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(57) Abstract :
The use of Portland cement in concrete construction is under critical review due to high amount 5 of carbon dioxide gas released to the atmosphere during the production of cement. In recent years, attempts to increase the utilization of fly ash to partially replace the use of Portland cement in concrete are gathering momentum. Most of this by-product material is currently dumped in landfills, creating a threat to the environment. Fly ash based concrete is a ‘new’ material that does not need the presence of Portland cement as a binder. Instead, the source of 10 materials such as fly ash, that are rich in Silicon (Si) and Aluminium (Al), are activated by alkaline liquids to produce the binder.The elastic properties of hardened fly ash-based concrete, i.e. the modulus of elasticity, the Poisson’s ratio, and the indirect tensile strength, are similar to those of ordinary Portland cement concrete. The stress-strain relations of fly ash-based concrete fit well with the expression developed for ordinary Portland cement concrete. In this 15 study, cement has been partially replaced by fly ash (0%, 5%, 10%, 15%, and 20% by weight of cement for M-25 mix with 0.50 water-cement ratio. Test on hardened concrete is done i.e. Compressive strength at 7th, 14th and 28th day respectively.

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