

Model CB – Embedded Reference

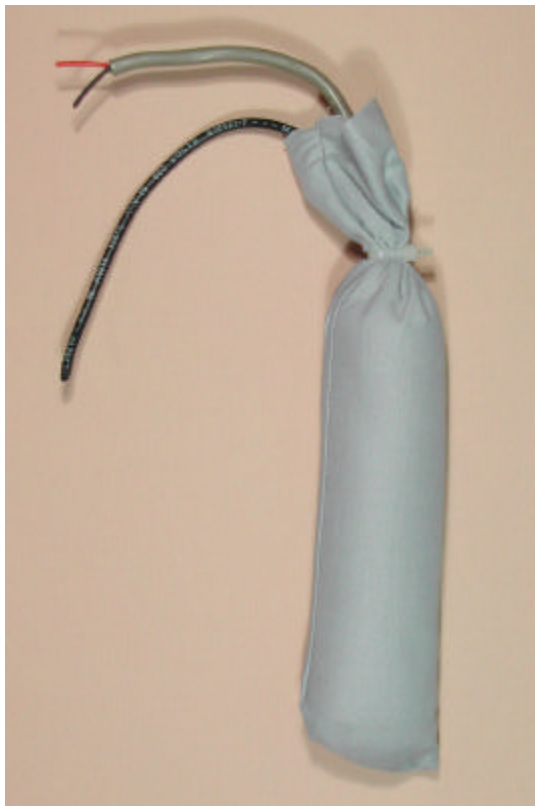
Typical Applications

Bridge decks and substructures, parking garages, docks and buildings

Featuring

Long term reliability with thermodynamically stable Ag/AgCl element

Cotton bag housing containing proprietary backfill compatible with concrete provides good electronic and mechanical bonding to the structure



Housing Specifications

1 ½ in. (4 cm) dia. X 6 ½ in. (17 cm) long
Cotton bag with special backfill
Shipping weight - 1 lb (½ kg)

Element Specifications

Design life - 25 yrs.
Shelf life - 1 year minimum

Element Types

AGG - saturated gelled Ag/AgCl

Terminations

SWnnn - nnn ft. of #14 AWG HMW/PE
2Wnnn - nnn ft. #22 AWG 2 conductor
shielded cable plus a 3 ft. (1 m) length
#14 AWG HMWPE for bonding to rebar

Model Designation

Specify as EDI Model CB-AGG-zznnn
zz = Termination type
nnn = Length of lead wire

Application Notes:

The **Model CB** should be installed as close as possible to the rebar where measurements are to be taken. The single wire termination, **SW**, is intended for use where the lead wire goes into a conduit within a short distance of the reference location. The two wire shielded cable termination, **2W**, is intended for use where the lead wire is grouted into a saw slot or fully encased in the concrete. Shielded cable is recommended whenever there are concerns about interference effects on the reading. This can happen when the reference lead shares a conduit with a power lead or if the reference lead exceeds 10 ft (3m) in length. Refer to the installation instructions for additional information.

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*C Series
Concrete
Products*



Installation Instructions for Reference Electrodes Embedded in Concrete

These instructions apply to EDI Model CB-AGG, a reference electrode with a gelled silver/silver chloride (Ag/AgCl) element designed for use in reinforced concrete. Be sure to follow the correct procedures. Failure to do so can significantly shorten the life of the reference electrode.

Installation in New Structures

Remove electrode from its protective packaging. Use plastic coated wire ties to secure reference electrode to the center of a rebar net square. This should be done not more than four hours before the concrete will be poured.

Installation in Existing Structures

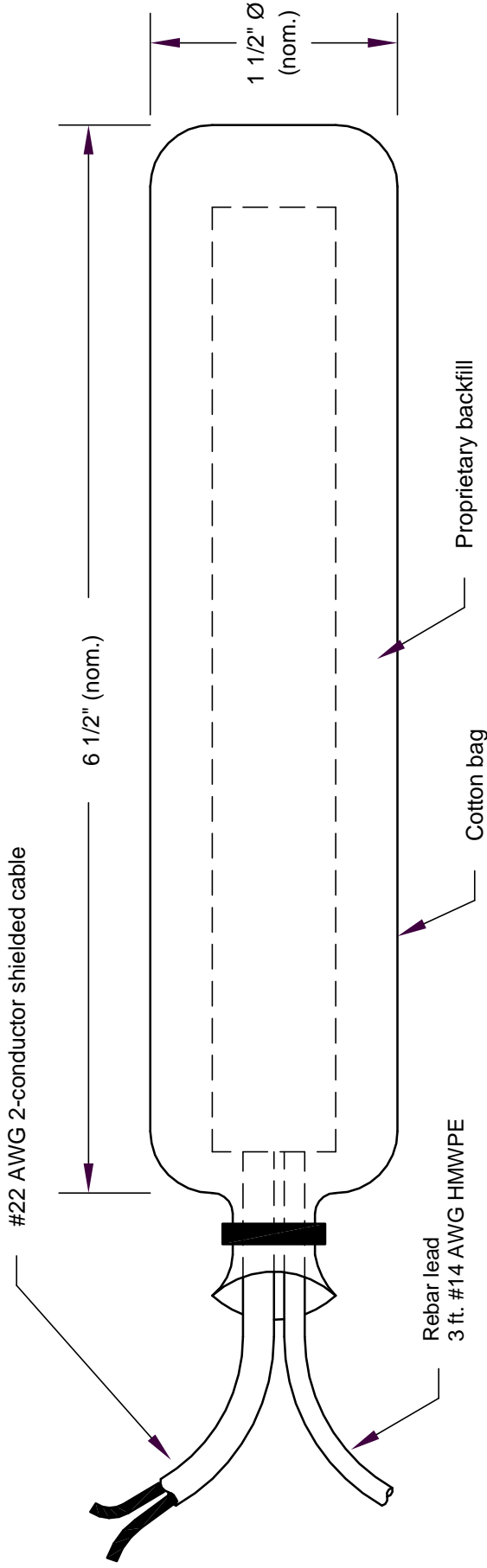
Excavate hole to required depth for proper location. Recommended minimum dimensions for the hole are 2 ½" x 2 ½" x 8" (6 cm x 6 cm x 20 cm). A layer of the original concrete should remain between the reference electrode and the rebar. Lead wires can be embedded in saw slits. The preferred location for the reference is at the center of a rebar square at the same depth as the outer rebars. Remove electrode from its protective packaging and place it in the hole. Fill the hole with portland cement patching grout.

Caution: Do not use patching grouts containing polymer additives.

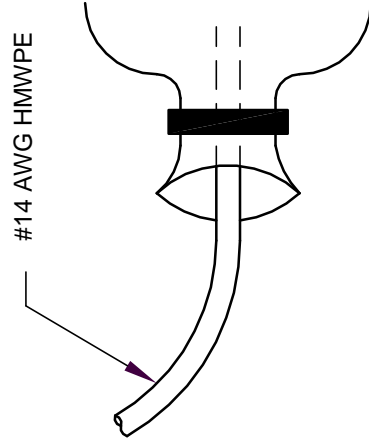
Two Wire Termination - The Model CB electrode with a two-wire termination (code **2W**) has a lead wire, length as specified, and a 3 foot (1 meter) structure wire. The **lead wire** is a shielded 2-conductor #22 AWG cable. One of the two wires in this cable is designated as "**element**" and is the one connected to the sensing element in the reference electrode. The other wire is designated as "**structure**"; this wire has been shunted within the electrode housing to the structure wire. The shield should be connected to an earth ground at the test station. The #14 HMWPE **structure wire** is to be attached to a rebar by brazing or cad-welding a minimum of 18 inches (1/2 meter) away from the intended location of the reference. This joint should be coated with a suitable dielectric coating. If the structure wire has the optional steel rod termination, the rod can be arc welded to a rebar and no dielectric coating is necessary.

Single Wire Termination - The Model CB electrode with a single wire termination (code **SW**) has a single #14HMWPE lead wire, length as specified. This wire should not share a conduit with power leads. For elevated structures, this wire should be encased in a metal conduit. These precautions will minimize errors in potential readings due to interference.

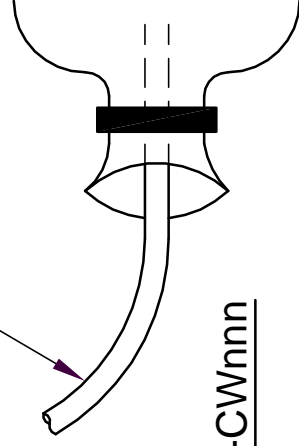
Model CB-AGG-2Wnnn



Model CB-AGG-SWnnn



customer specified wire
e.g. #12 THHN/THWN



Model CB-AGG-CWnnn

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Permanent Embedded Reference, Concrete

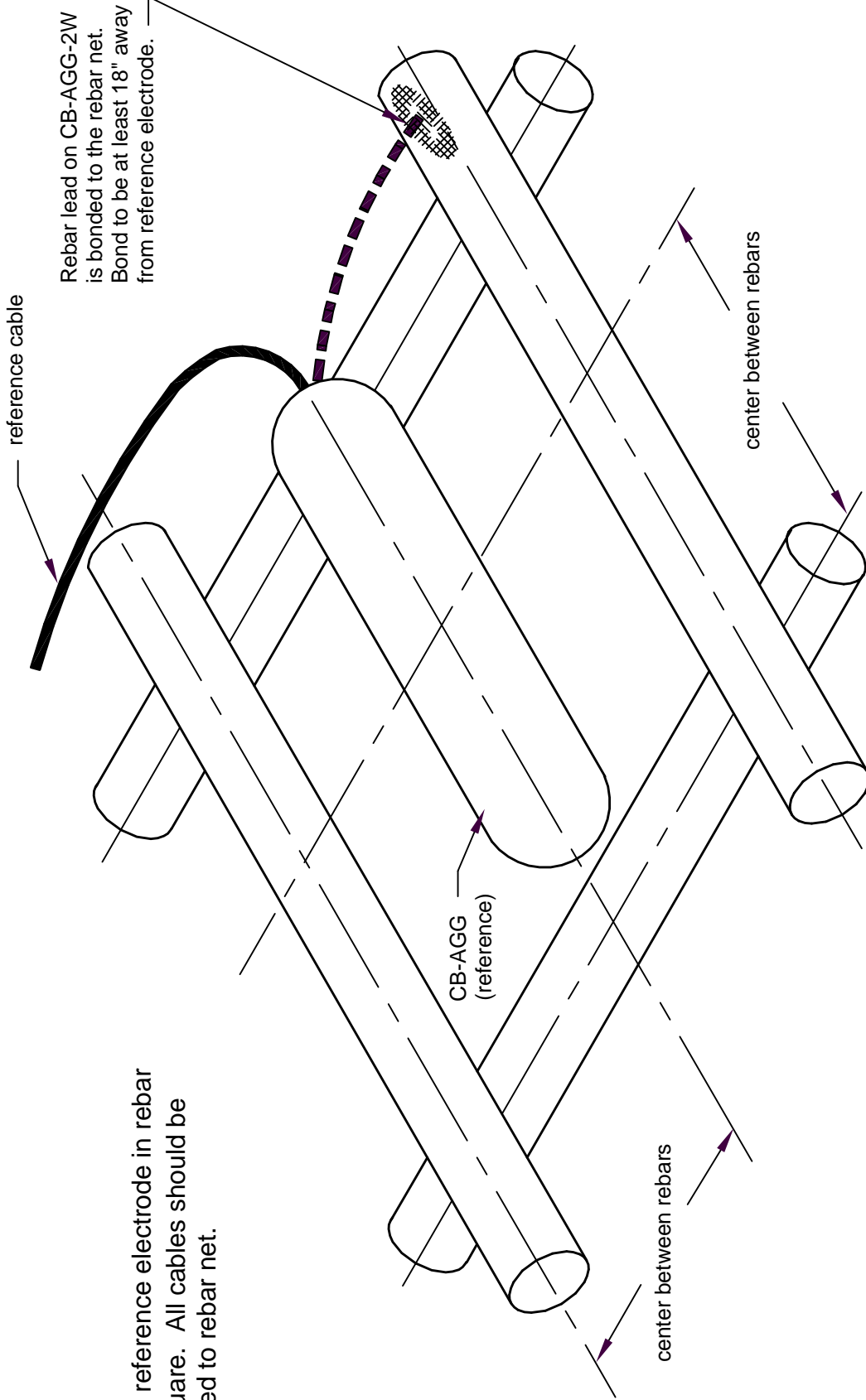
Note:
nnn in model designation refers to cable length in feet

SCALE FULL

DATE 09/27/01

DRAWN BY FJA

DRAWING NO. CBASY



Center reference electrode in rebar net square. All cables should be strapped to rebar net.

reference cable

Rebar lead on CB-AGG-2W is bonded to the rebar net. Bond to be at least 18" away from reference electrode.

CB-AGG (reference)

center between rebars

center between rebars

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Reference Electrode Installation

SCALE None

DATE 06/28/99

DRAWN BY FJA

DRAWING NO. CBAPP1