BT Openreach Conductive Concrete

Installation Method Statement

SCOPE

This method statement covers the installation of CUBIS SAN-EARTH conductive concrete for British Telecom NGA Broadband cabinets. The CUBIS SAN-EARTH installation process will take place as part of the standard construction process for the NGA Broadband roll out.

This document is for information and guidance only.

HEALTH AND SAFETY

Care should be taken to avoid physical contact with this product. Prolonged or repeated skin contact may cause irritation. Allergic dermatitis may develop in hypersensitive individuals. The combination of conductive concrete powder and sweat on the skin may be sufficient to cause burns.

It is recommended that washing facilities be nearby when CUBIS SAN-EARTH is installed. Wash hands frequently when exposed to dust and wash thoroughly after each installation is complete. Wash thoroughly before eating or other hand to mouth contact.

Avoid breathing the dusts. A dust respirator should be used. Adequate exhaust ventilation should be provided when the product is installed in a confined space. Direct eye contact with this product may cause injuries. Rinse immediately.

Further information is available through the CUBIS SAN-EARTH Material Safety Datasheet (MSDS).

PERSONAL PROTECTIVE EQUIPMENT

EYES:	Chemical goggles EN 166B
SKIN:	Rubber gloves BS EN 388 disposable over sleeves, disposable over shoes & disposable over leggings all in compliance with (PPE Directive 89/686/EEC).
RESPIRATORY:	Wear a FFP3 approved dust respirator
RISK PHASES:	R20, R21, R22, R36, R37, R37, R38 & R66

ADDITIONAL INFORMATION

At certain points of the installation, it is a requirement to take a photograph for internal audit purposes. These are identified in the method statement instructions and are illustrated with the camera icon (left).

It is the responsibility of the contractor to carry-out risk assessments to ensure that HSG47 (*Avoiding danger from underground services*) recommendations/best practices are not breached related to use of concrete-based material in close proximity to other buried underground services. If a risk assessment indicates that the HSG47 recommendations will not be met, the contractor should seek further guidance through the Principal Contractor Health and Safety Team before proceeding with the installation.

The use of Conductive Concrete and copper electrode **DOES NOT** change any of the existing rules regards DSLAM location or building over any existing buried services of any type. If there is any doubt as to the suitability of the DSLAM location due to proximity of existing buried services this **MUST BE** discussed and an alternative location agreed with the managed service supervisor and Openreach Contracts Manager **BEFORE** the installation is allowed to continue.

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1. Keep the bags of conductive concrete in the vehicle until ready to deploy.
   PPE should be worn for the duration of the installation.

2. Excavate an area to match the job pack DSLAM build dimension to accommodate the copper earth electrode as shown in the drawings (Appendix 1 – Left and right hand telco trench configuration). The depth should be 700mm if casting a cabinet base in-situ or 750mm if using a precast base.

3. Remove any undulations to ensure the bottom of the excavation is as level and flat as possible.

4. Place the bag(s) in base of excavation before opening to avoid waste of product and reduce dust levels. Take a sharp knife and carefully slice open the conductive concrete bag on one side across its width just below the filler spout. This is approximately 75mm up from the bottom of the bag.

5. Lay the top, open side of the bag on the earth at the bottom of the excavation and slowly lift the bottom of the bag up allowing the conductive concrete powder to flow from the bag freely.

6. Spread the contents of two bags of conductive concrete across the bottom of the excavation and along the telco trench for approximately 2m, holding the bag close to the ground to avoid excessive dust. Spread the powder evenly around covering the entire footprint of the excavation.

7. After confirming the orientation of the cabinet and which side the earth connection will enter, install the supplied 16mm^2 copper electrode, taking care to ensure that the copper is kept away from the edges of the excavation. Ensure that the insulated copper tail is in the correct position. Avoid the copper earth electrode being pushed through the conductive concrete and touching the earth at the bottom of the excavation.

Ensure the copper electrode is run for the full length of the duct trench (ideally for 2m). If this is not possible the copper conductor must be coiled back from the furthest point and run back along trench towards the DSLAM plinth hole, ensuring the coiled back section does not touch the surrounding earth and is covered by conductive concrete material.

At this point, the contractor should take a photograph for internal audit purposes.

Please note: if the telco duct trench length is less than 1m then the power trench must also be used using the alternative pre-attached copper tail, ensuring the conductive concrete material is also deployed into the power trench opening. Each site may differ due to location - please consult with your CT Supervisor and Openreach Contracts Manager if there are any individual site issues.

For information and guidance only

8. For the long term performance and longevity of the electrode system it is imperative that the copper electrode does not touch the earth and that it is fully encapsulated in the powder.

9. Allow the insulated earth cable to protrude up through the conductive concrete in the desired location. Use the the DSLAM plinth template or Polylid to determine the exact location of the insulated copper electrode. This is typically the back left hand corner, or to a specific location marked on the plan drawing.

10. If the spare tail is unused, coil it into a piece of black duct 36 (200mm length minimum) for future use and cap with a plug. Ensure that the plugged end is free from the material to allow future access.

11. Spread the contents of the two remaining bags across the bottom of the excavation taking care to ensure that the copper electrode is surrounded by the material. This can be done with a broom to avoid disturbing the electrode.

12. Place the insulated earth cable into a vertical duct, cut to the pre-determined length. Ensure the DSLAM plinth template or Polylid is used to determine the exact location of the insulated copper electrode – using the same practice as with an Earth Rod.

13. With a hand shovel, slowly and carefully place a layer approximately 100mm deep of earth free from stones from the excavation on top of the concrete, taking care not to disturb the electrode and duct. Lightly compact the backfill. Subsequent layers of backfill can then be placed onto this layer to the specified depth and compacted using a hand tamp.

At this point, the contractor should take a photograph for internal audit purposes.

Please note: If the earth free from stones from the excavation is of poor quality or not available due to the particular local ground conditions (e.g hard rock or type 1 only material) then Contractor MUST consult with local Openreach Contracts Manager regards sourcing suitable alternative soft soil (e.g via local purchase) – this initial layer of soil must be hand tampered before subsequent layers of backfill material are applied.

14. Type 1 material can now be placed to the required depth and compacted to receive the concrete plinth base as per Openreach drawing specification.

15. Remove the empty bags after use as per regulations for bags of ordinary cement.

16. Ensure that the A55 earthing electrode document (Earth Certificate) is completed, showing the location, length and direction of the copper tail and whether both tails have been used. Ensure the location of black duct 36 is noted. Please also ensure label provided is placed on the insulated earth cable.

NO EARTH READING IS REQUIRED.

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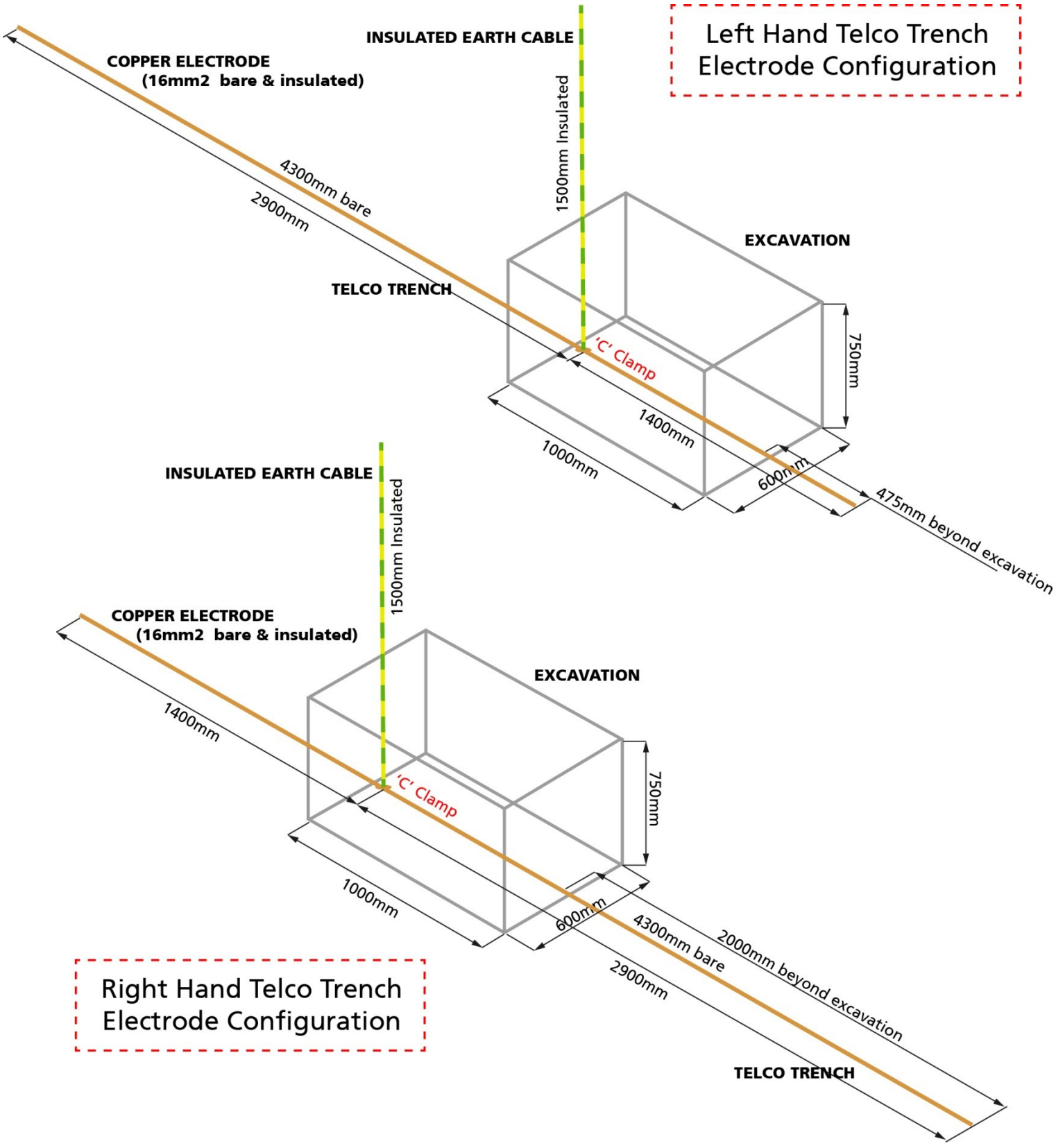

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