Site Readiness Guide

Commercial and Industrial Load above 100A
About this guide

The purpose of this guide is to help you understand what you require to have in place to allow us to complete your network connection as smoothly and quickly as possible.

Find this guide online at: www.ssen.co.uk/Connections/Developers/

Useful contacts

www.ssen.co.uk/connections
0800 048 3516
connections@sse.com

In an emergency situation call 105 immediately for help

Your SSEN Connections Project Manager

Name

Mobile

E-mail
Your to do list

☐ Register your postal addresses

Please register your postal addresses (if a new build) with the Royal Mail or local authority. Once your addresses are registered we will issue your Meter Point Administration Number(s) (MPAN).

☐ Contact your electricity supplier to install your meter(s)

Once we have issued your MPAN(s) you will be required to register them with your electricity supplier and arrange for the installation of the meter(s). You should allow 28 days in advance of your connection date to allow your supplier time to register your MPAN and arrange for their staff to attend and fit the meter(s). Please note that SSEN will not provide or install your meters and cannot be involved in this step of the process.

You can compare suppliers at www.ofgem.gov.uk/publications-and-updates/list-all-electricity-licensees-registered-or-service-addresses

For large meter connections you will also need to appoint a meter operator. For details of available meter operators please see: www.meteroperators.org.uk/members

☐ Excavate cable trenches to the required width and depth

For details please see page 7

☐ Excavate joint bay(s) to suit connection type

For details please see page 8

☐ Install cable ducting as required and install draw cord

For details please see page 9

☐ Fit meter backing board(s) and protective ducting

For details please see pages 10

☐ Ensure that the premises are securely locked and weather tight

☐ Construct substation foundation (if required)

For details see page 11-12

☐ Clear work area of any obstructions or hazards including any scaffolding near the agreed work areas

Not ready in time?

If you think you are not going to be ready on the agreed date, please contact us as soon as possible. Ideally you should give us a minimum of 5 days’ notice. If we arrive on site and you are not ready we will be unable to commence our works and may charge for the abortive visit.
Regional information

SOUTH

Ridgeway

Thames Valley

Wessex

South East

SOUTH (SHEPD)

NORTH (SEPD)
Please contact your dedicated Connections Project Delivery Manager.
Safe Working Practices
Working together to make your connections safe

If you damage any of our underground cables you must report it to the Emergency Service Centre immediately by calling 105.

We want you to stay safe - especially when you are working near overhead lines and cables. Contact your Connections Project Manager before you start work to make sure everything is secure and in accordance with health and safety regulations.

Overhead lines

Particular care must be taken when operating or handling mechanical plant, cranes, scaffolding or ladders in the vicinity of our overhead lines. You should always seek guidance before any work takes place on site from your appointed Connections Project Manager, who will ensure that all your works are carried out safely and in accordance with Health and Safety Guidance Instruction GS6 – Avoidance of Danger from Overhead Electric Power Lines.

www.hse.gov.uk/pubns/gs6.htm

Underground cables

Prior to getting connected, you need to establish where the existing cables on site are located in order to avoid damaging these when digging. To obtain the latest copies of our cable records please send a plan of the area in question together with your contact details to the address below, requesting details of any Scottish and Southern Electricity Networks (SSEN) plant and cables in the area.

Scottish and Southern Electricity Networks Mapping Services
PO Box 6206
Basingstoke
RG24 8BW

New Roads and Street Works Act

All excavation works required in the public highway will be carried out by SSEN or our designated contractors. The New Roads and Street Works Act 1991 require us to notify Local Authorities and other utility companies before we begin work to install our equipment. This is to ensure works are carried out to nationally agreed standards.

Please note we will only raise notifications after you have accepted our quotation and we have agreed with you a scheduled date to deliver the works.

The following are the minimum period of notice we are required to give:

- 3 days for minor works (works with a planned duration of 3 days or less)
- 10 days for standard works (works with a planned duration of between 4 and 10 days)
- 3 months for major works (works requiring a temporary traffic order and with a planned duration of 11 days or more)
Cable trenches, routes and depths

If you damage any of our underground cables you must report it to the Emergency Service Centre immediately by calling 105.

All trenching works must be carried out in accordance with our technical guidance Installation of Electricity Service, Intake and Distributor Cables up to and Including 33kV available from the SSEN website. www.ssen.co.uk/CompetitionInConnections/G81Documents/

It is also recommended that you review the ‘Practical guide to Streetworks’ before undertaking any excavations. assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/4382/practicalguidetostreetworks.pdf

The drawing included with your connection offer shows where you are required to dig and fill cable trenches and joint bays.

The following trench section shows the position of duct in the ground. It is important that the top of any apparatus is at these depths as a minimum, this includes the top of the duct.

In addition to the cable or duct there is a requirement for 75mm finefill material on all sides. Cable mark tape must be installed 75mm above the top of the apparatus, this needs to be branded with the SSEN logo. This is available from our approved suppliers.

The crossings shall extend at least 150mm beyond the kerb line on either side of the road and the ends shall be blanked off to prevent ingress of spoil.

Please ensure that ducts provided for our use are spaced at least 1000mm clear of inspection pits and other ducts.

Depth of cover for cable and cable ducts

<table>
<thead>
<tr>
<th>Location / Voltage</th>
<th>LV Service</th>
<th>LV Main</th>
<th>11kV</th>
<th>33kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmade &amp; cultivated ground</td>
<td>450mm</td>
<td>450mm</td>
<td>600mm</td>
<td>800mm</td>
</tr>
<tr>
<td>Footpaths</td>
<td>450mm</td>
<td>450mm</td>
<td>600mm</td>
<td>800mm</td>
</tr>
<tr>
<td>Roadways</td>
<td>600mm</td>
<td>600mm</td>
<td>750mm</td>
<td>900mm</td>
</tr>
<tr>
<td>Agricultural land</td>
<td>1000mm</td>
<td>1000mm</td>
<td>1000mm</td>
<td>1000mm</td>
</tr>
</tbody>
</table>

Where there are changes in surface type (e.g. footpath to carriageway) the excavations should always be the greater of the depths required. Ducted road crossings must be laid at a depth of not less than shown in the table and not more than 200mm deeper than shown in the table.
Multi Utility Arrangements

The trenched details mentioned above show the depths to the top of the cable, duct or service tube.

The bottom of the trench must be free of sharp stones or other materials that might damage the cable and a layer of 75mm of sand shall be placed below the cable prior to laying. The trench edge nearest the kerb edge must be positioned where practicable (see right) to ensure separation from other utility plant.

Joint Bays

In addition to cable trenches, joint bays will need to be excavated alongside the existing mains cable to connect your power cable to our network.

You must hand dig trial holes to establish the actual positions of existing cables before using a mechanical excavator. The required sizes of joint bays will depend on the type of joint required and are detailed to the right and below:

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Service Joint L x W</th>
<th>Straight Joint L x W</th>
<th>Breech Joint L x W</th>
<th>Pot end L x W</th>
</tr>
</thead>
<tbody>
<tr>
<td>LV</td>
<td>1.5m x 1.2m</td>
<td>1.5m x 1.2m</td>
<td>2.5m x 1.2m</td>
<td>0.9m x 0.9m</td>
</tr>
<tr>
<td>HV</td>
<td>N/A</td>
<td>2.5m x 1.2m</td>
<td>3.5m x 1.3m</td>
<td>1.2m x 0.9m</td>
</tr>
</tbody>
</table>

The length of the joint bay should be measured from the point where the new cable is parallel to and touching the existing cable for a breech joint. All cable joints should be in the centre of the joint bays.
Ducting cables on site

For more detailed information on the ducting of cables please see our technical guidance document Installation of Electricity Service, Intake and Distributor Cables up to and Including 33kV available on our website.

www.ssen.co.uk/CompetitionInConnections/G81Documents/

Ducting of service cables

The drawing provided with our connection offer shows where you are required to install ducting.

Minimum internal diameters of ducting are given in the table below:

<table>
<thead>
<tr>
<th>Cable type</th>
<th>Minimum Internal Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single phase service cable</td>
<td>32mm</td>
</tr>
<tr>
<td>Three phase service cable</td>
<td>50mm-100mm</td>
</tr>
<tr>
<td>Main low voltage cable</td>
<td>150mm</td>
</tr>
</tbody>
</table>

For single phase service cables, you are required to install a 32 mm internal diameter black electrical duct, from the joint position at the mains cable to the meter box.

For three phase service cables, a 50mm internal diameter black duct can be used although it is recommended a 100mm duct is used for used for lengths over 20m.

Ducts should be laid straight where possible with a minimum number of bends, and shall be marked with SSEN-branded tape.

Trench backfilling and reinstatement

SSEN will cover all laid mains cables before leaving site. The sand for this activity must be provided by the customer and placed at regular intervals along the trench. You will be responsible for backfilling and completing the reinstatement of trenches and joint bays as indicated in your design.

The amount of sand to be provided is 4 tonne per 100m of trench based on width of 300mm and depth of sand of 75mm and assuming damp sand.


Please also refer to the Specification for Reinstatement of the Openings in Highways (SROH) (England) or Specification for Reinstatement of the Openings in Roads (SROR) (Scotland) for further guidance.
**Meter Positions—200 A to 600 A terminations**

Meters should be situated on the inside face of an external wall as close as possible to the incoming mains service and must not be installed in passageways that are designed as fire escapes, or where they could be enclosed, such as behind locked gates or in bin stores.

Service terminations must not be installed in cellars, toilets, bathrooms, kitchens, bed-rooms, under stairs with headroom of less than 2m, over doorways, on partition, stud dry-lined walls or any other position not complying with BS 7671.

The position and size requirements are shown on the drawings below. SSEN will supply the fully insulated metering panel and heavy duty cut-out. You will need to install a back-boards. It is recommended that 18 mm thick plywood is used. Further information is can be obtained form our document TG-NET-CAB-003, Low Voltage 100A Termination Arrangements 200 A to 600 A.

**Meter Terminations above 600 A**

Due to the specialist nature of the requirements for supplies above 600 A Developers must only use our document TG-NET-CAB-013, Low Voltage Termination Arrangements Using 3 Core Bunched Wavecon Cables.
Substation foundation arrangements

For detailed information on the foundation arrangements for our secondary distribution plant please refer to our technical guidance:

- Foundation Arrangements for Secondary Distribution Plant Installed in Fenced Enclosures and Pad Mount Transformers
- Foundation Arrangements for Secondary Distribution Plant Installed in GRP Enclosures

www.ssen.co.uk/CompetitionInConnections/

Before carrying out any substation foundation works please contact your allocated Connections Project Manager so that we can advise which foundation type is required.

Foundation Arrangements for 3112mm x 2800mm glass reinforced plastic (GRP, Envico TR18 or Equivalent)
Construction and installation instructions

• The base shall be installed to the setting out dimensions and to the top datum level of the foundation supplied by the Developer. The datum shall be 50mm above the finished ground level. A minimum of three pegs shall be installed by the Developer to ensure the base is located correctly.

• The concrete base shall be to a minimum depth of 600mm, this may need to be increased to suit the site conditions.

• The concrete shall be of compressive class C25/30 to BS 8500.

• The concrete shall be poured in a continuous manner until the shuttering is filled. Brickwork or blockwork installed within the shuttering, forming part of the final base is not permitted without the permission of SSEN.

• Foundations shall be reinforced by two, 20m (19.5mm diameter) mild steel reinforcing bars to BS 4449, minimum cover of concrete 50mm.

• A face shutter may be used around the perimeter of the base but the area in front of the transformer base must have a full depth shutter.

• Form rebate in each side of foundation for the concrete lintel.

• The surface should be float finished with finished tolerances, length way, width way and across the diagonals of 5mm.

• Install two precast, reinforced concrete lintels, 65mm x 150mm x 2200mm (2500mm for the larger GRP), across front of enclosure. This will be carried out after the electrical works are complete (note, pre-stressed concrete lintels must not be used due to the camber).

• The area in front of the transformer base shall be filled and then covered with 100mm of dust-free stone chippings or coarse gravel, of maximum size 20mm. This will be carried out after the electrical works are complete.

• The GRP Enclosure shall be installed and levelled in accordance with the manufacturer’s instructions. Silicone sealant shall be applied to fill gaps between the GRP and concrete base.

• SSEN may require bases not complying with the above specification and construction to be broken out and replaced.
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS 4449</td>
<td>Specification for rebar and steel reinforcement used in concrete structures <a href="https://www.concretecentre.com/Concrete-Design/Design-Codes/BS-4449.aspx">https://www.concretecentre.com/Concrete-Design/Design-Codes/BS-4449.aspx</a></td>
</tr>
<tr>
<td>Camber</td>
<td>A rounded edge formed into the corner of a structure</td>
</tr>
<tr>
<td>Datum</td>
<td>Single point of reference from which all measurements and locations are set</td>
</tr>
<tr>
<td>ENATS 12-14</td>
<td>Technical Specification for Plastic Ducts for Buried Electrical Cables, an official ENA document</td>
</tr>
<tr>
<td>Float finish</td>
<td>A fine and hard sand concrete which presents a smooth, level surface</td>
</tr>
<tr>
<td>GRP</td>
<td>Glass Reinforced Plastic – also known as fibreglass</td>
</tr>
<tr>
<td>Hockey stick</td>
<td>A piece of plastic pipe in the shape of a hockey stick which is used to protect the cable between the ground and the meter cabinet</td>
</tr>
<tr>
<td>IET Wiring Regulations BS7671</td>
<td>Wiring regulations for domestic and commercial electrical installations <a href="https://electrical.theiet.org/resources/digital/">https://electrical.theiet.org/resources/digital/</a></td>
</tr>
<tr>
<td>Inspection pits</td>
<td>Open areas of trench where the depth of the contained duct can be measured and the use of sand and marker tape can be witnessed</td>
</tr>
<tr>
<td>Joint bays</td>
<td>The hole in which the joint to a cable will be made</td>
</tr>
<tr>
<td>Kerb lines</td>
<td>The demarcation line which designates the end of the roadway and the start of the pavement</td>
</tr>
<tr>
<td>Lintel</td>
<td>Used to support GRP enclosure whilst allowing cables to pass beneath</td>
</tr>
<tr>
<td>MPAN</td>
<td>Meter Point Administration Number, your unique 21-digit reference number for your supply point</td>
</tr>
<tr>
<td>Pad mount transformer</td>
<td>A ground-mounted, self-enclosed transformer available in 50, 100 and 200kVA load sizes</td>
</tr>
<tr>
<td>Shuttering</td>
<td>Used for pouring concrete when setting plant and equipment bases</td>
</tr>
<tr>
<td>Single Phase service</td>
<td>Typically a small domestic or commercial supply, less than or equal to 23 kVA</td>
</tr>
<tr>
<td>Three Phase service</td>
<td>Typically a large domestic or commercial supply, greater than 69kVA</td>
</tr>
</tbody>
</table>

**Scottish and Southern Electricity Networks** is a trading name of: Scottish and Southern Energy Power Distribution Limited Registered in Scotland No. SC213459; Scottish Hydro Electric Transmission plc Registered in Scotland No. SC213461; Scottish Hydro Electric Power Distribution plc Registered in Scotland No. SC213460; (all having their Registered Office at Inveralmond House, 200 Dunkeld Road, Perth, PH1 3AQ); and Southern Electric Power Distribution plc Registered in England & Wales No. 04094290 having its Registered Office at Number One Forbury Place, 43 Forbury Road, Reading, Berkshire, RG1 3H which are members of the SSE Group. [www.ssen.co.uk](http://www.ssen.co.uk)
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