

## الألياف النسجية وتطبيقاتها في المجالات المعمارية لتحقيق أهداف ميكانيكية جيدة

**Fiber textile and their applications in the architectural fields to achieve good mechanical targets**

م.د / طارق أحمد محمود عبد الله راشد

المدرس بشعبة النسيج – قسم التعليم الصناعي كلية التربية جامعة حلوان

**Abstract.**

The textile fibers as “ fiberglass “ have highly efficient mechanical and properties . it has been industrially used in several areas to achieve good insulation and high mechanical properties of the product .

Textile fibers were used in this research to achieve architectural objectives in the concrete mix.

Textile fibers were mixed with different proportions with cobalt polyester . and different proportions of epoxy to achieve a high-strength mix used in architectural fields .

- The research studies the effect of deference layers of glass fabrics on strengths with deferent amount of epoxy .
- The research studies the effect of deference layers of glass fabrics on strengths with deferent amount of polyester / cobalt liquids.
- The experimental measured by ( instron 5500R ) , ( Barcol Hardness tester model Barcol - impressor Barber – colman company USA ) , ( Portable Hardness Tester model D H T – 300 , instron 5500R ) .

**1. Effect of increasing the layers of glass fabrics on tensile strength .**

- The research confirmed that the sample ( 1 Kg epoxy / 9 layers glass fabrics ) is the best . in case of covering all sample area by epoxy mix inside and outside the glass fabric layers , that lead to increasing the holding among the glass fabric layers .

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**2. Effect of increasing the layers of glass fabrics on elongation .**

- The research confirmed that the sample ( 1 Kg polyester / 9 layers glass fabrics ) is the best , in case of covering all sample area by polyester liquid inside and outside the glass fabric layers , a few separate can happen among the glass fabric layers .

**3. Effect of increasing the layers of glass fabrics on power bend bearing .**

- The research confirmed that the sample ( 1 Kg epoxy / 9 layers glass fabrics ) is the best , in case of covering all sample area by epoxy mix partially inside and holly outside the glass fabric layers , that lead to increasing the holding among the glass fabric layers .

**4. Effect of increasing the layers of glass fabrics on hardness .**

- The research confirmed that the sample ( 1 Kg polyester / 3 layers glass fabrics ) is the best , in case of covering all sample area by polyester liquid partially inside and holly outside the glass fabric layers , that lead to increasing the holding among the glass fabric layers .