



WATER SERVICES
ASSOCIATION OF AUSTRALIA



WSA 201—2017

Manual for selection and application of protective
coatings

Second Edition
Version 2.1

Previous edition WSA 201—2013



ACKNOWLEDGMENTS

The WSAA Board would like to express its appreciation to WSAA Members and staff for their contributions to the development and revision of this Manual. The contribution and leadership by Jerry Sunarho and Vangeli Perakis from Sydney Water, Theodora Hogan from Melbourne Water, and Peter Dove from GHD Pty Ltd in developing the second edition of this Manual deserves special acknowledgement.

Contributions from other industry organisations and individuals are also gratefully acknowledged. The following individuals from WSAA staff, WSAA members and industry expert's peer reviewed this revision and provided comments and suggestions, many of which have been adopted.

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PUBLICATION DETAILS

Published by:

Water Services Association of Australia Limited

Level 8 Suite 8.02

401 Docklands Drive

Docklands VIC 3008

ISBN 1 920760 81 4

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FOREWORD

The Australian urban water industry commenced in the mid 1800's and became a major builder of infrastructure in the 1920's, peaking in the post-World War II period. The industry has a large portfolio of assets with a nominal written down replacement cost for fixed water supply and sewerage assets exceeding \$120 Billion. These infrastructure assets consist of in excess of 140,000 km of water mains, 120,000 km of sewer mains, approximately 260 water treatment plants and 440 sewage treatment plants, as well as large numbers of water storage tanks and reservoirs, water and sewage pumping stations and other associated facilities and structures.

Many of these assets rely upon coatings and linings to control and mitigate the impacts of corrosion, sometimes in combination with other measures such as cathodic protection. Most coated or lined assets require regular ongoing maintenance and repair.

The water utilities collectively have acquired immense knowledge and experience in the use of protective coatings and linings across a wide range of applications and environments. The industry's material specialists have a long history of involvement in the development of technical standards and specifications along with training and certification programs to ensure that quality products are manufactured and supplied for application by competent contractors using appropriate surface preparation and application techniques.

The first edition of this Manual was developed to consolidate current industry "most appropriate best practice". It is not intended to inhibit innovation. It does not purport to address all asset management situations and/or options.

The second edition continues to build on the experience and confidence of the water industry with the selection and application of protective coatings. Revisions include:

- (a) latest update of AS/NZS 2312, Parts 1 and 2
- (b) relevant AS/NZS, ASTM, ICRI, NACE, SSPC, ISO standards for application of protective coatings to steel and concrete
- (c) application of elastomeric polyurea and polyurethane systems, and siloxane penetrating sealer.
- (d) update concrete surface preparation and application to relevant international standards to reflect current industry practices.
- (e) concrete repair section for delamination and spalling of concrete.
- (f) update OHS environmental sections with management of hazardous materials in the existing coatings
- (g) update relevant coating systems
- (h) a review of recommended coating systems for various asset classes and environmental exposures including specific chemicals exposure
- (i) design service life for applied protective coating systems
- (j) restructure of some sections within the Manual to improvement readability
- (k) other editorial changes.

The clear benefits of this Manual and WSAA Codes, Standards, Specifications and Tools extend beyond our members to the wider Australian community. The performance of network infrastructure is fundamental to achieving excellence in community health, commerce and industry, customer service, asset management and delivering sustainable water and sewerage services. The Manual will make a practical contribution to better achieving these goals.

WSAA is ideally positioned to provide national leadership in actively prosecuting its National Codes Initiative that commenced in 1997. As an industry association of the major urban water utilities in Australia, WSAA's members supply the majority of Australian residential, commercial and industrial consumers with water and sewerage services. In developing Codes that articulate appropriate planning, design and construction practices, WSAA is providing a valuable training resource that can assist in building asset management capability and capacity necessary for the ongoing reliable and successful performance of our network infrastructure.

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