

ICS 93.040
CCS P 28

JT

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

JT/T 391-2009

**Pot bearing for highway bridge
(English Translation)**

Issued on: January 1, 1970

Implemented on: September 1, 2019

Issued by: Ministry of Transport

Table of Contents

Foreword	
1 Scope	
2 Normative references	
3 Terms, definitions and symbols	
4 Classification, structure and model	
5 Technical requirements	
6 Test method	
7 Inspection rules	
8 Marking, packaging, transportation and storage	
Appendix A (Normative Appendix) Test Method for Vertical Bearing Capacity of Supports	
Appendix B (Normative Appendix) Test Method for Horizontal Bearing Capacity of Supports	
Appendix C (Normative Appendix) Test Method for Bearing Friction Coefficient	
Appendix D (Normative Appendix) Test Method for Bearing Rotation Angle	
Appendix E (informative) Mounting instructions for support (example)	

Foreword

This standard is in accordance with GB/T Draft the rules given in 1-2009.

This standard replaces JT/T 391-2009 "Highway Bridge Basin Bearings". Compared with JT/T 391-2009, in addition to editorial changes, the main the technical changes are as follows.

- Increased the definition of high-performance skateboard materials and their performance index requirements (see 3.1.4 and 5.3.3);
- Increased lateral movable bearings and shock-absorbing lateral movable bearings (see 4.1);
- Added the method of indicating the horizontal bearing capacity model (see 4.3);
- Increased the service life requirements of the basin support (see 5.1.1);
- Increased the horizontal bearing capacity classification standards and test methods (see 5.1.3 and Appendix B);
- Added technical requirements for the appearance of the support (see 5.2);

- Removed vertical design bearing capacity 0.4 MN ~ 0.8 MN support classification (see 4.1.1 of the 2009 edition);
- Increased the support classification of vertical design bearing capacity 65 MN ~ 80 MN (see 5.1.2);
- Added technical requirements and test methods for raw materials such as anchors, sleeves, and screws (see 5.3.1 and 6.3.1);
- Modify the appearance defects of the rubber sheet (see 5.4.2.2.2, 4.4.1 of the 2009 edition);
- Deleted the polytetrafluoroethylene sheet material (see 4.2.2 of the 2009 edition);
- Added anti-corrosion measures for anchor bolts and sleeves, and modified the requirements for anti-corrosion measures for steel parts (see 5.5.5)
- Modified the inspection rules (see Chapter 7, Chapter 7 of the 2009 edition).

This standard is proposed and managed by the National Technical Committee for Traffic Engineering Facilities (Highway) Standardization (SAC/TC 223).

This standard was drafted. China Communications Highway Planning and Design Institute Co., Ltd., China Communications Highway Long Bridge Construction National Engineering Research Center Co., Ltd.

Division, Jiangsu Wanbao Bridge Component Co., Ltd., Fengze Engineering Rubber Technology Development Co., Ltd., Shenzhou Engineering Plastic Co., Ltd., Tangshan Huayun Railway Transportation Equipment Co., Ltd., Jiangsu Runtong Engineering Equipment Co., Ltd., Heng Rubber Technology Co., Ltd., Changshu Bridge Tunnel Rubber Co., Ltd., Hengshui Rubber General Factory Co., Ltd., Hengshui Railway Construction Rubber Co., Ltd., Zhejiang Qinshan Rubber Engineering Co., Ltd.

Co., Ltd., Suzhou Hyde New Material Technology Co., Ltd., Shanghai Pengpu Rubber Products Co., Ltd., Hebei Baoli Engineering Equipment Co., Ltd.

Co., Ltd., Zhuzhou Times New Material Technology Co., Ltd., Chengdu Xinzhu Road and Bridge Machinery Co., Ltd., Chengdu Datongqiao Machinery Co., Ltd., Zhonglu Gaoke Traffic Inspection and Certification Co., Ltd.

1 Scope

This standard specifies the product classification, structural form, model, technical requirements, test methods, inspection rules of highway bridge basin bearings, and Marking, packaging, transportation and storage requirements.

This standard is applicable to the production, inspection, and use of basin bearings for highway bridges with a design bearing capacity of 1 MN to 80 MN.

2 Normative references

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

GB/T 528 Determination of tensile stress and strain properties of vulcanized rubber or thermoplastic rubber
 GB/T 699 high-quality carbon structural steel
 GB/T 700 carbon structural steel
 GB/T 1040. 3 Determination of tensile properties of plastics. Part 3. Test conditions for films and sheets
 GB/T 1184 Shape and position tolerances without tolerance values
 GB/T 1591 Low-alloy high-strength structural steel
 GB/T 1632. 3 Plastics using a capillary viscometer to determine the viscosity of dilute polymer solutions. Part 3.
 Polyethylene and polypropylene
 GB/T 1682 Determination of low temperature brittleness of vulcanized rubber-Single specimen method
 GB/T 1804 Tolerances for linear and angular dimensions without general tolerances
 GB/T 2040 Copper and copper alloy sheet
 GB/T 3077 alloy structural steel
 GB/T 3280 stainless steel cold-rolled steel plate and strip
 GB/T 3323 Radiographs of metal fusion welded joints
 GB/T 3398. 1 Determination of plastic hardness Part 1. Ball indentation method
 GB/T 3512 Vulcanized rubber or thermoplastic rubber hot air accelerated aging and heat resistance test
 GB/T 6031 Determination of hardness of vulcanized rubber or thermoplastic rubber (10 IRHD to 100 IRHD)
 GB/T 7233. 1 Ultrasonic Testing of Steel Castings Part 1. General Purpose Steel Castings
 GB/T 7759. 1 Determination of permanent compression set of vulcanized rubber or thermoplastic rubber Part 1. Under normal and high temperature conditions
 GB/T 7762 Vulcanized rubber or thermoplastic rubber resistance to ozone cracking static tensile test
 GB/T 1145 Nondestructive Testing of Welds Ultrasonic Testing Technology, Test Grades and Evaluation
 GB/T 11352 Cast carbon steel parts for general engineering
 HG/T 2198 General requirements for physical test methods for vulcanized rubber
 HG/T 2502 5201 Silicone grease
 JB/T 5936 General technical requirements for machined parts of construction machinery
 JB/T 5943 General technical conditions for welding of construction machinery
 JT/T 722 Technical requirements for anticorrosive coating of steel structures for highway bridges
 JT/T 901 Polymer material slide for bridge support
 JT/T 391-2019

3 Terms, definitions and symbols

3.1

Terms and definitions the following terms and definitions apply to this document.

3. 1. 1

Pot bearing

The rubber plate sealed in the steel basin is used to bear the dead load and live load of the upper structure, and the load is transmitted to the support of the lower structure.

3. 1. 2

Useful life

Under normal design, production, installation, operation and maintenance conditions, the number of years that the support can work normally.

3. 1. 3

Friction plate

Used for shock-absorbing bearings, steel plates with specified friction coefficient and energy consumption capacity.

3. 1. 4

High-performance skateboard slider slide Sliding elements with self-lubricating, abrasion resistance and physical and mechanical properties, usually refers to modified PTFE skateboards or high viscosity average molecular weight Modified ultra high molecular weight polyethylene skateboard processed from 9 million polyethylene raw materials.

3.2

Symbol

The following symbols apply to this document.

D --- diameter of rubber plate, unit is millimeter (mm);

D1 --- diameter of brass seal ring, unit is millimeter (mm);

M --- molecular weight, dimensionless;

d --- the diameter of the high-performance slide, the unit is millimeter (mm);

d1 --- Plane diameter of high-performance slide fat storage pit, unit is millimeter (mm);

d2 --- diameter of steel plate for friction coefficient test, unit is millimeter (mm);

μ --- friction coefficient of movable bearing;

μ_s --- high performance sliding friction coefficient;

μ_d --- high performance sliding friction coefficient;

η --- intrinsic viscosity number, the unit is deciliter per gram (dL/g).

4 Classification, structure and model

4.1

Classification