AS 2832.3-1992

# Australian Standard®

### **Cathodic protection of metals**

Part 3: Fixed immersed structures

This Australian Standard was prepared by Committee MT/14, Corrosion of Metals. It was approved on behalf of the Council of Standards Australia on 13 December 1991 and published on 16 April 1992.

The following interests are represented on Committee MT/14: Aluminium Development Council Australasian Corrosion Association Australian Gas Association Australian Institute of Steel Construction Australian Zinc Development Association Austroads Bureau of Steel Manufacturers of Australia Confederation of Australian Industry Department of Defence Electricity Supply Association of Australia Engineering and Water Supply Department, S.A. Railways of Australia Committee Standards Association of New Zealand States electrolysis committees Telecom Australia

Additional interests participating in preparation of Standard:

Corrosion consultants

Gas and Fuel Corporation of Victoria

Hunter Water Board

N.S.W. Office of Energy

Petroleum refineries

State Electricity Commission of Victoria

State Energy Commission of Western Australia

Water Resources Commission, Qld

This Standard was issued in draft form for comment as DR 90177.

**Review of Australian Standards.** To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

## Australian Standard®

# Cathodic protection of metals Part 3: Fixed immersed structures

First published as AS 2832.3-1992

Incorporating: Amdt 1—1993 Amdt 2—1999

PUBLISHED BY STANDARDS AUSTRALIA (STANDARDS ASSOCIATION OF AUSTRALIA) 1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 7291 4

#### PREFACE

This Standard was prepared by the Standards Australia Committee on the Corrosion of Metals, at the request of industry to provide a Standard for the guidance of owners of immersed structures which are to be cathodically protected. It is not intended to be a complete cathodic protection design manual and those requiring further information should refer to the other Standards mentioned, to text books on the subject, or to appropriate corrosion prevention specialists.

During preparation of this Standard, account was taken of the regulations of the various state authorities which differ in their approach to cathodic protection.

This Standard forms one of the proposed AS 2832 series of Standards which cover the cathodic protection of metals. The first Standards in the series are as follows:

AS

2832 Cathodic protection of metals

2832.1 Part 1: Pipes, cables and ducts

2832.2 Part 2: Compact buried structures

Other Standards which are in the course of preparation and provide guidelines on cathodic protection cover internal surfaces of items such as water storage tanks, and the design of cathodic protection systems for boats.

#### © Copyright - STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

### <sup>3</sup> CONTENTS

|         |   | Page     |
|---------|---|----------|
| FOREWO  | RD  | 5        |
|         |   |          |
|         | 1 SCOPE AND GENERAL                                       |          |
|         |   |          |
|         | REFERENCED DOCUMENTS                                      |          |
| 1.3     | DEFINITIONS   | 6        |
| SECTION | 2 DESIGN OF STRUCTURES FOR CATHODIC PROTECTION            |          |
| 2.1     | GENERAL   | -        |
| 2.2     | STRUCTURE COATING   | 9        |
| 2.3     | TEST POINTS   | -        |
|         | ISOLATION OF STRUCTURE                                    | 9        |
| 2.5     | ELECTRICAL CONTINUITY                                     | 10       |
| SECTION | 3 COATINGS FOR USE WITH CATHODIC PROTECTION               |          |
| 3.1     | GENERAL   | 11       |
| 3.2     | COATING PROPERTIES  | 11       |
| 3.3     | COATING CHOICE  | 11       |
| 3.4     | COATING LIFE  | 12       |
| SECTION | 4 CRITERIA FOR CATHODIC PROTECTION                        |          |
| 4.1     | GENERAL   | 13       |
| 4.2     | FERROUS STRUCTURES  | 13       |
| 4.3     | COPPER/COPPER ALLOY STRUCTURES                            | 13       |
|         | ALUMINIUM STRUCTURES                                      | 13       |
| 4.5     | MIXED METALLIC STRUCTURES                                 | 13       |
| 4.6     | MEASUREMENT OF POTENTIAL                                  | 13       |
| 4.7     | OVERPROTECTION  | 14       |
| SECTION | 5 DESIGN OF CATHODIC PROTECTION SYSTEMS                   |          |
|         | GENERAL   | 15       |
|         | SAFETY PRECAUTIONS  | 15       |
|         | CHOICE OF SYSTEM—IMPRESSED CURRENT OR GALVANIC ANODES     | 15       |
|         | CONTROL OF INTERFERENCE CURRENTS                          | 16       |
|         | CABLES  | 16       |
|         | CHECK LIST FOR INITIAL SURVEYS                            | 17       |
|         | DETERMINATION OF CATHODIC PROTECTION CURRENT REQUIREMENTS | 17       |
|         | ANODE ARRANGEMENTS  | 21       |
|         | ANODE MATERIALS AND APPLICATIONS                          | 22       |
|         | POWER SUPPLY FOR IMPRESSED CURRENT SYSTEMS                | 22       |
|         | BACKFILL  | 23       |
|         | SYSTEM DESIGN DOCUMENTATION                               | 23       |
| SECTION | 6 INSTALLATION OF CATHODIC PROTECTION SYSTEMS             |          |
|         | GENERAL   | 25       |
|         | MATERIALS AND EQUIPMENT ACCEPTANCE TESTS                  | 25<br>25 |
|         | INSTALLATION OF GALVANIC ANODE SYSTEMS                    | 23<br>26 |
|         | INSTALLATION OF UNALVANCE ANODE STREMS                    | 20<br>26 |
|         | INSTALLATION OF INSULATING FLANGES AND DEVICES            | 26       |



This is a free preview. Purchase the entire publication at the link below:

**Product Page** 

S Looking for additional Standards? Visit Intertek Inform Infostore

> Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation