

# Instruction Sheet



## MiniBars™ Dosing & Mixing



## Description

MiniBars™ are a structural Fiber Reinforced Polymer (FRP) composite macrofiber designed to provide high post-crack strength in concrete in addition to increasing toughness, ductility, impact and fatigue resistance. They can be used to reduce or eliminate secondary reinforcing like welded wire reinforcing (WWR) mesh or even as primary reinforcing in high performance concretes. MiniBars™ can be added to wet concrete at the batching plant or into the ready-mix truck on site. For optimal dispersion and performance, it is recommended to follow the instructions below.

## Prior To Use

Dosage rates are dependent on the application and desired performance levels. The amount is determined through engineering analysis related to concrete strength and other reinforcing in the application. The dose amount should be noted on the batch documentation in accordance with PCI and ACI recommendations.

- Dosage rates above 17 lbs/cy (10 kg/m<sup>3</sup>) can affect slump and workability, so anticipate a mix design adjustment (See Note 1 in Summary).
- Wear safety glasses and gloves when handling to prevent eye and skin irritation from fibers. Refer to material safety guidance documents.

## How To Use

### At the batching plant

- Add MiniBars™ to the wet concrete as the last component in the mix. It is not recommended to add during dry blending as it may not achieve maximum performance.
- Add fiber while the mixer is running.
- Separate any fiber nests before they enter the mixer.
- Add MiniBars™ at a rate of 1 box (22 lbs. or 10 kg) per minute manually or with dosing equipment designed for macrofibers. (See Note 2 in Summary)
- Mix 15-20 seconds at full speed after finishing dosing and check visually.

# Instruction Sheet

## MiniBars™ Dosing & Mixing



### At The Jobsite

- Add MiniBars™ when the truck arrives on site.
- For doses over 17 lbs/cy (10 kg/m<sup>3</sup>) add fiber at the batching plant to the wet mix.
- Mix continuously at about 12 rpm while adding fiber at a rate of 22 lbs (10 kg) per minute.
- After completing the dosing, mix for 3 minutes at full speed or 30 seconds per cubic yard and control with visual check.
- Use a fiber blower to achieve faster and easier dosing for large loads.

### In The Laboratory

- Avoid using a high shear or compulsory mixer. Prefer a small portable concrete or free-fall mixer.
- As the mixer is turning, spread MiniBars™ over the surface of the wet concrete at a rate of 2 lbs. per minute for a 3 cu.ft. drum.
  - Mix for 1 to 2 minutes after completing dosing and control visually to check for good dispersion of fiber.
- If a planetary or other kind of high shear mixer is the only option, then add fiber gradually, but as quickly as possible at the slowest mixing speed required to spread the fibers into the wet mix without causing clusters. (See Note 3 in Summary)
  - Limit the mixing time to 30 seconds after finishing dosing.

### Summary

Place	Batching Plant	Jobsite	Laboratory
Always introduce into the wet mix			
When	Last component	On arrival at jobsite	Last component
How	Planetary mixer	Truck Drum	Drum mixer preferably
Addition Rate	22 lbs/min	22 lbs/min	2 lbs/min for 3.5ft <sup>3</sup> drum
Mixer Speed	Lowest possible	12 rpm	<30 rpm
Mixing Time	20 sec	3 min	60-120 sec
Assistance Device	Dosing system <sup>2</sup>	Blower	Break clusters manually

<sup>1</sup> Typical slump reduction: 1.5 to 2.0 in. for a 4400 PSI strength 8.75 in. slump concrete with the addition of 17 lbs/yd<sup>3</sup> of 43mm MiniBars™ macrofibers.

<sup>2</sup> Dispensing/dosing devices can be suggested by our Technical Team.

<sup>3</sup> Experience shows that shear stresses in small pan mixers will damage MiniBars™ macrofibers, and this may result in lower performance that will be obtained from full size mixers.

# AIT Manufacturing

aitcomposites.com

20801 Miles Road, Suite C-1  
North Randall, OH 44128  
(440) 359-7151

This information and data contained herein is offered solely as a guide in the selection of reinforcement. The information contained in this publication is based on actual laboratory data and field test experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any responsibility or liability arising out of its use or performance. The user agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production. It is important for the user to determine the properties of its own commercial compounds when using this or any other reinforcement. Because of numerous factors affecting results, we make no warranty of any kind, express or implied, including those of merchantability and fitness for a particular purpose. Statements in this publication shall not be construed as representations or warranties or as inducements to infringe any patent or violate any law, safety code or insurance regulation. Advanced Infrastructure Technologies reserves the right to modify this document without prior notice.