

Indian Standard
CODE OF PRACTICE FOR
CORROSION PROTECTION OF STEEL
REINFORCEMENT IN RB AND
RCC CONSTRUCTION

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INDIAN STANDARDS INSTITUTION
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0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 January 1979, after the draft finalized by the Corrosion Protection Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 The National Buildings Organization of Government of India had entrusted a research scheme on Corrosion of Reinforcement in Reinforced Brick (RB) and Reinforced Cement Concrete (RCC) to the Central Electro-Chemical Research Institute, Karaikudi in order to investigate the causes leading to corrosion and to evolve suitable preventive measures. The Institute conducted the research work during the years 1960 to 1967 and also carried out a survey of deteriorated reinforced brick and reinforced concrete structures at different places in the country.

0.2.1 This code has emerged as a result of the investigations carried out and the recommendations made by CECRI for Corrosion Prevention of Steel Reinforcement in their report.

0.3 This code has been prepared to provide a better understanding of the mechanism of reinforcement corrosion for the benefit of practising engineers, architects and builders engaged in the planning and execution of work involving reinforced brick and reinforced cement concrete construction. Adoption of preventive measures recommended in the code would enable substantial economies to be achieved by increasing the durability of the construction.

0.4 Stray current corrosion, which may also contribute to corrosion of steel reinforcement has not been considered in this code. It was also decided to defer recommending the use of galvanized reinforcement rods, until conclusive data on its use become available.

0.5 This standard should be read in conjunction with IS : 456-1978*.

*Code of practice for plain and reinforced concrete (*third revision*).

A-4. It has been observed experimentally that on an average, the chloride content decreases to one-fifth and the sulphate content decreases to one-tenth of their original values, during setting of the cement concrete. The maximum permissible limits for raw concrete mix, therefore, works out to 50 ppm of chloride and 500 soluble ppm of sulphate respectively.

APPENDIX B

(Clause 5.3.3)

PROCEDURE FOR APPLICATION OF PROTECTIVE COATING OF REINFORCEMENT RODS

B-1. The reinforcement rods should be dipped in the derusting solution of approved quality and the rods removed as soon as the rust is satisfactorily removed and a bright surface is obtained. This should be immediately followed by cleaning the rods with wet waste cloth and alkaline cleaning powder. The rod should then be brushed with the phosphating jelly of approved quality by means of a fibre brush. The jelly should be left on the surface for a period of 45-60 minutes and then removed by means of wet waste cloth. This should be followed by brushing the inhibitor solution of approved quality and the first coat of cement slurry, prepared by mixing 500 cc of inhibitor solution for each 1 000 g of portland cement. All the above steps should be applied in the same day and after 12-24 hours of air-drying the sealing solution of approved quality should be brushed followed by the second coat of cement slurry. It should then be dried for 12-24 hours followed by a brush coat of the sealing solution which should be applied again after 4 hours of air-drying.