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**Construction Materials &  
Civil Engineering**

*Volume 3, Book 3, 2024, IIP Series*



**Futuristic Trends in Construction Materials & Civil Engineering Volume 3 Book 3**

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# PERFORMANCE OF CLAYEY AND SANDY SUBGRADE SOIL STABILISED WITH RBI GRADE 81

## Abstract

The performance and longevity of roads are greatly influenced by the characteristics of the underlying subgrade soil. Unstable subgrades often pose challenges due to their inherently weak mechanical properties, leading to suboptimal pavement performance. To address these challenges, soil stabilization techniques have been widely implemented to enhance the engineering parameters of the subgrade. Among various stabilizers, RBI Grade 81 has gained significant attention as a promising solution to enhance the performance of weak subgrade soils. The present study investigates the efficacy of RBI Grade 81 in stabilizing both clayey and sandy subgrade soils. A comprehensive series of laboratory experiments were conducted to analyze the engineering properties, including Atterberg limits, compaction characteristics, and California Bearing Ratio (CBR) of the stabilized subgrade soils. The findings of this study reveal that the incorporation of RBI Grade 81 at 2, 4 and 6% to both clayey and sandy subgrade soils resulted in significant improvements in compaction characteristics and CBR values. Furthermore, the paper discusses the effect of different curing periods on the subgrade soils' behaviour. It identifies the optimal RBI Grade 81 dosage required to achieve maximum benefits in terms of soil stabilization and presents a correlation between the stabilizer content and the corresponding mechanical properties. In conclusion, RBI Grade 81, has been proven to be a promising stabilizer for improving subgrade strength and durability.

**Keywords:** Clayey subgrade; Sandy subgrade; Compaction characteristics; CBR; RBI Grade 81.

## Authors

### **Arijit Kumar Banerji**

Department of Civil Engineering  
Dr. B. C. Roy Engineering College  
Durgapur, India

### **Md. Hamjala Alam**

Department of Civil Engineering  
Dr. B. C. Roy Engineering College  
Durgapur, India

### **Chanchal Das**

Department of Civil Engineering  
Dr. B. C. Roy Engineering College  
Durgapur, India

### **Koyndrik Bhattacharjee**

Department of Civil Engineering  
Dr. B. C. Roy Engineering College  
Durgapur, India  
koyndrik.bhattacharjee@bcrec.ac.in

### **Satabdi Saha**

Department of Civil Engineering  
Elite College of Engineering  
Kolkata, India