



FIBER REINFORCED CONCRETE

TESTING & LABORATORY SERVICES



FEATURES AND CAPABILITIES

- Verify calculated dosages of fibers to replace conventional reinforcing
- Determine admixture and concrete rheology requirements when proportioning FRC
- Provide competitive analyses and troubleshoot common problems
- Develop performance based specifications with FRC
- Instron servo-hydraulic test frames for precision accuracy
- CCRL inspected mixing laboratory
- Petrographic and forensic services
- Temperature and humidity controlled environment for consistency
- Professional and certified reports and analyses

CUSTOMER SERVICE

Euclid Chemical can perform mixing, sampling, testing and analysis of fiber reinforced concrete mixtures and hardened samples at its Technical and Training Center, located in Cleveland, Ohio. This facility assists customers in qualifying, characterizing and evaluating the performance of fibers in concrete using current ASTM and other nationally and internationally recognized testing methods and procedures. Our investment in this facility solidifies our global vision to provide the best service and support on fiber reinforcement to the concrete construction industry worldwide.

CERTIFIED PRECISION

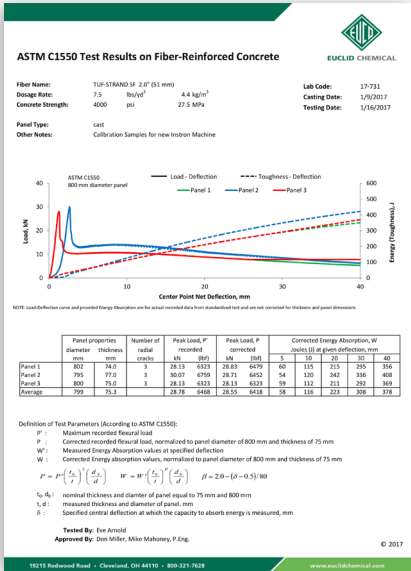
Euclid Chemical can prepare Fiber-Reinforced Concrete samples within its controlled laboratory environment or provide personnel to assist customers on a project site to cast and deliver test specimens to our facility. Certified ACI and NRMCA technicians produce samples in accordance with ASTM and other relevant standards. Curing methods and test intervals are recorded prior to delivering formal reports and submittal documents.

AVAILABLE TESTING PROCEDURES AND METHODS

ASTM C1399	Average Residual Strength of Fiber-Reinforced Concrete
ASTM C1550	Flexural Toughness of Fiber-Reinforced Concrete (using round panels)
ASTM C1579	Evaluating Plastic Shrinkage Cracking
ASTM C1609	Flexural Performance of Fiber-Reinforced Concrete (using beams)
EN 14651	Flexural Tensile Strength of Fiber-Reinforced Concrete (notched beams)
ASTM C157	Length Change of Hardened Concrete (shrinkage testing)

Other tests: Elastic modulus, tensile strength, concrete strength, air content, fatigue properties, permeability, impact, abrasion, scaling and freeze-thaw resistance.

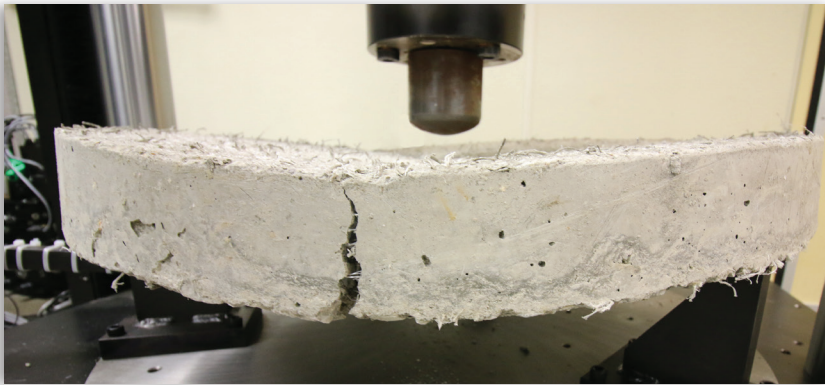




TECHNICAL EXPERTISE

Approved reports and Technical Service Requests are provided and reviewed with our customers to support engineering design requests and characterize concrete mixtures. The testing laboratory can also compare competitive fiber products and is used to maintain quality and control parameters for our product line of micro-synthetic, macro-synthetic and steel fibers. This data is used to support calculations to develop performance-based specifications for determining the appropriate quantity of fibers for industrial floor designs, tunnel segment stresses and precast product moments. This information is also supplied to customers to support alternative design cost comparisons and pre-job conference discussions to ensure proper execution of specifications and job site requirements.

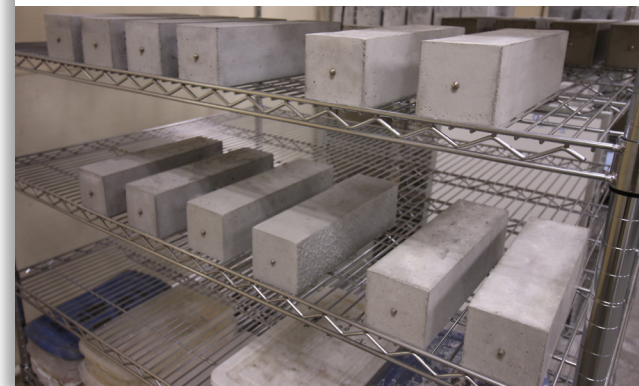
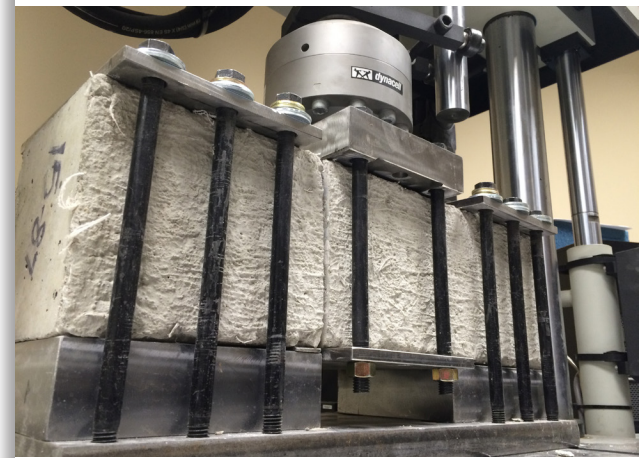
EUCLID CHEMICAL



INDUSTRY LEADERSHIP

Euclid Chemical's staff of professional engineers, certified technicians and concrete managers also actively participate in industry related organizations helping to further define and promote the use of Fiber-Reinforced Concrete for floors, precast, walls, shotcrete and other applications. These organizations include:

- American Concrete Institute (ACI)
- National Ready Mixed Concrete Association (NRMCA)
- Fiber Reinforced Concrete Association (FRCA)
- National Precast Concrete Association (NPCA)
- Precast Prestressed Concrete Institute (PCI)
- American Society of Testing and Materials (ASTM)



For more than 100 years, The Euclid Chemical Company has served as a leading supplier to the concrete and masonry industry offering a full line of engineered concrete admixture and construction products. Our products also include fiber reinforcement, block and masonry additives, curing and sealing compounds, epoxy adhesives, floor and wall coatings, structural grouts for columns, equipment and machinery, decorative solutions, joint fillers, waterproofing and repair products. The Euclid Chemical Company strives to bring innovative technologies and products to the concrete market with industry-leading customer service.