

HGM® Arma Blend

High-Performance Aramid Blend Fibers for Asphalt

Product Description

PIONEER® HGM® Arma Blend is a fiber blend that meets ASTM D8395-2023 standards. It combines aramid and polyolefin fibers to create a synthetic fiber mixture. Specifically designed for asphalt mixes, PIONEER® HGM® Arma Blend enhances the performance of asphalt pavements. Adding PIONEER® HGM® Arma Blend to asphalt mixes improves adhesion and stability, effectively preventing rutting and extending the lifespan of asphalt surfaces by over 50%. This makes it an effective solution for addressing issues related to asphalt durability and early damage, thereby significantly prolonging the service life of asphalt pavements.

Uses

PIONEER® HGM® Arma Blend is typically used in the intermediate and surface layers of asphalt pavements to enhance overall performance, extend the lifespan of the pavement, and reduce long-term maintenance costs. Applications of PIONEER® HGM® Arma Blend include the following:

- New asphalt pavement surfaces
- Overlays on old asphalt pavements, existing concrete pavements, or bridge decks
- Maintenance and repair of asphalt pavements
- Surfacing for steel bridge decks
- Large-scale asphalt pavements, such as those for airports and parking lots

- Asphalt concrete surfaces with various gradations (e.g., SMA, AC, LH)
- Asphalt concrete surfaces under diverse conditions, including hot mix asphalt, warm mix asphalt, and patching.

Benefits in Pavements

PIONEER® HGM® Arma Blend is a specially designed aramid fiber blend for asphalt pavements. Its design meets the latest ASTM standards, making it an ideal solution for asphalt pavement challenges.

- **Extended Service Life:**
PIONEER® HGM® Arma Blend significantly extends the lifespan of asphalt pavements. This longevity is crucial for reducing disruptions and ensuring safe transportation on both urban and rural roads.
- **Increased Durability:**
By reinforcing the asphalt matrix, PIONEER® HGM® Arma Blend makes pavement more resistant to fatigue and cracking, a necessity for roads under heavy traffic and adverse weather conditions.
- **Lower Maintenance Costs:**
With PIONEER® HGM® Arma Blend, pavements require less upkeep over time. The improved resistance to cracking and rutting reduces the need for repairs, resulting in cost savings for municipalities and road authorities.
- **Superior Performance in Extreme Conditions:**
Pavements treated with PIONEER® HGM® Arma Blend perform better in extreme weather conditions. The added strength and flexibility help them endure temperature fluctuations, preventing early deterioration.

- Eco-Friendly:
The longer-lasting pavements made possible by PIONEER® HGM® Arma Blend align with sustainability goals. By reducing the frequency of repairs and reconstructions, it helps decrease the environmental impact of traditional pavement maintenance.

Product Advantages

PIONEER® HGM® Arma Blend is a specially designed aramid fiber blend for asphalt pavements. Its design meets the latest ASTM standards, making it an ideal solution for addressing asphalt pavement issues:

- Extremely high tensile strength and modulus for better asphalt pavement toughness.
- Achieve superior pavement performance with a thinner layer, reducing thickness by up to 35%.
- Resistant to rutting, enhancing durability and extending pavement lifespan by 50%.
- Reduces labor, time, and logistics, thereby lowering overall project costs.
- Excellent UV resistance and weatherability.
- 3D random fiber distribution for enhanced reinforcement and strengthening of asphalt pavements.
- Improves adhesion strength and stability of asphalt pavements, boosting resistance to wear.
- Enhances low-temperature crack resistance and water stability of asphalt pavements.

Compliance and Certification

ASTM D8395-23: "Standard Specification for Aramid Fiber for Asphalt Mixtures".
 ASTM D7552: Standard Specification for Fiber-Reinforced Asphalt Concrete
 AASHTO M320: Standard Specification for Performance-Graded Asphalt Binder

Physical Properties

Material :	Aramid	Polyolefin
Fiber Type :	Monofilament fibers	Fibrillated fibers
Specific Gravity :	1.45	0.91
Tensile strength :	365-670 ksi(2.5-4.6GPa)	61 ksi (420 MPa)
Modulus of Elasticity :	11000-17500 ksi (75-120GPa)	> 650ksi (4.5GPa)
Nominal Length :	19 (mm)	19 (mm)
Melting point (°C) :	> 450	115/157
Alkali, Acid Resistance :	High	High
UV-resistant :	Excellent	Excellent
Color :	Yellow	White

Dosage

The use of PIONEER® HGM® Arma Blend in asphalt pavements depends on the traffic volume of the road. For highways, major roads, urban expressways, and bridge decks, the recommended dosage of PIONEER® HGM® Arma Blend is 0.5-0.8 kg per ton of asphalt mix.

Construction

- Raw Materials: Adding PIONEER® HGM® Arma Blend to asphalt mixes does not change the raw materials compared to mixes without it.
- Mixing Process: The mixing process for asphalt mixes with PIONEER® HGM® Arma Blend is essentially the same as without it.
- Construction Procedure: The construction procedures for asphalt mixes with or without PIONEER® HGM® Arma Blend are identical.
- Compaction: Asphalt mixes with PIONEER® HGM® Arma Blend require 3-4 additional passes during compaction to achieve a density of 98% or more.

Packaging

PIONEER® HGM® Arma Blend are available in a variety of packaging options, For custom packaging, please reach out to a PIONEER® sales representative.

Technical solution

PIONEER® HGM® Arma Blend meets the ASTM D8395-2023 standard for aramid fibers in asphalt mixes. Research shows that using PIONEER® HGM® Arma Blend can reduce your asphalt layer thickness by 35% and extend the pavement's lifespan by 50%.

Contact a PIONEER® fiber expert today to find out how much you could save on your project costs. Please fill out the form below to receive a detailed technical proposal. We guarantee that all your information will be kept confidential.