50Mmx12Mmx1.5Mm Fiber Cutting Blade For Industrial Cutter

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Seton
- Certification: CE ISO
- Model Number: Stainless Steel
- Minimum Order Quantity: MOQ 10 Pieces
- Price: Can be discussed
- Packaging Details: 1pc/wrapper, 100pcs/box, 100boxes/ctn,Wooden and carbon boxes
- Delivery Time: 30 days
- Payment Terms: L/C, D/A, D/P, T/T, Western Union, MoneyGram
- Supply Ability: 500 Piece/Pieces per Day

Product Specification

- Product Name: Fiber Cutting Blade
- Material: Stainless Steel
- Hardness: HRC34-52
- Precision: ±10 Micron
- Length: 50mm
- Width: 12mm
- Thickness: 1.5mm
- Applicable Industries: Manufacturing Plant
- Highlight: **1.5Mm Fiber Cutting Blade**, **50Mmx12Mmx1.5Mm Fiber Cutting Blade**, **Industrial Cutter Fiber Cutting Blade**

Our Product Introduction

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Product Description

50Mmx12Mmx1.5Mm Fiber Cutting Blade For Industrial Cutter

Description:

Wear Mechanisms of Blades with Different Materials

The wear mechanisms of industrial blades vary significantly based on the material used. Understanding these differences is crucial for selecting the right blade for specific applications and optimizing their performance. Here are the primary wear mechanisms associated with different blade materials:

1. High Carbon Steel

Wear Mechanisms:

Abrasive Wear: Occurs when harder materials scrape against the blade, leading to loss of material from the cutting edge.

Adhesive Wear: Results from the bonding of materials at the cutting edge, causing fragments to be pulled away during cutting.

Impact: High carbon steel blades can become dull quickly in abrasive environments, requiring frequent sharpening.

2. Tool Steel

Wear Mechanisms:

Abrasive Wear: Similar to high carbon steel, tool steel can experience significant abrasive wear, especially when cutting hard materials.

Fatigue Wear: Repeated stress can lead to micro-cracking and eventual failure of the blade.

Impact: Tool steel provides good edge retention but may require heat treatment to enhance wear resistance.

3. Stainless Steel

Wear Mechanisms:

Corrosive Wear: Exposure to moisture and corrosive environments can lead to rust and degradation of the cutting edge.

Abrasive Wear: Stainless steel can also experience abrasive wear, especially when cutting harder materials.

Impact: While resistant to corrosion, stainless steel may not retain sharpness as well as harder materials, making it less ideal for heavy-duty cutting tasks.

4. Tungsten Carbide

Wear Mechanisms:

Abrasive Wear: Tungsten carbide exhibits excellent resistance to abrasive wear due to its extreme hardness.

Cracking and Chipping: Although tough, the brittleness of carbide can lead to chipping if subjected to shock or impact.

Impact: Tungsten carbide blades are highly durable in abrasive environments and maintain sharpness longer, reducing replacement frequency.

5. Ceramic

Wear Mechanisms:

Abrasion: Ceramic blades are highly resistant to abrasive wear due to their hardness.

Brittle Fracture: Ceramic materials can crack or shatter under high-stress conditions or impact.

Impact: Ideal for precision cutting tasks, but their brittleness limits their use in applications involving heavy impacts.

6. Alloy Steel

Wear Mechanisms:

Abrasive and Adhesive Wear: Alloy steel can experience both types of wear, depending on the cutting conditions.

Fatigue Wear: Similar to tool steel, alloy steel may also suffer from fatigue over extended use.

Impact: Alloy steels provide a good balance of toughness and wear resistance, making them versatile for various cutting applications.

7. Polymer Blades
Wear Mechanisms:
Abrasion: Polymer blades can wear down through abrasive contact, but they are less affected by corrosion.
Deformation: Under stress, polymer materials can deform rather than wear, affecting performance.
Impact: Suitable for cutting soft materials, polymer blades are less durable in heavy-duty applications.
Industrial Blade Specifications:

Product name	Fiber Cutting Blade
Material	Stainless Steel
Hardness	HRC34-52
Precision	±10 Micron
Length	50mm
Width	12mm
Thickness	1.5mm
Applicable Industries	Manufacturing Plant

Comparative Wear Rates of Different Blade Materials in Various Environments

The wear rates of different blade materials can vary significantly depending on the environment in which they are used. Here's a comparison of how various materials perform under different conditions:

1. High Carbon Steel
Environment: General use, moderate abrasiveness.
Wear Rate: Moderate to high wear rate.
Factors: Prone to abrasive wear when cutting hard materials. Susceptible to corrosion if not maintained, which can further increase wear.
2. Tool Steel
Environment: Machining operations, high-stress applications.
Wear Rate: Moderate wear rate, but can increase under high-stress conditions.
Factors: Maintains sharpness well but may experience fatigue wear over time, especially in high-impact settings. Heat treatment can enhance performance.
3. Stainless Steel
Environment: Moist and corrosive environments (e.g., food processing).
Wear Rate: Moderate wear rate, affected by corrosion.
Factors: While resistant to rust and corrosion, it generally has a lower hardness compared to tool steels and tungsten carbide, leading to quicker dulling in abrasive conditions.
4. Tungsten Carbide
Environment: Heavy-duty applications, abrasive conditions.
Wear Rate: Low wear rate.
Factors: Extremely wear-resistant due to high hardness, making it ideal for cutting tough materials. However, it can chip under heavy impact.
5. Ceramic
Environment: Clean, precision cutting tasks.
Wear Rate: Low wear rate due to high hardness.
Factors: Maintains sharpness for a long time but can suffer from brittle fracture if subjected to shock or heavy impact.
6. Alloy Steel
Environment: Versatile applications, moderate to heavy use.
Wear Rate: Moderate wear rate.
Factors: Provides a balance between toughness and hardness, performing well in a variety of environments but can wear more quickly than tungsten carbide in abrasive conditions.
7. Polymer Blades
Environment: Cutting soft materials, packaging.
Wear Rate: Low wear rate in suitable applications, but can wear faster in abrasive

environments.
Factors: Less durable than metal blades, but they can perform well in non-abrasive settings. They are resistant to corrosion, making them suitable for certain environments.
Picture:

Applications:

Packing:

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