

ICS 91.220
CCS P 97



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34652-2017

**Full face tunnel boring machines - Open type hard rock tunnel
boring machines**

全断面隧道掘进机 敞开式岩石隧道掘进机

Issued on: October 25, 2017

Implemented on: May 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by the China Machinery Industry Federation. This standard by the National Building Machinery and Equipment Standardization Technical Committee (SAC/TC328) centralized. This standard drafting unit. China Railway Construction Heavy Industry Group Co., Ltd., China Railway Eighteenth Group Co., Ltd., the Yellow River limited planning planning and design Company, China Water Conservancy and Hydropower Engineering Bureau Co., Ltd., Yangtze River Survey Planning Design Co., Ltd., China Railway 11th Bureau Group fifth Engineering Co., Ltd., China Railway Engineering Equipment Group Co., Ltd., North Heavy Industries Group Co., Ltd., China Power Construction Group Chengdu Survey Design Research Institute Co., Ltd., National Building Urban Construction Machinery Quality Supervision and Inspection Center, State Key Laboratory of Shielding and Tunneling Technology, Beijing Construction Mechanization Institute. The main drafters of this standard. Cheng Yongliang, Ma Chengbiao, Peng Shiguo, Wang Yanjun, Wang Meizhai, Chen Xiaonian, Huang Jimin, Xu Jinlin, Ni Jinchu, Yan Tianyou, Tan Liping, Li Jianbin, Deng Liying, Hong Xingyuan, Zeng Shunan, Zhou Jianjun, Tang Tiandong, Li Jing, Wang Yufei, Long Bin, Xu Junzhe, Xu Dongbo, Li Jia Liang, Deng Liang Hua, Chen feed, Han Xiaoliang. Full-face tunnel boring machine Open type rock tunnel boring machine

1 Scope

China's national standard for open type hard rock tunnel boring machines. It specifies the requirements for this type within the full face tunnel boring machine series. An open machine is the simplest of the family and is used where the rock will stand unsupported: there is no shield around the machine, and it grips the tunnel walls with hydraulic pads to react the thrust it needs to push the cutterhead into the face. Disc cutters on the head roll against the rock under enormous load and break it by inducing fractures between adjacent tracks rather than by cutting it. Because the machine is open, the rock behind the head is accessible, and support - rock bolts, mesh, shotcrete, steel arches - is installed as needed rather than as a lining built behind a shield. That flexibility is the type's advantage and its limitation: it is the fastest and cheapest way to drive a tunnel through competent rock, and it is the wrong machine entirely where a fault zone might close on it.

This standard specifies the terms and definitions open tunnel boring machine, the basic parameters and models, technical requirements, test methods, inspection rules Then, accompanying documents, logos, packaging and shipping. This standard applies to open rock tunnel boring machine (hereinafter referred to as roadheader).

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 150 (all parts) pressure vessels

GB/T 191 Packaging - Pictorial signs

GB/T 1985-2014 high-voltage AC isolation switch and earthing switch GB 2893 safe color

GB 2894 safety signs and guidelines for their use

GB/T 3766 hydraulic drive systems and components of the general rules and safety requirements

GB/T 3956 cable conductor

GB/T 4208 enclosure protection (IP code)

GB 5226.1 Safety of machinery - Electrical machinery and electrical equipment - Part 1. General specifications

GB 5226.3 Safety of Machinery - Mechanical Electrical Equipment Part 11. Voltage High Voltage 1000Va.c. Or 1500Vd.c. But not to exceed 36kV high-voltage equipment technical conditions

GB/T 6388 transport packaging shipping symbols

GB/T 7932 pneumatic system of general technical conditions GB/T 10595 belt conveyor

GB/T 13283 industrial process measurement and control instrumentation and display instrumentation accuracy grade GB/T 13306 signs

GB/T 13384 mechanical and electrical product packaging General technical conditions