

Indian Standard

**CODE OF PRACTICE FOR CONSTRUCTION
OF TUNNELS CONVEYING WATER**

PART I PRECISION SURVEY AND SETTING OUT

1 SCOPE

1.1 This standard (Part I) covers recommendations for precision survey and setting out of tunnels.

FOREWORD

0.1 This Indian Standard (Part I) was adopted by the Indian Standards Institution on 29 March 1971, after the draft finalized by the Water Conductor System Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 The construction of tunnels involves a variety of problems. Because of the great longitudinal extent of the work, many different kinds of conditions are encountered which for maximum economy should be treated differently. Moreover, design of a work is based on assumptions regarding quality of work which would be obtained during construction. These assumptions hold good only if the material used and the work as actually executed are according to the specifications which are known to give desired results. This standard (with all its parts) is intended to serve as a guide to the engineer-in-charge of construction of tunnel projects. However, because of the complex nature of the subject, it has not been possible to cover all possible contingencies and the judgement of the engineer-in-charge is required in making a final choice of the method to be adopted depending upon the conditions prevailing at the site.

0.3 This Part covers methods of precision survey setting out the tunnel alignment. Since the excavation of tunnel is normally started from many faces for expeditious completion of the work, it is essential that the excavation proceeds precisely along the pre-determined alignment. Even a slight deviation from the correct alignment, particularly in the initial stages, may lead to non-coincidence of the centre lines of the various stretches of a tunnel at the meeting points.