

## Review of helical reinforcement in column

<sup>1</sup>Gaurav, <sup>2</sup>Nitish Malik

<sup>1</sup>Research Scholar, Department of Civil, GITM, Jhajjar Haryana

<sup>2</sup>A.P. Department of Civil, GITM, Jhajjar Haryana

### Abstract:

The present work explores the compatibility of normal with helical reinforcement as a whole which can be looked upon as an efficient replacement for normal reinforcement because of its ability to reinforce in all directions. The effectiveness was assessed by performing tests on the beams with respect to the cracking pattern, ductility and load deflection diagrams. The advantage of using helical reinforcement can be observed significantly. Therefore, reinforced beam with helical reinforcement has higher ultimate load-bearing capacity than normally reinforced beam. Hence it can be used in places where horizontal loads have higher significance.

**Keywords:** RCC beams, RCC columns, Spiral reinforcement

### Introduction

Reinforced concrete, as a composite material, has occupied a special place in the modern construction of different types of structures due to its several advantages. Due to its flexibility in form and superiority in performance, it has replaced, to a large extent, the earlier materials like stone, timber and steel. Further, architect's scope and imaginations have widened to a great extent due to its mouldability and monolithicity. Thus, it has helped the architects and engineers to build several attractive shell forms and other curved structures. However, its role in several straight line structural forms like multistoried frames, bridges, foundations etc. is enormous.

**Column:** Column is a vertical compression member whose unsupported length  $l$  shall not exceed sixty times of  $b$  (least lateral dimension), if restrained at the two ends. Further, its unsupported length of a cantilever column shall not exceed  $100b^2/D$ , where  $D$  is the larger lateral dimension which is also restricted up to four times of  $b$  (vide cl. 25.3 of IS 456).

### Classification of Columns Based on Types of Reinforcement

Based on the types of reinforcement, the reinforced concrete columns are classified into three groups:

