

## NRA MANUAL OF CONTRACT DOCUMENTS FOR ROAD WORKS

### A BRIEF DESCRIPTION OF DECEMBER 2010 AMENDMENTS

DOCUMENT	DESCRIPTION OF CHANGES SINCE OCTOBER 2009
<p>Series 100</p> <p>Edge of Pavement Details</p>	<p>Series 100 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 100 is updated in December 2010 by the deletion of RCD/100/1 to RCD/100/12 inclusive from Volume 4 and the updating of Table NG1/1 in Volume 2 as further detailed below.</p>
<p>Series 200</p> <p>Site Clearance</p>	<p>Series 200 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 200 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 200</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 200</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 200</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. Terminology has been updated for consistency with the Public Works Contracts.</li> <li>2. Additional requirements for the protection of existing vegetation have been introduced.</li> <li>3. Burning of materials on site has been prohibited.</li> <li>4. The method of measurement has been extended to include partial demolition of structures.</li> </ol>
<p>Series 300</p> <p>Fencing and Environmental Noise Barriers</p>	<p>Series 300 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW) and revised in January 2009.</p> <p>Minor amendments have been made to the Series 300 as published in January 2009 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 300.</li> <li>• Volume 4, Road Construction Details, Series 300, RCD/300/10.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. The testing requirements for Environmental Barriers are included in Table NG 1/1 to reflect the changes made to Series 300 in January 2009.</li> <li>2. Size of Double Field Gate altered in RCD/300/10.</li> </ol>

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<p>Series 400</p> <p>Safety Barriers and Pedestrian Guardrails</p>	<p>Series 400 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW) and revised in January 2009.</p> <p>Minor amendments have been made to the Series 400 as published in January 2009 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 400.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. The testing requirements for Safety Barriers are included in Table NG 1/1 to reflect the changes made to Series 400 in January 2009.</li> </ol>
<p>Series 500</p> <p>Drainage and Service Ducts</p>	<p>Series 500 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW) and revised in January 2009 with an Erratum in October 2009.</p> <p>Minor amendments have been made to the Series 500 as published in January 2009 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 2 Notes for Guidance on the Specification for Road Works, Series NG 100 Table NG 1/1 as relevant to Series 500.</li> <li>• Volume 4 Road Construction Details, Series 500, RCD/500/03, RCD/500/07 and RCD/500/08.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. The testing requirements for Drainage and Service Ducts are included in Table NG 1/1 to reflect the changes made to Series 500 in January 2009.</li> <li>2. The three Series 500 RCDs are revised to correct duplicate Manholes Type C and D.</li> </ol>

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<p>Series 700</p> <p>Road Pavements - General</p>	<p>Series 700 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 700 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1 Specification for Road Works, Series 700</li> <li>• Volume 2 Notes for Guidance on the Specification for Road Works, Series NG 700</li> <li>• Volume 2 Notes for Guidance on the Specification for Road Works, Series NG 100 Table NG 1/1 as relevant to Series 700.</li> <li>• Volume 3 Section 1 : Method of Measurement for Road Works Chapter IV Series 700</li> <li>• Volume 3 Section 2 : Notes for Guidance on the Method of Measurement for Road Works Chapter IV Series 700</li> <li>• Volume 4 Road Construction Details, Series 700, RCD700/1, 2, 3, 4, 5 &amp; 6.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. A complete revision to Series 700 Road Pavements – General to include the new names and designations for pavement layers arising out of the revisions to Series 900 dated January 2010.</li> <li>2. Terminology has been updated for consistency with the Public Works Contracts.</li> <li>3. An additional clause on 709 on Cold-milling (Planing) of Bituminous Bound Flexible Pavement.</li> <li>4. Construction and weather conditions requirements for laying pavement materials are moved to the relevant Series for the particular material.</li> <li>5. Series 700 Volume 2 is revised to provide better guidance on the compilation of Appendix 7/1, including tables on Particular Requirements for Bituminous Bound Materials, Unbound and Cement Bound Mixtures and Concrete Materials.</li> <li>6. The Road Construction Details are revised to include the new names and designations for pavement layers and to reflect the new joints spacing requirements from Series 900.</li> <li>7. Requirement introduced into Clause 706 for excavations and reinstatements of openings in existing pavements and paved areas of national roads designed to carry traffic loading of 120 msa or less to comply with the “Specification for the Reinstatement of Openings in National Roads” issued by the National Roads Authority.</li> </ol>

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<b>DOCUMENT</b>	<b>DESCRIPTION OF CHANGES SINCE OCTOBER 2009</b>
<p>Series 800</p> <p>Road Pavements - Unbound Cement Bound Mixtures</p>	<p>Series 800 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW) and revised in May 2004.</p> <p>Series 800 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1 Specification for Road Works, Series 800</li> <li>• Volume 2 Notes for Guidance on the Specification for Road Works, Series NG 800</li> <li>• Volume 2 Notes for Guidance on the Specification for Road Works, Series NG 100 Table NG 1/1 as relevant to Series 800.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. Complete revision to Series 800 – now renamed as Road Pavements – Unbound and Cement Bound Mixtures. The previous CBM materials have been removed from Series 1000 and replaced by the HBM's contained in this new Series 800.</li> <li>2. Implementation of the new IS EN Standards for unbound and cement bound mixtures and their associated test methods. The new IS EN Standards for unbound mixtures supersede the previously referenced Irish and British Standards.</li> <li>3. Terminology has been updated for consistency with the Public Works Contracts.</li> <li>4. Further clarification of the grading and material properties of Granular Material Types B, C, D and E (Cl 803 to Cl 806) to accord with IS EN 13285.</li> <li>5. Introduction of two new material classes, clauses 808 and 809 which require material placed in close proximity to Cement-Bound Materials and Metallic Structural Elements respectively to conform to Type B with additional restrictions on sulphur content.</li> <li>6. Construction and weather conditions requirements for unbound and cement bound materials have been removed from Series 700 and Series 1000 and are reproduced in Series 800.</li> <li>7. The testing requirements for Unbound and Cement Bound Mixtures are revised in Table NG 1/1 to reflect the changes made to Series 800.</li> </ol>

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DOCUMENT	DESCRIPTION OF CHANGES SINCE OCTOBER 2009
<p>Series 900</p> <p>Road Pavements - Unbound Materials</p>	<p>Series 900 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW), revised in May 2005 and an Advance Publication of a further revision was published in October 2009.</p> <p>Series 900 was formally updated in January 2010 by the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 900</li> <li>• Volume 2 Notes for Guidance on the Specification for Road Works, Series NG 900</li> <li>• Volume 2 Notes for Guidance on the Specification for Road Works, Series NG 100 Table NG 1/1 as relevant to Series 900.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. Implementation of the new IS EN Standards for bituminous mixtures and their associated test methods. The new IS EN standards introduce new names and designations for bituminous mixtures. The new IS EN Standards for bituminous mixtures supersede the previously referenced Irish and British Standards.</li> <li>2. These new Standards are further supported by a new BS594987 which specifies requirements for the transport, laying and compaction of bituminous mixtures.</li> <li>3. The NRA has considered the requirements of the new Standards and chosen to rationalise them for incorporation into Series 900 of the Specification for Road Works. The revised Series 900 includes additional requirements to those in the IS EN standards. It also includes new requirements for the sealing of cold joints to improve durability.</li> <li>4. Some materials are included which are not covered by EN standards such as CI 919 Surface Dressing and CL 924 High Friction Surfaces.</li> <li>5. The new IS EN standards introduce a significant change to the way bituminous mixtures are specified, namely, the Evaluation of Conformity methodology which incorporates Type Testing and Factory Production Control. NSAI has published a guidance document SR 28 Standard recommendations for I.S.EN 13108 series that gives advice on how to specify Irish standard mixtures using the new European Standards. Elements of this advice have been made mandatory for NRA schemes by inclusion within Series 900 of the Specification for Road Works.</li> <li>6. Terminology has been updated for consistency with the Public Works Contract.</li> </ol>

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DOCUMENT	DESCRIPTION OF CHANGES SINCE OCTOBER 2009
<p>Series 1000</p> <p>Road Pavements – Concrete Materials</p>	<p>Series 1000 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 1000 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1      Specification for Road Works, Series 1000</li> <li>• Volume 2      Notes for Guidance on the Specification for Road Works, Series NG 1000</li> <li>• Volume 2      Notes for Guidance on the Specification for Road Works, Series NG 100 Table NG 1/1 as relevant to Series 1000.</li> <li>• Volume 4      Road Construction Details, Series 1000, RCD/1000/1, 3 to 9, 16 and 18 to 29.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. Complete revision to Series 1000 – now renamed as Road Pavements – Concrete Materials. CBM materials have been removed and replaced by HBMs in the new Series 800.</li> <li>2. Implementation of the new IS EN Standards for concrete materials and their associated test methods. The new IS EN Standards for concrete materials supersede the previously referenced Irish and British Standards.</li> <li>3. Terminology has been updated for consistency with the Public Works Contracts.</li> <li>4. Construction and weather conditions requirements for concrete materials have been removed from Series 700 and are reproduced in Series 1000.</li> <li>5. The Road Construction Details are revised to include the new names and designations for pavement layers and to introduce RCD/1000/20 to RCD/1000/29 dealing with transitions between rigid and flexible construction, longitudinal joints in continuously reinforced concrete pavement or base and ground beam anchorages.</li> </ol>

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<b>DOCUMENT</b>	<b>DESCRIPTION OF CHANGES SINCE OCTOBER 2009</b>
<p>Series 1100</p> <p>Kerbs, Footways and Paved Areas</p>	<p>Series 1100 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 1100 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 1100</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 1100</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 1100.</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 1100</li> <li>• Volume 3, Section 2 : Notes for Guidance on the Method of Measurement for Road Works, Chapter IV Series 1100</li> <li>• Volume 4, Road Construction Details, Series 1100, RCD1100/1, 2, 3 and 9.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. Implementation of the new IS EN Standards for precast concrete materials and their associated test methods. The new IS EN Standards supersede the previously referenced Irish and British Standards.</li> <li>2. Terminology has been updated for consistency with the Public Works Contracts.</li> <li>3. Additional clauses have been introduced covering the use of clay pavers, cellular grass paving and access steps.</li> <li>4. RCD's have been amended for consistency with the above, additional splayed kerb details and universal access enhancements.</li> </ol>

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DOCUMENT	DESCRIPTION OF CHANGES SINCE OCTOBER 2009
<p>Series 1600</p> <p>Piling and Diaphragm Walling</p>	<p>Series 1600 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 1600 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 1600</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 1600</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 1600.</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 1600</li> <li>• Volume 3, Section 2 : Notes for Guidance on the Method of Measurement for Road Works Chapter IV Series 1600</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. A major update based on the UK MCHW Series 1600 that has been in common use in Ireland in recent years, adapted for consistency with the Public Works Contracts and design to Eurocodes.</li> <li>2. Particular additional requirements for prestressed concrete piles and precast reinforced concrete segmental piles.</li> <li>3. Revised detailed requirements for piling records to be kept</li> <li>4. Revised requirements for static and dynamic testing of piles.</li> </ol>
<p>1700</p> <p>Structural Concrete</p>	<p>Series 1700 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW) and revised in October 2009</p> <p>Series 1700 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>•</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 1700.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. Testing requirements have been updated for consistency with the October 2009 revision of Volume 1.</li> </ol>



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DOCUMENT	DESCRIPTION OF CHANGES SINCE OCTOBER 2009
<p>1900</p> <p>Protection of Steelwork Against Corrosion</p>	<p>Series 1900 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 1900 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 1900</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 1900</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 1900.</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 1900</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. Major revision incorporating both series 1900 and 5000 of the UK MCHW to address both new works and maintenance, amended for consistency with the Public Works Contracts.</li> <li>2. CREST will now act as testing authority and testing laboratory, unless otherwise agreed . . .</li> <li>3. Additional paint system sheet templates have been inserted for the testing of paint samples</li> <li>4. These amendments are consistent with the ne NRA Addendum to BD 87.</li> </ol>
<p>2000</p> <p>Waterproofing for Structures</p>	<p>Series 2000 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 2000 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 2000</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 2000</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 2000.</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 2000</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. A major revision for consistency with the new NRA BD57 and the Public Works Contracts.</li> <li>2. The use of mastic asphalt as bridge deck waterproofing has been removed due to poor performance.</li> <li>3. The use of sheet membrane products on bridge decks is no longer allowed.</li> <li>4. The use of tar and cut back bitumen for below ground surfaces is replaced with 2 no coats of epoxy resin waterproofing.</li> </ol>

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<b>DOCUMENT</b>	<b>DESCRIPTION OF CHANGES SINCE OCTOBER 2009</b>
<p>2300</p> <p>Bridge Expansion Joints and Sealing of Gaps</p>	<p>Series 2300 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 2300 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 2300</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 2300</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 2300</li> </ul> <p>The revisions are minor, as follows:</p> <ol style="list-style-type: none"> <li>1. General updating for consistency with the Public Works Contracts.</li> <li>2. Secondary waterproofing systems in the form of continuous membranes to be provided to achieve waterproof seals between prefabricated units.</li> <li>3. The drainage system installed must be accessible for inspection and checked and cleared of any obstructions after installation.</li> </ol>
<p>2400</p> <p>Brickwork, Blockwork and Stonework</p>	<p>Series 2400 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 2400 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 2400</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 2400</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 2400.</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 2400</li> <li>• Volume 4, Road Construction Details, Series 2400, RCD2400/1-6</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. General update for consistency with the Public Works Contracts and current Euronorms.</li> </ol>

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<b>DOCUMENT</b>	<b>DESCRIPTION OF CHANGES SINCE OCTOBER 2009</b>
<p>2500</p> <p>Special Structures</p>	<p>Series 2500 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 2500 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 2300</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 2500</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 2500.</li> <li>• Volume 3, Section 1 : Method of Measurement for Road Works Chapter IV Series 2500</li> <li>• Volume 3, Section 2 : Notes for Guidance on the Method of Measurement for Road Works Chapter IV Series 2500</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. General revision for consistency with the Public Works Contracts and current Euronorms.</li> </ol>
<p>2600</p> <p>Miscellaneous</p>	<p>Series 2600 of The Manual of Contract Documents for Road Works was published by the National Roads Authority in March 2000 (NRA MCDRW).</p> <p>Series 2600 is updated in December 2010 by the issue of the following documents:-</p> <ul style="list-style-type: none"> <li>• Volume 1, Specification for Road Works, Series 2600</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 2600</li> <li>• Volume 2, Notes for Guidance on the Specification for Road Works, Series NG 100, Table NG 1/1 as relevant to Series 2600.</li> </ul> <p>The revisions of particular note are as follows:</p> <ol style="list-style-type: none"> <li>1. General revision for consistency with the Public Works Contracts and current Euronorms.</li> </ol>
<p>Volume 1A</p> <p>Specification for Road Works: Amendments for use with Public Works Contracts</p>	<p>Volume 1A of the MCDRW was published by the National Roads Authority in January 2009.</p> <p>Volume 1A is updated in December 2010, deleting those elements which are taken account of in the above revision to individual series of the Specification for Road Works.</p>
<p>Volume 3A</p> <p>Method of Measurement for Road Works: Amendments for use with Public Works Contracts</p>	<p>Volume 3A of the MCDRW was published by the National Roads Authority in January 2009.</p> <p>Volume 3A is updated in December 2010, deleting those elements which are taken account of in the above revision to individual series of the Method of Measurement for Road Works.</p>