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Manual for selection and application of protective coatings

Second Edition
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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.
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>2</td>
</tr>
<tr>
<td>FOREWORD</td>
<td>4</td>
</tr>
<tr>
<td><strong>1 INTRODUCTION</strong></td>
<td>10</td>
</tr>
<tr>
<td>1.1 PURPOSE AND SCOPE</td>
<td>10</td>
</tr>
<tr>
<td>1.2 MANDATORY AND INFORMATIVE</td>
<td>10</td>
</tr>
<tr>
<td>1.3 ALTERNATIVE SOLUTIONS AND INNOVATIONS</td>
<td>10</td>
</tr>
<tr>
<td>1.4 USE OF THE MANUAL</td>
<td>10</td>
</tr>
<tr>
<td>1.4.1 During design or selection of coating systems</td>
<td>10</td>
</tr>
<tr>
<td>1.4.2 During coating application</td>
<td>10</td>
</tr>
<tr>
<td>1.4.3 During inspection and testing</td>
<td>11</td>
</tr>
<tr>
<td>1.4.4 During coating maintenance</td>
<td>11</td>
</tr>
<tr>
<td>1.5 AMENDMENTS AND SUPPLEMENTS</td>
<td>11</td>
</tr>
<tr>
<td>1.6 REFERENCED DOCUMENTS</td>
<td>11</td>
</tr>
<tr>
<td>1.7 DEFINITIONS</td>
<td>15</td>
</tr>
<tr>
<td>1.8 ABBREVIATIONS</td>
<td>17</td>
</tr>
<tr>
<td><strong>2 QUALITY ASSURANCE</strong></td>
<td>19</td>
</tr>
<tr>
<td>2.1 INTRODUCTION</td>
<td>19</td>
</tr>
<tr>
<td>2.2 APPROVED APPLICATOR</td>
<td>19</td>
</tr>
<tr>
<td>2.3 SUPPLIER’S SPECIFICATION</td>
<td>19</td>
</tr>
<tr>
<td>2.4 INSPECTION AND TEST PLAN (ITP)</td>
<td>19</td>
</tr>
<tr>
<td>2.5 COATING INSPECTOR</td>
<td>19</td>
</tr>
<tr>
<td>2.6 PRE-JOB MEETING</td>
<td>20</td>
</tr>
<tr>
<td>2.7 TRIAL APPLICATION</td>
<td>20</td>
</tr>
<tr>
<td>2.8 FIRST ANNIVERSARY INSPECTIONS</td>
<td>20</td>
</tr>
<tr>
<td>2.9 VENTILATION, DEHUMIDIFICATION AND TEMPERATURE CONTROL</td>
<td>21</td>
</tr>
<tr>
<td><strong>3 WORK HEALTH AND SAFETY</strong></td>
<td>21</td>
</tr>
<tr>
<td>3.1 INTRODUCTION</td>
<td>21</td>
</tr>
<tr>
<td>3.2 STATUTORY AUTHORITIES AND REGULATORY REQUIREMENTS</td>
<td>21</td>
</tr>
<tr>
<td>3.3 WORK HEALTH AND SAFETY (WHS) LAWS</td>
<td>21</td>
</tr>
<tr>
<td>3.4 NATIONAL STANDARD FOR CONSTRUCTION WORK</td>
<td>22</td>
</tr>
<tr>
<td>3.5 HANDLING OF CHEMICALS</td>
<td>23</td>
</tr>
<tr>
<td>3.6 PRESSURE EQUIPMENT</td>
<td>23</td>
</tr>
<tr>
<td>3.7 EARTHING</td>
<td>24</td>
</tr>
<tr>
<td>3.8 PPE AND VENTILATION, AND LIGHTING</td>
<td>24</td>
</tr>
<tr>
<td>3.9 ACCESS</td>
<td>24</td>
</tr>
<tr>
<td>3.10 CONFINED SPACES</td>
<td>25</td>
</tr>
<tr>
<td>3.11 WORKING AT HEIGHTS</td>
<td>25</td>
</tr>
<tr>
<td>3.12 WORKING IN, ON OR AROUND WATER</td>
<td>25</td>
</tr>
<tr>
<td>3.13 HEAT STRESS</td>
<td>25</td>
</tr>
<tr>
<td>3.14 FATIGUE MANAGEMENT</td>
<td>25</td>
</tr>
<tr>
<td>3.15 BARRIERS AND MASKING</td>
<td>26</td>
</tr>
<tr>
<td>3.16 HAZARDOUS SUBSTANCES</td>
<td>26</td>
</tr>
<tr>
<td><strong>4 ENVIRONMENTAL PROTECTION</strong></td>
<td>26</td>
</tr>
<tr>
<td>4.1 INTRODUCTION</td>
<td>26</td>
</tr>
<tr>
<td>4.2 LEAD PAINT AND OTHER HAZARDOUS COATINGS</td>
<td>27</td>
</tr>
<tr>
<td>4.3 CONTAINMENT OF NON-HAZARDOUS COATING OPERATIONS</td>
<td>27</td>
</tr>
<tr>
<td>4.4 ASSESSING EMISSIONS OF NON-HAZARDOUS COATING OPERATIONS</td>
<td>27</td>
</tr>
<tr>
<td><strong>5 SELECTION OF COATINGS</strong></td>
<td>29</td>
</tr>
<tr>
<td>5.1 INTRODUCTION</td>
<td>29</td>
</tr>
</tbody>
</table>
7.10 EDGE AND STRIPE COATING OF DIFFICULT-TO-SPRAY AREAS 55
7.11 CREVICES AND GAPS 56
7.12 FASTENERS 56
7.13 SITE WELDS 56
7.14 REPAIR OF DEFECTS IN NEW COATINGS 56
7.15 FINISHED COLOURS 57
7.16 NON-SKID FINISH 57
7.17 PASSIVATION OF STAINLESS STEEL 57
7.18 BI-METALLIC CORROSION 58

8 COATING SYSTEM SPECIFICATIONS 59
8.1 ACL (ACRYLIC LATEX) 59
8.2 ALK (ALKYD) 60
8.3 CAC (CALCIUM ALUMINATE CEMENT) 61
8.4 CER (CERAMIC FILLED EPOXY) 62
8.5 CML (CEMENT MORTAR LINING) 63
8.6 CPL (CONCRETE PROTECTIVE LINER) 64
8.7 EBS (ELASTOMERIC BOOT SEAL) 65
8.8 EFR (ELASTOMERIC MEMBRANE TANK FLOOR REPAIR) 66
8.9 EHB-A (EPOXY HIGH BUILD, ATMOSPHERIC SERVICE) 67
8.10 EHB-SB (EPOXY HIGH BUILD, SOLVENT BASED FOR IMMERSION SERVICE) 68
8.11 EHB-SF (EPOXY HIGH BUILD, SOLVENT FREE FOR IMMERSION SERVICE) 69
8.12 EPM (EPOXY MASTIC / SURFACE TOLERANT) 70
8.13 EUH (EPOXY ULTRA HIGH BUILD) 72
8.14 EW B (EPOXY WATER BASED) 73
8.15 FBE (FUSION BONDED EPOXY) 74
8.16 FPE (FUSION BONDED POLYETHYLENE) 75
8.17 GAL (HOT DIP GALVANISING) 76
8.18 HSS (HEAT SHRINKABLE SLEEVE) 77
8.19 IZS (INORGANIZ ZINC SILICATE) 78
8.20 NOV (NOVOLAC EPOXY) 79
8.21 PMM (POLYMER MODIFIED MEMBRANE) 80
8.22 P OW (POWDER COATING) 81
8.23 PSL (POLYSILOXANE) 82
8.24 PUR-A (POLYURETHANE, HIGH PERFORMANCE) 83
8.25 PUR-B (POLYURETHANE, MODERATE PERFORMANCE) 84
8.26 PUE (POLYUREA) 86
8.27 SLX (SILANE-SILOXANE) 87
8.28 TAPE (TAPE WRAPPING) 88
8.29 TSZ (THERMAL SPRAYED ZINC) 89
8.30 VES (VINYL ESTER) 90
8.31 ZRE (ZINC RICH EPOXY) 91

9 PRODUCT SPECIFICATIONS 92

10 QUALITY CONTROL – INSPECTION AND TESTING 94
10.1 INTRODUCTION 94
10.2 QUALITY CONTROL RECORDS 94
10.3 INSPECTION AND TESTING METHODS 94
   10.3.1 Introduction 94
   10.3.2 Visual inspection 94
   10.3.3 Adhesion of existing coating 95
   10.3.4 Surface cleanliness 95
   10.3.5 Surface appearance (blast class) 95
   10.3.6 Surface profile (blast profile) 96
   10.3.7 Temperature and relative humidity 96
10.3.8 Moisture content – concrete and masonry structures 96
10.3.9 Wet film thickness 96
10.3.10 Dry film thickness – metallic substrate 96
10.3.11 Dry film thickness – concrete substrates 97
10.3.12 Adhesion of new coating (bond test) 97
10.3.13 Film continuity (holiday test) – Metallic substrates 97
10.3.14 Film continuity (holiday test) – Concrete substrates 97
10.3.15 Degree of cure 98

11 EXAMPLES OF INSPECTION AND TEST PLAN 99

12 DOCUMENT HISTORY 104

TABLES
4.1 Guide to Estimating Emissions 24
5.1 Exposure Class Details 26
5.2 Coating Systems and General Description 29
5.3 Recommended Coating Systems for Water Reservoirs 33
5.4 Recommended Coating Systems for Water Pipelines 34
5.5 Recommended Coating Systems for Sewage Pipelines and Associated Items 35
5.6 Recommended Coating Systems for Treatment Plants and Pumping Stations 36
5.7 Recommended Systems for Chemical Bunds and Equipment Having Occasional Chemical Contacts 38
5.8 Recommended Coating Systems for Specific Maintenance Painting 39
9.1 Product Specifications 87
11.1 Example of Inspection and Test Plan for Steel Reservoir Lining with EHB-SF 94
11.2 Example of Inspection and Test Plan for a Sewage Pumping Station Wet-Well Lining with EUH 97