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# Literature Review: Comparison Study of Normal RCC Beams and Composite Steel Beams

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**Abstract:** This study presents a comprehensive comparison between traditional Reinforced Concrete (RCC) beams and Composite Steel Beams, aiming to evaluate their structural performance. Through meticulous experimentation and analysis, key parameters such as load-carrying capacity, deflection characteristics, and cost-effectiveness were scrutinized. The findings illuminate nuanced differences in structural behavior, providing valuable insights for optimizing beam selection in diverse construction scenarios. This research contributes to the evolving discourse on structural engineering, addressing the growing demand for sustainable and efficient building practices.

Keywords: Comparison Study of Normal RCC Beams and Composite Steel Beams

### REFERENCES

- [1]. Tedia A, Maru S. Cost analysis and design of steel-con- crete composite structure RCC structure. IOSR Journal of Mechanical and Civil Engineering. 2014 Jan; 11(1) Ver II:54–9.
- [2]. Anish NS, Pajgade PS. Comparison of RCC and com- posite multi-storeyed buildings. International Journal of Engineering Research and Applications. 2010; 3(2):534–9.
- [3]. Mahesh SK, Kalurkar LG. Analysis and design of multi- storey building using composite structure. International Journal of Structural and Civil Engineering Research. 2014; 3(2):125–37.
- [4]. Charantimath SS, Swapnil BC, Manjunath MB. Comparative study on structural parameter of R.C.C and composite building. IISTE Civil and Environmental Research. 2014; 6(6):98–110.
- [5]. Johnson RP. Composite structures of steel and concrete, Vol- I. Blackwell Scientific Publications; 1994.
- [6]. IS: 11384, Code of practice for composite construction in structural steel and concrete. Bureau of Indian Standards: New Delhi; 1985.
- [7]. IS: 800, Code of practice for general construction in steel. Bureau of Indian Standards: New Delhi; 2007.
- [8]. IS 875 (1987-Part 2), Code of practice for live loads. Bureau of Indian Standards (BIS): New Delhi; 1987.
- [9]. IS: 456, Code of practice for plain and reinforced concrete code of practice. Bureau of Indian Standards: New Delhi; 2000
- [10]. IS 875(1987-Part 1), Code of practice for design loads (other than earthquake) for buildings and structures, Dead loads. Bureau of Indian standards (BIS): New Delhi; 1987.
- [11]. IS: 1893, Criteria for earthquake resistant design of struc- tures general provisions for buildings, Part 1. Bureau of Indian Standards: New Delhi; 2002.
- [12]. Heirany Z, Ghaemian M. The effect of foundation's modu- lus of elasticity on concrete gravity dam's behavior. Indian Journal of Science and Technology. 2012 May; 5(5):2738–40. DOI: 10.17485/ijst/2012/v5i5/30453.
- [13]. Prabir Kumar Sarker, (2008), "Analysis of geo polymer concrete columns", Materials and Structures, Vol: 42, Issue: 6, pp. 715-724.

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- [14]. Rangan, B. V, and Hardijto, D, [2005], "Development and properties of low calcium fly ash based geo polymer concrete", Research report GC-1,Faculty of Engineering, Curtin University of Technology, Perth, Australia.
- [15]. Rawaz Kurda, Jorge de Brito, Jose D. Silvestre(2017), "influence of recycled aggregates and high volume contents of fly ash on concrete freshproperties", Cement and Concrete Composites, Vol 84, pp. 198 213.

