in the process a small amount of strain is released. This ensures that the value of maximum tension in the glass is within safe limits.
The second test is a 100°C. ‘downshock’, i.e. a heated glass is plunged into a bath of cold water, the temperature difference between the glass and the water at the time of immersion being 100°C. minimum. This test ensures a minimum degree of surface compression, on which the characteristics of the insulator depend.

After proving the quality of the toughening in the glasses in this way, each assembled insulator is subjected to a mechanical load test of one minute’s duration, the values being:

- B.S.8, C.T.8 ... ... 5,000 lbs.
- B.S.A.10, C.T.A.10, B.S.F.10 8,000 ,
- B.S.A.20, B.S.F.20 ... ... 12,000 ,
- B.S.30, B.S.A.30 ... ... 16,000 ,

In addition to these routine tests, which are carried out on every glass and every insulator, a full range of sample tests is carried out on half of one per cent of the total output, to ensure that quality is being maintained.

The sampling is weighted to the extent that the work of every operator is included, and the results of the sample tests are available while individual operator’s work can still be identified.

The sample tests are as laid down in B.S.137 and are as follows:

(a) Temperature cycle test.
(b) Mechanical strength test.
(c) Oil immersed puncture test on half the samples at (b).
(d) Ultimate strength test on the other half of the samples at (b).

NOTE. The test at (b) is the equivalent for toughened glass insulators of the electro-mechanical strength test for porcelain insulators.

The reason for the omission of voltage when carrying out this test, and indeed the omission of all electrical routine tests, lies in the fact that the glass is toughened to such a degree that it cannot be cracked and remain whole.

**Shattered Strength**

The design of all "ARMOURLIGHT" toughened glass disc insulators is such that the insulator has a minimum mechanical strength with the glass shattered equal to the guaranteed electro-mechanical strength.

**Line Fittings**

Details of conductor and crossarm attachment fittings for use with "ARMOURLIGHT" toughened glass insulators will be found in the next Section of this catalogue.
“Armourlight”
Toughened Glass DISC TYPE Insulators

ELECTRO-MECHANICAL STRENGTH

FLASHOVER FIGURES
"Armourlight" Toughened Glass
DISC TYPE Insulators

Electro-Mechanical Strength

The Electro-Mechanical strength figure specified in the Disc Type insulator leaflets is as defined in British Standard 137/41. As such it is the guaranteed load which the insulator will withstand *without deformation* of the metal cap and pin.

Certain other National Specifications use the Combined Mechanical and Electrical Strength which is the load at which any part of the insulator *fails* to perform its function either electrically or mechanically. The table below gives these values for each type of insulator described in the pages which follow.

<table>
<thead>
<tr>
<th>Insulator Type No.</th>
<th>Combined Mechanical and Electrical Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.S. 8</td>
<td>11,000 lb. (4,989 kgs.)</td>
</tr>
<tr>
<td>C.T. 8</td>
<td>11,000 lb. (4,989 kgs.)</td>
</tr>
<tr>
<td>B.S.A. 10</td>
<td>15,000 lb. (6,804 kgs.)</td>
</tr>
<tr>
<td>C.T.A. 10</td>
<td>15,000 lb. (6,804 kgs.)</td>
</tr>
<tr>
<td>B.S.F. 10</td>
<td>15,000 lb. (6,804 kgs.)</td>
</tr>
<tr>
<td>B.S.A. 20</td>
<td>25,000 lb. (11,340 kgs.)</td>
</tr>
<tr>
<td>B.S.F. 20</td>
<td>25,000 lb. (11,340 kgs.)</td>
</tr>
<tr>
<td>B.S.A. 30</td>
<td>28,000 lb. (12,700 kgs.)</td>
</tr>
<tr>
<td>B.S.A.T. 30</td>
<td>42,000 lb. (19,051 kgs.)</td>
</tr>
<tr>
<td>B.S.F. 30</td>
<td>42,000 lb. (19,051 kgs.)</td>
</tr>
</tbody>
</table>

Flashover Figures

The dry and wet flashover figures specified in the leaflets are given for standard atmospheric conditions as defined in B.S. 137/41 which are: Temperature 20° C., Pressure 760 mms. Mercury, and Humidity 11 grammes per cubic metre, or 48 grains per cubic foot.

*The flashover voltage figures stated are minimum values.*

Unless these points of Electro-Mechanical strength and flashover voltage figures are appreciated it might at first sight cause a misleading comparison to be made.
“ARMOURLIGHT” TOUGHENED GLASS

DISC TYPE insulators

TYPE B.S. 8 4½

Electro-mechanical strength as defined in B.S. 137

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pounds</td>
<td>8,000 (3,600 kgs.)</td>
</tr>
<tr>
<td>Dry flashover</td>
<td>55 kV</td>
</tr>
<tr>
<td>Wet flashover</td>
<td>35 kV</td>
</tr>
<tr>
<td>Puncture (in oil)</td>
<td>100 kV</td>
</tr>
<tr>
<td>Puncture (in air)</td>
<td>UNPUNCTURABLE</td>
</tr>
<tr>
<td>Leakage Distance</td>
<td>ins. 6½ (165 mms.)</td>
</tr>
<tr>
<td>Protected Leakage Distance</td>
<td>ins. 3½ (89 mms.)</td>
</tr>
<tr>
<td>Electrostatic capacity</td>
<td>mmfds. 42</td>
</tr>
<tr>
<td>Weight</td>
<td>lbs. 4½ (2·2 kgs.)</td>
</tr>
</tbody>
</table>

STANDARD PACKING

<table>
<thead>
<tr>
<th>Property</th>
<th>Home</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Weight</td>
<td>lbs. 36</td>
<td>lbs. 36</td>
</tr>
<tr>
<td>In crates of 6</td>
<td>ins. 8 × 8 × 30½</td>
<td>cub. ft. 1·13</td>
</tr>
<tr>
<td>Size</td>
<td>mms. 203 × 203 × 775</td>
<td>cub. m. 0·032</td>
</tr>
<tr>
<td>Export Volume</td>
<td>cub. ft. 1·13</td>
<td></td>
</tr>
<tr>
<td>Gross Weight</td>
<td>lbs. 36</td>
<td>lbs. 36</td>
</tr>
<tr>
<td></td>
<td>kgs. 16·3</td>
<td>kgs. 16·3</td>
</tr>
</tbody>
</table>

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
"ARMOURLIGHT" TOUGHENED GLASS

DISC TYPE insulators

TYPE C.T.8.5

(fitted with Clevis Cap and Tongue Ended Pin)

Electro-mechanical strength as defined in B.S.137

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry flashover</td>
<td>kV 55</td>
</tr>
<tr>
<td>Wet flashover</td>
<td>kV 35</td>
</tr>
<tr>
<td>Puncture (in oil)</td>
<td>kV 100</td>
</tr>
<tr>
<td>Puncture (in air)</td>
<td>kV UNPUNCTURABLE</td>
</tr>
<tr>
<td>Leakage Distance</td>
<td>ins. 6½</td>
</tr>
<tr>
<td>Protected Leakage Distance</td>
<td>ins. 3½</td>
</tr>
<tr>
<td>Electrostatic capacity</td>
<td>mmfds. 42</td>
</tr>
<tr>
<td>Weight</td>
<td>lbs. 4½</td>
</tr>
</tbody>
</table>

8,000 (3,600 kgs.)

STANDARD PACKING

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td></td>
</tr>
<tr>
<td>In crates of 6</td>
<td></td>
</tr>
<tr>
<td>Gross Weight</td>
<td>lbs. 39</td>
</tr>
<tr>
<td>In crates of 6</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>ins. 8×8×34½</td>
</tr>
<tr>
<td></td>
<td>mms. 203×203×876</td>
</tr>
<tr>
<td>Export</td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>cub. ft. 1·25</td>
</tr>
<tr>
<td></td>
<td>cub. m. 0·035</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>lbs. 39</td>
</tr>
<tr>
<td></td>
<td>kgs. 17·69</td>
</tr>
</tbody>
</table>
### ELECTRICAL CHARACTERISTICS

- **Electro-mechanical strength as defined in B.S.137:** pounds 10,000 (4,600 kgs.)
- **Dry flashover:** kV 70
- **Wet flashover:** kV 50
- **Puncture (in oil):** kV 120
- **Puncture (in air):** kV UNPUNCTURABLE
- **Leakage Distance:** ins. 11\(\frac{1}{4}\) (286 mms.)
- **Protected Leakage Distance:** ins. 6\(\frac{3}{4}\) (171 mms.)
- **Electrostatic capacity:** mmfds. 41
- **Weight:** lbs. 9\(\frac{1}{4}\) (4.2 kgs.)

### STANDARD PACKING

<table>
<thead>
<tr>
<th></th>
<th>Home</th>
<th>B.S.A.10.5</th>
<th>B.S.A.10.5(\frac{1}{2})</th>
<th>B.S.A.10.5(\frac{3}{4})</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In crates of 5</td>
<td></td>
<td>56</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>In crates of 6</td>
<td></td>
<td>11\times12\times34(\frac{1}{2})</td>
<td>11\times12\times36(\frac{1}{2})</td>
<td>11\times12\times37(\frac{1}{2})</td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td>280\times305\times876</td>
<td>280\times305\times927</td>
<td>280\times305\times953</td>
</tr>
<tr>
<td>Export</td>
<td></td>
<td>2.64</td>
<td>2.79</td>
<td>2.87</td>
</tr>
<tr>
<td>Volume</td>
<td></td>
<td>0.075</td>
<td>0.079</td>
<td>0.081</td>
</tr>
<tr>
<td>Gross Weight</td>
<td></td>
<td>66</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29.94</td>
<td>30.84</td>
<td>31.30</td>
</tr>
</tbody>
</table>

**PILKINGTON BROTHERS LIMITED ST. HELENS LANCS**
**"ARMOURYLIGHT" TOUGHENED GLASS**

**DISC TYPE insulators**

**TYPES C.T.A.10.5 C.T.A.10.5\(\frac{1}{2}\) C.T.A.10.5\(\frac{3}{4}\)**

(fitted with Clevis Cap and Tongue Ended Pin)

<table>
<thead>
<tr>
<th>SPACING</th>
<th>INSULATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>'X'</td>
<td>TYPE</td>
</tr>
<tr>
<td>INS. MMS. NO.</td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>127</td>
</tr>
<tr>
<td>5%</td>
<td>140</td>
</tr>
<tr>
<td>5% 2%</td>
<td>146</td>
</tr>
</tbody>
</table>

Electro-mechanical strength as defined in B.S.137: 10,000 (4,600 kgs.)

- Dry flashover: 70 kV
- Wet flashover: 50 kV
- Puncture (in oil): 120 kV
- Puncture (in air): UNPUNCTURABLE
- Leakage Distance: 11\(\frac{1}{2}\) (286 mms.)
- Protected Leakage Distance: 6\(\frac{1}{2}\) (171 mms.)
- Electrostatic capacity: 41 mmfd.
- Weight: 9\(\frac{1}{2}\) (4.2 kgs.)

**STANDARD PACKING**

<table>
<thead>
<tr>
<th>Home</th>
<th>In crates of 5</th>
<th>lbs.</th>
<th>56</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In crates of 6</td>
<td>ins. mms.</td>
<td>11×12×34(\frac{1}{2})</td>
</tr>
<tr>
<td></td>
<td>Size</td>
<td></td>
<td>280×305×876</td>
</tr>
<tr>
<td>Export</td>
<td>Volume</td>
<td>cub. ft.</td>
<td>2.64</td>
</tr>
<tr>
<td></td>
<td>cub. m.</td>
<td>0.075</td>
<td>0.081</td>
</tr>
<tr>
<td></td>
<td>Gross Weight</td>
<td>lbs.</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kgs.</td>
<td>29.94</td>
</tr>
</tbody>
</table>
**DISC TYPE insulators**

**SPACING ‘X’ INSULATOR TYPE**

<table>
<thead>
<tr>
<th>INS. MMS. NO.</th>
<th>5</th>
<th>5(\frac{1}{2})</th>
<th>5(\frac{3}{4})</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>B.S.F.10.5</td>
<td>B.S.F.10.5(\frac{1}{2})</td>
<td>B.S.F.10.5(\frac{3}{4})</td>
</tr>
</tbody>
</table>

Electro-mechanical strength as defined in B.S.137

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pounds</td>
<td>10,000 (4,600 kgs.)</td>
</tr>
<tr>
<td>Dry flashover</td>
<td>70 kV</td>
</tr>
<tr>
<td>Wet flashover</td>
<td>50 kV</td>
</tr>
<tr>
<td>Puncture (in oil)</td>
<td>120 kV</td>
</tr>
<tr>
<td>Puncture (in air)</td>
<td>UNPUNCTURABLE</td>
</tr>
<tr>
<td>Leakage Distance</td>
<td>14(\frac{1}{2}) ins. (368 mms.)</td>
</tr>
<tr>
<td>Protected Leakage Distance</td>
<td>8 ins. (203 mms.)</td>
</tr>
<tr>
<td>Electrostatic capacity</td>
<td>47 mmfds.</td>
</tr>
<tr>
<td>Weight</td>
<td>10(\frac{1}{2}) lbs. (4.6 kgs.)</td>
</tr>
</tbody>
</table>

**STANDARD PACKING**

<table>
<thead>
<tr>
<th>Home</th>
<th>B.S.F.10.5</th>
<th>B.S.F.10.5(\frac{1}{2})</th>
<th>B.S.F.10.5(\frac{3}{4})</th>
</tr>
</thead>
<tbody>
<tr>
<td>In crates of 5 Gross Weight</td>
<td>lbs. 62</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>In crates of 5 Size</td>
<td>ins. (11 \times 12 \times 34\frac{1}{4})</td>
<td>(11 \times 12 \times 36\frac{3}{4})</td>
<td>(11 \times 12 \times 37\frac{3}{4})</td>
</tr>
<tr>
<td>mms.</td>
<td>(280 \times 305 \times 876)</td>
<td>(280 \times 305 \times 927)</td>
<td>(280 \times 305 \times 953)</td>
</tr>
<tr>
<td>Export Volume</td>
<td>cub. ft. 2.64</td>
<td>2.79</td>
<td>2.87</td>
</tr>
<tr>
<td>cub m.</td>
<td>0.075</td>
<td>0.079</td>
<td>0.081</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>lbs. 63</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>kgs. 28.6</td>
<td>29.48</td>
<td>29.48</td>
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</tbody>
</table>

**PILKINGTON BROTHERS LIMITED ST. HELENS LANCs**
"ARMOURLIGHT" TOUGHENED GLASS

DISC TYPE insulators

TYPES A.B.S.A.10.5 A.B.S.A.10.5½ A.B.S.A.10.5⅓

(with ball and socket dimensioned in accordance with Australian Specification C.67. Fig. A-2.)

Electro-mechanical strength as defined in B.S.137 pounds 10,000 (4,600 kgs.)

Dry flashover

Wet flashover kV 50

Puncture (in oil) kV 120

Puncture (in air) kV UNPUNCTURABLE

Leakage Distance ins. 11½ (286 mms.)

Protected Leakage Distance ins. 63 (171 mms.)

Electrostatic capacity mmfds. 41

Weight lbs. 9½ (4.2 kgs.)

STANDARD PACKING

In crates of 6

Size ins. 11×12×34½

mms. 280×305×876

Volume cub. ft. 2.64

cub. m. 0.075

Gross Weight lbs. 66

kgs. 29.94

A.B.S.A.10.5 A.B.S.A.10.5½ A.B.S.A.10.5⅓

Volume cub. ft. 2.79

cub. m. 0.079

Gross Weight lbs. 68

kgs. 30.84

Volume cub. ft. 2.87

cub. m. 0.081

Gross Weight lbs. 69

kgs. 31.30
Electro-mechanical strength as defined in B.S.137 pounds 20,000 (9,100 kgs.)

Dry flashover kV 70
Wet flashover kV 50
Puncture (in oil) kV 120
Puncture (in air) kV UNPUNCTURABLE

Leakage Distance ins. 11\(\frac{1}{2}\) (286 mms.)
Protected Leakage Distance ins. 6\(\frac{3}{4}\) (175 mms.)
Electrostatic capacity mmfds. 50
Weight lbs. 11\(\frac{1}{2}\) (5.1 kgs.)

**STANDARD PACKING**

<table>
<thead>
<tr>
<th></th>
<th><strong>B.S.A.20.5(\frac{1}{2})</strong></th>
<th><strong>B.S.A.20.5(\frac{3}{4})</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In crates of 5</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Gross Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In crates of 6</td>
<td>11(\times)12(\times)37(\frac{1}{2})</td>
<td>11(\times)12(\times)40(\frac{1}{2})</td>
</tr>
<tr>
<td>Size</td>
<td>280(\times)305(\times)953</td>
<td>280(\times)305(\times)1029</td>
</tr>
<tr>
<td>Export</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>2.79</td>
<td>2.9</td>
</tr>
<tr>
<td>cub. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cub. m.</td>
<td>0.079</td>
<td>0.083</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>80</td>
<td>82</td>
</tr>
<tr>
<td>lbs.</td>
<td>36.29</td>
<td>37.19</td>
</tr>
<tr>
<td>kgs.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
"ARMOURLIGHT" TOUGHENED GLASS

DISC TYPE insulators

TYPE B.S.F.20.6

Electro-mechanical strength as defined in B.S.137

- Dry flashover: 95 kV
- Wet flashover: 54 kV
- Puncture (in oil): 120 kV
- Puncture (in air): UNPUNCTURABLE

Leakage Distance: 16\(\frac{3}{4}\) ins. (425 mms.)
Protected Leakage Distance: 10\(\frac{1}{4}\) ins. (260 mms.)
Electrostatic capacity: 49 mmfds.
Weight: 14 lbs. (6-35 kgs.)

STANDARD PACKING

<table>
<thead>
<tr>
<th>Home</th>
<th>Gross Weight</th>
<th>lbs.</th>
<th>66</th>
</tr>
</thead>
<tbody>
<tr>
<td>In crates of 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Size</td>
<td>ins.</td>
<td>12(\times)12(\times)28(\frac{3}{4})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mms.</td>
<td>305(\times)305(\times)724</td>
</tr>
<tr>
<td>Export</td>
<td>Volume</td>
<td>cub. ft.</td>
<td>2.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cub. m.</td>
<td>0.070</td>
</tr>
<tr>
<td></td>
<td>Gross Weight</td>
<td>lbs.</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kgs.</td>
<td>30.84</td>
</tr>
</tbody>
</table>
“ARMOURLIGHT” TOUGHENED GLASS

DISC TYPE insulators

TYPES B.S.30.6¾ B.S.30.7

(for use where higher factors of safety are required than are given by the B.S.20 types)

<table>
<thead>
<tr>
<th>SPACING</th>
<th>INSULATOR TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IN S. MMS. NO.</td>
<td></td>
</tr>
<tr>
<td>6¾</td>
<td>159</td>
</tr>
<tr>
<td>7</td>
<td>178</td>
</tr>
</tbody>
</table>

Electro-mechanical strength as defined in B.S.137

<table>
<thead>
<tr>
<th></th>
<th>pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry flashover</td>
<td>20,000 (9,100 kgs.)</td>
</tr>
<tr>
<td>Wet flashover</td>
<td>70</td>
</tr>
<tr>
<td>Puncture (in oil)</td>
<td>45</td>
</tr>
<tr>
<td>Puncture (in air)</td>
<td>120</td>
</tr>
<tr>
<td>Leakage Distance</td>
<td>120</td>
</tr>
<tr>
<td>Protected Leakage Distance</td>
<td>9 (229 mms.)</td>
</tr>
<tr>
<td>Electrostatic capacity</td>
<td>mmfds. 73</td>
</tr>
<tr>
<td>Weight</td>
<td>13 (5·9 kgs.)</td>
</tr>
</tbody>
</table>

STANDARD PACKING B.S.30.6¾ B.S.30.7

<table>
<thead>
<tr>
<th>Home</th>
<th>B.S.30.6¾</th>
<th>B.S.30.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>In crates of 4</td>
<td>lbs.</td>
<td>62</td>
</tr>
<tr>
<td>Gross Weight</td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>In crates of 5</td>
<td>ins.</td>
<td>11×12×37¾</td>
</tr>
<tr>
<td>Size</td>
<td>mms.</td>
<td>280×305×953</td>
</tr>
<tr>
<td>Export</td>
<td>cub. ft.</td>
<td>2·87</td>
</tr>
<tr>
<td>Volume</td>
<td>cub. m.</td>
<td>0·081</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>lbs.</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>kgs.</td>
<td>34·47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>34·93</td>
</tr>
</tbody>
</table>

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
"ARMOURLIGHT" TOUGHENED GLASS

DISC TYPE insulators

TYPES B.S.A.30.6\(\frac{1}{2}\) B.S.A.30.7

(for use where higher factors of safety are required than are given by the B.S.A.20 types)

Electro-mechanical strength as defined in B.S.137 | pounds | 20,000 (9,100 kgs.)
---|---|---
Dry flashover | kV | 80
Wet flashover | kV | 50
Puncture (in oil) | kV | 120
Puncture (in air) | kV | UNPUNCTURABLE
Leakage Distance | ins. | 13\(\frac{3}{4}\) (349 mms.)
Protected Leakage Distance | ins. | 8\(\frac{1}{4}\) (216 mms.)
Electrostatic capacity | mmfds. | 67
Weight | lbs. | 16\(\frac{1}{2}\) (7.5 kgs.)

STANDARD PACKING

<table>
<thead>
<tr>
<th>Home</th>
<th>B.S.A.30.6(\frac{1}{2})</th>
<th>B.S.A.30.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>In crates of 4</td>
<td>lbs.</td>
<td>76</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>In crates of 4</td>
<td>ins.</td>
</tr>
<tr>
<td>Size</td>
<td>mms.</td>
<td>305 × 305 × 724</td>
</tr>
<tr>
<td>Export</td>
<td>cub. ft.</td>
<td>2.37</td>
</tr>
<tr>
<td>Volume</td>
<td>cub. m.</td>
<td>0.067</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>lbs.</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>kgs.</td>
<td>34.47</td>
</tr>
</tbody>
</table>
**“ARMOURLIGHT” TOUGHENED GLASS**

**DISC TYPE insulators**

**TYPES B.S.A.T.30.6\(\frac{1}{2}\) B.S.A.T.30.7**

<table>
<thead>
<tr>
<th>SPACING</th>
<th>INSULATOR TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>'X'</td>
<td></td>
</tr>
<tr>
<td>INS. MMS. NO.</td>
<td></td>
</tr>
<tr>
<td>6(\frac{1}{2})</td>
<td>171</td>
</tr>
<tr>
<td>7</td>
<td>178</td>
</tr>
</tbody>
</table>

Combined mechanical and electrical strength as defined in A.I.E.E.—41-1944

- Combined mechanical and electrical strength: 42,000 pounds (19,050 kgs.)

Electro-mechanical strength as defined in B.S.137

- Electro-mechanical strength: 30,000 pounds (13,600 kgs.)

**Properties:**

- **Dry flashover:** 80 kV
- **Wet flashover:** 50 kV
- **Puncture (in oil):** 120 kV
- **Puncture (in air):** UNPUNCTURABLE
- **Leakage Distance:** 13\(\frac{1}{2}\) ins. (349 mms.)
- **Protected Leakage Distance:** 8\(\frac{1}{2}\) ins. (216 mms.)
- **Electrostatic capacity:** 60 mmds.
- **Weight:** 18 lbs. (8.16 kgs.)

**STANDARD PACKING**

**Home**

- In crates of 4
- Gross Weight lbs.: 86

**Export**

- Size
  - ins.: 12\(\times\)12\(\times\)32
  - mms.: 305\(\times\)305\(\times\)813
- Volume
  - cub. ft.: 2.67
  - cub. m.: 0.076
- Gross Weight
  - lbs.: 86
  - kgs.: 39.01

**B.S.A.T.30.6\(\frac{1}{2}\)**

- Gross Weight lbs.: 87

**B.S.A.T.30.7**

- Gross Weight lbs.: 87

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
**ARMOURLIGHT** TOUGHENED GLASS

**DISC TYPE insulators**

**TYPE B.S.F.30.6\(\frac{3}{4}\)**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined mechanical and electrical strength as defined in A.I.E.E.—41—1944</td>
<td>pounds 42,000 (19,050 kgs.)</td>
</tr>
<tr>
<td>Electro-mechanical strength as defined in B.S.137</td>
<td>pounds 30,000 (13,600 kgs.)</td>
</tr>
<tr>
<td>Dry flashover</td>
<td>kV 90</td>
</tr>
<tr>
<td>Wet flashover</td>
<td>kV 52</td>
</tr>
<tr>
<td>Puncture (in oil)</td>
<td>kV 120</td>
</tr>
<tr>
<td>Puncture (in air)</td>
<td>kV UNPUNCTURABLE</td>
</tr>
<tr>
<td>Leakage Distance</td>
<td>ins. 16(\frac{1}{4}) (425 mms.)</td>
</tr>
<tr>
<td>Protected Leakage Distance</td>
<td>ins. 10(\frac{1}{4}) (260 mms.)</td>
</tr>
<tr>
<td>Electrostatic capacity</td>
<td>mms. 65</td>
</tr>
<tr>
<td>Weight</td>
<td>lbs. 18 (8·16 kgs.)</td>
</tr>
</tbody>
</table>

**STANDARD PACKING**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home</strong></td>
<td></td>
</tr>
<tr>
<td>In crates of 4</td>
<td>lbs. 87</td>
</tr>
<tr>
<td>Gross Weight</td>
<td></td>
</tr>
<tr>
<td>In crates of 4</td>
<td>ins. 12 × 12 × 32</td>
</tr>
<tr>
<td>Size</td>
<td>mms. 305 × 305 × 813</td>
</tr>
<tr>
<td><strong>Export</strong></td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>cub. ft. 2·67</td>
</tr>
<tr>
<td></td>
<td>cub. m. 0·076</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>lbs. 87</td>
</tr>
<tr>
<td></td>
<td>kgs. 39·46</td>
</tr>
</tbody>
</table>

“ARMOURLIGHT” is a registered trade mark of Pilkington Brothers Limited
Fittings for
"ARMOURLIGHT"
Toughened Glass
DISC TYPE
Insulators

"ARMOURLIGHT" is the registered trade mark of Pilkington Brothers Limited.
Fittings for
“Armourlight” Toughened Glass
DISC TYPE Insulators

Introduction

In this section will be found details of the different types of fittings which are available for use with the disc type insulators shown in the preceding section.

They are manufactured in malleable cast iron or steel, of grades and qualities suitable for the mechanical load conditions which they have to meet. All ferrous fittings are galvanised by the hot-dip process, and will meet the tests specified in B.S.729.

Those fittings, the code numbers of which begin with 1 or 4, are for use with the B.S.8, C.T.8, B.S.A.10, C.T.A.10, and B.S.F.10 types of insulator.

If the code number begins with 3 or 5, the fitting is suitable for the B.S.A.20, B.S.F.20, B.S.30 and B.S.A.30 types of insulator.

The material of the security clip for socket ended fittings is phosphor bronze.

In all cases, split pins are of stainless steel, but brass or copper alternatives can be made available if necessary. The different materials are indicated by the suffix B, C or S at the end of the fitting code number.

Locknuts are supplied as standard on all bolts.

The actual fittings supplied may differ in shape or dimensions from those shown on the catalogue pages. Such differences, if they occur, will be slight. If a major alteration is made to any fitting, a new catalogue page will be issued.
Fittings for
"Armourlight" Toughened Glass
Disc Type Insulators

Ball Ended Hook
CODE No. 1600
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 50</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 14&quot; × 6&quot;</td>
<td>82 lbs. (37 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) m/m (356) m/m (152) m/m</td>
<td></td>
</tr>
</tbody>
</table>

Ball Ended Hook, A.H. Type
CODE No. 1601
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 18,000 lbs. (8,165 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 40</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 13&quot; × 9&quot;</td>
<td>90 lbs. (41 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) m/m (330) m/m (229) m/m</td>
<td></td>
</tr>
</tbody>
</table>

Pilkington Brothers Limited St. Helens Lancs
Clevis Ball CODE No. 4300/B, C or S

- Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
- Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

Clevis Ball, A.H. Type CODE No. 4301/8, C or S

- Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
- Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)
FITTINGS for
"ARMOURLIGHT" TOUGHENED GLASS
DISC TYPE insulators

Ball Ended Eye Link, A.H. Type
CODE No. 1618
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 60</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 13&quot; × 8&quot;</td>
<td>79 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) m/m (330) m/m (203) m/m</td>
<td>(36 kgs.)</td>
</tr>
</tbody>
</table>

Ball Ended Tongue A.H. Type
CODE No. 1692 with Hole 'A' = 1/8" (17 m/m) dia.
CODE No. 1693 with Hole 'A' = 3/16" (21 m/m) dia.
CODE No. 1694 with Hole 'A' = 1/16" (27 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double bags of 50</td>
<td>19&quot; × 11&quot; × 9&quot;</td>
<td>84 lbs.</td>
</tr>
<tr>
<td></td>
<td>(483) m/m (279) m/m (229) m/m</td>
<td>(38 kgs.)</td>
</tr>
</tbody>
</table>
Ball Ended Eye Link

CODE No. 1615

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 80</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>17&quot; × 13&quot; × 8&quot;</td>
<td>72 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(432) (330) (203)</td>
<td></td>
</tr>
</tbody>
</table>

Shackle

CODE No. 4306 with 5/8" (16 m/m) dia. bolt, washer, nut and locknut

CODE No. 4307/B, C or S with 5/8" (16 m/m) dia. through pin, washer and split pin

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 50</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>19&quot; × 13&quot; × 8&quot;</td>
<td>56 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(483) (330) (203)</td>
<td></td>
</tr>
</tbody>
</table>

Ball Ended Eye Link A.H. Type (Twisted)

CODE No. 1619

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 60</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 13&quot; × 8&quot;</td>
<td>82 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) (330) (203)</td>
<td></td>
</tr>
</tbody>
</table>
FITTINGS for
"ARMOURLIGHT" TOUGHENED GLASS
DISC TYPE insulators

Channel Type Crossarm Straps
CODE No. 4720 for 2½" (51/64 m/m) Channel Crossarms
CODE No. 4721 for 3" (76 m/m) Channel Crossarms
CODE No. 4722 for 3½/4" (89/102 m/m) Channel Crossarms
CODE No. 4723 for 6" (152 m/m) Channel Crossarms
CODE No. 4724 for 5" (127 m/m) Channel Crossarms
CODE No. 4726 for 4½" (114 m/m) Channel Crossarms
Average Ultimate Mechanical Strength 18,000 lbs. (8,165 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification Code Nos. 4720/1/2/6</th>
<th>Double bags of 20</th>
<th>Size 20&quot; × 8&quot; × 11&quot;</th>
<th>Gross weight 68 lbs. (31 kgs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export Packing Specification Code No. 4723/4</td>
<td>Double bags of 20</td>
<td>Size 20&quot; × 8&quot; × 11&quot;</td>
<td>Gross weight 70 lbs. (32 kgs.)</td>
</tr>
</tbody>
</table>

Angle Type Crossarm Straps
CODE No. 4700 for 3½/8" (8/10 m/m) Angle Crossarms
CODE No. 4701 for 3/4" (13 m/m) Angle Crossarms
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 30</th>
<th>Size 19&quot; × 10&quot; × 11&quot;</th>
<th>Gross weight 84 lbs. (38 kgs.)</th>
</tr>
</thead>
</table>
Crossarm Eye Bolt

Average Ultimate Mechanical Strength 20,000 lbs.
(9,072 kgs.)

Code | Dimns. 'A' | Dimns. 'B' | X-arm depth |
---|---|---|---|
4320 | 2½" (57 m/m) | 2" (51 m/m) | 3⁄8" to 5⁄8" (6 - 19 m/m) |
4321 | 3" (76 mm) | 1½" (38 mm) | 5⁄8" to 1½" (19 - 38 mm) |
4322 | 4" (102 mm) | 2½" (64 mm) | 1½" to 2½" (38 - 64 mm) |
4323 | 5½" (140 mm) | 3" (76 mm) | 2½" to 4" (64-102 mm) |
4324 | 7½" (191 mm) | 3½" (89 mm) | 4½" to 6" (114-152 mm) |
4325 | 9¼" (241 mm) | 3½" (89 mm) | 6" to 8" (152-203 mm) |
4326 | 12" (305 mm) | 4" (102 mm) | 8" to 10½" (203-267 mm) |

Export Packing Specification

<table>
<thead>
<tr>
<th>Code</th>
<th>In double bags of</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4320</td>
<td>60</td>
<td>13&quot; x 11&quot; x 9&quot; (330 x 279 x 229 mm)</td>
<td>66 lbs. (30 kgs.)</td>
</tr>
<tr>
<td>4321</td>
<td>60</td>
<td>13&quot; x 11&quot; x 11&quot; (330 x 279 x 279 mm)</td>
<td>72 lbs. (33 kgs.)</td>
</tr>
<tr>
<td>4322</td>
<td>55</td>
<td>13&quot; x 11&quot; x 13&quot; (330 x 279 x 330 mm)</td>
<td>73 lbs. (33 kgs.)</td>
</tr>
<tr>
<td>4323</td>
<td>50</td>
<td>13&quot; x 11&quot; x 19&quot; (330 x 279 x 483 mm)</td>
<td>74 lbs. (34 kgs.)</td>
</tr>
<tr>
<td>4324</td>
<td>45</td>
<td>12&quot; x 14&quot; x 15&quot; (305 x 356 x 381 mm)</td>
<td>78 lbs. (35 kgs.)</td>
</tr>
<tr>
<td>4325</td>
<td>35</td>
<td>14&quot; x 11&quot; x 16&quot; (356 x 279 x 406 mm)</td>
<td>69 lbs. (31 kgs.)</td>
</tr>
<tr>
<td>4326</td>
<td>30</td>
<td>16&quot; x 10&quot; x 16&quot; (406 x 254 x 406 mm)</td>
<td>72 lbs. (33 kgs.)</td>
</tr>
</tbody>
</table>

Crossarm Eye Link

CODE No. 1054

Average Ultimate Mechanical Strength 11,000 lbs.
(4,990 kgs.)

Export Packing Specification

<table>
<thead>
<tr>
<th>Double bags of</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>17&quot; x 8&quot; x 8&quot; (432) (203) (203) m/m/m</td>
<td>85 lbs. (39 kgs.)</td>
</tr>
</tbody>
</table>
Fittings for
“Armourlight” Toughened Glass
Disc Type Insulators

Terminating Thimble
Code No. 1053
Conductor and crossarm attachment fittings for light line construction, in accordance with B.S. 1320.

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 150</th>
<th>Size</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>20&quot; x 10&quot; x 10&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(508) (254) (254)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>m/m m/m m/m</td>
<td>79 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(m/m) (m/m) (m/m)</td>
<td>(36 kgs.)</td>
</tr>
</tbody>
</table>

Terminating Strap
(Complete with 2" x 3" (51 m/m x 19 m/m) dia. bolt)
Code No. 4709

Conductor and crossarm attachment fittings for light line construction, in accordance with B.S. 1320.

Pilkington Brothers Limited St. Helens Lancs
Insulator Hook
CODE No. 1604
Conductor and crossarm attachment fittings for light line construction, in accordance with B.S. 1320.

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 40</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
<td>14&quot; × 10&quot; × 10&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(356) (254) (254)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>m/m  m/m  m/m</td>
<td>64 lbs. (29 kgs.)</td>
</tr>
</tbody>
</table>

![Diagram of Insulator Hook]

- 9\(\frac{15}{64}\)" long
- 235\(\text{m/m}\)
- 7\(\frac{7}{8}\)" dia. 22\(\text{m/m}\)
Fittings for
"Armourlight" Toughened Glass
Disc Type Insulators

Socket Tongue A.H. Type
CODE No. 4009 with Hole ‘A’ = \(1\frac{3}{16}\) dia. (21 m/m) (complete with W Security Clip)
CODE No. 4011 with Hole ‘A’ = \(1\frac{3}{16}\) dia. (27 m/m) (complete with W Security Clip)
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Size</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double bags of 30</td>
<td>(18\times12\times10) (457) (305) (254) m/m m/m m/m</td>
<td>92 lbs. (42 kgs.)</td>
</tr>
</tbody>
</table>

Socket Tongue A.H. Type
CODE No. 4003 (complete with W Security Clip)
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Size</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double bags of 30</td>
<td>(17\times12\times9) (432) (305) (229) m/m m/m m/m</td>
<td>73 lbs. (33 kgs.)</td>
</tr>
</tbody>
</table>

Pilkington Brothers Limited St. Helens Lancs
Socket Clevis
CODE No. 4036/B, C or S (complete with W Security Clip)
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 40</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>17&quot; × 12&quot; × 9&quot;</td>
<td>84 lbs. (38 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(432) (305) (229)</td>
<td></td>
</tr>
</tbody>
</table>

Socket Tongue
CODE No. 4001 (complete with W Security Clip)
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 50</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>18&quot; × 11&quot; × 8&quot;</td>
<td>84 lbs. (38 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(457) (279) (203)</td>
<td></td>
</tr>
</tbody>
</table>

Socket Clevis A.H. Type
CODE No. 4038/B, C or S (complete with W Security Clip)
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 30</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>19&quot; × 11&quot; × 8&quot;</td>
<td>79 lbs. (36 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(483) (279) (203)</td>
<td></td>
</tr>
</tbody>
</table>
FITTINGS for
"ARMOURLIGHT" TOUGHENED GLASS
DISC TYPE insulators

Clevis Ended Hook Type Suspension Clamp
with Arcing Horn/Bridge

CODE No. 4113/B, C or S
Maximum Conductor Size 0·612" (15 m/m) dia.
Minimum Conductor Size 0·312" (8 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 12</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>26&quot; × 13&quot; × 11&quot;</td>
<td>80 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(660) (330) (279)</td>
<td>(36 lbs.)</td>
</tr>
</tbody>
</table>

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
Tongue Ended Hook Type Suspension Clamp

These clamps can be supplied with aluminium liners on request.

CODE No. 4103
Maximum Conductor Size 0.579" (15 m/m) dia.
Minimum Conductor Size 0.187" (5 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 18,000 lbs. (8,165 kgs.)

Clevis Ended Hook Type Suspension Clamp

These clamps can be supplied with aluminium liners on request.

CODE No. 4114/B, C or S
Maximum Conductor Size 0.579" (15 m/m) dia.
Minimum Conductor Size 0.187" (5 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)
Cradle Type Suspension Clamp

**CODE No. 4150/B, C or S without Liners**

**CODE No. 4151/B, C or S with Copper Liners**

**CODE No. 4152/B, C or S with Aluminium Liners**
- Maximum Conductor Size 0·4" (10 m/m) dia.
- Minimum Conductor Size 0·2" (5 m/m) dia.

**CODE No. 4153/B, C or S without Liners**

**CODE No. 4154/B, C or S with Copper Liners**

**CODE No. 4155/B, C or S with Aluminium Liners**
- Maximum Conductor Size 0·6" (15 m/m) dia.
- Minimum Conductor Size 0·4" (10 m/m) dia.

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 18,000 lbs. (8,165 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification Code No. 4150/1/2</th>
<th>Double bags of 17</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>21&quot; × 10&quot; × 13&quot; (533) (254) (330) m/m m/m m/m</td>
<td>79 lbs. (36 kgs.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Export Packing Specification Code No. 4153/4/5</th>
<th>Double bags of 15</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>21&quot; × 10&quot; × 13&quot; (533) (254) (330) m/m m/m m/m</td>
<td>79 lbs. (36 kgs.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pivoted Type Suspension Clamp

<table>
<thead>
<tr>
<th>CODE</th>
<th>No. 4104/B or S without Liners</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
<td>No. 4105/B or S with Copper Liners</td>
</tr>
<tr>
<td>CODE</td>
<td>No. 4106/B or S with Aluminium Liners</td>
</tr>
<tr>
<td>Maximum Conductor Size</td>
<td>0.625&quot; (16 m/m) dia.</td>
</tr>
<tr>
<td>Minimum Conductor Size</td>
<td>0.375&quot; (10 m/m) dia.</td>
</tr>
</tbody>
</table>

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>CODE</th>
<th>No. 4107/B or S without Liners</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
<td>No. 4108/B or S with Copper Liners</td>
</tr>
<tr>
<td>CODE</td>
<td>No. 4109/B or S with Aluminium Liners</td>
</tr>
<tr>
<td>Maximum Conductor Size</td>
<td>0.937&quot; (24 m/m) dia.</td>
</tr>
<tr>
<td>Minimum Conductor Size</td>
<td>0.375&quot; (10 m/m) dia.</td>
</tr>
</tbody>
</table>

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 18,000 lbs. (8,165 kgs.)

Export Packing Specification

<table>
<thead>
<tr>
<th>Code Nos.</th>
<th>4104/5/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double bags of 10</td>
<td>19&quot; x 14&quot; x 10&quot;</td>
</tr>
<tr>
<td>Size</td>
<td>Code Nos.</td>
</tr>
<tr>
<td>(483) (356) (254) m/m m/m m/m</td>
<td></td>
</tr>
<tr>
<td>Gross weight</td>
<td>88 lbs. (40 kgs.)</td>
</tr>
</tbody>
</table>

Export Packing Specification

<table>
<thead>
<tr>
<th>Code Nos.</th>
<th>4107/8/9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double bags of 8</td>
<td>17&quot; x 12&quot; x 10&quot;</td>
</tr>
<tr>
<td>Size</td>
<td>Code Nos.</td>
</tr>
<tr>
<td>(432) (305) (254) m/m m/m m/m</td>
<td></td>
</tr>
<tr>
<td>Gross weight</td>
<td>87 lbs. (39 kgs.)</td>
</tr>
</tbody>
</table>

Pivoted Type Suspension Clamp

<table>
<thead>
<tr>
<th>CODE</th>
<th>No. 4110/B or S without Liners</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
<td>No. 4111/B or S with Copper Liners</td>
</tr>
<tr>
<td>CODE</td>
<td>No. 4112/B or S with Aluminium Liners</td>
</tr>
<tr>
<td>Maximum Conductor Size</td>
<td>1.40&quot; (35 m/m) dia.</td>
</tr>
<tr>
<td>Minimum Conductor Size</td>
<td>0.97&quot; (24 m/m) dia.</td>
</tr>
</tbody>
</table>

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 18,000 lbs. (8,165 kgs.)

Export Packing Specification

<table>
<thead>
<tr>
<th>Code Nos.</th>
<th>533 (330) (178)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double bags of 6</td>
<td>21&quot; x 13&quot; x 7&quot;</td>
</tr>
<tr>
<td>Size</td>
<td>Code Nos.</td>
</tr>
<tr>
<td>m/m m/m m/m</td>
<td></td>
</tr>
<tr>
<td>Gross weight</td>
<td>76 lbs. (34 kgs.)</td>
</tr>
</tbody>
</table>
FITTINGS for
"ARMOURLIGHT" TOUGHENED GLASS
DISC TYPE insulators

Clevis Ended Snail Clamp

CODE No. 4250/B, C or S
Maximum conductor size 0-6" (15 m/m) dia.
Minimum conductor size 0-312" (8 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

Export Size GYPSS
Packing Double bags

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 18</th>
<th>Size 14&quot; x 16&quot; x 10&quot; (356) (406) (254) m/m m/m m/m</th>
<th>Gross weight 83 lbs. (38 kgs.)</th>
</tr>
</thead>
</table>

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
Clevis Ended Snail Clamp

CODE No. 4252/B, C or S
Maximum Conductor Size 0-312" (8 m/m) dia.
Minimum Conductor Size 0-187" (5 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 17,500 lbs. (7,798 kgs.)
Fittings for
“Armourlight” Toughened Glass
Disc Type Insulators

Clevis Ended
4-bolt Strain Clamp

Code No. 4210/B, C or S for Conductor Range 0.192" (5 m/m) dia. to 0.384" (10 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

Export Size Gross

<table>
<thead>
<tr>
<th>Packing Double bags</th>
<th>Size</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>of 15</td>
<td>21&quot; × 7&quot; × 13&quot;</td>
<td>77 lbs.</td>
</tr>
<tr>
<td></td>
<td>(533) (178) (330)</td>
<td>(35 kgs.)</td>
</tr>
</tbody>
</table>

Both these clamps can be supplied with aluminium liners on request

Tongue Ended
4-bolt Strain Clamp

Code No. 4200 for Conductor Range 0.192" (5 m/m) dia. to 0.312" (8 m/m) dia.
Code No. 4201 for Conductor Range 0.312" (8 m/m) dia. to 0.384" (10 m/m) dia.
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

Export Size Gross

<table>
<thead>
<tr>
<th>Packing Double bags</th>
<th>Size</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>of 15</td>
<td>21&quot; × 7&quot; × 13&quot;</td>
<td>79 lbs.</td>
</tr>
<tr>
<td></td>
<td>(533) (178) (330)</td>
<td>(36 kgs.)</td>
</tr>
</tbody>
</table>
**Tongue Ended 6-bolt Strain Clamp**

CODE No. 4203 for Conductor Range 0.388" (10 m/m) dia. to 0.460" (12 m/m) dia.
CODE No. 4204 for Conductor Range 0.498" (13 m/m) dia. to 0.580" (15 m/m) dia.

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification Code No. 4203</th>
<th>Double bags of 12</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 8&quot; × 13&quot;</td>
<td>86 lbs. (39 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) (203) (330)</td>
<td></td>
</tr>
</tbody>
</table>

Both these clamps can be supplied with aluminium liners on request.

**Clevis Ended 6-bolt Strain Clamp**

CODE No. 4213/B, C or S for Conductor Range 0.388" (10 m/m) dia. to 0.460" (12 m/m) dia.
CODE No. 4214/B, C or S for Conductor Range 0.498" (13 m/m) dia. to 0.580" (15 m/m) dia.

Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification Code No. 4213</th>
<th>Double bags of 12</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 8&quot; × 13&quot;</td>
<td>88 lbs. (40 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) (203) (330)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Export Packing Specification Code No. 4214</th>
<th>Double bags of 11</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 8&quot; × 13&quot;</td>
<td>87 lbs. (39 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) (203) (330)</td>
<td></td>
</tr>
</tbody>
</table>
FITTINGS for
“ARMOURLIGHT” TOUGHENED GLASS
DISC TYPE insulators

Tongue Ended Eye Link
(Twisted)
CODE No. 1625
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

Export Packing Specification
<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>15&quot; × 15&quot; × 8&quot;</td>
</tr>
<tr>
<td></td>
<td>(381) (381) (203)</td>
</tr>
<tr>
<td>Gross weight</td>
<td>82 lbs.</td>
</tr>
<tr>
<td></td>
<td>(37 kgs.)</td>
</tr>
</tbody>
</table>

Tongue Ended Eye Link
CODE No. 1624
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

Export Packing Specification
<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>15&quot; × 15&quot; × 8&quot;</td>
</tr>
<tr>
<td></td>
<td>(381) (381) (203)</td>
</tr>
<tr>
<td>Gross weight</td>
<td>82 lbs.</td>
</tr>
<tr>
<td></td>
<td>(37 kgs.)</td>
</tr>
</tbody>
</table>
Tongue Ended Hook A.H. Type
CODE No. 1607
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 17,000 lbs. (7,711 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 40</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>23&quot; × 16&quot; × 8&quot;</td>
<td>94 lbs. (43 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>m/m m/m m/m</td>
<td></td>
</tr>
</tbody>
</table>

Tongue Ended Hook A.H. Type
CODE No. 1606
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 17,000 lbs. (7,711 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 40</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 17&quot; × 5&quot;</td>
<td>89 lbs. (40 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>m/m m/m m/m</td>
<td></td>
</tr>
</tbody>
</table>

Tongue Ended Hook
CODE No. 1605
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 50</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>23&quot; × 15&quot; × 8&quot;</td>
<td>79 lbs. (36 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>m/m m/m m/m</td>
<td></td>
</tr>
</tbody>
</table>
Fittings for
"Armourlight" Toughened Glass
Disc Type Insulators

Clevis Tongue (Twisted)
CODE No. 4302/B, C or S
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 70</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>18&quot; × 12&quot; × 8&quot;</td>
<td>88 lbs. (40 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(457) (305) (203) m/m</td>
<td>m/m</td>
</tr>
</tbody>
</table>

Clevis—Clevis (Twisted)
CODE No. 4305/B, C or S
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 50</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>18&quot; × 13&quot; × 9&quot;</td>
<td>79 lbs. (36 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(457) (330) (229) m/m</td>
<td>m/m</td>
</tr>
</tbody>
</table>

Pilkington Brothers Limited St. Helens Lancs
Clevis Tongue A.H. Type

CODE No. 4303/B, C or S
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 40</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>18&quot; x 12&quot; x 8&quot;</td>
<td>(457) (305) (203)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>79 lbs. (36 kgs.)</td>
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</table>

Clevis Tongue A.H. Type

CODE No. 4304/B, C or S
Elastic Limit Strength 10,000 lbs. (4,536 kgs.) for one minute
Average Ultimate Mechanical Strength 20,000 lbs. (9,072 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 40</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>18&quot; x 12&quot; x 8&quot;</td>
<td>(457) (305) (203)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>79 lbs. (36 kgs.)</td>
</tr>
</tbody>
</table>
FITTINGS for
"ARMOURLIGHT" TOUGHENED GLASS
DISC TYPE insulators

Ball Ended Eye Link, A.H. Type
CODE No. 3618

Elastic Limit Strength 20,000 lbs. (9,072 kgs.) for one minute
Average Ultimate Mechanical Strength 40,000 lbs. (18,144 kgs.)

Export Packing Specification
Double bags of 30
Size 19" × 8" × 10" (483) (203) (254) m/m m/m m/m
Gross Weight 70 lbs. (32 kgs.)

PILKINGTON BROTHERS LIMITED ST. HELENS LANCs
Shackle
CODE No. 5303 with \( \frac{3}{4} \) (19 m/m) dia. Bolt, Washer, Nut and Locknut
CODE No. 5304/B, C or S with \( \frac{3}{8} \) (19 m/m) dia. Thro' Pin and Split Pin
Elastic Limit Strength 20,000 lbs. (9,072 kgs.) for one minute
Average Ultimate Mechanical Strength 40,000 lbs. (18,144 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 30</th>
<th>Size</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21&quot; × 7&quot; × 11&quot;</td>
<td>88 lbs. (40 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(533) (178) (279) m/m m/m m/m</td>
<td></td>
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Ball Ended Hook
CODE No. 3600
Elastic Limit Strength 20,000 lbs. (9,072 kgs.) for one minute
Average Ultimate Mechanical Strength 32,000 lbs. (14,515 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 35</th>
<th>Size</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>14&quot; × 12&quot; × 12&quot;</td>
<td>83 lbs. (38 kgs.)</td>
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<tr>
<td></td>
<td></td>
<td>(356) (305) (305) m/m m/m m/m</td>
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</tbody>
</table>
FITTINGS for
“ARMOURLIGHT” TOUGHENED GLASS
DISC TYPE insulators

Socket Tongue, A.H. Type
CODE No. 5001 (complete with W Security Clip)

Elastic Limit Strength 20,000 lbs. (9,072 kgs.) for one minute
Average Ultimate Mechanical Strength 37,000 lbs. (16,783 kgs.)

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 20</th>
<th>Size 17&quot; × 8&quot; × 12&quot; (m/m)</th>
<th>Gross weight 81 lbs. (37 kgs.)</th>
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PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
Socket Clevis A.H. Type
CODE No. 5038/B, C or S (complete with W Security Clip)

Elastic Limit Strength 20,000 lbs. (9,072 kgs.) for one minute
Average Ultimate Mechanical Strength 40,000 lbs. (18,144 kgs.)

Export Packing Specification
Double bags of 15
Size 15" x 8" x 11"
Gross weight 79 lbs. (36 kgs.)

<table>
<thead>
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<th>Export Packing</th>
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<td>Specification</td>
<td>Size (m/m m/m m/m)</td>
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<tr>
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<td>15&quot; x 8&quot; x 11&quot;</td>
</tr>
<tr>
<td></td>
<td>(381) (203) (279)</td>
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</table>

Gross weight 79 lbs. (36 kgs.)
FITTINGS for
“ARMOURLIGHT” TOUGHERNED GLASS
DISC TYPE insulators

ARC HORNS

CODE No. 4564 Dimn. A 3½” (89 m/m)
CODE No. 4565 Dimn. A 5” (127 m/m)
CODE No. 4566 Dimn. A 6½” (168 m/m)

Export Packing Specification Code
Nos. 4564/5/6 Double bags of 40

<table>
<thead>
<tr>
<th>Size</th>
<th>Gross weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot; × 10&quot; × 10&quot;</td>
<td>56 lbs.</td>
</tr>
<tr>
<td>(457) m/m</td>
<td>(25 kgs.)</td>
</tr>
<tr>
<td>(254) m/m</td>
<td></td>
</tr>
<tr>
<td>(254) m/m</td>
<td></td>
</tr>
</tbody>
</table>

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
ARC HORNS

CODE No. 4496 Dimn. A 3½" (89 m/m)
CODE No. 4497 Dimn. A 5" (127 m/m)
CODE No. 4498 Dimn. A 6½" (168 m/m)

Export Packing Specification

<table>
<thead>
<tr>
<th>Code</th>
<th>Double bags of 25</th>
<th>Size</th>
<th>Gross weight</th>
</tr>
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<tbody>
<tr>
<td>No. 4496</td>
<td></td>
<td>25&quot; × 9&quot; × 9&quot;</td>
<td>52 lbs. (24 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(635) (229) (229) m/m m/m m/m</td>
<td></td>
</tr>
<tr>
<td>Nos. 4497/8</td>
<td>Double bags of 24</td>
<td>25&quot; × 9&quot; × 9&quot;</td>
<td>52 lbs. (24 kgs.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(635) (229) (229) m/m m/m m/m</td>
<td></td>
</tr>
</tbody>
</table>
FITTINGS for
"ARMOURLIGHT" TOUGHENED GLASS
DISC TYPE insulators

ARC HORNS
CODE No. 4562

Export Packing Specification
Code No. 4562

<table>
<thead>
<tr>
<th>Double bags of 30</th>
<th>Size 18&quot; × 10&quot; × 10&quot; (457) (254) (254) m/m m/m m/m</th>
<th>Gross weight 49 lbs. (22 kgs.)</th>
</tr>
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</table>

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
ARC HORNS
CODE No. 4494

Export Packing Specification
Code No. 4494

<table>
<thead>
<tr>
<th>Double bags 25″ x 11″ x 12″</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (635) (279) (305)</td>
</tr>
<tr>
<td>m/m m/m m/m</td>
</tr>
</tbody>
</table>

Gross weight 52 lbs. (24 kgs.)
FITTINGS for
“ARMOURLIGHT” TOUGHENED GLASS
DISC TYPE insulators

ARC HORNS

For details of fixing bosses, please see page 34
ARC HORNS

Code with $\frac{8}{6} \times \frac{13}{6}$ bolts (16 x 57 m/m) for tongue fitting

<table>
<thead>
<tr>
<th>'A'</th>
<th>Code with $\frac{8}{6} \times \frac{3}{6}$ bolts (16 x 76 m/m) for clevis fitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. m/m</td>
<td>4510</td>
</tr>
<tr>
<td>1 $\frac{3}{8}$ (44)</td>
<td>4520</td>
</tr>
<tr>
<td>5 $\frac{1}{8}$ (140)</td>
<td>4518</td>
</tr>
<tr>
<td>8 (203)</td>
<td>4522</td>
</tr>
<tr>
<td>9 $\frac{1}{8}$ (251)</td>
<td></td>
</tr>
</tbody>
</table>

Forged steel fixing bosses

Butt welded joint

1 $\frac{3}{16}$ m dia. hole

1 $\frac{9}{16}$ m dia. hole

Butt welded joint

1 $\frac{11}{16}$ m dia. hole

1 $\frac{1}{8}$ m dia. hole
## ARC HORNS

### Fittings for "Armourlight" Toughened Glass Disc Type Insulators

<table>
<thead>
<tr>
<th>'A'</th>
<th>Code with $\frac{8}{10}'' \times 2\frac{1}{2}''$ bolt (16 x 57 m/m) for tongue fitting</th>
<th>Code with $\frac{8}{10}'' \times 3''$ bolt (16 x 76 m/m) for clevis fitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. m/m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 (51)</td>
<td>4619</td>
<td>4620</td>
</tr>
<tr>
<td>3 $\frac{1}{2}$ (89)</td>
<td>4609</td>
<td>4610</td>
</tr>
<tr>
<td>5 $\frac{1}{2}$ (140)</td>
<td>4591</td>
<td>4592</td>
</tr>
<tr>
<td>7 $\frac{1}{2}$ (190)</td>
<td>4593</td>
<td>4594</td>
</tr>
<tr>
<td>8 $\frac{1}{2}$ (222)</td>
<td>4595</td>
<td>4596</td>
</tr>
<tr>
<td>10 $\frac{1}{2}$ (273)</td>
<td>4613</td>
<td>4614</td>
</tr>
<tr>
<td>11 (279)</td>
<td>4589</td>
<td>4590</td>
</tr>
<tr>
<td>12 $\frac{1}{2}$ (324)</td>
<td>4597</td>
<td>4598</td>
</tr>
<tr>
<td>14 $\frac{1}{2}$ (362)</td>
<td>4599</td>
<td>4600</td>
</tr>
<tr>
<td>15 (381)</td>
<td>4615</td>
<td>4616</td>
</tr>
<tr>
<td>17 $\frac{1}{2}$ (451)</td>
<td>4601</td>
<td>4602</td>
</tr>
<tr>
<td>18 $\frac{1}{2}$ (464)</td>
<td>4603</td>
<td>4604</td>
</tr>
<tr>
<td>19 $\frac{1}{2}$ (502)</td>
<td>4611</td>
<td>4612</td>
</tr>
<tr>
<td>22 (559)</td>
<td>4623</td>
<td>4624</td>
</tr>
<tr>
<td>23 $\frac{1}{2}$ (591)</td>
<td>4605</td>
<td>4606</td>
</tr>
<tr>
<td>26 $\frac{1}{2}$ (673)</td>
<td>4625</td>
<td>4626</td>
</tr>
<tr>
<td>30 $\frac{1}{2}$ (784)</td>
<td>4632</td>
<td>4633</td>
</tr>
</tbody>
</table>

For details of fixing bosses, please see page 36

PILKINGTON BROTHERS LIMITED ST. HELENS LANCs
ARC HORNs

Forged steel fixing bosses

Code numbers will be issued as and when required
FITTINGS for
"ARMOURLIGHT" TOUGHENED GLASS
DISC TYPE insulators

ARC HORNS

Special Heavy Section Arcing Horn

CODE No. 4607 complete with 3/8" x 2 1/2" (16 x 57 m/m) bolt for tongue fitting
CODE No. 4608 complete with 3/8" x 3" (16 x 76 m/m) bolt for clevis fitting

<table>
<thead>
<tr>
<th>Export Packing Specification</th>
<th>Double bags of 10</th>
<th>Size (787) (229) (229)</th>
<th>Gross weight 80 lbs. (36 kgs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>31&quot; x 9&quot; x 9&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>m/m m/m m/m</td>
<td></td>
</tr>
</tbody>
</table>

PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
Index of Insulator Hardware

Fittings for use with 8,000 and 10,000 lb. Electro-Mechanical Strength Insulators

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type of Fitting</th>
<th>Page No.</th>
</tr>
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<tbody>
<tr>
<td>1053</td>
<td>Terminating Thimble, B.S. 1320</td>
<td>9</td>
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<tr>
<td>1054</td>
<td>Crossarm Eye Link</td>
<td>8</td>
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<tr>
<td>1600</td>
<td>Hook, ball-ended</td>
<td>3</td>
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<tr>
<td>1601</td>
<td>Hook, ball-ended, arc horn type</td>
<td>3</td>
</tr>
<tr>
<td>1604</td>
<td>Hook, insulator</td>
<td>10</td>
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<tr>
<td>1605</td>
<td>Hook, tongue-ended</td>
<td>22</td>
</tr>
<tr>
<td>1606/1607</td>
<td>Hook, tongue-ended, arc horn type</td>
<td>22</td>
</tr>
<tr>
<td>1615</td>
<td>Eye Link, ball-ended</td>
<td>6</td>
</tr>
<tr>
<td>1618</td>
<td>Eye Link, ball-ended, arc horn type</td>
<td>5</td>
</tr>
<tr>
<td>1619</td>
<td>Eye Link, ball-ended, arc horn type (twisted)</td>
<td>6</td>
</tr>
<tr>
<td>1624</td>
<td>Eye Link, tongue-ended</td>
<td>21</td>
</tr>
<tr>
<td>1625</td>
<td>Eye Link, tongue-ended (twisted)</td>
<td>21</td>
</tr>
<tr>
<td>1692/1694</td>
<td>Tongue, ball-ended, arc horn type</td>
<td>5</td>
</tr>
<tr>
<td>4001</td>
<td>Socket Tongue</td>
<td>12</td>
</tr>
<tr>
<td>4003</td>
<td>Socket Tongue, arc horn type</td>
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</tr>
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<td>4009</td>
<td>Socket Tongue, arc horn type</td>
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<td>4011</td>
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</tr>
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<td>4036</td>
<td>Socket Clevis</td>
<td>12</td>
</tr>
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<td>4038</td>
<td>Socket Clevis, arc horn type</td>
<td>12</td>
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<td>4103</td>
<td>Suspension Clamp, hook type</td>
<td>14</td>
</tr>
<tr>
<td>4104/4112</td>
<td>Suspension Clamp, pivoted type</td>
<td>16</td>
</tr>
<tr>
<td>4113</td>
<td>Suspension Clamp, hook type with arcing horn</td>
<td>13</td>
</tr>
<tr>
<td>4114</td>
<td>Suspension Clamp, hook type</td>
<td>14</td>
</tr>
<tr>
<td>4150/4155</td>
<td>Suspension Clamp, cradle type</td>
<td>15</td>
</tr>
<tr>
<td>4200/4201</td>
<td>Strain Clamp, 4-bolt, tongue-ended</td>
<td>19</td>
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<tr>
<td>4203/4204</td>
<td>Strain Clamp, 6-bolt, tongue-ended</td>
<td>20</td>
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<tr>
<td>4210</td>
<td>Strain Clamp, 4-bolt, clevis-ended</td>
<td>19</td>
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<td>Strain Clamp, 6-bolt, clevis-ended</td>
<td>20</td>
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<tr>
<td>4250</td>
<td>Strain Clamp, snail type</td>
<td>17</td>
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<tr>
<td>4252</td>
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[continued overleaf]
### Index of Insulator Hardware [continued]

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type of Fitting</th>
<th>Page No.</th>
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<tbody>
<tr>
<td>4300</td>
<td>Clevis Ball</td>
<td>4</td>
</tr>
<tr>
<td>4301</td>
<td>Clevis Ball, arc horn type</td>
<td>4</td>
</tr>
<tr>
<td>4302</td>
<td>Clevis Tongue (twisted)</td>
<td>23</td>
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<td>4303/4304</td>
<td>Clevis Tongue, arc horn type</td>
<td>24</td>
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<td>4305</td>
<td>Clevis-Clevis (twisted)</td>
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<td>4306/4307</td>
<td>Shackle</td>
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<td>4320/4326</td>
<td>Crossarm Eye Bolt</td>
<td>8</td>
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<tr>
<td>4478/4493</td>
<td>Arc Horn, double point, 12&quot; reach</td>
<td>33</td>
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<td>4494</td>
<td>Arc Horn, cap fixing, 12&quot; reach</td>
<td>32</td>
</tr>
<tr>
<td>4496/4498</td>
<td>Arc Horn, flat type, 12&quot; reach</td>
<td>30</td>
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<td>Arc Horn, double point, 12&quot; reach</td>
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<td>Arc Horn, duplicate type, 12&quot; reach</td>
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<td>4562</td>
<td>Arc Horn, cap fixing, 12&quot; reach</td>
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<td>4564/4566</td>
<td>Arc Horn, flat type, 12&quot; reach</td>
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<td>4580/4586</td>
<td>Arc Horn, screwed end, 12&quot; reach</td>
<td>33</td>
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<td>4589/4606</td>
<td>Arc Horn, double point, 15&quot; reach</td>
<td>35</td>
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<td>Arc Horn, heavy type, 15&quot; reach</td>
<td>37</td>
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<td>4609/4616</td>
<td>Arc Horn, double point, 15&quot; reach</td>
<td>35</td>
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<td>Arc Horn, double point, 15&quot; reach</td>
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<td>Arc Horn, single point, 15&quot; reach</td>
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<td>Arc Horn, single point, 15&quot; reach</td>
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<td>Arc Horn, screwed end, 15&quot; reach</td>
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<td>4700/4701</td>
<td>Crossarm Straps, angle type</td>
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<td>4709</td>
<td>Terminating Strap, B.S. 1320</td>
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<td>Crossarm Straps, channel type</td>
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**Heavy Duty Fittings for use with 20,000 lb. Electro-Mechanical Strength Insulators**

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<th>Type of Fitting</th>
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<tr>
<td>3600</td>
<td>Hook, ball-ended</td>
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<tr>
<td>3618</td>
<td>Eye Link, ball-ended, arc horn type</td>
<td>25</td>
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<tr>
<td>5001</td>
<td>Socket Tongue, arc horn type</td>
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<td>5038</td>
<td>Socket Clevis, arc horn type</td>
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<td>5303/5304</td>
<td>Shackle</td>
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"ARMOURLIGHT"

Toughened Glass

PIN TYPE

Insulators

"ARMOURLIGHT" is the registered trade mark of Pilkington Brothers Limited.
Introduction

IN THIS SECTION will be found technical and physical data for the complete range of "ARMOURLIGHT" toughened glass pin type insulators and pins.

Catalogue Numbers
The catalogue numbers of the different insulators have the following significance:
The last figure denotes the number of separate pieces of glass used in the construction of the insulator, and the remaining figures the wet flashover of the insulator measured in accordance with the procedure laid down in B.S.137. Thus, the type 321 insulator consists of one single glass pressing and has a minimum power frequency wet flashover of 32 kV; type 1053 consists of a three-piece insulator with a minimum power frequency wet flashover of 105 kV.

Mechanical Load
All pin insulators are designed for maximum working loads of 800 lbs., applied at the side groove at right angles to the insulator axis.
The ultimate strength of the insulators exceeds the 2,400 lb. minimum laid down in B.S.137.

Pins
Pins with one type of head only are available, namely, the large steel head detailed in Fig. 16 of B.S.137.
Two strengths of line pins are standard, suitable for maximum working loads of 400 lbs. and 800 lbs. respectively.
The pilot pin is suitable for a maximum working load of 50 lbs.
Line and pilot pins are stocked in the range of stalk and shank sizes as shown on pages 7 and 8 in this section.

Construction
The individual glass parts of multi-piece insulators are cemented together with an aluminous cement. A metal cap in which is formed the top and side grooves is cemented to the head of the insulator, and a copper ferrule threaded to take the pin head is cemented in the bottom of the insulator.
The material of the cap is copper or aluminium, depending on the material of the line conductor.

All cement joints are water cured for a period of 24 hours after assembly. Assembly is jigged throughout to ensure accurate alignment.

Testing

As already described on pages 4 and 5 of the general introduction to the catalogue, every insulator glass is subjected to two thermal tests prior to assembly with the metal fittings. These tests are as follows, and are carried out in the order given:

The first test is a combination of 'upshock' and strain release, the cold glasses being placed into a hot atmosphere to increase momentarily the value of the toughening tension, while at a later stage in the process a small amount of strain is released. This ensures that the value of maximum tension in the glass is within safe limits.

The second test is a 100°C 'downshock', i.e. a heated glass is plunged into a bath of cold water, the temperature difference between the glass and the water at the time of immersion being 100°C. minimum. This test ensures a minimum degree of surface compression, on which the characteristics of the insulator depend.

After proving the quality of the toughening in the glasses in this way, a full range of sample tests is carried out on half of one per cent of the total output to ensure that quality is being maintained.

The sampling is weighted to the extent that the work of every operator is included and the results of sample tests are available while individual operator's work can still be identified.

The sample tests are as laid down in B.S.137 and are as follows:

(a) Temperature cycle test.
(b) Mechanical strength test.
(c) Oil immersed puncture test.

Radio Interference

The fitting of a relatively large metal cap to the head of the insulator prevents electrical stress concentrations to such an extent that the insulator has an exceptionally good radio interference characteristic.

Shattered Strength

The design of "ARMOURLIGHT" toughened glass pin type insulators is such that a mechanical strength in excess of the rated ultimate strength of the sound insulator (2,400 lbs.) is obtained when one or both sheds are shattered in the case of single or two-piece insulators, and any two of the three sheds shattered in the case of three-piece insulators.
“ARMOURLIGHT” TOUGHENED GLASS
PIN TYPE insulators
TYPE 321

B.S. Rating No. 30
Dry Flashover kV 65
Wet Flashover kV 32
Puncture (in oil) kV 95
Puncture (in air) UNPUNCTURABLE
50 per cent Dry Impulse Flashover
Negative Polarity kV peak 133
Positive Polarity kV peak 109
Leakage Distance ins. 7\(\frac{5}{8}\) (194 mms.)
Protected Leakage Distance ins. 3\(\frac{5}{8}\) (92 mms.)
Electrostatic Capacity mmfds. 46
Weight without Pin lbs. 3\(\frac{3}{4}\) (1-8 kgs.)

NOTE:—The 50 cycle dry and wet flashover values are determined in accordance with B.S. 137/41.

STANDARD PACKING

Home 6 in cardboard carton Size ins. 20\(\frac{1}{4}\) × 5 × 14
Gross Weight lbs. 25

Export 48 in 8 cardboard cartons encl. in wooden case Size ins. 32 × 24 × 25
Gross Weight mms. 813 × 610 × 635 lbs. 265
kgs. 120-20
"ARMOURLIGHT" TOUGHENED GLASS

PIN TYPE **insulators**

**TYPE 542**

---

### B.S. Rating No.
- Dry Flashover: kV 50
- Wet Flashover: kV 80
- Puncture (in oil): kV 130
- Puncture (in air): UNPUNCTURABLE

### 50 per cent Dry Impulse Flashover
- Negative Polarity: kV peak 147
- Positive Polarity: kV peak 130

### Leakage Distance
- ins. 12\(\frac{1}{8}\) (308 mms.)

### Protected Leakage Distance
- ins. 6 (152 mms.)

### Electrostatic Capacity
- mmfds. 39

### Weight without Pin
- lbs. 6\(\frac{1}{2}\) (2.95 kgs.)

**NOTE:** The 50 cycle dry and wet flashover values are determined in accordance with B.S. 137/41.

---

### STANDARD PACKING

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<thead>
<tr>
<th><strong>Home</strong></th>
<th><strong>Export</strong></th>
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<tr>
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<td><strong>Size</strong></td>
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<td>lbs. 420</td>
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<td>kgs. 190-51</td>
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B.S. Rating No. 90
Dry Flashover kV 140
Wet Flashover kV 105
Puncture (in oil) kV 200
Puncture (in air) UNPUNCTURABLE
50 per cent Dry Impulse Flashover
   Negative Polarity kV peak 255
   Positive Polarity kV peak 204
Leakage Distance ins. 28 1/2 (730 mms.)
Protected Leakage Distance ins. 14 1/2 (368 mms.)
Electrostatic Capacity mmf ds. 38
Weight without Pin lbs. 23 (10-43 kgs.)

NOTE:—The 50 cycle dry and wet flashover values are determined in accordance with B.S. 137/41.

STANDARD PACKING

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<tr>
<th>Type</th>
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<td>lbs. 63</td>
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PILKINGTON BROTHERS LIMITED ST. HELENS LANCS
"ARMOURLIGHT" TOUGHENED GLASS

PIN TYPE insulators

TYPE 742

B.S. Rating No. 70
Dry Flashover kV 100
Wet Flashover kV 74
Puncture (in oil) kV 170
Puncture (in air) UNPUNCTURABLE

50 per cent Dry Impulse Flashover
  Negative Polarity kV peak 162
  Positive Polarity kV peak 152
Leakage Distance ins. 18½ (470 mms.)
Protected Leakage Distance ins. 9 (229 mms.)
Electrostatic Capacity mmfds. 42
Weight without Pin lbs. 9 (4·08 kgs.)

NOTE:—The 50 cycle dry and wet flashover values are determined in accordance with B.S. 137/41.

STANDARD PACKING

Home 4 in wooden case
  Gross Weight
  Size ins. 35½×12×12
  lbs. 47

Export 4 in wooden case
  Gross Weight
  Size ins. 35½×12×12
  mms. 902×305×305
  lbs. 47
  kgs. 21·32
Pins for "ARMOURLIGHT" TOUGHENED GLASS PIN TYPE insulators
WITH B.S. LARGE STEEL HEAD

RANGE OF STANDARD SIZES AVAILABLE

400 LBS. | 800 LBS.

For Insulators Type 321. A = 6\(\frac{1}{2}\)" — B.S. 137
Figure 21 Ref. Nos. 26 and 27

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For Insulators Type 542. A = 9" — B.S. 137
Figure 21 Ref. Nos. 28 and 29

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For Insulators Type 742 and 1053. A = 12" — B.S. 137
Figure 21 Ref. Nos. 30 and 31

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PILOT PIN B.S. 137 Fig. 25 Ref. No. 45

_CODE 599

[For metric sizes see overleaf]
Pins for
"ARMOURLIGHT" TOUGHENED GLASS
PIN TYPE insulators
WITH B.S. LARGE STEEL HEAD

RANGE OF STANDARD SIZES AVAILABLE

181 KGS.

For Insulators Type 321. A = 165 mms.—B.S. 137
Figure 21 Ref. Nos. 26 and 27

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363 KGS.

For Insulators Type 342. A = 229 mms.—B.S. 137
Figure 21 Ref. Nos. 28 and 29

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FLATS to suit spanner

For Insulators Type 742 and 1053. A = 305 mms.—B.S. 137
Figure 21 Ref. Nos. 30 and 31

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181 KG. and 363 KG. PINS

Threaded in accordance with B.S. 137 Figure 16

PILOT PIN B.S. 137 Fig. 25 Ref. No. 45

Threaded in accordance with B.S. 137 Figure 16

British Standard Whitworth Thread

406 m CODE 599

152 m