IS : 4880 (Part VI) – 1971

Indian Standard

CODE OF PRACTICE FOR DESIGN OF TUNNELS CONVEYING WATER

PART VI TUNNEL SUPPORTS

1 SCOPE

1.1 This standard (Part VI) covers the criteria for design of steel supports and roof bolts for tunnels and shafts in rock and soft strata.

FOREWORD

0.1 This Indian Standard (Part VI) was adopted by the Indian Standards Institution on 27 October 1971, after the draft finalized by the Water Conductor Systems Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Very few tunnels are located in perfectly intact strata throughout their whole length, the vast magnitude being driven through rock with defects of one kind or another requiring some support until the permanent lining can be placed. Even intact rock in areas of high initial stresses may require support to prevent popping. Moreover construction of tunnels involves a large number of problems because of the great longitudinal extent of the work and many kinds of conditions are encountered which for maximum economy should be treated differently. In view of this it has been appreciated that it would be futile to prepare a rigid set of rules or procedures which shall be enforced without leaving any latitude for the exercise of discretion by the site engineer. The aim of this standard is to summarize the well-known and proved principles and to describe the commonly used procedures and techniques for providing guidelines which would permit the site engineer to use his discretion.

0.3 In view of the inherent advantages of the steel supports over timber supports, the use of the former is recommended and only steel supports are covered in this standard. In olden days timber was used in tunnel supports but now steel has become almost universally adopted as the standard material for supporting tunnels. Sometimes, however, timber may have to be used for tunnel supports.