

# **Review on Definition and Application of “Grouted Embedments” in ACI 349**

**2023. 08.**



## **[APPENDIX A - SCOPE OF SERVICE AND METHOD OF PERFORMANCE]**

### **1. OBJECTIVES**

The objective of this service is to provide KEPCO E&C with the following scope of services related to definition and application of “Grouted Embedments” in ACI 349 which provide design criteria of “Anchoring to Concrete”. The main purpose of this services is to ensure for application of design criteria through code interpretation by ACI 349 code committee. In addition, consulting of anchor system design criteria permitted by ACI 349 expert is used as evidence for responses to regulators. Therefore, these technical issues shall be resolved through this consultation. Results during consulting service could be provided to KHNP.

### **2. SCOPE OF SERVICES**

To achieve the above objective, the Contractor shall provide KEPCO E&C with the services in the following tasks:

#### **Task 1. Definition and scope of “grouted embedment” in ACI 349**

This task will focus on reviewing historical change in definition and scope of “grouted embedment” since ACI 349-76. Various versions of ACI 349 will be reviewed and historical change in definition of “grouted embedment” will be identified and documented.

#### **Task 2. Definition and scope of “special grout” as “grouted embedment”**

This task will focus on reviewing historical change in definition and scope of “special grout” since ACI 349-76. Various versions of ACI 349 will be reviewed. This task will also focus on consideration of “special grout” as “grouted embedment”.

#### **Task 3. Qualification and test methods for “special grout”**

This task will focus on reviewing the qualification and test methods for “special grout” as defined or described in ACI 349-01. ACI 349 states that “the use of special grouts shall be qualified for use by the licensed design professional and specified in the contract documents”. No further details are given in ACI 349. This task involves with reviewing ACI 355 describing testing programs and evaluation requirements for post-installed mechanical anchors intended for use in concrete.

#### **Task 4. ACI code committee code interpretation inquiry**

This task will focus on submitting an inquiry to the ACI code committee. The inquiry will be submitted from KEPCO E&C and the inquiry will be developed by the Contractor and KEPCO E&C. The inquiry will focus on clarification of definition and scope of “grouted embedment” as well as consideration of adhesive anchors as part of “grouted embedment”.

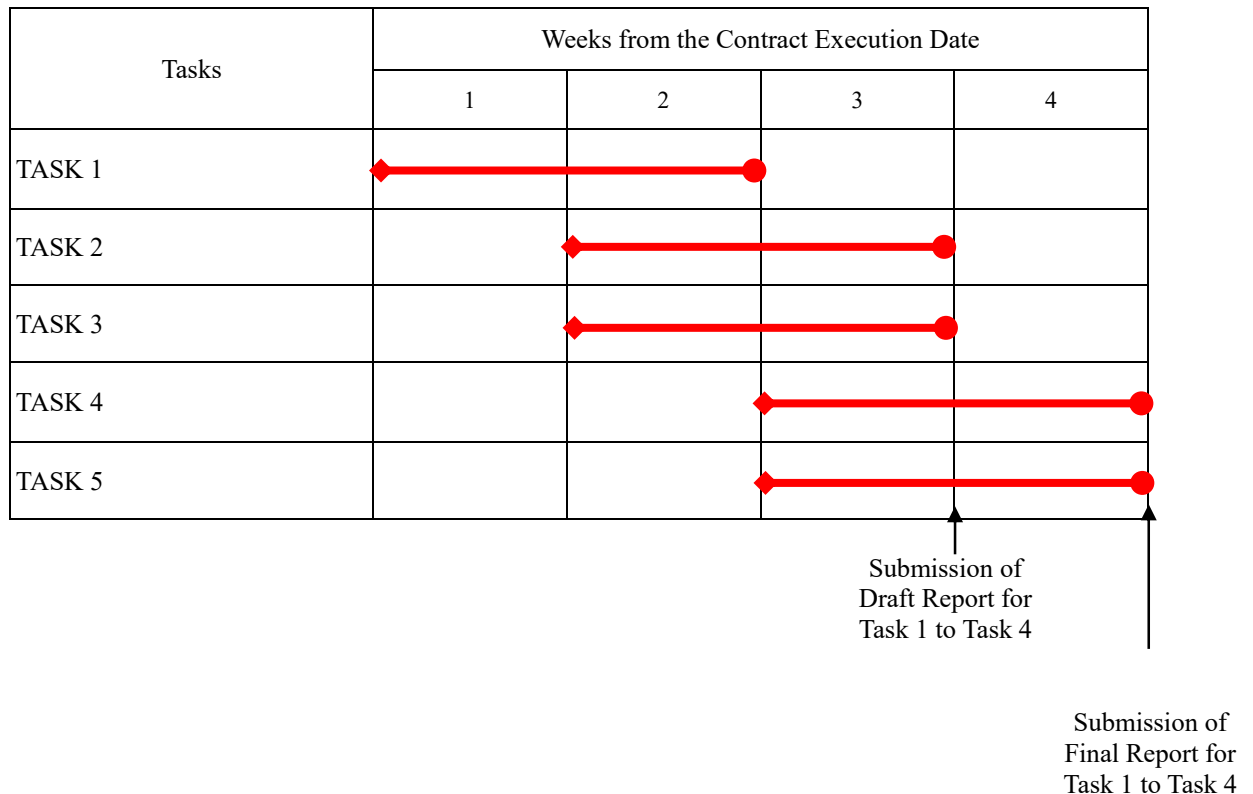
#### **Task 5. Preparation of final report**

A Draft Report for Task 1 to Task 4 shall be submitted to KEPCO E&C within 3 weeks after the Execution Date contract. All comments issued by KEPCO E&C shall be resolved and incorporated into the Final Report which shall be submitted to KEPCO E&C within 4 weeks after the Execution Date.

### **3. METHODS OF PERFORMANCE**

#### **Consultation Schedule**

The contract period shall be 4 weeks from the Contract signing date (Execution Date).



### **Method of Performance**

The Contractor shall start the service in accordance with the schedule shown as the above table, immediately after signing the Contract. If the schedule needs to be changed, the Contractor must discuss the schedule with KEPCO E&C and provide the changed schedule immediately.

Based on technically acceptable, all the tasks above should be performed by Prof. Amit Varma who can't be replaced. The Contractor shall keep confidential all the results and information obtained from this consultation, and shall not divulge them to any third parties. KEPCO E&C will review the results of each task and Draft Report which shall be prepared by the Contractor. KEPCO E&C will discuss the problems and issues encountered during the execution of Task 1 to Task 5.

### **Deliverables**

The deliverables are Draft Report for Task 1 to Task 4 including inquiry letter to ACI committee and Final Report.

### **Miscellaneous**

- After the consulting tasks, the Contractor must discard all of the documents, data, etc. provided by KEPCO E&C.
- Expert to perform the Services

| Name                 | Specialty  | Grade     |
|----------------------|--|-----------|
| AMIT H. VARMA, Ph.D. | Professor of Civil Engineering,<br>Purdue University | Professor |