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TITLE OF PROJECT: Development of Excel Sheet for Concrete Mix Design

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ABSTRACT:

This research topic, titled "Development of Excel Sheet for Concrete Mix Design" addresses the challenges faced by civil engineers in the traditional concrete mix design process by harnessing the functionalities of Microsoft Excel. Recognizing the inherent complexities and potential for human error in manual calculations, the study focuses on streamlining the workflow of civil engineers. A user-friendly Excel spreadsheet has been developed, incorporating commands such as SUM, MIN, MAX, VLOOKUP, IF, and IFS to automate intricate calculations involved in concrete mix proportioning. This tool enables civil engineers to input project-specific requirements and constraints, such as strength and workability, facilitating dynamic adjustments of mix proportions. Four distinct spreadsheets have been created, aligning with IS 10262-2019 and IS 456-2000 standards, tailored for ordinary, standard, and high-strength concrete. By utilizing this Excel-based solution with advanced commands and standard-specific spreadsheets, the efforts aim to significantly reduce human error and eliminate the need for rigorous hand calculations, ultimately enhancing the precision and efficiency of concrete mix design in accordance with industry standards in civil engineering practices.

KEYWORDS: Concrete Mix Design, Excel spreadsheet, IS 10262-2019, IS 415-2000.

CATEGORY: Concrete Technology and Building Materials.