

JTG

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

中华人民共和国行业标准

JTG D40-2011

**Specifications for Design of Highway
Cement Concrete Pavement
公路水泥混凝土路面设计规范**

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Public Notice of Announcing Specifications for Design of Highway Cement Concrete Pavement

Specifications for Design of Highway Cement Concrete Pavement (JTG D40 -2011) is hereby announced which will come into force from December 1, 2011, and the original *Specifications for Design of Highway Cement Concrete Pavement* (JTG D40 -2002) will be repealed simultaneously.

The administration authority and interpretation authority of the Specification belong to Ministry of Transport, and the daily interpretation and administration work is borne by the chief editorial unit CCCC Highway Consultants Co., Ltd.

The units concerned should pay more attention to summer up the experience, and the problems and amendments founded should write letters to inform the CCCC Highway Consultants Co., Ltd. (Address: Room 305, Block A, Desheng International Center, No.85, Deshengmen Exterior Street, Beijing, Post Code: 100088) for research and use in the revision.

Hereby make an announcement.

Ministry of Transport of the People's Republic of China

September 19, 2011

Subject Term: Road Pavement Design Specification Public notice

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Foreword

Specifications for Design of Highway Cement Concrete Pavement (JTG D40-2002) (hereinafter referred to as the original specification) has played an important role in guiding our national design of highway cement concrete pavement of our country and guaranteeing pavement quality since it is published and implemented. With the development of China's highway construction, the highway engineering technicians have accumulated rich experience in the construction of cement concrete pavement, and have gotten many research results. What's more, cement concrete pavement technological level has been greatly improved, and technical indicators in the original specification have not meet needs. According to the requirement of the *Notice on Issuing 2007 Highway Engineering Revision Project Plan of the Ministry of Transport* (formerly Ministry of Communication) (JGLF [2007] No. 378), the CCCC Highway Consultants CO., Ltd. will act as the chief editorial unit to be responsible for the revision of the original specification.

During revision process, the preparation group conducts a more comprehensive technical research on the national highway cement concrete pavements that have been finished and are being constructed, refers to domestic scientific research results and technical information for nearly past decade home and broad, fully absorbs the construction experience of the cement concrete pavement, and extensively seeks for opinions from the relevant units and experts in this industry.

The Specification after revision is divided into 8 chapters and 5 appendices, mainly including the structure combination design of cement concrete pavement, the thickness design, the joint design, the reinforcement design of the concrete surface, the material composition design and the overlay structure design, etc.. This revision mainly increases checking standard for the concrete slab fracture limit and fatigue crack design standards for the lean concrete and RCC grassroots; increase level of heavy traffic loads in consideration of the special vehicles and special road structure design; improves joint design and caulking material model selection, perfects the two design index formulas for the crack spacing and crack width of the continuous reinforcement; increase the amount of concrete slab flat and joint load transfer rating criteria; and improves the material design

parameter experience reference values.

If the organizations and individuals concerned have found problems in using this Specification, please write letters to inform the Highway Planning and Design Institute Limited (Address: Room 305, Block A, Desheng International Center, No.85, Deshengmen Exterior Street, Beijing, Post Code: 100088) for research and use in the next revision.

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1 General

1.0.1 This specification has been established to adapt the requirements of traffic development and highway construction, improve design quality and technical level of cement concrete pavement, and guarantee the safety, reliability, economics and rationality of project.

1.0.2 This specification is suitable for cement concrete pavement design of new-building and rebuilding highway.

1.0.3 Cement concrete pavement design scheme shall, base on the highway function and level, and combined with the local climate, hydrology, geology, materials, construction and maintenance conditions, engineering practice, environmental protection, etc., be determined through comprehensive analysis.

1.0.4 The cement concrete pavement design shall include designs of structural combination, structural layer thickness, material composition, joint structure, reinforcement configuration and others.

1.0.5 Cement concrete pavement structure shall according the stated safety level and target reliability requirements, withstand the expected traffic loads function in the design reference period, adapt to its natural environment, and meet the scheduled operational performance requirements.

1.0.6 The cement concrete pavement design besides complying with the requirements of this specification; it also should be consistent with the requirements of the national existing related standards.

2 Terms and symbols

2.1 Terms

2.1.1 Cement concrete pavement

Pavement using cement concrete as topping (with or without reinforcing)

2.1.2 Jointed plain concrete pavement

Except for joint area and minor region, cement concrete pavement has no reinforcing in topping, which is also called non-reinforced concrete pavement.

2.1.3 Jointed reinforced concrete pavement

Cement concrete pavement allocating longitudinal and traverse reinforcing or reinforcing mesh in topping, and setting joint.

2.1.4 Continuously reinforced concrete pavement

Cement concrete pavement allocating longitudinal continuous reinforcing and traverse reinforcing in topping, but not setting contraction joint in traverse direction.

2.1.5 Steel fiber reinforced concrete pavement

Cement concrete pavement incorporating steel fiber into concrete topping.

2.1.6 Composite pavement

Pavement with topping composed by two kinds of structural layers in different material types and mechanical properties.

2.1.7 Concrete block pavement

Pavement with topping paved by concrete block.

2.1.8 Design reference period

Reference time bucket (a) selected in consideration of the relationship between various basic factors and time when calculation pavement structural reliability.

2.1.9 Safety classes

Design classes divided according to importance of pavement structure and severity probably induced due to pavement destroy.

2.1.10 Reliability

Probability of pavement structure finishing expected functions under regulated time and conditions. The reliability reached by the designed structures is called the objective

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