

# Arkaz MacroFibers

Synthetic MacroFibers for Shotcrete and concrete

## DESCRIPTION

**Arkaz MacroFibers** is Macro synthetic reinforcing fibers. **Arkaz MacroFibers** is specifically engineered for use as secondary reinforcement. It is a 100% virgin copolymer fiber designed to provide a high performing reinforcement system for concrete. **Arkaz MacroFibers** is specifically engineered and manufactured to reduce plastic and hardened concrete shrinkage, increase fatigue resistance and concrete toughness, and improve impact strength.

## USES

**Arkaz MacroFibers** structural synthetic fibers are a patented synthetic macro polypropylene fiber successfully used to replace steel fibers and conventional reinforcing bars in a wide variety of applications. This fiber standard specification for fiber reinforced concrete and shotcrete are specifically designed to provide equivalent tensile and bending moment resistance to conventional reinforcement requirements. Concrete reinforced with **Arkaz MacroFibers** will have three-dimensional reinforcing with enhanced flexural toughness, impact and abrasion resistance and will also help mitigate the formation of plastic shrinkage cracking in concrete.

## TYPICAL PROPERTIES

Specific Gravity	0.91
Modulus of elasticity (MPa)	> 4000
Length (mm)	30 – 60
Shape	Curved / Embossed
Equivalent diameter (mm)	0.8 – 1.5
Melting Point	160 – 170 °C
Alkalis & salt resistance	Strong
Breaking strength (MPa)	> 550
Elongation at break (%)	15 ± 5

**Arkaz MacroFibers** may be used as an alternative to welded wire fabric, depending on the application. **Arkaz MacroFibers** may be used as a replacement for structural or post-crack control steel reinforcement in some situations as for temperature or shrinkage post crack control.

## ADVANTAGES

**Arkaz MacroFibers** uniformly distribute multidimensionally throughout the concrete mixture. The fibers mechanically lock in the fresh concrete matrix providing reinforcement for the mixture while its tensile strength is the weakest. This reinforcement reduces the formation of plastic shrinkage cracking that may otherwise permanently weaken the resulting concrete. The concrete permeability is decreased, while the surface characteristics, impact and toughness properties are improved. Together these effects work synergistically to produce a long-term better quality, more durable and serviceable concrete.

## ADDITION RATES

**Arkaz MacroFibers** may be added to concrete at any point during the batching or mixing process. **Arkaz MacroFibers** can be added to the aggregate during weighing or charging, or to the central mixer or truck before, during, or after charging. The load must be mixed at high speed for 5 minutes, or 70 revolutions, after the addition of the **Arkaz MacroFibers** to ensure uniform distribution. The standard range of addition for **Arkaz MacroFibers** is 3-9 Kg/M<sup>3</sup> of concrete. Higher addition rates may be used to produce concrete when special properties are required. Package: 1kg per bag or according to customer's requirements.

## COMPATIBILITY

**Arkaz MacroFibers** are compatible with all Arkaz admixtures. Their action in concrete is purely mechanical and will not affect the hydration process. Each admixture should be added separately.

## PACKAGING

**Arkaz MacroFibers** are available in convenient Bags which are added, unopened, to the truck drum or central mixer.

## HEALTH AND SAFETY

For more Safety information you can check Product Material Safety Data Sheet, drop an email to Arkaz Concrete Doctor at [ConcreteDoctor@arkaz.com](mailto:ConcreteDoctor@arkaz.com) or Contact Arkaz Technical Department.

## SPECIFICATIONS

**Arkaz MacroFibers** are polypropylene fibers as supplied by Arkaz. Required dosage rate shall be as specified by the design engineer or architect. **Arkaz MacroFibers** shall be used in strict accordance with the supplier's recommendations. The fibers shall comply with ASTM Designation C1116 Type III 4.1.3 and with applicable building codes. Certification of compliance shall be made available on request. Standard ACI 302 procedures for placing, finishing and curing shall be followed when using **Arkaz MacroFibers**.

### TECHNICAL SERVICE

The technical service department of Arkaz is available to assist in the correct and best use of our products, these resources and advice are at your disposal entirely without obligation.

Please contact:  
concretedoctor@arkaz.com

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Printed in K.S.A. Version 2.0  
3-March-2021