

**STAFF SELF APPRAISAL REPORT****2020-2021****KSSEM**

Field	Data	SCORE
Name	Dr Arekal Vijay	
Present Address, Mob.No., e-mail id.	135, Sri Venkateshwara Nilaya, 2 <sup>nd</sup> Floor, 5 <sup>th</sup> Main, 3 <sup>rd</sup> Cross, KSRTC Layout, Chikallasandra, Bengaluru 560061 Mob: 9663590628 Email: arekal.vijay@kssem.edu.in	---
Age and Date of Birth	53 yrs (23/3/1968)	
Qualification	BE, M.Tech, PhD	
Designation and Department	Professor, Civil Engineering	
Teaching Experience (After PG)	12 yrs	
Other Experience(If any)	13 yrs	
List of Subjects Taught till date (use separate sheet if necessary)	Geotechnical Engineering, Ground Improvement Technique, Design Concepts of Substructure, Advanced Foundation Design, Design Concepts of Building Services, Earth Retaining Structures, Building Construction, Concrete Technology, Construction Management, Engineering Mechanics,	
*Subjects taught in the Assessment Year and percentage pass (10marks for each x Percentage) If Online please indicate.	1. 17CV743 – 96% 2.17CV53 – 93% 3. 18CV54 – 74% 4. 18CV62 – 100% (online) 5. 17CV61 – 100% (online)	26.3/40
Details of UG Projects Guided (5 marks/ project guided) Online	1. A Study on Forensic Geotechnical Engineering 2. Comparison Of Segmental Retaining Wall With Conventional Retaining Wall	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA	1. 2.	/10
Percentage of Online classes held ( No. of classes taken/no. of classes allocated x 5)	1.7CV743 – 100% 2.17CV53 – 100% 3. 18CV54 – 100% 4. 18CV62 – 100% 5. 17CV61 – 100%	5/5



Student Feedback for Online classes. (Av.Percentage x 5 marks)	17CV743 – 96.64% 18CV62 – 97.64% 18CV54 – 88.57% 17CV53 – 96.67%	4.74/5
Details of Industrial Visits arranged. (2marks/visit) Max 5 marks.	NOT APPLICABLE FOR CURRENT YEAR	
Number of FDPs attended since joining service (Attach Separate List)		--

\*Marks to be awarded on for subjects for which end exam was conducted

Details of students mentored during current assessment year.		--
Details of Participation in VTU Bodies (2 Marks)		/2
Details on Examination related Activity (2marks each)	1. Practical Exams (GT Lab, MT Lab, Project Viva) 2. Conduction of Theory exams (DCS) 3. Paper Setting 4. Evaluation (18CV54, 17CV53)	6/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies)	1) "FDP on Sustainable Practices in Civil Engineering" conducted by UVCE, AICTE/ATAL, 14/6/21 to 18/6/21  2)"FDP on Virtual Lab for Affiliated Engineering Colleges under VTU" conducted by NITK, 19/10/20	10/10
Financial Assistance received during current year for attending FDPs	Rs.	--
Status of Ph.D. [Attach proof for each stage] (This can be claimed only once during a life time after the PhD is awarded) [Attach proof for every claim]  Ph.D. Completed – 10 marks.	Awarded - 2018	/10
Research Publications: (5 marks each) [Attach copies of Title Page]	1. Arekal Vijay, Vijayalakshmi Akella, P R Bhanu Murthy (2021) "Numerical Validation of Experimental Results for Bearing Capacity of Internal Inclined Skirted Footings on c-φ Soil" <i>Journal of Construction Management</i> , Vol. XXXVI, No II, ISSN 0970-3675, pp 5-12	5/10

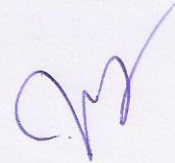


	2.	
Seminars / Workshops / Conferences attended (5 Marks each) [Attach Certificate Copies]	1) "Recent Advances in Geotechnical and Geoenvironmental Engineering" conducted by IITG, TEQUIP, 17/12/20 to 23/12/20 2) "Effective utilization of VTU subscribed e-resources" by KNIBUS, 23/8/21	10/10
Financial Assistance received during current year	Rs.	--
Registered as Research Guide (Reasons for not registering)	Yes	
Research Scholars registered with details	No	/5
Details of Patents Applied for (If any) One application 5 marks		/5
Academic Programs organized and supported during current year. (FDP/Workshop/Seminar / Conference)	1. Conducted inplant training program for Lateral entry students 2. Conducted DCET coaching	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others	"Sustainable Designs" conducted by Knowledge solutions, 10/7/2021	5/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures.	Case studies, PPT, Videos,	5/5
Details of Project Proposal submitted during the current year. (At least one)	"Studies on Slope Vulnerability Assessment and Landslide Mitigation for Kodagu District", Karnataka" VTU Research Grant Scheme 2021	5/5
Details of Project Funds Received.	Rs.	/5
Consultancy Revenue Generated	Rs.	/5
Details of Participation in cultural events during the current year	NOT APPLICABLE FOR CURRENT YEAR	
Additional Responsibilities in the Department/ College Example: Head, Coordinator etc.	1) IAQC coordinator 2) Internship coordinator 3) Geotechnical Lab incharge 4) Student Mentor	10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ....)	1. Indian Institute of Engineers (A513685/8) 2. Indian Society for Technical Education	5/5




	(LM94770) 3. Indian Geotechnical Society (LM-1564)	
COVID TASK FORCE Responsibilities. (If any) Please mention your role.		/5
Contribution towards Branding, Admissions, etc	Admission desk duty, telephone calls for prospective students	10/10
TOTAL		122/190

Date: 25/9/2021



Signature of faculty





Comments from the HOD:

- > needs to be more proactive
- > IQAC coordinator, advised to bring quality practices in the Dept and College.
- > ~~needs~~ advised to take Ph.D students
- > needs to publish papers  
only one paper was published in 2020-21

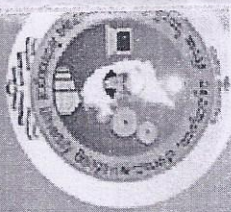
*Mskelle*  
4/10/21  
Signature of the HOD

Comments of the Principal after the discussion:

Signature of the Principal

CEO





VISVESVARAYA TECHNOLOGICAL  
UNIVERSITY, BELAGAVI



NATIONAL INSTITUTE OF TECHNOLOGY  
KARNATAKA, SURATHKAL



## CERTIFICATE OF PARTICIPATION

This is to certify that

Dr AREKAL VIJAY, Professor

KSSEM, BENGALURU

has participated in the

**Faculty Development Programme on Virtual Labs for affiliated  
Engineering Colleges under VTU Belagavi for Civil Engineering and  
related domains organized by Visvesvaraya Technological University  
Belagavi in association with National Institute of Technology Karnataka,  
Surathkal on 19th OCTOBER 2020**

*Dr. A. S. Deshpande*

**Dr. A. S. Deshpande**  
REGISTRAR  
VTU BELAGAVI

SUPPORTED BY

*Prof. K. V. Gangadharan*

**Prof. K. V. Gangadharan**  
PARTICIPATING INSTITUTE  
COORDINATOR  
VIRTUAL LABS  
NITK SURATHKAL

*Dr. Rashmi R. Rachh*

**Dr. Rashmi R. Rachh**  
NODAL COORDINATOR  
VTU BELAGAVI





Registration No. 43770/86

ISSN. 0970-3575

**NICMAR**

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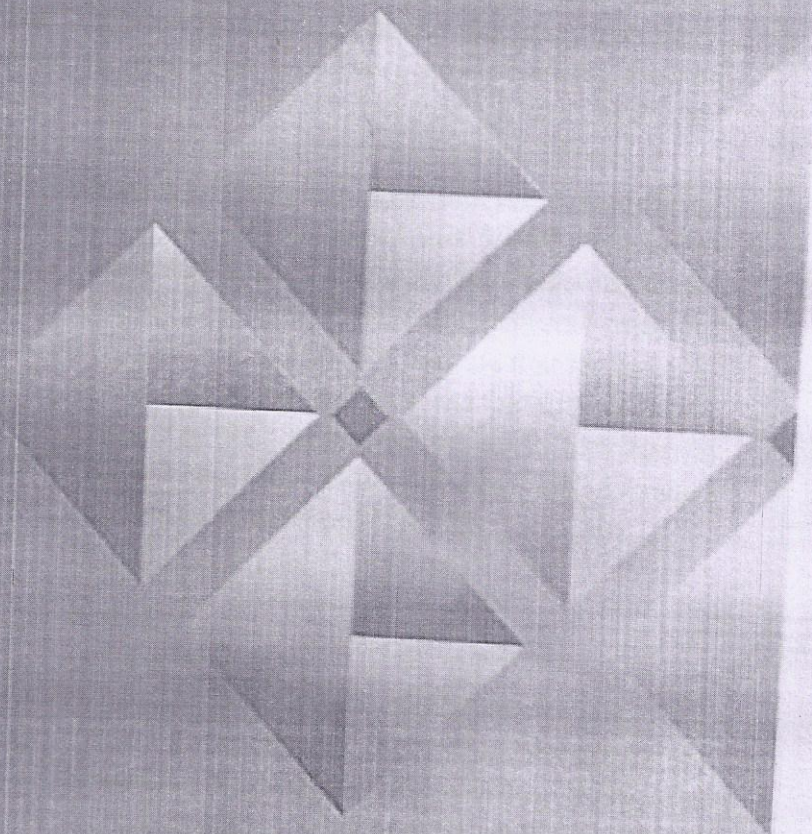
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**Journal of Construction Management**

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Construction Management  
Project Management  
Real Estate Management  
Infrastructure Management  
General Management



Vol. XXXVI, No. II  
April - June 2021

National Institute of  
Construction Management and Research



# Numerical Validation of Experimental Results for Bearing Capacity of Internal Inclined Skirted Footing on $c-\phi$ Soil

Arekal Vijay<sup>1</sup>, Vijayalakshmi Akella<sup>2</sup> and P. R. Bhanu Murthy<sup>3</sup>

**Abstract :** The Skirted foundations are adopted to replace pile foundations in offshore structures. The peripheral vertical skirts under conventional footing, confine the soil beneath the footing. The present study aims at the suitability of internal inclined skirts of on bearing capacity of footing on  $c-\phi$  soil for onshore condition and validation of experimental results by finite element method. The experimentation and the numerical analysis are carried out for different shapes of the footing by varying the skirt depth, skirt thickness and spacing between the internal inclined skirts. Results showed that increase in the depth and thickness of skirts increased the bearing capacity in both square footing and rectangular footing. It is concluded that the reduction in the internal inclined skirt spacing tend to increase the bearing capacity of  $c-\phi$  soil when compared to the higher spacing of internal inclined skirts.

**Keywords :** Skirted Footing, Bearing Capacity, Settlement, Confinement.

## INTRODUCTION

Foundation is the lower most part of the structure that directly interacts with the soil. The stresses developed in the soil due to transfer of forces and moments from the superstructure must be within the permissible limits to maintain the stability of the structure against overturning and sliding. The ability of the foundation to resist the stresses transferred from the superstructure without causing shear failure and excessive settlement is termed as bearing capacity. Soil bearing capacity depends on requirement of foundation stability. Shear strength and settlement are the two main parameters on which the bearing capacity of the soil depends. Foundations are classified as shallow and deep foundations depending on the relation between the depth of the foundation and its width. In recent decades, skirted foundations are being adopted to replace pile foundations in offshore structures. The foundation soil is confined by the peripheral vertical skirts under the footing. Due to the confinement of foundation soil, there is a tendency of increase in bearing capacity. The pile foundation is replaced with these bucket foundations or skirted foundations as they are economical compared to deep foundations. This research is carried out to study the feasibility of applying the skirted foundation for onshore structures.

In this work, in addition to vertical skirts, inclined skirts are also welded to the footing to study its effect. Experimental tests were conducted on bearing capacity of these skirted footings and results are validated numerically using Plaxis 2D software.

The past studies conducted by Eid, H (2013) and Sunil S. P et. al. (2013) showed that skirted foundations improve bearing capacity with the increase in the size of skirts. Also, the finite element analyses carried out by Divya S. K et al (2013) indicate that reduction in number of skirts reduced the bearing capacity. Laboratory tests conducted by M. El Sawwafet al (2005) showed the cells with small cell diameters exhibit deep foundation behaviour.

## MATERIALS AND METHODS

### Materials

#### $c-\phi$ Soil

A mixture of  $c-\phi$  soil was used for this experiment. It is made free from organic matters. The above sample was properly sieved by passing through 600  $\mu$  IS sieve after the soil is oven dried. The effect of moisture is not included as dry soil is used as soil medium for the test. The physical properties of soil used in the experimentation and numerical analysis are listed in the *Table 1*.

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भारतीय प्रौद्योगिकी संस्थान गुवाहाटी  
**INDIAN INSTITUTE OF TECHNOLOGY  
GUWAHATI**

This is to certify that

**DR. AREKAL VIJAY**

participated in the Short Term Course on

Recent Advances in Geotechnical and Geoenvironmental Engineering

conducted by Department of Civil Engineering, IIT Guwahati

under the Technical Education Quality Improvement Programme (TEQIP) sponsored

by the Ministry of Human Resource Development, Government of India,

held on 17<sup>th</sup> to 23<sup>rd</sup> of December 2020.

**TEQIP**

**SHORT TERM COURSE**

Organized by

Centre for Educational Technology (CET)

IIT Guwahati

  
(Dr. Anil Kumar Mishra)

Course Coordinator

  
(Dr. Ravi K)

Coordinator, Knowledge Incubation for TEQIP



Head, CET



# CERTIFICATE

PROUDLY PRESENTED TO

*AREKAL VIJAY*

Sustainable Designs (For civil engineering and architecture)

*Jul 10, 2021*

Date of Completion

*Knowledge Solutions India*

Organizer

