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(57) Abstract :
Industrialization and urbanisation cause the metallurgical industry to produce enormous quantities of metal products for production activities. As the production of metallic products rises, so do the associated wastes, which exacerbate environmental issues. In this regard, one of the metallic derivatives known as cinder is utilised in the production of sustainable M40 concrete. Iron Cinder (IC) is a byproduct obtained by separating molten metal from impurities in a furnace during metalworking. Iron Cinder is used as partial substitute of traditional combination in possibilities of 10%, 20%, 30%. 40%, and 50%. To evaluate the behaviour of Iron cinder inclusion, mechanical parameters such as compressive strength, split tensile strength, and flexural strength are analysed. The study reveals that the mechanical properties of Iron cinder achieved the desired strength when 40% of conventional aggregate was substituted with Iron cinder. Therefore, an effective exploitation of up to 40% Iron cinder in the production of green concrete is recommended

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