



Bonneagar Iompair Éireann  
Transport Infrastructure Ireland

## TII Publications



---

# Method of Measurement for Road Works Series MM 2000 - Waterproofing for Structures

**CC-RMP-02000**  
December 2010

## About TII

Transport Infrastructure Ireland (TII) is responsible for managing and improving the country's national road and light rail networks.

## About TII Publications

TII maintains an online suite of technical publications, which is managed through the TII Publications website. The contents of TII Publications is clearly split into 'Standards' and 'Technical' documentation. All documentation for implementation on TII schemes is collectively referred to as TII Publications (Standards), and all other documentation within the system is collectively referred to as TII Publications (Technical). This system replaces the NRA Design Manual for Roads and Bridges (NRA DMRB) and the NRA Manual of Contract Documents for Road Works (NRA MCDRW).

## Document Attributes

Each document within TII Publications has a range of attributes associated with it, which allows for efficient access and retrieval of the document from the website. These attributes are also contained on the inside cover of each current document, for reference. For migration of documents from the NRA and RPA to the new system, each current document was assigned with new outer front and rear covers. Apart from the covers, and inside cover pages, the documents contain the same information as previously within the NRA or RPA systems, including historical references such as those contained within NRA DMRB and NRA MCDRW.

## Document Attributes

<b>TII Publication Title</b>	<i>Method of Measurement for Road Works Series MM 2000 - Waterproofing for Structures</i>
<b>TII Publication Number</b>	<i>CC-RMP-02000</i>

<b>Activity</b>	<i>Construction &amp; Commissioning (CC)</i>
<b>Stream</b>	<i>Requirements for Measuring and Pricing (RMP)</i>
<b>Document Number</b>	<i>02000</i>

<b>Document Set</b>	<i>Standards</i>
<b>Publication Date</b>	<i>December 2010</i>
<b>Historical Reference</b>	<i>Series MM 2000</i>

## NRA DMRB and MCDRW References

For all documents that existed within the NRA DMRB or the NRA MCDRW prior to the launch of TII Publications, the NRA document reference used previously is listed above under 'historical reference'. The TII Publication Number also shown above now supersedes this historical reference. All historical references within this document are deemed to be replaced by the TII Publication Number. For the equivalent TII Publication Number for all other historical references contained within this document, please refer to the TII Publications website.

---

## Series 2000: Waterproofing for Structures

	<b>Waterproofing</b>																	
Units	1	The unit of measurement shall be:  (i) waterproofing.....square metre.																
Measurement	2	The measurement shall be the area of surface covered by the waterproofing. No deduction shall be made for openings of 1 square metre or less.																
Itemisation	3	Separate items shall be provided for waterproofing for structures in accordance with Chapter II paragraphs 3 and 4 and the following:  <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: right;">Group</td> <td style="text-align: right;">Feature</td> </tr> <tr> <td style="border-top: 1px solid black;">I</td> <td style="border-top: 1px solid black;">1 Waterproofing</td> </tr> <tr> <td style="border-top: 1px solid black;">II</td> <td style="border-top: 1px solid black;">1 Different types</td> </tr> <tr> <td style="border-top: 1px solid black;">III</td> <td style="border-top: 1px solid black;">1 More than 300mm wide horizontal or at any inclination up to and including 30° to the horizontal</td> </tr> <tr> <td></td> <td>2 More than 300mm wide at any inclination more than 30° up to and including 90° to the horizontal</td> </tr> <tr> <td></td> <td>300mm wide or less at any inclination</td> </tr> <tr> <td></td> <td>3 Domed</td> </tr> <tr> <td></td> <td>4</td> </tr> </table>	Group	Feature	I	1 Waterproofing	II	1 Different types	III	1 More than 300mm wide horizontal or at any inclination up to and including 30° to the horizontal		2 More than 300mm wide at any inclination more than 30° up to and including 90° to the horizontal		300mm wide or less at any inclination		3 Domed		4
Group	Feature																	
I	1 Waterproofing																	
II	1 Different types																	
III	1 More than 300mm wide horizontal or at any inclination up to and including 30° to the horizontal																	
	2 More than 300mm wide at any inclination more than 30° up to and including 90° to the horizontal																	
	300mm wide or less at any inclination																	
	3 Domed																	
	4																	
<b>Waterproofing</b>	4	The items for waterproofing shall in accordance with the Preambles to Bill of Quantities General Directions include for:																
Item Coverage		<ul style="list-style-type: none"> <li>(a) preparing, cleaning and drying;</li> <li>(b) priming and bonding agents;</li> <li>(c) laying to cambers, falls and crowns;</li> <li>(d) protective layers;</li> <li>(e) additional protection;</li> <li>(f) levelling courses;</li> <li>(g) formwork (as Series 1700 paragraph 14);</li> <li>(h) additional basecourse or wearing course required as a result of the Contractors choice of waterproofing;</li> <li>(i) nibs, angle fillets, external angles, mitres, stops and the like;</li> <li>(j) sealing and making good at edges and chases, Around interruptions and projections and up to abutting surfaces including cleaning and priming;</li> <li>(k) cutting out and rectifying imperfections;</li> <li>(l) joints and laps;</li> </ul>																

- (m) preparation and supply of data sheets;
- (n) preparing surfaces at gullies and the like;
- (o) masking and other measures to protect adjacent untreated areas;
- (p) complying with any special requirements in respect of ambient conditions and for intervals between successive operations and applications;

**Surface Impregnation and Coatings of Concrete**

Units	<p><b>5</b> The unit of measurement shall be:</p> <ul style="list-style-type: none"> <li>(i) surface impregnation of concrete.....square metre.</li> <li>(ii) surface impregnation of coatings and concrete.....square metre.</li> </ul>										
Measurement	<p><b>6</b> The measurement shall be the area of the surface to be impregnated of any width or at any inclination. No deduction shall be made for openings of 1 square metre or less. For plain surfaces the measurement shall be the area over the face of individual fillets, chamfers, splays, drips, rebates, recesses, grooves and the like of 100mm total girth or less when measured overall the faces of the concrete. For patterned surfaces the measurement shall be the flat undeveloped area and measured over the face of individual fillets, chamfers, splays, drips, rebates, recesses, grooves and the like, not forming part of the pattern and 100mm total girth or less when measured overall the faces of the concrete. Surfaces shall be measured once only, irrespective of the number of applications specified in the treatment.</p>										
Itemisation	<p><b>7</b> Separate items shall be provided for surface impregnation of concrete in accordance with Chapter II paragraph 3 and 4 and the following:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Group</th> <th style="text-align: left;">Feature</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="vertical-align: top;">I</td> <td>1 Surface impregnation</td> </tr> <tr> <td>2 Surface impregnation and coatings of concrete</td> </tr> <tr> <td rowspan="2" style="vertical-align: top;">II</td> <td>1 Patterned surfaces</td> </tr> <tr> <td>2 Plain surfaces</td> </tr> <tr> <td style="vertical-align: top;">III</td> <td>1 Different types of systems</td> </tr> </tbody> </table>	Group	Feature	I	1 Surface impregnation	2 Surface impregnation and coatings of concrete	II	1 Patterned surfaces	2 Plain surfaces	III	1 Different types of systems
Group	Feature										
I	1 Surface impregnation										
	2 Surface impregnation and coatings of concrete										
II	1 Patterned surfaces										
	2 Plain surfaces										
III	1 Different types of systems										
<b>Surface Impregnation of Concrete and Surface Impregnation of Coatings and Concrete</b>	<p><b>8</b> The items for surface impregnation of concrete and surface impregnation and coatings of concrete shall in accordance with the Preambles to Bill of Quantities General Directions include for</p> <ul style="list-style-type: none"> <li>(a) preparing, cleaning and drying;</li> <li>(b) priming and bonding agents;</li> <li>(c) laying to cambers, falls and crowns;</li> </ul>										

- (d) protective layers;
- (e) additional protection;
- (f) levelling courses;
- (g) formwork (as series 1700 paragraph 14);
- (h) additional basecourse or wearing course required as a result of the Contractor's choice of waterproofing;
- (i) nibs, angle fillets, external angles, mitres, stops and the like;
- (j) sealing and making good at edges and chases, around interruptions and projections and up to abutting surfaces including cleaning and priming;

**Removal of Existing Waterproofing**

Units	<b>9</b>	The unit of measurement shall be: <ul style="list-style-type: none"> <li>(i) removal of existing waterproofing .....square metre</li> </ul>												
Measurement	<b>10</b>	The measurement of removal of existing waterproofing shall be the area of surface covered by the existing waterproofing. No deduction shall be made for openings of 1 square metre or less.												
Itemisation	<b>11</b>	Separate items shall be provided for removal of existing waterproofing in accordance with Chapter II paragraphs 3 and 4 and the following: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left; padding: 5px;">Group</th> <th style="text-align: left; padding: 5px;">Feature</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">I</td> <td style="padding: 5px;">1 Removal of existing waterproofing</td> </tr> <tr> <td style="padding: 5px;">II</td> <td style="padding: 5px;">1 More than 300mm wide horizontal or at any inclination up and including 30o to the horizontal</td> </tr> <tr> <td></td> <td style="padding: 5px;">2 More than 300mm wide at any inclination more than 30o up to and including 90o to the horizontal</td> </tr> <tr> <td></td> <td style="padding: 5px;">3 300mm wide or less at any inclination</td> </tr> <tr> <td></td> <td style="padding: 5px;">4 Domed</td> </tr> </tbody> </table>	Group	Feature	I	1 Removal of existing waterproofing	II	1 More than 300mm wide horizontal or at any inclination up and including 30o to the horizontal		2 More than 300mm wide at any inclination more than 30o up to and including 90o to the horizontal		3 300mm wide or less at any inclination		4 Domed
Group	Feature													
I	1 Removal of existing waterproofing													
II	1 More than 300mm wide horizontal or at any inclination up and including 30o to the horizontal													
	2 More than 300mm wide at any inclination more than 30o up to and including 90o to the horizontal													
	3 300mm wide or less at any inclination													
	4 Domed													
<b>Removal of Existing Waterproofing</b>	<b>12</b>	The items for removal of existing waterproofing shall in accordance with the Preamble to Bill of Quantities General Directions include for: <ul style="list-style-type: none"> <li>(a) marking out the areas of waterproofing to be removed;</li> <li>(b) removal of protective layer;</li> <li>(c) removal of primer;</li> <li>(d) preparation of existing surfaces to receive new waterproofing;</li> <li>(e) disposal of materials (as Series 600 paragraph 39);</li> </ul>												
Item coverage														

- (f) trials and approval tests;
- (g) measures to prevent damage to existing surfaces;





Bonneagar Iompair Éireann  
Transport Infrastructure Ireland



Ionad Ghnó Gheata na  
Páirce,

Stráid Gheata na Páirce,  
Baile Átha Cliath 8, Éire



Parkgate Business Centre,  
Parkgate Street,  
Dublin 8, Ireland



[www.tii.ie](http://www.tii.ie)



[info@tii.ie](mailto:info@tii.ie)



+353 (01) 646 3600



+353 (01) 646 3601