

FDS SERIES

FIBER DOSING-FEEDING SYSTEM

Perfect Solution for Fiber Feeding
Thanks to Flawless Dosing and Strong Construction

MEKA

FIBER DOSING SYSTEM

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FIBER REINFORCED CONCRETE: SOLUTION FOR BUILDING REINFORCEMENT AND CHANGING ARCHITECTURAL EXPECTATIONS



Concrete is a composite construction material obtained by mixing cement, water, various aggregates based on areas of use, and certain additives when required. Today, the qualities expected from concrete have increased due to changes in architectural expectations and development of construction technologies. Emergence of the need for using concrete in various areas caused some developments in concrete technology and concrete formula was developed. One of the most significant of these developments is the production of fiber reinforced concrete. In fact, fiber has been used as reinforcement material for a long time and it is not a new application for mankind. In Ancient Egypt, straws were used to reinforce bricks while horse hair or asbestos fiber was used to obtain a more flexible and robust construction material even thousands of years ago.

Metallic, polymeric, mineral or natural materials with certain length/diameter (fragility ratio) ratio added to fresh concrete with various methods and different amounts in order to positively change concrete properties are called fiber. Fibers are produced in various types and dimensions from materials such as steel, plastic, glass.

In general, fiber reinforcement decreases plastic and contraction shrinkage cracks in concrete, and increases wear, fraction and tensile strength and fatigue resistance. Fibers that minimize concrete damage due to freezing-dissolution in site concrete open to UV decrease rebound rate in shotcrete applications.

It is proven with many researches that the fiber added to concrete increases the concrete's ability to strain-transform under pressure and bending strength. Today, the use of fiber reinforced concrete applications that are the subject of many scientific researches is becoming widespread after finding out relevant benefits.

Fiber reinforcement concrete components are commonly used in applications including various structures such as industrial buildings, pavements, bridges, tunnel and channel coatings, hydraulic structures, explosion resistant buildings, security rooms, thin coatings and concrete cylinder.





Meka Fiber Feeding System Got Full Marks During Riva Tunnel Construction

MEKA Fiber Feeding System realized the dosing and adding of fiber reinforced concrete used for the construction of the tunnel that has the widest excavation area of Europe within Yavuz Sultan Selim Bridge also known as 3rd Bosphorus Bridge and North Marmara Highway Project. The system got positive reviews for its perfect dosing and operation efficiency.



FIBER REINFORCED CONCRETE PRODUCTION

Regardless of type of the fiber added to the concrete, its homogenous distribution and remaining the same after mixing the cement directly affects the contribution it makes to mechanical properties of the concrete. Homogeneously distributed fibers prevent cracks in the concrete and make the concrete more robust by slowing down the progress of cracks within the concrete.



Measuring and adding fiber to mixer truck for a small quantity of fiber reinforced concrete

Primitive and risky method of fiber reinforced concrete production in terms of reliability is preparing the fiber reinforced concrete by adding fiber to the concrete in truck mixer and mixing for 5-15 minutes.

In this method, sudden water loss occurs when fiber is added to fresh concrete. Therefore the concrete may lose its slump value before homogenous mixture is obtained.

Since the concrete in truck mixer is a dense mixture containing all components, fiber reinforcement to fresh concrete may not be a suitable method for obtaining a homogenous mixture.

The operator's manual addition to the truck mixer also poses a risk for person related production failures.

In addition, the mixer is operated for 5-15 minutes in order to allow the mixing when fiber is added after the mixer arrives to the site. A significant loss in production efficiency will occur due to long waiting durations of personnel and vehicles when this method is repeated for each truck.



Fiber reinforced concrete production in the plant with the fiber feeding system to be added to concrete plant

The most accurate choice for a concrete plant is not adding to the mixer, but to produce fiber reinforced concrete by a system feeding fiber to aggregate feeding belt. This system supported by plant automation allows highly accurate production and prevents user faults. Because, fiber additive less or more than the calculated amount directly affects the concrete quality.



MEKA FIBER FEEDING SYSTEM WORKING VIDEO

<https://www.youtube.com/embed/ec8F599C-4A>





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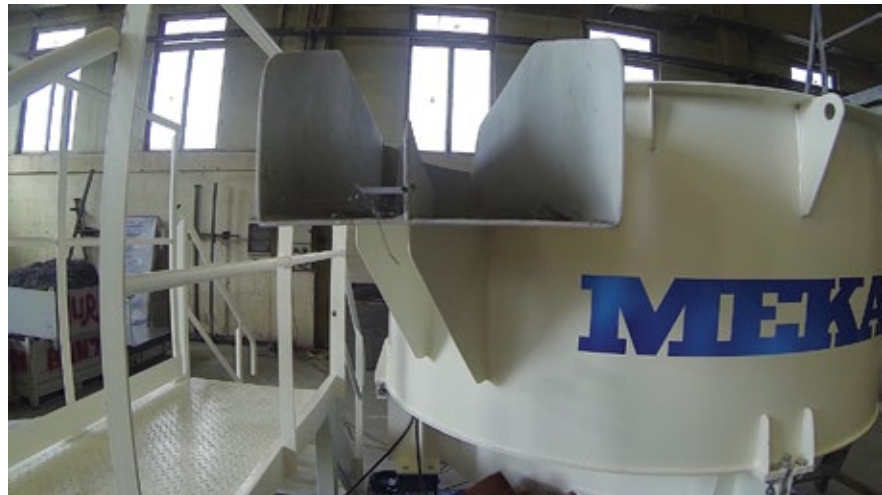
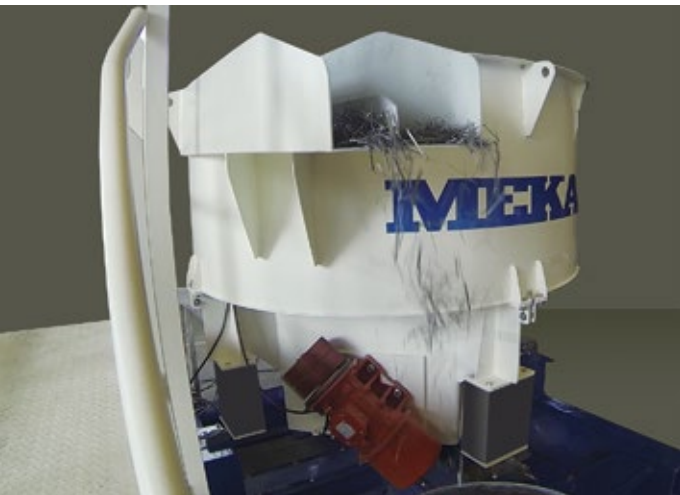
MEKA FDS SERIES FIBER DOSING SYSTEM

If the purpose is high capacity production, accurate weighing and mixture quality, MEKA Fiber Feeding Systems provide the best solution. Meka Fiber Feeding Systems with high weighing accuracy that can be used for steel/hard plastic and soft fibers are designed flexibly in order to meet various needs of our customers. Fiber feeding belt and other by-products are designed based on site installation and needs.

Meka fiber feeding system may be used for fiber reinforced concrete production in concrete plants, fiber reinforced stone mastic (TMA-SMA) asphalt production in asphalt plants, and for automatic and accurate fiber feeding and dosing in all kinds of production processes.

Weighing process can be integrated to plant automation for mixture quality and homogeneity check.





WHY MEKA FIBER FEEDING SYSTEM?



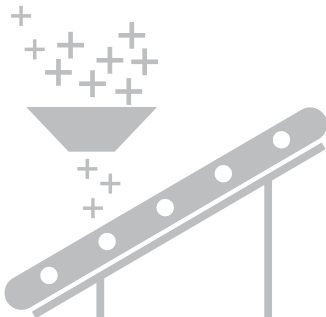
EASY MATERIAL LOADING FACILITIES

Steel and hard plastic fibers are generally sold in BIG-BAGs. Vessel of Meka Fiber Feeding System can be fed by BIG-BAG with the help of crane.



EXCELLENT CONCRETE WITH COMPLETE MEASUREMENT

Required fiber amount is chosen for each mixture from indicators on control panel of Meka Fiber Feeding System or from concrete plant automation. Weighing system works with a margin of error less than 1% thanks to accurate load cells. Fiber weighed with reduced weighing method is discharged on aggregates on aggregate feeding belt or into feeding bucket by transfer belt. It is also possible to obtain various types of reports related to fiber in complete integration.



AGGREGATE SPEED SENSITIVE FEEDING FOR HOMOGENOUS MIXTURE

In order to obtain the best mixture and high homogeneity in Meka fiber feeding system, fiber feeding speed is regulated to transfer speed of the aggregate, therefore the aggregate passes through a pre-mixture phase with fiber.





ROBUST BODY THAT CAN BE USED WITH ALL KINDS OF FIBER

Meka fiber feeding system is equipped with cylindrical spiral fiber feeding lines and installed on a robust steel structure. Two adjustable vibrators allow the required movement of the vessel.



PLUG-AND-PLAY STRUCTURE COMPLETELY INSTALLED AND TESTED IN THE FACTORY

Meka fiber feeding unit is pre-installed and tested in the factory and shipped in a condition ready to operate. Site installation is done quickly thus allowing immediate production.



TECHNICAL SPECIFICATIONS

MODEL	A mm	B mm	C mm	D mm	E mm	POWER W	WEIGHT kg	CAPACITY kg/min*	FEEDER VOLUME litre**
MFD 1000	2490	2170	1935	1800	300	3920	1200	40-150	1000
MFD 2000	2590	2370	2370	2000	300	3920	1450	40-150	2000

* Capacity varies depending on fiber type used

** Theoretical value.





MEKA FIBER FEEDING SYSTEMS, WITH ASSURANCE OF THE GREATEST PRODUCER IN TURKEY

Choice of worldwide leader companies such as Lafarge, Holcim, Cemex, Heidelberg, Meka has established more than 2000 concrete plants and crushing-screening facilities in more than 65 countries in 4 continents.

Meka is an expert in terms of crushing screening and concrete plants thanks to its world class quality as well as special designs it developed.

Meka FDS Series fiber feeding systems can perform 100% accurate fiber dosing and feeding in your plant, also you can get assistance from Meka 24/7 thanks to international service support.

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