BOTON

Mining

COAL
Coal

Mining

11.2 km Aramid Belt Proven in Underground Coal Conveying

A fire-resistant aramid conveyor belt supporting long-distance, high-capacity and energy-efficient coal transport at CHN Energy Shangwan Coal Mine.

CHN Energy's Shangwan Coal Mine is one of China's highest-capacity underground coal operations, placing exceptionally demanding requirements on the safety, reliability and efficiency of its main conveying system.

BOTON supplied an 11.2 km fire-resistant aramid conveyor belt for the mine's primary underground conveyor. Combining lightweight aramid reinforcement with optimized belt engineering, the project demonstrates long-term, reliable performance under demanding underground mining conditions while helping improve energy efficiency and reduce maintenance requirements.

KEY FACTS

- Application: **Coal Conveying**
- Site: **Ordos, Inner Mongolia, China**
- Product: **Fire-resistant Aramid Conveyor Belt**

Underground Conveyor Route	Belt Width	Belt Strength	Mine Production Capacity
5.6 km	**2,600 mm**	**2500N/mm**	**20 million tonnes/year**

Conveying Mode: **fire-resistant aramid conveyor**

Delivery Scope: **R&D, manufacturing, and successful delivery of the entire high-performance fire-resistant aramid conveyor belt for the main underground transport line**

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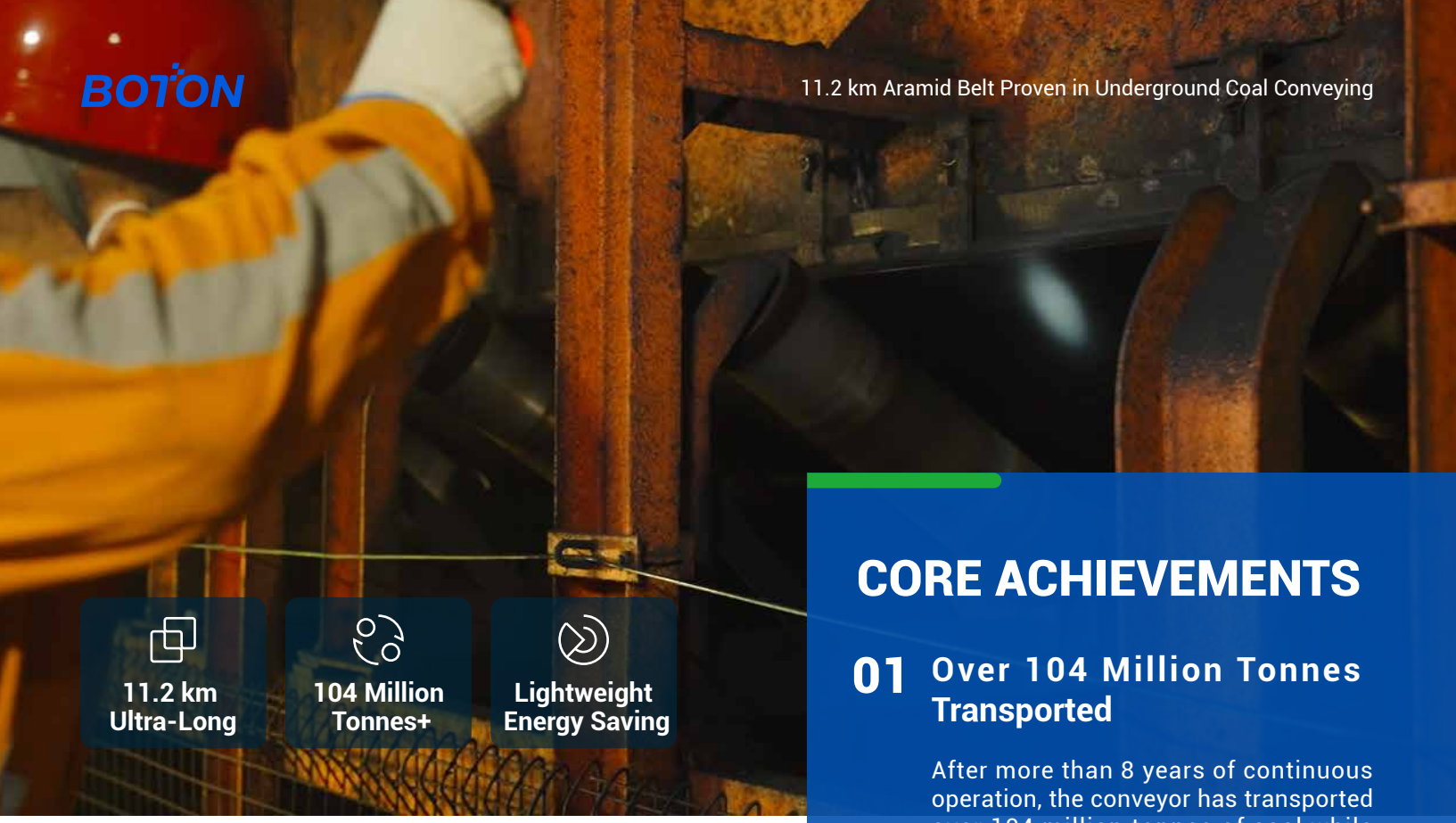

11.2 km Ultra-Long

104 Million Tonnes+

Lightweight Energy Saving

PROJECT CHALLENGES

Long-Distance Underground Conveying

The combination of an 11.2 km belt length and high-capacity coal transport required a lightweight belt structure capable of reducing running resistance while maintaining high tensile strength and operational stability.

High Throughput, Continuous Operation

Continuous operation under heavy production loads places significant demands on splice durability, belt tracking stability and maintenance efficiency throughout the conveyor lifecycle.

Strict Underground Safety Requirements

Underground coal mining environments require conveyor belts with reliable flame-resistant and anti-static performance to support safe, uninterrupted operation.

CORE ACHIEVEMENTS

01 Over 104 Million Tonnes Transported

After more than 8 years of continuous operation, the conveyor has transported over 104 million tonnes of coal while maintaining stable performance and reliable operation.

02 11.2 km Ultra-Long Aramid Conveyor Belt

BOTON supplied an 11,200 m fire-resistant aramid conveyor belt for the mine's primary underground conveyor, demonstrating the capability of lightweight aramid technology in ultra-long-distance conveying.

03 Lower Belt Mass. Lower System Demand

23.6% lower total belt weight

→ 16.8% lower average operating current

→ Approx. 2,120 MWh saved annually

Compared with the original steel-cord belt configuration.

BOTON SOLUTION

Lightweight Aramid Reinforcement

BOTON adopted high-performance aramid reinforcement to significantly reduce belt weight while maintaining the strength required for ultra-long underground conveying. The lightweight structure helps reduce running resistance, lower energy consumption and improve conveyor efficiency.

Optimized Belt Engineering

The belt structure and splice design were specifically optimized for aramid reinforcement, achieving splice efficiencies above 90% while maintaining excellent tracking stability throughout long-distance operation.

Digital Lifecycle Management

BOTON established digital lifecycle records covering installation, inspection and maintenance history. Combined with standardized maintenance procedures, this data-driven approach supports predictive maintenance and improves long-term operational reliability.