

Installation Instructions

For the STELTH 7[®] IR-Free Probe with two 5 cm² coupons – Cu-CuSO₄

Remove the plastic bag from the **STELTH 7[®] IR-Free reference electrode**, as well as the black cap protecting the ceramic tip, just prior to installation. There will be moisture if not actual water in this plastic bag. This is intentional as each cell is saturated with distilled water prior to shipment. *(We do this to give you a reference cell that will instantly fire up when installed. There will be no waiting for several hours that was SOP, standard operating procedure, in the past).* Also, do not be alarmed if the steel coupon has corroded. This is intentional and is necessary for the **STELTH 7[®] IR-Free reference electrode** to work properly.

Always try to install the **STELTH 7[®] IR-Free reference electrode** below the frost line. *(In frozen soil conditions, reliable potential readings are almost impossible to obtain. By installing the reference cell below the frozen area you will be able to take reliable readings all year long).*

Bore a hole 4" to 6" in diameter and deep enough so that you can place the **STELTH 7[®] IR-Free reference electrode** level with or below the spring line (horizontal center line) of the structure and between 3' and 24' (1 to 7 meters) from the structure. Location to proximity of the structure is not critical but, placement of the electrode in the same soil environment as the structure is in is critical.

Pre-soak the **STELTH 7[®] IR-Free reference electrode** in a clean bucket of fresh potable water just prior to installation for 20 to 30 seconds. Place the **STELTH 7[®] IR-Free reference cell** in the hole, at the correct level, pour the remaining water in the bucket in the hole over the **STELTH 7[®] IR-Free reference electrode**. *(This procedure is important because we are creating a condition for the surrounding soil and backfill to penetrate and lock into the pores of the STELTH 7[®] IR-Free reference cell. Also, the backfill will easily compact around the STELTH 7[®] IR Free reference electrode with this water present).*

Immediately after soaking and placing the **STELTH 7[®] IR-Free reference electrode** in the hole, proceed to backfill, with native soil ONLY, Do not use sand (unless the sand is the native soil such as in tank bottom installations). After backfilling, lightly tamp backfill by hand to ensure good compaction. **(NOTE: There absolutely is no requirement for any other backfills other than the native soil. Therefore plasters, bentonite, etc. are not required nor are they in any way recommended. In fact, this will only add significantly to your IR problems).**

Connect all of the wires, except the wire from the structure, according to the instructions in sheet 2 of 2 "Bullet Box IR Free Interrupter, Wiring & Setup Instructions".

Important: Wait a period of two months (60 days) prior to making the final connection between the **STELTH 7[®] IR-Free reference cell** and your CP system. It is critical that the coupon be allowed to reach its natural corrosion state in the soil prior to connection to the cathodic protection system. After this 60 day period, make the final connection by attaching the wire from the structure to terminal **A** on the Bullet Box IR Free Interrupter. It is important to allow the coupon to reach its natural corrosion state. This can only be done by letting it remain unprotected for a period of 60 days.

Measurement: IR Free readings are taken across terminals 2 (coupon) and 3 (reference cell). Note, it is not necessary to shut your rectifier off to obtain this IR Free reading. Traditional potential readings are taken across terminals 3 (reference cell) and 5 (structure). This later reading would require that you shut your rectifier off to obtain an off potential reading. The current protecting the coupon can be read across terminals 3 and 4.

If your potential reading across terminals 2 and 3 are at a protection level of (-.85v or higher) you can be certain that your structure is under protection 82' (25 meters) in each direction from the location of the **STELTH 7[®] IR-Free reference electrode**.

SPECIAL NOTICE

The **STELTH 7[®] IR-Free reference electrode** models SRE-022-CIY, SRE-023-CIY, **SRE-024-CIY** & SRE-031-CSY **has been specifically designed to be used in dry soil conditions**. The **STELTH 7[®]** will hibernate when the soil dries up. There is no circuit to provide a reading at that time. It will awaken when moisture returns to the soil and a circuit can be re-established. The **STELTH 7[®] IR-Free reference electrode** models SRE-022-CIY, SRE-023-CIY, **SRE-024-CIY** & SRE-031-CSY has an indefinite shelf life.

