CALL FOR SUBMISSIONS - PILE PREDICTION EVENT - BC EXPERIMENTAL TESTING SITE 01

1. INTRODUCTION

The first edition of the Pile Prediction Event at **BC Experimental Testing Site 01** will take place in the second half of 2024, with the results to be announced during the **Brazilian Conference on Soil Mechanics and Geotechnical Engineering – COBRAMSEG 2024**, in Balneário Camboriú – SC.

The **BC Experimental Testing Site** is a collaborative initiative that brings together designers, consultants, construction companies, pile contractors, soil investigation companies, pile load test contractors, steel suppliers, concrete suppliers, and other professionals in the field. Together, they have dedicated time and financial resources to enable research and promote significant advances in foundation engineering practice.

This event aims to challenge civil and geotechnical engineers to predict the behavior of a continuous flight auger pile subjected to axial loads. The goal is to encourage the community to submit their predictions, describing the methodologies and calculation assumptions used, ultimately promoting the dissemination of knowledge.

2. SCHEDULE

Submission of estimates and calculation memos: by **September 08-2024** (prior to the test execution date)

Load test: **September 09 to 13 - 2024**

Results announcement: **September 25-2024** during **COBRAMSEG 2024**

3. CHALLENGE

Based on the geotechnical data provided in this call, participants are encouraged to submit the following information:

a) Total pile capacity
b) Side friction capacity
c) Toe capacity
d) Axial load distribution along the shaft at ultimate load
e) Load-settlement curve (up to a settlement corresponding to 15% of the diameter: 90 mm)

Items **a**, **b**, and **c** are mandatory. Items **d** and **e** are optional.

A design description of how the load capacity predictions were made and how the load-settlement curve was determined must be provided.

Explanations and references to the materials used, software utilized (if applicable), methodologies (effective stress, total stress, based on in-situ tests, etc.) should be added.

4. TEST PILE

The load test will be performed on a continuous flight auger pile with a diameter of 60 cm and a length of 25 m, subjected to a clear failure. The pile has a total reinforcement length of 8 m, composed of 10 bars with a diameter of 25 mm (yield strength fy = 500 MPa), helical stirrups with a spacing of 20 cm and a diameter of 50 cm. The concrete used is type C40 (compressive strength fc = 40 MPa).

Details:

- Pile Type: Continuous Flight Auger (CFA) Pile
- Diameter: 60 cm
- Length: 25 m
- Reinforcement:
  - Length: 8 m
  - Bars: 10 bars of 25 mm diameter
  - Yield Strength (fy): 500 MPa
- Helical Stirrups:
  - Spacing: 20 cm
  - Diameter: 50 cm
- Concrete Type: C40
  - Compressive Strength (fc): 40 MPa

5. TESTS

The EVENT will include the following tests:

- SPT (SM-03)
- SCPTu (SCPTu-01)
- DMT (DMT-01)

The data from these tests are available at www.bc-est.com.br/edital.

6. SUBMISSION OF ESTIMATES

The estimates and the design description of the methodologies and assumptions used in the calculations must be submitted using the mandatory spreadsheet model available at www.bc-est.com.br/edital.

Submissions should be sent to the email address: contato@bc-ets.com.br

7. EVALUATION AND CLASSIFICATION

The results will be evaluated based on the closest percentage proximity to the measured test data. The participants with the closest results will be announced and recognized. Only participants who have submitted all items of the challenge will be mentioned.

8. FINAL CONSIDERATIONS

The organizing committee has the autonomy to make any changes to this call and is obligated to make them known. Registration implies acceptance of the rules contained in the communications and this call.