



Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications



Method of Measurement for Road Works Series MM 300 - Fencing and Environmental Noise Barriers

CC-RMP-00300

January 2009

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inside cover pages, the documents contain the same information as previously within the NRA or RPA systems, including historical references such as those contained within NRA DMRB and NRA MCDRW.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

TII Publication Title	<i>Method of Measurement for Road Works Series MM 300 - Fencing and Environmental Noise Barriers</i>
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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NRA MCDRW prior to the launch of TII Publications, the NRA document reference used previously is listed above under 'historical reference'. The TII Publication Number also shown above now supersedes this historical reference. All historical references within this document are deemed to be replaced by the TII Publication Number. For the equivalent TII Publication Number for all other historical references contained within this document, please refer to the TII Publications website.

Fencing	4	The items for fencing shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item Coverage		<ul style="list-style-type: none">(a) excavation of acceptable material (as Series 600 paragraphs 17 and 18);(b) excavation of unacceptable material (as Series 600 paragraph 19);(c) excavation in Hard Material (as Series 600 paragraph 23);(d) trimming ground on the line of the fencing;(e) in situ concrete (as Series 1700 paragraph 4);(f) formwork (as Series 1700 paragraph 14);(g) reinforcement (as Series 1700 paragraph 25);(h) backfilling and compaction;(i) disposal of material (as Series 600 paragraph 39);(j) preservation of timber;(k) adjustment of fencing to a flowing alignment including additional length posts;(l) fittings;(m) joining to existing fencing, gates, hedges and walls;(n) protective system (as Series 1900 paragraph 4);(o) inspection and maintenance of fencing and gates;(p) erection and removal of temporary fencing and gates;(q) additional posts and rails over ditches;(r) maintenance of access for owners, tenants and occupiers of adjoining land and patrolling gaps or openings;(s) epoxy resin compound and mastic filler to posts fixed in sockets.
Concrete Footing to Timber Posts	5	The items for concrete footing to timber posts shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item Coverage		<ul style="list-style-type: none">(a) excavation of acceptable material (as Series 600 paragraphs 17 and 18);(b) excavation of unacceptable material (as Series 600 paragraph 19);(c) excavation in Hard Material (as Series 600 paragraph 23);

- (d) in situ concrete (as Series 1700 paragraph 4);
- (e) formwork (as Series 1700 paragraph 14);
- (f) reinforcement (as Series 1700 paragraph 25);
- (g) backfilling and compaction;
- (h) disposal of material (as Series 600 paragraph 39).

Gates and Stiles

6 The items for gates and stiles shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item Coverage

- (a) excavation of acceptable material (as Series 600 paragraphs 17 and 18);
- (b) excavation of unacceptable material (as Series 600 paragraph 19);
- (c) excavation in Hard Material (as Series 600 paragraph 23);
- (d) trimming ground at entrance;
- (e) in situ concrete (as Series 1700 paragraph 4);
- (f) formwork (as Series 1700 paragraph 14);
- (g) reinforcement (as Series 1700 paragraph 25);
- (h) backfilling and compaction;
- (i) disposal of material (as Series 600 paragraph 39);
- (j) preservation of timber;
- (k) protective system (as Series 1900 paragraph 4);
- (l) posts, fittings and furniture;
- (m) joining to existing fencing, hedges and walls;
- (n) in the case of new gates and stiles in existing fencing, hedges or walls, forming openings and making good.

Remove from Store and Re-erect Fencing, Gates and Stiles

Units

- 7** The units of measurement shall be:
- (i) remove from store and re-erect fencing linear metre.
 - (ii) concrete footing to timber posts number.
 - (iii) remove from store and re-erect gates and stiles number.

Measurement	8	<p>The measurement of re-erected fencing shall be the developed length along the centre line of the re-erected fencing. The measurement of height of fencing shall be that stated in the Contract for the type of fence.</p> <p>The measurement of width of gates shall be the distance between the outer edges of the stiles; the outer edges of hanging stiles in the case of double gates.</p> <p>The measurement of height of gates shall be the distance between the upper surface of the top rail and the underside of the bottom rail.</p> <p>Concrete footing to timber posts shall only be measured for those locations stated in Appendices 1/15 or 3/1 of the Specification.</p>																			
Itemisation	9	<p>Separate items shall be provided for re-erected fencing, gates and stiles in accordance with Chapter II paragraphs 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="4" style="vertical-align: top;">I</td> <td>1</td> <td>Each type of re-erected fencing</td> </tr> <tr> <td>2</td> <td>Concrete footing to timber posts of each type of re-erected fencing</td> </tr> <tr> <td>3</td> <td>Each type of re-erected gate</td> </tr> <tr> <td>4</td> <td>Each type of re-erected stile</td> </tr> <tr> <td rowspan="2" style="vertical-align: top;">II</td> <td>1</td> <td>Re-erected fencing of different heights</td> </tr> <tr> <td>2</td> <td>Re-erected gates of different heights and widths</td> </tr> <tr> <td style="vertical-align: top;">III</td> <td>1</td> <td>Re-erected painted fencing, gates or stiles</td> </tr> </tbody> </table>	Group	Feature	I	1	Each type of re-erected fencing	2	Concrete footing to timber posts of each type of re-erected fencing	3	Each type of re-erected gate	4	Each type of re-erected stile	II	1	Re-erected fencing of different heights	2	Re-erected gates of different heights and widths	III	1	Re-erected painted fencing, gates or stiles
Group	Feature																				
I	1	Each type of re-erected fencing																			
	2	Concrete footing to timber posts of each type of re-erected fencing																			
	3	Each type of re-erected gate																			
	4	Each type of re-erected stile																			
II	1	Re-erected fencing of different heights																			
	2	Re-erected gates of different heights and widths																			
III	1	Re-erected painted fencing, gates or stiles																			
Remove from Store and Re-erect Fencing	10	<p>The items for remove from store and re-erect fencing shall in accordance with the Preambles to Bill of Quantities General Directions include for:</p>																			
Item Coverage		<p>(a) loading, transporting from store, unloading and positioning for re-erection;</p> <p>(b) replacing items damaged during the foregoing operations;</p> <p>(c) modification and new materials;</p> <p>(d) painting existing painted items;</p> <p>(e) fencing (as this Series paragraph 4).</p>																			
Concrete Footing to Timber Posts	11	<p>The items for concrete footing to timber posts shall in accordance with the Preambles to Bill of Quantities General Directions include for:</p>																			
Item Coverage		<p>(a) concrete footing to timber posts (as this Series paragraph 5).</p>																			

Remove from Store and Re-erect Gates and Stiles

12 The items for remove from store and re-erect gates and stiles shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item Coverage

- (a) loading, transporting from store, unloading and positioning for re-erection;
- (b) replacing items damaged during the foregoing operations;
- (c) modification and new materials;
- (d) painting existing painted items;
- (e) gates and stiles (as this Series paragraph 6).

Walls and Environmental Noise Barriers

Units

13 The unit of measurement shall be:

- (i) walls linear metre.
- (ii) environmental noise barriers linear metre.

Measurement

14 The measurement shall be the developed length along the centre line of the top of the wall or the environmental noise barrier.

The measurement of height of wall or environmental noise barrier shall be that stated in the Contract for the type of wall or environmental noise barrier.

Itemisation

15 Separate items shall be provided for walls and environmental noise barriers in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Each type wall
	2 Each type of environmental barrier
II	1 Walls of different heights
	2 Barriers of different heights
III	1 Curved on plan
IV	1 With battered face
V	1 Different finishes
V	1 Different infills

Walls	16	The items for walls shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		<ul style="list-style-type: none">(a) excavation of acceptable material (as Series 600 paragraph 17 and 18);(b) excavation of unacceptable material (as Series 600 paragraph 19);(c) excavation in Hard Material (as Series 600 paragraph 23);(d) in situ concrete (as Series 1700 paragraph 4);(e) formwork (as Series 1700 paragraph 14);(f) reinforcement (as Series 1700 paragraph 25);(g) backfilling and compaction;(h) disposal of material (as Series 600 paragraph 39);(i) preservation of timber;(j) sample panels;(k) protective system (as Series 1900 paragraph 4);(l) forming pockets and casting in sockets;(m) fixing to structures and other elements;(n) accesses;(o) gabion walling and mattresses (as Series 600 paragraph 112);(p) crib-walling (as Series 600 paragraph 116);(q) pre-cast members, slabs, segmental units, hinges, specially moulded blocks, copings, plinths, capping units, culverts and facing unit (as Series 1700 paragraph 9).
Environmental Noise Barriers	17	The items for environmental noise barriers shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		<ul style="list-style-type: none">(a) excavation of acceptable material (as Series 600 paragraph 17 and 18);(b) excavation of unacceptable material (as Series 600 paragraph 19);(c) excavation in Hard Material (as Series 600 paragraph 23);(d) in situ concrete (as Series 1700 paragraph 4);

- (e) formwork (as Series 1700 paragraph 14);
- (f) reinforcement (as Series 1700 paragraph 25);
- (g) backfilling and compaction;
- (h) disposal of material (as Series 600 paragraph 39);
- (i) preservation of timber;
- (j) trimming ground on the line of the environmental noise barrier;
- (k) burying the bottom of the environmental noise barrier or gravel board;
- (l) sample panels including safety barriers;
- (m) gates, fittings and furniture;
- (n) adjustment of the environmental barrier to a flowing alignment;
- (o) protective system (as Series 1900 paragraph 4);
- (p) forming pockets and casting in sockets;
- (q) fixing to structures and other elements;
- (r) accesses;
- (s) filling.



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