

RefineTM ±

Reference Electrodes



PERMANENT CuCuSO_4 REFERENCE ELECTRODE CU1

The RefineTM CU1 Reference Electrode is a permanent installation reference cell used for underground buried structures, typically pipes, vessels and tanks. Our unique porous end plug / ion barrier design ensure long life, accuracy and stability over decades of service life without leaching of sulphates into the environment or cross contamination from exterior sources. Cell can be provided pre-packaged and fitted with your choice of cable tail, or self attachment cable kit if required.



“Designed with
potential in mind”

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Refine⁺

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PERMANENT Cu/CuSO₄ REFERENCE ELECTRODE CU1

Materials Specification :

Electrode Element	High conductivity copper to HD HC C101 to BS EN 133/62
Electrode Media	Standard CU1.1 and CU1.2 specially formulated CuSO ₄ matrix
	Gel Type CU 1.3 and CU 1.4 CuSO ₄ Gel
Body	uPVC
Conductive Tip	CU1.1 and CU1.3 specially formulated high temperature fired ceramic
	CU1.2 and CU1.4 specially formulated porous plug with membrane trap

Performance Details :

Operating Life	25 years, with correct handling prior to installation
Shelf Life	Indefinite, under correct storage conditions
Stability	± 5 mV at 5 microamps
Temperature Range	0 – 60 °C (32 – 140 °F)
Environment	CU1.1 and CU1.3 have been designed for use in moist soils
	CU1.2 and CU1.4 have been designed for use in dry soils

Dimensional Data :

Electrode Body Diameter	80 mm (3.2")
Electrode Body Length	CU1.1 and CU1.2 150 mm (5.9")
	CU1.3 and CU1.4 300 mm (11.8")
Nominal Weight	450 grammes (15.87 oz) without electrode media

Cable Tails :

Standard Specification	1 x 4 mm ² (12 AWG) XLPE/PVC, stranded Cu conductor 5m long
You Specify	Cable tail fitted to your requirements
You Fit	Separate work instruction provided with encapsulation kit

Additional Information :

All CU1 electrodes can be supplied pre-packaged with wetting backfill.

Encapsulation kit includes:

- Proprietary right angled crimp lug to suit specified cable CSA.
- Two part epoxy resin kit to insulate cable tail connection.
- Nut and washer set for terminating cable tail to electrode element.
- Protective cap c/w integral non-metallic sealing gland to suit cable tail OD.

The method of self connection is simple yet offer maximum integrity, the activities required can be completed in remote areas without difficulty.

Prior to installation CU1 reference electrodes should be immersed in potable water for a minimum period of 2 hours. Water container shall be made from a non-metallic material.

With or without wetting backfill CU1 reference electrodes should be installed vertically to achieve full life expectancy.