

**Egatube  
Conduit and Fittings**

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**Egatube® Conduit and Fittings**

PRODUCT RANGE	
<b>Oval section conduit</b>	<b>List No.</b>
13mm	EOC/1
16mm	EOC/2
20mm	EOC/3
25mm	EOC/4
25mm spec	EOC/5
Oval conduit is supplied in 3 metre lengths as standard	
<b>Component range</b>	
<b>Oval section conduit</b>	<b>List No.†</b>
Couplings	CO/
Oval to round adaptors	OA/
Bellmouth bushes	BOB/
Saddles	OS/
External spring clips, oval	XC/
Normal bends, forward	OFB/
Normal bends, side	OSB/
<b>Flexible conduit*</b>	
16mm	EF/1
20mm	EF/2
25mm	EF/3
32mm	EF/4
Nylon adaptors	FAB/†
Rectangular channelling	REC/†
† Please note that only part of the list no. is shown here. The three letters denote component type, for digits to denote component size, please refer to MK catalogue.	
* Flexible conduit is supplied in 50 metre coils.	

PRODUCT RANGE			
<b>Round section conduit</b>	<b>List Nos.</b>		
	<b>Super high impact conduit heavy gauge (black or white)</b>	<b>Super high impact conduit light gauge (white)</b>	<b>High impact conduit heavy gauge (black)</b>
16mm	HIP/1	HLG/1	ESP/1
20mm	HIP/2	HLG/2	ESP/2
25mm	HIP/3	HLG/3	ESP/3
32mm	HIP/4	HLG/4	ESP/4
38mm	HIP/5 BLK	HLG/5	ESP/5
50mm	HIP/6 BLK	HLG/6	ESP/6
Round conduit is supplied in 3 metre lengths as standard			

**Components**

The full range of components with list nos. and sizes is set out in the MK Catalogue. Below is a list of available components by name only.

- |                           |                            |
|---------------------------|----------------------------|
| Bending springs           | Spacer bar saddles         |
| Bell mouth bushes/sleeves | Lockrings                  |
| Heavy gauge couplings     | Spring clip saddles        |
| Male/female bushes        | Quickfit inspection elbows |
| Expansion couplings       | Inspection elbows          |
| Plugs                     | Quickfit inspection tees   |
| Inspection couplings      | Inspection tees            |
| Locknuts                  | Conduit clips              |
| Strap saddles             | Adaptors                   |
| Reducers                  | Normal bends               |
| Quickfit spacer saddles   | Compression glands         |



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### Boxes and accessories

The full range of components with list nos is set out in the MK Catalogue. Below is a list of available boxes and accessories by name only.

<i>Circular</i>	<i>Conduit boxes</i>
Circular boxes	Square junction boxes
Terminal boxes	Adaptable boxes
Through boxes	Circular lids and gaskets
Branch boxes	Earth electrode box
Angle boxes	
Tee boxes	<i>Accessories</i>
Intersection boxes	Extension rings
Tangent boxes	Pendant dome cover
Heat resistant boxes	Steel insert clip
	Earthing ring
	Brass earthing terminals
	Egaweld glues
	Egasnip cutter
	Nylon draw tape

### Switch and socket boxes

A wide range is available in various depths with a variety of knockout positions, see table on page 6:6.

### Standards and approvals

Flexible conduit is manufactured in accordance with BS 4607: Part 3.

Oval section conduit is manufactured in accordance with BS 4607: Part 5.

Round section conduit is manufactured in accordance with BS 4607 and BS 6099.

Switch and socket boxes comply with BS 4662 'Boxes for the enclosure of electrical accessories', and BS 1363 and where applicable BS 4678: Part 4, 'Cable trunking made of insulating material'.

All products are designed and manufactured to allow installation to comply with BS7671 - IEE Wiring Regulations.

### Description

Egatube high impact PVC-U conduit offers a cost effective solution for both new and refurbishment contracts.

The conduit is available in oval sections (5 sizes), in 3 grades of round section (6 sizes of each) and as a flexible corrugated version (4 sizes).

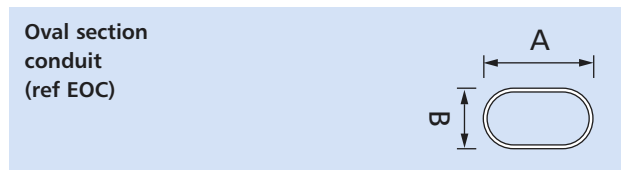
The wide range of fittings and ancillary products means that almost any installation can be specified for with confidence.

Egatube conduits are light in weight, the smaller sizes can be bent cold and they can easily be cut using a hacksaw or Egasnips. This means that installation can be 50% quicker than using steel. Repairs and alterations are also simpler and quicker to make.

### Features

- Wide range of sections and sizes
- Oval, round and corrugated sections are compatible
- Simple and fast installation
- Very wide range of components maximises versatility of application
- Very durable and impact resistant
- 3 grades of round conduit to suit various site conditions

### Dimensions



Oval conduit is mainly used for switch drops and general domestic installations in both buried and surface installations. Manufactured in accordance with requirements of BS 4607 Part 5.

List. No.	Size mm		Wall thickness mm	Weight kg/m	Cross section area mm <sup>2</sup>
	A	B			
EOC/1	13	8	0.9	0.036	60
EOC/2	16	10	0.9	0.049	103
EOC/3	22.5	11	0.9	0.084	172
EOC/4	29	11	1.0	0.097	225
EOC/5	29	16	1.0	0.125	336

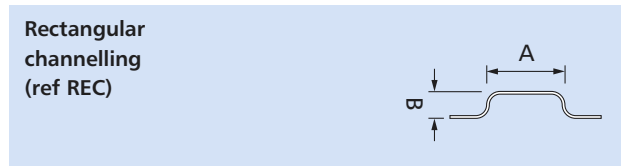
Standard length 3 metres.

### Flexible conduit (ref EF)

Suitable for connection of vibrating equipment or to provide tight bends for interconnecting conduits. Can be surface mounted or cast in concrete and can be used with standard conduit fittings. Manufactured in accordance with BS 4607, Part 3.

List. No.	Diameter mm	Weight kg/m	Cross section area mm <sup>2</sup>
EF/1	16	0.05	107
EF/2	20	0.064	189
EF/3	25	0.094	308
EF/4	32	0.125	547

Standard lengths 50 metre coils.



Used for switch drops and general domestic installations mainly in carcass situations. Manufactured in accordance with requirements of BS 4607, Part 5.

List. No.	Size mm		Wall thickness mm	Weight kg/m
	A	B		
REC/1	12.5	8	0.9	0.047
REC/2	25	8	0.9	0.051
REC/3	38	9.5	0.9	0.069

Standard length 2 metres.



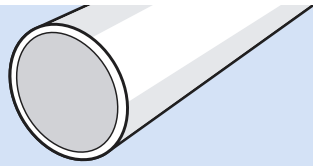
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**Dimensions cont'd**

**Round section heavy gauge super high impact conduit (ref. HIP)**



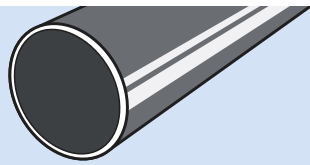
This is acknowledged to be the finest PVC-U conduit available and is designed to withstand the most arduous site conditions and extremes of weather.

Temperature range -25°C to +60°C. Complies with BS 6099 Section 2.2 Heavy Mechanical Stress, BS 4607: Part 1: Type B.

List. No.	Outside diameter mm	Wall thickness mm	Weight kg/m	Cross section area mm <sup>2</sup>
HIP/1	16	1.7	0.102	121
HIP/2	20	1.8	0.150	209
HIP/3	25	1.9	0.205	350
HIP/4	32	2.5	0.322	573
HIP/5	38	2.5	0.394	859
HIP/6	50	3.1	0.684	1506

Standard lengths 3 metres

**Round section light gauge super high impact conduit (ref. HLG)**



Suitable for applications where heavy compressive strength is not required. The high impact characteristic combined with the lighter gauge provides excellent physical properties for flush and surface applications.

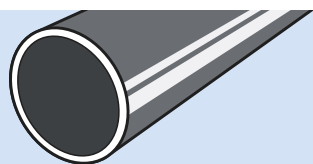
Temperature range -25°C to +60°C.

Complies with BS 6099 Section 2.2 Medium Mechanical Stress. BS 4607 Type B.

List. No.	Outside diameter mm	Wall thickness mm	Weight kg/m	Cross section area mm <sup>2</sup>
HLG/1	16	1.1	0.076	143
HLG/2	20	1.3	0.102	237
HLG/3	25	1.5	0.170	376
HLG/4	32	1.5	0.214	654
HLG/5	38	1.5	0.259	954
HLG/6	50	1.9	0.417	1676

Standard lengths 3 metres

**Round section heavy gauge high impact conduit (ref. ESP)**



For typical conduit installations this provides a high degree of protection, but does not achieve the low temperature workability of super high impact conduit. Temperature range -5°C to + 60°C.

Complies with BS 6099 Section 2.2 Medium Mechanical Stress, BS 4607 Type A.

List. No.	Outside diameter mm	Wall thickness mm	Weight kg/m	Cross section area mm <sup>2</sup>
ESP/1	16	1.7	0.102	121
ESP/2	20	1.8	0.150	209
ESP/3	25	1.9	0.205	350
ESP/4	32	2.5	0.322	573
ESP/5	38	2.5	0.394	859
ESP/6	50	3.1	0.684	1506

Standard lengths 3 metres.

**Cable capacities of conduit**

**From Appendix A of the BS7671 (16th Edition of the I.E.E. Wiring Regulations) Selection and Erection of Equipment Guidance Note 1**

This appendix describes a method which can be used to determine the size of conduit or trunking necessary to accommodate cables of the same size, or differing sizes, and provides a means of compliance with Regulation 522-08.

The number of cables drawn into or laid in an enclosure of a wiring system shall be such that no damage is caused to the cables or to the enclosure during their installation.

The method employs a unit system, each cable size being allocated a factor. The sum of all factors for the cables intended to be run in the same enclosure is compared against the factors given for conduit in order to determine the size of the conduit necessary to accommodate those cables.

**Types of run**

It has been found necessary, for conduit, to distinguish between:-

1. *Straight runs not exceeding 3 metres in length, and*
2. *Straight runs exceeding 3 metres, or runs of any length incorporating bends or sets*

The term "bend" signifies a British Standard 90° bend, and one double set is equivalent to one bend.

For case 1, each conduit size is represented by only one factor. For case 2, each conduit size has a variable factor which is dependent on the length of run and the number of bends or sets. For a particular size of cable the factor allocated to it for case 1 is not the same as for case 2.

**Variable factors**

A number of variable factors affect any attempt to arrive at a standard method of assessing the capacity of conduit.

Some of these are:

- reasonable care (of drawing-in)
- acceptable use of the space available
- tolerance in cable sizes
- tolerance in conduit



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The following tables can only give guidance as to the maximum number of cables which should be drawn in. The sizes should ensure an easy pull with low risk of damage to the cables.

Only the ease of drawing-in is taken into account. The electrical effects of grouping is not. As the number of circuits increases the current carrying capacity of the cable decreases. Cable sizes have to be increased with consequent increase in cost of cable and conduit.

**Single-core PVC insulated cables in straight runs of conduit not exceeding 3 metres in length.**

- For each cable it is intended to use, obtain the term from Table A1.
- Add the cable terms together and compare the total with the conduit terms given in Table A2.
- The conduit size which will satisfactorily accommodate the cables is that size having a factor equal to or exceeding the sum of the cable factors

**Single-core PVC insulated cables in straight runs of conduit exceeding 3 metres in length or in runs of any length incorporating bends or sets**

- For each cable it is intended to use, obtain the appropriate terms from Table A3.
- Add all the cable terms so obtained and compare with the conduit terms given in Table A4, taking into account the length of run it is intended to use and the number of bends and sets in that run.
- The conduit size which will satisfactorily accommodate the cables is that size having a terms equal to or exceeding the sum of the cable terms.

**Table A1**

Cable terms for short straight runs		
Type of conductor	Conductor cross-sectional area (mm <sup>2</sup> )	Term
Solid	1	22
	1.5	27
	2.5	39
Stranded	1.5	31
	2.5	43
	4	58
	6	88
	10	146
	16	202
	25	385

**Table A2**

Conduit terms for short straight runs	
Conduit dia mm	Term
16	290
20	460
25	800
32	1400
38	1900
50	3500

**Table A3**

Conduit terms for long straight runs, or runs incorporate bends		
Solid or stranded conductor	Conductor cross-sectional area mm <sup>2</sup>	Term
	1	16
	1.5	22
	2.5	30
	4	43
	6	58
	10	105
	16	145
	25	217

**Table A4**

**Conduit terms for long straight runs, or runs incorporating bends**

Length of run m	Conduit dia mm																			
	16				20				25				32							
	Straight				One bend				Two bends				Three bends				Four bends			
1					188	303	543	947	177	286	514	900	158	256	463	818	130	213	388	692
1.5	Covered by Tables A1 and A2				182	294	528	923	167	270	487	857	143	233	422	750	111	182	333	600
2					177	286	514	900	158	256	463	818	130	213	388	692	97	159	292	529
2.5					171	278	500	878	150	244	442	783	120	196	358	643	86	141	260	474
3					167	270	487	857	143	233	422	750	111	182	333	600				
3.5	179	290	521	911	162	263	475	837	136	222	404	720	103	169	311	563				
4	177	286	514	900	158	256	463	818	130	213	388	692	97	159	292	529				
4.5	174	282	507	889	154	250	452	800	125	204	373	667	91	149	275	500				
5	171	278	500	878	150	244	442	783	120	196	358	643	86	141	260	474				
6	167	270	487	857	143	233	422	750	111	182	333	600								
7	162	263	475	837	136	222	404	720	103	169	311	563								
8	158	256	463	818	130	213	388	692	97	159	292	529								
9	154	250	452	800	125	204	373	667	91	149	275	500								
10	150	244	442	783	120	196	358	643	86	141	260	474								

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#### Fixing

Egatube round conduit is fixed in the normal way with saddles or clips. (Various types of saddles are available, see MK Catalogue). The distance between saddles should not exceed 1.25 metres, or less in hot temperatures. It is recommended that all boxes be fixed first wherever practicable, using the two fixing holes provided in circular boxes. Lines may then be struck for the saddle run and the saddles should be fixed 225mm on either side of bend or boxes. The tubing may then be 'sprung' into the box spouts. It will be noted that the saddles are designed to be a sliding fit on the conduit and it is important to see that all fixings should be sliding fits (see Expansion).

#### Expansion

A rise in temperature of 25°C would cause an increase of 5mm in a 3 metre length of conduit. This may be ignored in flush work where the tube is bonded to the concrete or plaster.

In surface work, however, precautions must be taken or expansion will cause the tube to bow, although where bends and sets are close together these take up any expansion. Where long straight runs occur in conditions of varying temperatures, care must be taken to overcome problems by using expansion couplers. These are couplers of double normal length with a shoulder formed 19mm from one end. Conduit is secured into this end of about 75mm long which is a sliding fit over the other conduit. The other conduit is inserted about 50mm into the coupler leaving it free to move 25mm in either direction, which is ample for even the greatest extremes of temperature. For straight runs it is advisable to use an expansion coupling every 6 metres.

#### Adhesives

##### Egaweld No. 1

A vinyl solvent adhesive used for making watertight joints with push on fittings.

##### Egaweld No. 2

An adhesive that remains flexible although providing water resistant joints. It is ideal for expansion couplings or where an installation may have to be altered

##### Egaweld No. 3

A Thixotropic liquid used mainly as a trunking adhesive.

A statement regarding COSHH regulations is available please contact MK Technical Sales and Services Dept.

#### Light fittings

When considering the use of totally enclosed lighting fittings, remember that the BS7671 (I.E.E. Wiring Regulations) restrict the use of PVC-U boxes to loads of 3 kg and a temperature of 60°C. When conditions in excess of these figures are anticipated, the use of either the heat resistant boxes or conduit boxes suffixed 'EL' are recommended.

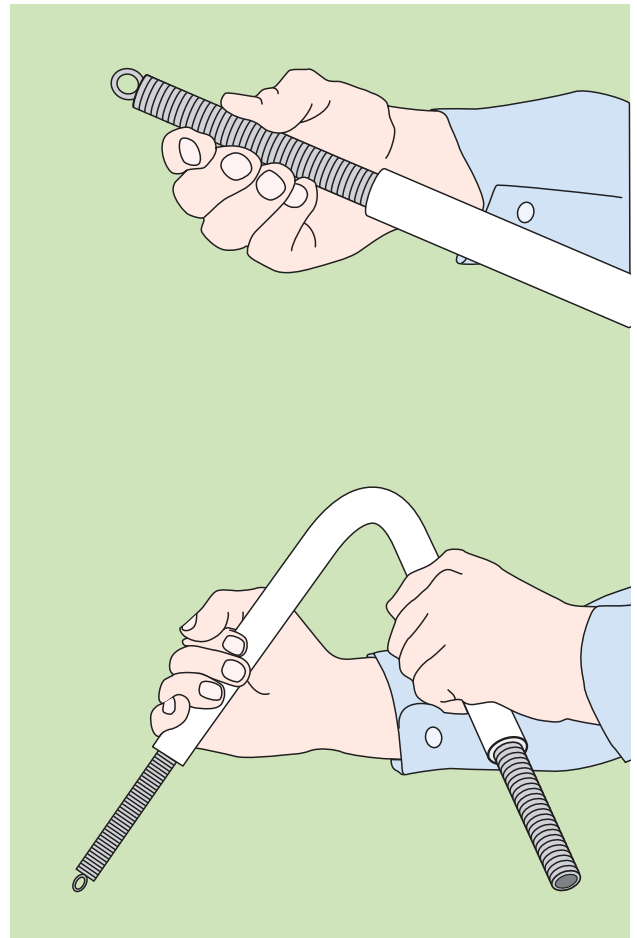
The "EL" conduit boxes will support a load of up to 10 kgs at 60°C.

#### Fittings

A wide range of fittings are available, see MK Catalogue for details.

#### Bending

To bend circular conduit, insert the appropriate spring. The spring has an "eye" formed on one end, to which a cord should be attached in order to withdraw the spring. The bend is then made by hand or across the knee, twice the angle required should be bent and the tube then allowed to ease back to the desired position. Do not attempt to force the bend back with the spring inserted, as this action will damage the spring. When withdrawing the spring it is suggested that it be twisted in an anti-clockwise direction thus reducing the diameter of the spring and providing easy withdrawal. It is important to use the correct size spring. In cold weather it may be necessary to warm the tube slightly at the point where the bend is to be made. Always saddle the tubing as quickly as possible after bending.





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**Boxes**

This table breaks down box specifications showing gang, entry points, cut outs and corner types.

List No.	Mounting	Gang	Entry Type			Cut-Outs in back	Corner
			Rectangular	Round	Oval		
ESU/6/1	flush	1	-	-	DI	1	-
ESU/8/1	flush	1	-	ABCEFGHJ	-	-	-
ESU/8/ML	flush	1	-	ABCEFGHJ	-	1	-
ESU/8/S/ML	flush	2	-	ABCEFGHJ	I	2	-
ESU/9/2ML	flush	2	-	BCDEGHJ	I	2	-
ESU/9/ML	flush	1	-	BCEGHJ	-	1	-
ESU/24/1	surface	1	I	D	-	2	round
ESU/24/2	surface	2	AFI	D	-	2	round
ESU/26/1	surface	1	-	D	-	1	square
ESU/26/2	surface	2	-	D	-	-	square
ESU/28/1	surface	1	-	I	-	1	square
ESU/28/2	surface	2	I	D	-	1	square

