

ICS 93.160

P 59



# PROFESSIONAL STANDARD OF REPUBLIC OF CHINA

SL 314-2004

---

## Design specification for roller compacted concrete dams 碾压混凝土坝设计规范

Issued on December 8, 2004

Implemented on February 1, 2005

---

Issued by Ministry of Water Resources of the People's Republic of China

**Ministry of Water Resources of the People's Republic of China**  
**Notice on Approval of Release of *Design Specification for Roller***  
***Compacted Concrete Dams* SL 314—2004**

**SGK [2004] No.592**

Units directly under the ministry, water resources (water affairs) departments (bureaus) of provinces, autonomous regions and municipalities directly under the central government, water resources (water affair) bureaus of municipalities with independent planning status, and water resources bureau of Xinjiang Production and Construction Corps:

After examination, *Design Specification for Roller Compacted Concrete Dams* is approved and issued as water conservancy industry standard. Standard number is SL 314-2004.

This Standard was implemented on February 1, 2005.

Texts of this Standard are released by China WaterPower Press.

December 8, 2004

## Foreword

The Standard is formulated through modification and supplementation of the original guide by absorbing domestic and foreign project construction experiences and scientific research achievements on rolled concrete dams in the recent 10 years on the basis of *Design Guide for Roller Compacted Concrete Dams* (DL/T 5005-92) (hereinafter referred to as the Original Guide), in accordance with China Renewable Energy Engineering Institute SZJK [2001] No. 1 file of *About Issuing Notice of 2001 Water Resources and Hydroelectric Survey Design Technical Standards Formulation, Revision of Project Plan and Chief Editorial Unit and Specification for the Drafting of Technical Standards of Water Resources* (SL 1-2002).

The Standard contains 9 chapters and 73 articles, the main technical contents include:

- Arrangement of junctions of roller compacted concrete dams;
- Shape design of roller compacted concrete dams and analytical contents and methods of dam body;
- Designs of open joints, seepage-proofing, galleries, water stop, drainage and other structures of roller compacted concrete dams;
- Subarea of roller compacted concrete materials and dam body concrete;
- Design methods and measures of temperature control of roller compacted concrete dams;
- Safety monitoring design principles, arrangement of monitoring items and monitoring facilities

The main modifications and supplements of the Standard to the original guide include:

- Supplemented reference standards;
- Supplemented terms;
- Supplemented the contents that the finite element calculation is suitable for high roller compacted concrete gravity dams;
- Definitely adopted Grade 2 roller compacted concrete as the preferred seepage-proofing methods of dams, and defined the minimum allowable impervious grade and effective thickness;
- Revised setting principles for transverse or inducing joints of roller compacted

concrete gravity dams;

——Supplemented water stop design requirements on transverse or inducing joints of roller compacted concrete gravity dams;

——Revised the maximum mixing amount of mineral admixtures in external and internal roller compacted concretes;

——Supplemented contents of grout enriched vibrated roller compacted concrete application;

——Revised design principles for allowable temperature difference of roller compacted concrete gravity dam foundation;

——Supplemented measures for preventing cracks on dam body;

——Supplemented design contents of roller compacted concrete arch dams, including arch dam shape and stress analysis methods of arch dams, open joints structures, grouting systems, etc.;

——Changed the original “Observation Design” to “Safety Monitoring Design”; Stipulated the project monitoring scope and revised the principles for safety monitoring design; Refined the arrangement requirements for main monitoring items.

The mandatory provisions of the Standard include 1.0.2, 4.0.2, 4.0.4, and 7.0.6, Paragraph 1 of 8.0.1 and 8.0.5 and contents marked by boldface.

Approved by: **Ministry of Water Resources of the People’s Republic of China**

Performed by: **China Renewable Energy Engineering Design and Administration Bureau of Ministry of Water Resources**

Interpreted by: **China Renewable Energy Engineering Institute of Ministry of Water Resources**

Edited by: **Shanghai Investigation, Design & Research Institute**

Published and released by: **China WaterPower Press**

Drafted by: **Dong Qinjian Li Qixiong Bai Baozhong Mao Yingqiu**

**Chen Zaimin Lei Xingshun Guo Jingen**

Technical director of the review conference: **Shen Fengsheng**

Examiner of the style and form: **Cao Zhengqi**

**Contents**

1	General Provisions .....	1
2	Terms.....	3
3	Arrangement of Junctions.....	4
4	Dam Body Design.....	5
5	Dam Body Structure .....	7
6	Subarea of Roller Compacted Concrete Materials and Dam Body Concrete .....	10
7	Temperature Control and Anti-Cracking of Dam Body .....	12
8	Safety Monitoring Design.....	15
	Instructions for Standard Words .....	18

## 1 General Provisions

**1.0.1** To satisfy the construction and development needs and specify design requirements of roller compacted concrete dams, the Standard is formulated to make project design safe and applicative, economic and reasonable with advanced technology and reliable quality.

**1.0.2** Roller compacted concrete dam level shall be in compliance with the provisions of *Standard for Flood Control (GB 50201-94)* and *Standard for Classification and Flood Control of Water Resources and Hydroelectric Project (SL 252-2000)*.

**1.0.3** The Standard applies to the design of Grade 1, 2 and 3 roller compacted concrete gravity dams on the batholith of water resources and hydroelectric project, while the design of Grade 4 and 5 can take the Standard as reference. Special study shall be made for the design of roller compacted concrete gravity dams with height over 200 m. The Standard also applies to the design of roller compacted concrete arch dam.

**1.0.4** Roller compacted concrete dams can be divided into low dam, medium dam and high dam in accordance with dam height. Dams whose height below 30 m are low dams, dams of 30-70 m are medium dams, dams over 70 m are high dams.

**1.0.5** Roller compacted concrete dam design requires collecting and mastering meteorology, hydrology, sediment, terrain, geology, earthquake, construction materials, ecological environment and other basic information, and making a research on construction and application conditions.

**1.0.6** The following standards are primary standards quoted in the Standard. At the publication of the Standard, all shown editions are valid. All standards are subject to revision, and all parties using this Standard are encouraged to investigate the possibility of applying the latest editions of the following standards.

*Standard for Flood Control (GB 50201—94)*

*Test Code for Hydraulic Roller Compacted Concrete (SL 48— 94)*

*Design Code for Hydraulic Concrete Structures (SL/T 191-96)*

*Specifications for Seismic Design of Hydraulic Structures (SL 203—97)*



北京文心雕语翻译有限公司  
Beijing Lancarver Translation Inc.

---

---

---

**完整版本请在线下单/Order Checks Online for Full Version**

**联系我们/or Contact :**

TEL: 400-678-1309

QQ: 19315219 | Skype: Lancarver

Email : [info@lancarver.com](mailto:info@lancarver.com)

<http://www.lancarver.com>

---

---

**线下付款方式 :**

**I. 对公账户 :**

**单位名称 :** 北京文心雕语翻译有限公司

**开户行 :** 中国工商银行北京清河镇支行

**账 号 :** 0200 1486 0900 0006 131

---

---

**II. 支付宝账户 : [info@lancarver.com](mailto:info@lancarver.com)**

**III. Paypal: [info@lancarver.com](mailto:info@lancarver.com)**

---

---

注: 付款成功后, 请预留电邮, 完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱, 如需索取发票, 下单成功后的三个工作日内安排开具并寄出, 预祝合作愉快!

**NOTE** All documents on the store are in electronic Adobe Acrobat PDF format, there is not sell or ship documents in hard copy. Mail the order and payment information to [info@lancarver.com](mailto:info@lancarver.com), you will shortly receive an e-mail confirming your order.

---

