

## **ITEM 582.99 07 - EMBEDMENT OF GALVANIC ANODES IN CONCRETE**

### **DESCRIPTION:**

This work shall consist of installing galvanic anodes and testing for electrical conductivity at locations indicated in the plans.

### **MATERIALS:**

- A. Embedded galvanic anodes shall be compact-puck shaped, pre-manufactured, and consist of electrolytic High Grade Zinc in compliance with ASTM B6-00, cast around a pair of steel tie wires and encased in a highly alkaline cementitious shell as manufactured under the trademark "Galvashield XP" manufactured by Vector Corrosion Technologies, Inc.; [www.vector-corrosion.com](http://www.vector-corrosion.com), (330) 723-1177 or Sentinel-GL manufactured by The Euclid Chemical Company; [www.euclidchemical.com](http://www.euclidchemical.com), 1-800-321-7628 or an approved equal.
- B. Reinforcement steel tie wire shall be 1.5-mm wire gauge or heavier, uncoated, black annealed wire.

### **CONSTRUCTION DETAILS:**

The Contractor shall embed Galvanic Anodes in concrete where indicated on the plans or where directed by the Engineer.

- A. Concrete Removal will be paid under Item 582.05 or 582.06
  - 1. Complete the concrete removal, following the procedures given in **SECTION 582 – REMOVAL AND REPLACEMENT OF STRUCTURAL CONCRETE**
  - 2. Cleaning and Repair of Reinforcing Steel will be paid under Item 582.05 or 582.06
    - 1. Complete the cleaning and repair of reinforcing steel, following the procedures given in **SECTION 582 – REMOVAL AND REPLACEMENT OF STRUCTURAL CONCRETE**
- C. Galvanic Anode Installation
  - 1. Galvanic anodes shall be furnished and placed along the perimeter of the repair area at spacing specified in the plans. In no case, shall the distance between anodes exceed 750 mm.
  - 2. Provide sufficient clearance between anodes and substrate to allow repair material to encase the anode.
  - 3. Secure the galvanic anodes as close as possible to the patch edge using the anode tie wires. The tie wires should be tightened to allow little or no free movement.
  - 4. If the anode is to be tied onto a single bar, or if less than 25 mm of concrete cover is expected, place anode beneath the bar, and secure to clean reinforcing steel.
  - 5. If sufficient concrete cover exists, the anode may be placed at the intersection between two bars, and secured to each clean bar.
  - 6. Loose reinforcing steel shall be secured by tying tightly to existing bars with uncoated steel tie wire.

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- D. Electrical Continuity
1. Confirm electrical connection between anode, tie wire, and reinforcing steel with a multi-meter.
  2. Confirm electrical continuity of the exposed reinforcing steel within the repair area. If necessary, electrical continuity shall be established with steel tie wire.
- E. Concrete Replacement will be paid under Item 582.05 or 582.06
1. Complete the concrete repair, following the procedures given in **SECTION 582 – REMOVAL AND REPLACEMENT OF STRUCTURAL CONCRETE**
  2. Take precautions so as not to create any air voids around the embedded galvanic anodes.

**METHOD OF MEASUREMENT:**

This work will be measured as the number of galvanic anodes installed in accordance with the contract documents or as directed by the Engineer.

**BASIS OF PAYMENT:**

The unit price bid per galvanic anode shall include all material, equipment, and labor necessary to install, connect, and test the anode. Payment for concrete removal, steel reinforcement repair/replacement, and concrete replacement will be made under their respective items.

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