
SERIES NG 1100
KERBS, FOOTWAYS AND PAVED AREAS

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(05/01) **NATIONAL ALTERATIONS OF
THE OVERSEEING ORGANISATIONS
OF SCOTLAND, WALES AND
NORTHERN IRELAND**

Wales

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KERBS, FOOTWAYS AND PAVED AREAS

NG 1101 General

1 (11/04) The choice of placing the kerb can be either on the surface of, or adjoining the edge of, pavements particularly when used as a drainage detail for concrete pavements. It should also include the choice of laying in-situ kerbs and edgings either in concrete or asphalt as there are small machines available for this purpose.

2 Care should be taken in preparing detailed drawings to ensure good drainage from the carriageway construction either through or under the kerb foundation.

3 (11/04) Even if concrete pavement is not provided with expansion joints, adjacent in situ concrete edge details such as combined marginal strips and drainage channels should be provided with expansion joints, and should coincide with any joints formed in adjacent slabs.

4 (11/04) The construction adopted for footways will depend very much upon the availability of local materials and local conditions. Where appropriate and to allow economy, the use of groups of permitted alternatives should be described in Appendix 11/1.

5 (11/04) For footways which are known to be subjected to vehicle overrun the use of smaller and thicker paving flags laid on a thin layer of sand may be considered. Other alternatives would be concrete block paving, clay pavers, in-situ concrete, or for flexible footways increased construction thickness and the use of denser surfacing materials.

6 Concrete block paving and clay pavers may be considered in certain low speed traffic situations, e.g. service areas, and lay-bys, because of their resistance to oil spillage and to deformation due to wheel loads. The block or paver layout and other details should be described in Appendix 11/1 wherever possible and incorporate whole units immediately adjacent to the edge of a carriageway or hard strip and avoid trimming of units to less than one third of their surface area.

7 The construction adopted for cycle tracks should be one or more of those given for footways and paved areas.

NG 1103 (11/04) Freestanding In-Situ Concrete Kerbs, Channels and Edge Details

1 (11/04) Experience suggests that for the in-situ construction of relatively high drainage channels by slip-forming or extrusion techniques, the use of crushed or partially crushed aggregate will ensure a more consistent and stable profile. Uncrushed aggregate may be used for surface water channels of 400mm or less in height where past experience in the use of a particular aggregate, or the result of trials, demonstrate that a satisfactory profile can be achieved.

2 The precise level of concrete workability will depend on the type of construction plant used, for example:

extrusion auger (small kerbs)

ram compaction (small kerbs, kerbs, channels)

slip-form (kerbs, channels).

NG 1109 (11/04) Grass Concrete Paving

1 (11/04) Grass concrete paving may be considered for parking areas, hard standings and accesses.

2 (11/04) In-situ reinforced grass concrete paving may be advantageous where heavy goods vehicles or vehicles with high point loadings are anticipated or where poor ground may result in differential settlement between panels.

3 Details of paving systems should be described in Appendix 11/1.

#NG 1110 (02/17) Access Steps

1 (02/17) Access steps are normally to be provided to communications cabinets or other roadside equipment where necessary to provide safe access for highway maintenance. The specification in Clause 1110 is for steps for these purposes and not for other uses.

Details of access steps requirements should be given in contract specific Appendix 11/2. The requirements should be stated in performance terms rather than prescriptive details to allow the Contractor suitable options for the provision of the steps. HCD drawing MCX 0138 should only be specified when considered necessary.

The steps can be Contractor designed or not. Where the Contractor is undertaking the design of the steps

contract specific Appendices 1/10 and 11/2 should be used to give any specific design requirements.

2 (02/17) The design process should include consideration of the following elements.

- (i) The location and alignment of the steps.
- (ii) The width of the steps, this should be 800mm as a minimum.
- (iii) Edge details and level of the steps with respect to surrounding ground level.
- (iv) Guardrails – at least one guardrail should be provided, where the width of the steps is greater than 1.2m a second should be provided, the risk assessment should consider what to provide for widths up to 1.2m.
- (v) The steps are required to have a rise and going which achieves the safety requirements formulae of BS EN ISO 14122-3, if the ground conditions do not allow this the risk assessment should consider what should be achieved.
- (vi) The angle of pitch of the steps should be between 18° and 38°. Should an angle of pitch less than 18° be required, the risk assessment should determine whether steps, ramps or a combination are appropriate. Should an angle of pitch between 38° and 45° be required the risk assessment should determine whether steps are appropriate.
- (vii) The number of kneerails required and the requirement for toe plates on landings.
- (viii) The need for a pedestrian guardrail between the steps and the road or other hazard to restrict direct egress from the steps onto the carriageway.

There should also be consideration of the need to provide a road restraint system between the steps and the road. For road restraint system requirements see Series 400.

3 (02/17) Contract specific Appendix 11/2 should also include details of performance requirements including the required serviceable life of the steps, the loading requirements and any environmental or geotechnical requirements. The specified serviceable life of the steps should be the same as that identified for the equipment to which the steps are providing access. The loading requirements should be identified for the specific use of the steps and be within the limits stated in BS EN ISO 14122-3 section 4.7.

4 (02/17) Table 11/1 gives some material requirements, these are minimum default values and should be supplemented with site specific requirements in contract specific Appendix 11/2. The compiler should include site specific requirements for each material to be used and reference relevant Clauses, or numbered appendices, that are not already referenced in Table 11/1. For example, for concrete the type of specification should be determined, i.e. designed, prescribed or standardised prescribed, along with the basic and other requirements such as concrete designation, maximum aggregate size, consistence class, compressive strength, and other limiting values for composition. Specific relevant Clauses of Series 1700 should be identified and referenced. Where details may be given in Series 1700 contract specific Appendices these should be cross-referenced in contract specific Appendix 11/2. Where the Contractor is to design the access steps site details should be stated to inform the design and set any other relevant minimum requirements.

NG SAMPLE APPENDIX 11/1: KERBS FOOTWAYS AND PAVED AREAS

[Note to compiler: This should include:]

- 1 (11/04) Dimensions, type designations and performances and classes [see clause 5.3 and the National Annex NA of BS EN 1340] of precast concrete kerbs, channels, edgings and quadrants [1101.1].
- 2 Dimensions of precast concrete kerbs to be bonded to the pavement surface [1101.2].
- 3 Details of kerb joints at bridge expansion joints designed by the Overseeing Organisation [1101.3].
- 4 (11/04) Dimensions of in-situ asphalt kerbing [see MCHW 3 (HCD) Drawing Nos. B9 and B10] or in-situ concrete kerbing, channels and edgings [1102.2, 1103.1].
- 5 Concrete curing requirements if different from Clause 1027 [1103.3].
- 6 (11/04) Type designation, thickness and performances and classes of precast concrete flags or natural stone flags [1104.1]. [For precast concrete flags see clause 5.3, the National Annex NA of BS EN 1339. For natural stone flags, see relevant clauses and the National Annex NA of BS EN 1341.]
- 7 (05/01) Details of required bond for flags or natural stone flags [1104.2].
- 8 (05/01) Whether alternative bed for flags or natural stone flags, less than 450mm x 450mm, is permitted [1104.2].
- 9 Details of flexible surfacing materials to be used [1105.1].
- 10 (11/04) Required thickness of surfacing and subbase [1104, 1105, 1106, 1109.7, 1109.8] [or where appropriate the groups of permitted alternative materials].
- 11 (11/04) Requirements for laying and curing in-situ concrete [1106.1, 1109.2].
- 12 (11/04) Required finish and strength class of in-situ concrete [1106.1, 1109.2].
- 13 (11/04) Requirements for shapes, dimensions, colours and performances and classes of precast concrete paving blocks [1107.1] [see clause 5.3 and the National Annex NA of BS EN 1338].
- 14 (11/04) Requirements for shapes, dimensions, colours and performances and classes of clay pavers [1108.1] [see clause 4 and the National Annex NA of BS EN 1344].
- 15 Block or paver layout details [1107.3, 1108.3, 1109.6].
- 16 Requirements for grass/concrete paving [1109.1].
- 17 (11/04) Requirements for perforations in in-situ grass/concrete paving [1109.3].
- 18 Requirements for shapes, dimensions and colours of precast grass/concrete panels [1109.4].
- 19 Required thickness of sand bed for grass/concrete panels [1109.8].
- 20 Requirements for fill material to perforations of grass/concrete paving [1109.9].
- 21 Requirements for grass seed mix to grass/concrete paving [1109.9].

(02/17) #NG SAMPLE CONTRACT SPECIFIC APPENDIX 11/2: ACCESS STEPS

[Note to compiler: include the following here as necessary]

- 1 (02/17) Requirement for access steps, locations, cross reference to drawings as appropriate, use of HCD drawing MCX 0138.
- 2 (02/17) Design requirements for Contractor design. *[Details must also be included in contract specific Appendix 1/10. The requirement for drawings to be submitted must be included in contract specific Appendix 1/4.]*
- 3 (02/17) Loading requirements *[NG 1110.1 and NG 1110.3]*
- 4 (02/17) Required serviceable life of access steps *[1110.4]*
- 5 (02/17) Environmental requirements. *[1110.7]*
- 6 (02/17) Geotechnical requirements. *[1110.8]*
- 7 (02/17) Material requirements *[1110.5 and NG 1110.4]*

(05/01) **NATIONAL ALTERATIONS OF THE OVERSEEING ORGANISATION OF WALES**

NG 1110 NAW Access Steps

1 (02/03) Access steps to feeder pillars, communication cabinets, traffic counter cabinets, ice prediction installations and the like should conform to the requirements of the Welsh Assembly Government.

SUPERSEDED

NG SAMPLE APPENDIX 11/2 NAW: ^(05/01) ACCESS STEPS

Special Requirements for Access Steps [1110.1]

[Note to compiler: List below any special requirements, cross-referring to Drawings as appropriate]

SUPERSEDED