# ZX-FS-09

**Fiberglass Mat**

**General**

Glass fiber, as a high-performance reinforcing material, features low density and high strength. Adding glass fiber can effectively enhance the structural performance and wind pressure resistance of asphalt shingles and asphalt waterproofing membranes, with excellent tensile strength and anti-aging performance, and improve their durability.

## Composition

Fiberglass Mat is a fabric-like material made of glass fibers.

## Product properties

- Non-reinforced chopped strand mat
- Reinforced chopped strand mat

## Application

Fiberglass Mat Advantage

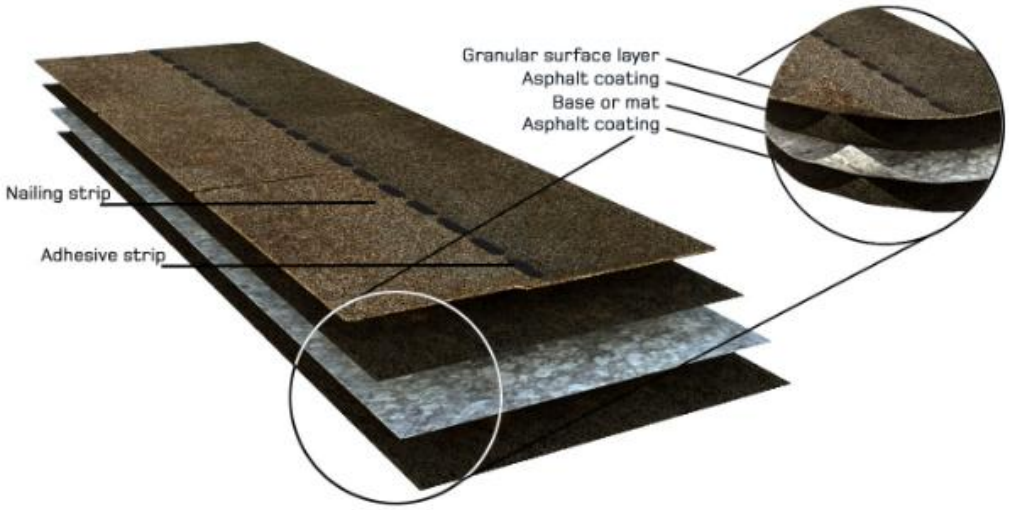
High tensile strength: The glass fiber fabric itself has extremely high tensile strength and modulus (rigidity). This provides strong internal support for the relatively soft and highly plastic asphalt.
Dimensional stability: The thermal expansion coefficient of glass fiber fabric is very low, and it is minimally affected by temperature changes. This ensures that the asphalt rolls and asphalt shingles with it as the base material do not sag, flow or wrinkle at high temperatures, nor do they contract excessively and crack at low temperatures, maintaining dimensional stability.
Preventing tearing and puncturing: It provides the product with the ability to resist tearing, puncturing and mechanical damage, thereby enhancing the durability of the product.

**1. Fiberglass Mat Application in asphalt sheet materials:**

The glass fiber fabric is used as the base material and is sandwiched between two layers of modified asphalt (usually SBS or APP modified asphalt). The asphalt provides waterproof sealing and bonding properties, while the glass fiber fabric offers the necessary structural strength and dimensional stability.
This structure ensures that the sheet material is less likely to be torn during installation and can withstand the stresses encountered during construction and use (such as movement of the base layer, wind loads, etc.).
Glass fiber base sheet rolls usually possess excellent high-temperature resistance and dimensional stability, and are suitable for various climatic conditions, especially in areas with high temperatures or large temperature differences.

**2. Fiberglass Mat Application in asphalt shingles:**

Glass fiber cloth, serving as the reinforcing base layer, is impregnated in the modified asphalt.
It forms the "framework" of the asphalt shingles, giving the shingles the necessary strength and rigidity, enabling them to maintain their shape, resist wind lifting, hail impact, and withstand the walking of construction workers on the roof (within reasonable limits).
Similarly, its dimensional stability ensures that the tiles will not sag or deform excessively under the intense heat of the roof, maintaining both their appearance and waterproofing performance.




**3. Comparison with other base materials:**

Traditional base materials (such as paper-based ones): They have low strength, are prone to decay, and have poor dimensional stability. They have been phased out or are only used in low-end products.

Polyester base fabric: It has excellent tensile strength and high elongation (good flexibility), strong resistance to impact and deformation of the base layer, but its dimensional stability (resistance to sagging) at high temperatures is usually slightly inferior to that of glass fiber base fabric.

Glassfiber mat: The highest tensile strength, the highest modulus (the hardest and most rigid), the best dimensional stability (the best resistance to sagging), corrosion resistance, and non-decay. However, the elongation is relatively low (it is relatively brittle), and it may not be as resistant as polyester mat under extreme deformation.