ACCURACY IS THE
UNDERLYING STRATEGY

GCTS
TESTING SYSTEMS

Introducing the GCTS eFRM-90S:

Future of Fiber Reinforced Concrete Testing

The GCTS eFRM-90S is a precision-controlled electro-mechanical loading frame designed for post-crack performance testing of Fiber Reinforced Concrete (FRC). This system combines precision with versatility, offering unmatched closed-loop control of net deformation, crack mouth opening CMOD or any other real time calculated parameter. Its compact design, cost-effective and user-friendly design makes it a smart option for commercial labs. GCTS also offers a broad spectrum of standard and customized tests, as well as fixtures and predefined Apps. Whether you intend to perform Q/C commercial work or research testing, the eFRM-90S promises accuracy, adaptability, and affordability, truly setting a gold standard in the industry.

KEY FEATURES

- Stiff electro-mechanical loading frame
- Precise closed-loop control
- 90 kN axial load capacity
- Fixtures for compression, flexural, and tension tests
- Apps to perform ASTM, EN and other standard tests
- Ideal for commercial and educational labs

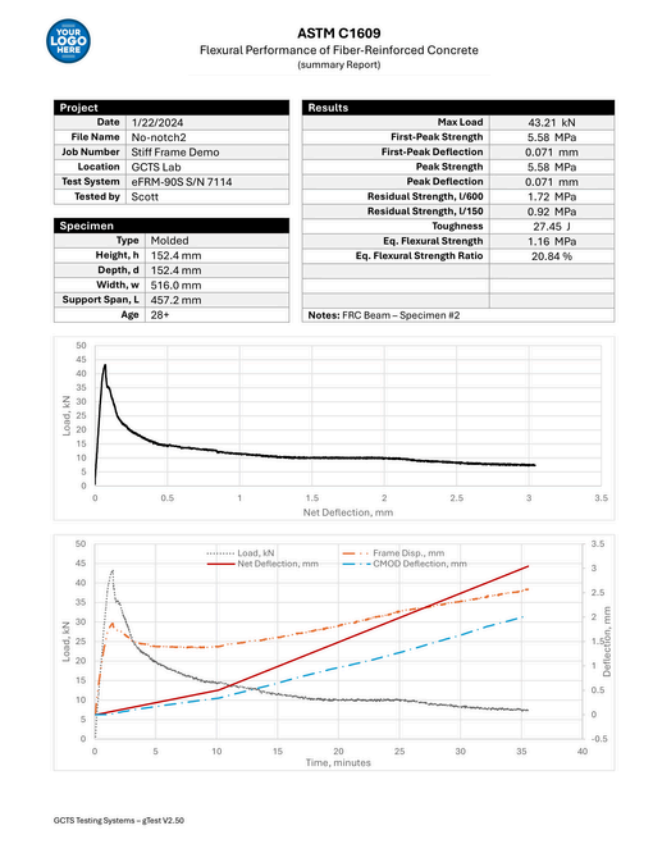
(480) 456-0110

gcts.com

6103 South Maple Avenue Tempe, Arizona 85283, USA

- **Precise Closed-Loop Control:** The eFRM-90S allows for control of any connected sensor or calculated input enabling accurate measurement and control of critical parameters during testing.
- **Flexible Control Options:** You can easily change the feedback control mid-test from Load, displacement, net deflection, or CMOD, making it adaptable to various testing scenarios.
- **Stiff Loading Frame:** A stiff loading frame ensures that most of the applied load is transferred directly to the specimen without significant deformation of the frame itself. Frame deformation could lead to premature failure and inaccurate results.
- **Directional Control:** The system excels in controlling displacement along the direction of the least principal stress, making it suitable for brittle materials like concrete and rock.
- **Comprehensive Testing Capabilities:** It can perform a large range of standard tests including compressive and flexural strength, indirect tension for concrete as well as tension and bending of metallic materials. The eFRM-90S is compatible with many different fixtures and application software for conducting Q/C commercial work or in-depth research testing.
- **Customizable Procedures:** Standard testing procedures can be easily customized to meet different standards, allowing for a combination of feedback control variables that can switch mid-test based on predefined threshold values or peak reversals.

GENERATE FULL REPORTS



ASTM C1609
Flexural Performance of Fiber-Reinforced Concrete
(summary Report)

Project	
Date	1/22/2024
File Name	No-notch2
Job Number	Stiff Frame Demo
Location	GCTS Lab
Test System	eFRM-90S S/N 7114
Tested by	Scott

Specimen	
Type	Molded
Height, h	152.4 mm
Depth, d	152.4 mm
Width, w	516.0 mm
Support Span, L	457.2 mm
Age	28+

Results	
Max Load	43.21 kN
First-Peak Strength	5.58 MPa
First-Peak Deflection	0.071 mm
Peak Strength	5.58 MPa
Peak Deflection	0.071 mm
Residual Strength, I/600	1.72 MPa
Residual Strength, I/150	0.92 MPa
Toughness	27.45 J
Eq. Flexural Strength	1.16 MPa
Eq. Flexural Strength Ratio	20.84 %

Notes: FRC Beam – Specimen #2

GCTS Testing Systems – gTest V2.50

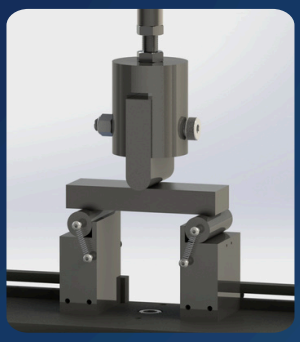
- **Cost-Effective Solution:** Easy to install requiring only 110 or 220 VAC @ 1 KVA power

SUITABLE FOR MANY TESTS

COMPRESSION MODULUS & POISSON'S RATIO

METAL AND FIBER TENSION TESTING GRIPS

DIRECT TENSION TEST OF UHPC AND FRC



DUCTILITY BEND TESTS

AND MORE...

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