



भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

**BUREAU OF INDIAN STANDARDS**

(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

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## DRAFT INDIAN STANDARD IN WIDE CIRCULATION

Reference : WRD 09/T-26

Date : 07 October 2024

**TECHNICAL COMMITTEE : Dams and Spillways, WRD 09**

To,

All concerned

Dear Madam/Sir,

The following document has been prepared by the Dams and Spillways Sectional Committee, WRD 09. Please [click here](#) to view the document.

**Document Number : WRD 09 (26616) WC**

**Title of the document : Hydraulic Design of Spillway Aerators Guidelines**

**Document Type : Revision of Indian Standard (IS 12804 : 1989)**

*This document has following salient features which may require specific attention for your valuable comments:*

- 1) Spillways and outlets of high-head dams may be exposed to high-velocity flows and the associated destructive phenomenon of cavitation. The extent of cavitation erosion depends to a large extent on the surface finish of the spillway/outlet. As velocity increases above a certain limit, the surface finish required to prevent cavitation erosion exceeds the tolerance to be expected from standard construction practice. In such cases, the spillway surfaces are usually protected from cavitation damage by introducing air near the flow boundary. Devices called aerators which supply the air are located on the spillway floors.*
- 2) The procedure outlined in the existing standard (1989) provides the guidelines for preliminary design of aerator for overflow spillway. However, the orifice spillway is a recent development in spillway design for dual purpose of passing the flood and flushing of sediment from the reservoir. The hydraulic characteristics of the orifice spillway are entirely different than the overflow spillway. The hydraulics of orifice spillway changes with varying reservoir levels. The flow is Free flow for reservoir water levels below the roof of the sluice, for higher water levels the flow is orifice flow.*

*Therefore, the design guidelines for aerator on overflow spillway are not applicable to design the aerator on orifice spillway. Aerators on deep-seated orifice spillways with heads more than 50 m are required for mitigating cavitation damage. However, no systematic studies have been reported until now for the aerators on orifice spillways except for a few project-specific studies.*

*3) This standard was first published in 1989. The first revision of this standard incorporates the latest information available for designing the spillway aeration system including need of aerator, types of aerators and its spacing, types of air passages to aerator, jet trajectory calculation, design aspects of aerators and air entrainment mechanism for overflow and orifice type of spillway. The title of the standards has also been updated as 'hydraulic design of spillway aerators — guidelines'.*

Please examine the document and share your comments regarding further improvement in the document.

**Last date for sharing the comments is : 07 December 2024**

The comments should be shared in the prescribed template through this portal only; and the comments so received shall be taken up by the Sectional Committee for necessary action. For any other query, please write an email at wrd@bis.gov.in to the undersigned at Bureau of Indian Standard, Manak Bhawan, 9, Bahadur Shah Zafar Marg, New Delhi.

In case no comments are received, we would presume your approval of the documents. However, in case we receive any comments on the document, the same shall be put up to the Sectional Committee for necessary action.

Thanking You,

**Yours faithfully,  
(DUSHYANT PRAJAPATI)  
Head (Water Resources Department)  
Email: wrd@bis.gov.in**



## व्यापक परिचालन में मसौदा(दे)

हमारा सन्दर्भ : WRD 09/T-26

दिनांक : 07-10-2024

**तकनीकी समिति : Dams and Spillways Sectional Committee, WRD 09**

प्राप्तकर्ता : रूचि रखने वाले सभी निकाय

महोदय/या,

निम्नलिखित मसौदा तैयार किया गया है :

प्रलेख संख्या : WRD 09 (26616) WC

शीर्षक :

कृपया इस/इन मानक(को)/संशोधन(नो) के मसौदे(दो) का अवलोकन करें और अपनी सम्मतियाँ यह बताते हुए भेजें कि यदि ये मानक(को) के संशोधन(नो) के रूप में प्रकाशित हो तो इन पर अमल करने में आपके व्यवसाय अथवा कारोबार में क्या कठिनाइयां आ सकती हैं।

**सम्मतियाँ भेजने की अंतिम तिथि : 07 December 2024**

सम्मतियाँ, यदि कोई हों तो, कृपया यहाँ क्लिक करके ऑनलाइन पोर्टल के माध्यम से ऊपर दी गयी अंतिम तिथि तक दर्ज कराएं।

यह/ये प्रलेख भारतीय मानक ब्यूरो की वेबसाइट [www.bis.gov.in](http://www.bis.gov.in) पर भी उपलब्ध है/हैं।

धन्यवाद।

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