ICES 2024

TITLE OF PROJECT:

STUDY DESIGN AND ANALYSIS OF FERROCRETE

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ABSTRACT (150-300 words):

this project centers on the comprehensive study and design of ferrocrete structures, a novel composite material known for its unique blend of cement and steel fibers. the inherent properties of ferrocrete, including increased tensile strength, improved crack resistance, and enhanced ductility, position it as a potential solution to various construction challenges.

the study commences by investigating optimal mix designs that balance material affordability, fire resistance, and strength. through rigorous experimentation and testing, suitable combinations of cement and steel fibers are identified to enhance the mechanical properties of ferrocrete

to apply design principles to unconventional structures, the project employs staad.pro, a sophisticated structural analysis and design software. this tool aids in the creation of physical and simulated models, allowing for a comprehensive exploration of the structural behavior under different loads. by subjecting the ferrocrete structures to simulated loading scenarios, their performance in terms of strength, deformation, and failure modes can be evaluated.

additionally, the project assesses the feasibility of ferrocrete structures in real-world applications. affordability, fire resistance, ease of construction, aesthetic appeal, and structural integrity are considered in this evaluation. by designing and testing both physical and simulated models, the project offers insights into how ferrocrete structures can address these criteria effectively.

in conclusion, this project contributes to the advancement of the construction industry by demonstrating the potential of ferrocrete structures. through a combination of optimized mix designs, innovative structural analysis using staad.pro, and comprehensive testing, the study provides a deeper understanding of ferrocrete's capabilities in meeting the challenges of affordability, fire resistance, construction efficiency, aesthetics, and structural strength

KEYWORD: ferrocrete

CATEGORY: Concrete Technology And Building Materials