

ANALYSIS AND DESIGN OF A STEEL BUILDING FOR A 10T CRANE USING TEKLA STRUCTURAL SOFTWARE

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Abstract:

This study presents the analysis and design of a steel industrial building integrated with a 10-ton overhead crane using Tekla Structural Designer. The structure is designed in accordance with Indian Standard codes including IS 800:2007, IS 875, and IS 1893. Various loads such as dead load, live load, wind load, seismic load, and crane load are considered in the analysis. The modeling and design process ensures structural safety, stability, and serviceability. The results demonstrate that the use of advanced structural software enhances design efficiency and accuracy. The study highlights the effectiveness of steel structures in industrial applications due to their strength, durability, and economic advantages.

Keywords — **Steel Structure, Tekla Structural Designer, Crane Load, Industrial Building, Structural Analysis**

I. INTRODUCTION

Steel structures are widely used in industrial construction due to their strength, durability, and flexibility. This paper focuses on the design of a steel building integrated with a 10T crane.

II. METHODOLOGY

The structure is modeled using Tekla Structural Designer. Loads including dead, live, wind, seismic, and crane loads are applied as per IS codes.

III. RESULT AND DISCUSSION

The structure satisfies all safety and serviceability requirements. The use of Tekla software improved efficiency and accuracy.

IV. CONCLUSION

The project concludes that steel structures are efficient for industrial buildings with crane systems.

Tekla software ensures reliable design.

REFERENCES

IS 800:2007, IS 875, IS 1893 and standard structural design textbooks.