

**STUDY OF HARDENED PROPERTIES OF BENDABLE
CONCRETE**

PROJECT REPORT

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ABSTRACT

Reducing the brittle nature of concrete has opened a new world of possibilities to enhance the safety durability and sustainability of the next generation of civil infrastructure. In this new ECC materials which was under development at U-M for 10 years, specially coated microscopic polymer fibers slide past each other instead of snapping under stress, giving it incredible ductility previously only seen in ductile metals. A new type of fibre-reinforced bendable concrete will be used for the first time in Michigan. Developed by Michigan scientists, the new concrete looks like regular concrete, but it is 500 times more resistant than cracking than what your sidewalk made of. It's also 40 percent lighter in weight. Tiny fibres that comprise about 2 percent of the mixture's volume partly account for its performance, and also the materials are designed for maximum flexibility, because of its long life, the Engineered Cement composites (ECC) is expected to cost less in the long run, as well. The ductile or bendable concrete is made of same ingredients as in regular concrete minus the coarse aggregate. It looks exactly like normal concrete, but under excessive strain, the ECC concrete gives, the specially coated network of fibre veining the cement is allowed to slide within the cement is allowed to slide within the cement, thus avoiding the inflexibility that causes brittleness and breakage. The key factor is that ECC is engineered ;means in addition to reinforcing the concrete with micro scale fibers that act as ligaments to bond the concrete more tightly. In the present investigation an attempt has been made to develop and study of hardened properties of bendable concrete in laboratory by using different percentages of PVA fibers along with fly ash, RHA and GGBS.