Indian Standard

CRITERIA FOR DESIGN OF DIVERSION WORKS

PART I COFFER DAMS

1. SCOPE

1.1 This standard covers the criteria for the design of coffer dams of different types, namely, masonry/concrete/colloidal concrete, earthen, rockfill, steel and timber coffer dams.

FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 29 January 1982, after the draft finalized by the Diversion Works Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Prior to the commencement of actual construction of any work in the bed of a natural river, it becomes obligatory in most cases to exclude temporarily the river flow away from the proposed work area during the construction period, so as to permit the work to be done in the dry or semi-dry areas. An efficient scheme of diverting the river flow away from the work area should be capable of limiting the seepage into the work area to a minimum, so that the work area can be kept dry with minimum pumping capacity.

0.3 A temporary river diversion scheme essentially consists of:

a) Coffer dam(s) built across a part of full width of the river to divert the flowing water away from the work area; and
b) Works to transfer the diverted water from upstream to the downstream of the work area without affecting the same, such as:

1) Diversion through (construction) sluices in the main work
2) Diversion by one or more tunnels along the side of the main work area ;
3) Diversion through low level blocks of the main structure left for the purpose or through channels excavated outside the main structure; and
4) Secluding part of the work area for construction and allowing the river to flow through the remaining work area.

Reference may be made to IS : 9795 (Part I) -1980* for the proper choice of the type of coffer dam after considering all the relevant aspects mentioned in the standard.

0.4 The successful planning and construction of any major project depends on the proper design and execution of the coffer dam selected for the purpose of temporary river diversion. Hence, a safe design of coffer dam in order to avoid unanticipated/uncalculated risks and calamities during construction of the project is very important. However, it is paradoxical to note that in the design of a coffer dam, which is a temporary structure, certain calculated risks may have to be taken to effect economy on the overall cost of the project.

0.5 This standard is among a group of standards covering the choice, design and construction of coffer dams. The standards already published in this series are IS : 9461-1980* and IS : 9795 (Part I)-1980†.