PVC Conduit & Fittings

Versatile applications from housing to heavy industry
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**PRODUCT FEATURES**

**Corrugated Conduit**
- Designed to BS 4607
- Available in Grey
- Impact resistant UV stabilised PVC
- Reduces installation time
- Capable of being tightly coiled without damage
- Minimum bending radius - 1.5 times diameter

**Rigid PVC Conduit**
- Designed to IEC 61386
- Gluing capabilities for permanent joints
- Impact resistant UV stabilised PVC
- Available in Black, White & Grey
- ROHS compliance to 2002/95/EC (Lead free product)

**Round Junction Boxes**
- Designed to BS 4607
- Impact resistant UV stabilised PVC
- Dimensions:
  - Outside dia 66mm
  - Depth 32mm
  - Lid Fixing centres 50mm x M4
- Provision for brass earth terminal

**Conduit Fittings**
- Designed to BS 4607 where relevant
- Impact resistant UV stabilised PVC
- Available in Black, White & Grey
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**Corrugated Conduit**
- 9020CLM
  - 20mm light duty, Grey
  - 50 metre coil lengths, Grey

- 9025CLM
  - 25mm light duty, Grey
  - 50 metre coil lengths, Grey

**Rigid PVC Conduit**
- 9020 LD (Light Duty)
  - Size: 20mm
  - Wall Thickness: 1.2mm
- 9020 MD (Medium Duty)
  - Size: 20mm
  - Wall Thickness: 1.6mm
- 9020 HD (Heavy Duty)
  - Size: 20mm
  - Wall Thickness: 1.8mm
- 9025 LD (Light Duty)
  - Size: 25mm
  - Wall Thickness: 1.4mm
- 9025 MD (Medium Duty)
  - Size: 25mm
  - Wall Thickness: 1.8mm
- 9025 HD (Heavy Duty)
  - Size: 25mm
  - Wall Thickness: 1.9mm

**Round Junction Boxes**
- 9032 LD (Light Duty)
  - Size: 32mm
  - Wall Thickness: 1.5mm
- 9032 MD (Medium Duty)
  - Size: 32mm
  - Wall Thickness: 2.1mm
- 9032 HD (Heavy Duty)
  - Size: 32mm
  - Wall Thickness: 2.5mm

**Conduit Fittings**
- 9038 LD (Light Duty)
  - Size: 38mm
  - Wall Thickness: 1.5mm
- 9038 MD (Medium Duty)
  - Size: 38mm
  - Wall Thickness: 2.2mm
- 9038 HD (Heavy Duty)
  - Size: 38mm
  - Wall Thickness: 2.5mm

**Fittings**
- E240/20/1
  - 1way
- E240/20/2
  - 2way through
- E240/20/2A
  - 2way angle
- E240/20/3
  - 3way - Tee
- E240/20/4
  - 4way
- Extension Ring
  - E240/20/L
    - 4 back knockouts 20mm (Loop-in-box)
  - E240/25/L
    - 4 back knockouts 25mm (Loop-in-box)

*Available in 2.90 meter length*
25mm Junction Boxes

- E240/25/1: 1way
- E240/25/2: 2way through
- E240/25/2A: 2way angle
- E240/25/3: 3way – Tee
- E240/25/4: 4 way

- E240/25/U: 2way “U” Type
- E240/25/Y: 3way “Y” Type
- E240/25/H: 4way “H” Type

20mm Deep Junction Boxes

- E240/20/1D: 1way
- E240/20/2D: 2way through
- E240/20/2AD: 2way angle
- E240/20/3D: 3way
- E240/20/4D: 4 way

Depth: 66mm
**25mm Deep Junction Boxes**

- E240/25/1D: 1way
- E240/25/2D: 2way through
- E240/25/2AD: 2way angle

**Junction Box Lids**

- E240L-BK: Lid: Round Black
- E240L - WE: Lid: Round White
- E240L SQ-WE: Lid: Square 3"x3" White
- E240L RL-WE: Lid: Rectangular White

**Female Adaptors**

- E258/20: 20mm plain, 20mm Female Adaptors
- E258/25: 25mm plain 20mm Female Adaptors
- E258/32: 32mm plain 20mm Female Adaptors
- E258/38: 38mm plain 20mm Female Adaptors
- E258/50: 50mm plain, 20mm Female Adaptors

Depth: 66mm
Plain Couplings

- E242/20
  - 20mm
- E242/25
  - 25mm
- E242/32
  - 32mm
- E242/38
  - 38mm
- E242/50
  - 50mm

Expansion Couplings

- E251/20
  - 20mm
- E251/25
  - 25mm
- E251/32
  - 32mm
- E251/38
  - 38mm
- E251/50
  - 50mm

Bends

- E247/20
  - 20mm
- E247/25
  - 25mm
- E247/32
  - 32mm
- E247/38
  - 38mm
- E247/50
  - 50mm

Conduit Mounting Accessories

- E261S20A
  - 20mm saddle and spacer
- E261S25A
  - 25mm saddle and spacer
- E261S32A
  - 32mm saddle and spacer
- E261S38A
  - 38mm saddle and spacer
- E261S50A
  - 50mm saddle and spacer

Designed to BS 4607
Adaptable Boxes

- **E265/2D**
  - 100mm x 100mm x 75mm

- **E265/3D**
  - 150mm x 150mm x 75mm

- **E265/4**
  - 225mm x 225mm x 75mm

Bending Springs

- **266HD20**
  - 20mm heavy duty

- **266HD25**
  - 25mm heavy duty

- **266HD32**
  - 32mm heavy duty

PVC Jointing Cement

- **240/250/CL**
  - 250ml Bottle with brush

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Designed to BS 4667
Rigid PVC Conduits

Clipsal Rigid PVC Conduits are designed and manufactured in accordance with BS EN 50086/IEC 61386 standard requirements.

Please note that while every care has been taken in their compilation, individual authorities, organizations or persons for “derating” or other reasons may prefer to use data, interpretations or criteria different from those used to prepare these tables.

Accordingly, neither Clipsal nor any of its subsidiaries or associated companies give any warranties, express or implied as their correctness or accuracy. Nor shall they accept any responsibilities whatsoever for any errors, omissions, imperfections or inaccuracies which may be contained herein and no compensation shall be paid in respect thereof.

If you have any queries contact your nearest Clipsal office.

Dimensions

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>15 LD</th>
<th>20 LD</th>
<th>20 MD</th>
<th>20 HD</th>
<th>25 LD</th>
<th>25 MD</th>
<th>25 HD</th>
<th>35 LD</th>
<th>35 MD</th>
<th>35 HD</th>
<th>50 LD</th>
<th>50 MD</th>
<th>50 HD</th>
<th>75 LD</th>
<th>75 MD</th>
<th>75 HD</th>
<th>100 LD</th>
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<th>100 HD</th>
<th>125 LD</th>
<th>125 MD</th>
<th>125 HD</th>
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<tbody>
<tr>
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<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
<td>±0.15</td>
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</tr>
<tr>
<td>Wall Thickness</td>
<td>1.10</td>
<td>1.20</td>
<td>1.30</td>
<td>1.40</td>
<td>1.50</td>
<td>1.60</td>
<td>1.70</td>
<td>1.80</td>
<td>1.90</td>
<td>2.00</td>
<td>2.10</td>
<td>2.20</td>
<td>2.30</td>
<td>2.40</td>
<td>2.50</td>
<td>2.60</td>
<td>2.70</td>
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<td>2.90</td>
<td>3.00</td>
<td>3.10</td>
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<tr>
<td>Basic Bore</td>
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<td>17.6</td>
<td>16.8</td>
<td>16.4</td>
<td>22.2</td>
<td>21.4</td>
<td>21.2</td>
<td>20.0</td>
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<td>25.5</td>
<td>25.0</td>
<td>24.5</td>
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<tr>
<td>Minimum Bore</td>
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<td>17.15</td>
<td>16.35</td>
<td>15.95</td>
<td>21.75</td>
<td>20.95</td>
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<td>25.00</td>
<td>25.00</td>
<td>25.00</td>
<td>25.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Min. Bore Area | 159.4 | 251 | 209.8 | 199.7 | 371.4 | 344.8 | 330.0 | 309.9 | 507.2 | 553.3 | 527.1 | 662.7 | 581.7 | 643.1 | 1551.0 | 1461.6 | All dimensions in mm
Cable Capacities Of Conduit And Trunking

Introduction:

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, which states “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 or trunking, as appropriate, in order to determine the size of the conduit or trunking necessary to accommodate those cables.

It has been found necessary, for conduit, to distinguish between
1. Straight runs not exceeding 3metres in length, and
2. Straight runs exceeding 3 metres, or runs of any length incorporating bends or sets.

The term ‘Bend’ signifies a standard 90° bend, and one double set is equivalent to one bend. For the case 1, each conduit size is represented by only one factor. For the 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 for case 2. For trunking each size of cable has been allocated a factor, as has been each size of trunking.

Because of certain aspects, such as the assessment of reasonable care of pulling-in, acceptable utilization of the space available and the dimensional tolerance of cables, conduit and trunking, any method of standardizing the cable capacities of such enclosures can only give guidance on the number of cables which can be accommodated. Thus the sizes of conduit or trunking determined by the method given in this appendix are those which can be reasonably expected to accommodate the desired number of cables in a particular run using an acceptable pulling force and with the minimum probability of damage to cable insulation. Only mechanical considerations have been taken into account in determining the factors given in the following tables. As the number of circuits in a conduit or trunking increases, the current-carrying capacities of the cables must be reduced accordingly. It may therefore be more attractive economically to divide the circuits concerned between two or more enclosures.

This appendix deals with the following four cases:
Single-core P.V.C. insulated cables in straight runs of conduit not exceeding 3m in length.
Single-core P.V.C. insulated cables in straight runs of conduit exceeding 3m in length incorporating bends or sets.
Single-core P.V.C. insulated cables in trunking.
Other sizes and types of cable in trunking.

For other cables and/or conduits not covered by the tables, advice on the number of cables which can be accommodated should be obtained from the manufacturers.

### TABLE 12A

<table>
<thead>
<tr>
<th>Type of conductor</th>
<th>Conductor cross-sectional area mm²</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solided</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>39</td>
</tr>
<tr>
<td>Stranded</td>
<td>1.5</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>43</td>
</tr>
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<td>88</td>
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<td>10</td>
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### TABLE 12B

<table>
<thead>
<tr>
<th>Length of run, m</th>
<th>16</th>
<th>20</th>
<th>25</th>
<th>32</th>
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</thead>
<tbody>
<tr>
<td>Conduit diam, mm</td>
<td>181</td>
<td>201</td>
<td>221</td>
<td>245</td>
</tr>
<tr>
<td>Factor</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
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### TABLE 12C

<table>
<thead>
<tr>
<th>Type of conductor</th>
<th>Conductor cross-sectional area mm²</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solided</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>30</td>
</tr>
<tr>
<td>Stranded</td>
<td>1.5</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>15</td>
</tr>
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<td></td>
<td>4</td>
<td>5</td>
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<td>105</td>
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### TABLE 12D

<table>
<thead>
<tr>
<th>Length of run, m</th>
<th>16</th>
<th>20</th>
<th>25</th>
<th>32</th>
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</thead>
<tbody>
<tr>
<td>Conduit diam, mm</td>
<td>181</td>
<td>201</td>
<td>221</td>
<td>245</td>
</tr>
<tr>
<td>Factor</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
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</table>

### Table 12E

<table>
<thead>
<tr>
<th>Type of conductor</th>
<th>Conductor cross-sectional area mm²</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solided</td>
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<td>Stranded</td>
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<td>8.1</td>
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<td>2.5</td>
<td>11.4</td>
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<tr>
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<td>15.2</td>
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### Table 12F

<table>
<thead>
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<th>Dim. of trunking mm</th>
<th>Conduit factors for trunking</th>
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<tr>
<td>100x100</td>
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<td>100x75</td>
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<td>75x75</td>
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</table>

### Table 12G

<table>
<thead>
<tr>
<th>Conduit diam, mm</th>
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<th>201</th>
<th>221</th>
<th>245</th>
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</thead>
<tbody>
<tr>
<td>Factor</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
<td>0.97</td>
</tr>
</tbody>
</table>
CHEMICAL RESISTANCE OF PVC-U, PE, PP, PC, PA and PPE/PPO

Mechanical stress and temperature
Mechanical stress can be minimized at the installation, taking care that the system is being installed as stress-free as possible, e.g. using large bending radii, leaving space for thermal expansion at the joints and taking care that fixings are not fastened too firmly. Using insulating systems at higher temperatures, the thermal expansion must be taken into account to avoid later stresses on the installed system by using expansion joints and allowing gliding within the fixings. At higher temperatures it must be considered that especially in sealed closed systems, temperatures may occur exceeding the surrounding temperatures. This can be due to additional heat through the cables or heat radiation (sunlight), the following survey gives general information about possible incompatibilities occurring during installation or use.

Chemical resistance of PVC systems
PVC offers excellent resistance against most chemicals used in the building industry. Care shall be taken with chemicals like carbon tetrachloride, acetone, chlorinated hydrocarbons and benzene.

FIRE BEHAVIOUR
CLIPSAL Conduits designed for indoor use are basically self-extinguishing and non-flame-propagating. Moreover, there are some other aspects that need to be considered in case of fire.

A very important point is the density (opacity) of the released smoke in safety areas (e.g. emergency exits). It is not only important how much smoke is released; more important is how rapidly the smoke is released. The slower the smoke density increases, the longer a safe getaway is available.

The plot shown below illustrates the smoke release of Clipsal Conduit Systems according to ASTM E-662. This test is performed in a standardized closed chamber where the emitted smoke is collected for a period of 20 minutes. The values of the smoke density are taken every minute.

All given values refer to standard test samples under standardized laboratory conditions. Design and specifications subject to change without notice.
CHEMICAL RESISTANCE OF PVC-U

The resistance against chemical attack basically on the mechanical stress of the plastic part, the time of exposure, the temperature and the concentration of the media. In view of the various environmental conditions laboratory tests under standard conditions are only of limited value for practical use. Under critical conditions tests should be made according to actual conditions to be stated by the user.

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