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(71)Name of Applicant :

1)Malla Reddy Engineering College

Address of Applicant :Maisammaguda (Post. Via. Kompally), Mechal-Malkajiri-500100. Telangana. Maisammaguda -----

2)Dr. Venkata Rathnam Ukkurthi

3)Dr. B. Sudharshan Reddy

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Dr. Venkata Rathnam Ukkurthi

Address of Applicant :Associate Professor, Civil Engineering Dept., Malla Reddy Engineering College, Maisammaguda (Post. Via. Kompally), Mechal-Malkajiri-500100 Maisammaguda -----

2)Dr. B. Sudharshan Reddy

Address of Applicant :Professor, Civil Engineering Dept., Malla Reddy Engineering College, Maisammaguda (Post. Via. Kompally), Mechal-Malkajiri-500100. Maisammaguda -----

3)Mrs. K. Asha Latha

Address of Applicant :Assistant Professor, Civil Engineering Dept., Siddharth Institute of Engineering & Technology Siddharth nagar, Narayanavanam Road, Puttur, Tirupati-517583, Andhra Pradesh Puttur -----

(57) Abstract :

The soil compaction is an important engineering application in many geotechnical issues related infrastructure development. Millions of cubic meters of soils are subject to compaction all over the world in the construction of flyovers, embankments, roads and irrigation structures. Compaction improves the stability, strength characteristics and reduces the permeability. Though the strength development as a result of compaction is well studied, compressibility characteristics need much closer examination for enabling better comprehension in the analysis and design of soil structures. A limited experimental investigation is taken up in the present study to understand the compressibility behavior of compacted soils. The soils from eight different locations in the region of Tirupati have been selected based on inherent variations represented by grain size and plasticity characteristics for the purpose of the study. The soils are classified predominantly as Clayey Sands (SC) to Clay with High Compressibility (CH) as per Indian Standard classification (IS 1498-1970). The oedometer compression tests are conducted on soils compacted to Proctor's maximum dry density as per IS 2720 Part-7 1980. The compressibility behavior is analyzed and a step wise procedure is proposed for assessing the compressibility behavior of compacted soils for use by practicing engineers.

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