

MISCELLANEOUS

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Miscellaneous

NG 2601 Bedding Mortar

General

- 1 Great importance is attached to the material having flow characteristics sufficient for it to occupy all the spaces between base plates and the surrounding sub-strata completely, including around all holding down bolts. The Specification for Road Works does not cover non-flowing mortars or dry pack mortars.

Where the Engineer requires a higher strength, this should be specified in Appendix 26/2. Materials with higher strengths may be more temperature sensitive and variable.

Mortar test cubes required in connection with early loading should be cured under conditions which simulate as far as possible those of the mortar in the Works.

Materials

- 2 (i) The minimum thickness of bedding mortar should be 10 mm and the maximum thickness without reinforcement should be 30 mm. This will allow sufficient space to enable filling yet reduce creep and shrinkage effects. The nominal thickness, with tolerances, should be shown on the Drawings.
- (ii) A purpose-made portable insulated store, equipped with thermostatically controlled heaters, would be suitable for complying with sub-Clause 2601.21 ii)(a). It may be convenient to include provision for storage of the mixing water at 20°C.

Site Mixing, Placing and Curing

- 3 (i) It is common practice to add the dry material to the water in the mixer. If the material does not flow correctly the addition of extra water or dry mortar to the sample is not permissible. In order to control the amount of water accurately it is good practice to use a proprietary graduated container. A bucket with a mark is not suitable.
- (ii) Where permanent shims are used underneath base plates to align or support parapet posts etc. they should take the form of either central packers or slotted washers placed around the shanks of the

holding down bolts. Packers and washers should be made of materials which will not corrode. Adequate bedding cover should also be provided to the packers and washers to ensure that they are fully protected from the weather and any road and traffic contaminants. Packers and washers should be compatible with the materials used in the base plates or bolts.

- (iii) Addition of mortar may be required to form a finished plinth. Voids may occur under the base plate if this operation is carried out incorrectly.
- (iv) The quantity of mortar in the plinth extending beyond the base plate should be kept to a minimum to reduce cracking. Forming of large plinths to support two or more base plates is not recommended.

Approval Tests

- 4 (i) It is important that the various temperatures required in the flow tests are accurately maintained within the tolerances specified. The testing laboratory appointed should be able to demonstrate that it has the facilities for accurate cold testing.
- (ii) Where different methods of placing the mortar are proposed, e.g. pumping, or where the geometry of the base plate is significantly different from that shown on UK Department of Transport Highway Construction Detail (HCD) Drawing No. K2, then the glass plate test, specified in sub-Clause 2601.4(iii), should be modified to the Engineer's approval.

Batch Acceptance Tests

- 5 The tests on Site should be conducted by a competent person. Proof of ability to carry out the flow cone test method consistently may be checked by trials using water.

NG 2602 Concrete for Ancillary Purposes

- 1 Concrete mixes complying with Clause 2602 will normally be suitable for the purposes described in Table 26/3 and need not be shown on the Drawings for these purposes. Standard mixes from BS 5328 may also be suitable for other purposes and should be called up on Drawings where necessary. Sub-Clause 1 of Clause 2602 makes it unnecessary to do more than show "ST4 concrete" (for example) on the Drawings. The relationship between concrete mix and strength of the concrete is given in BS 5328 : Part 2.
- 2 Where additional requirements are necessary, for example the use of sulfate-resisting cement in ground containing sulfates (see 1704.2), or resistance to alkali-silica reaction, these requirements should be specified in Appendix 26/1. Air entrainment will not normally be necessary but if it is required, this should also be specified in Appendix 26/1. Alkali-silica reaction will not normally be a risk because cement contents are comparatively low but in some areas where aggregates are known to be highly reactive, it may be necessary to state in Appendix 26/1 that ancillary concrete is to comply with sub-Clause 1704.5 for ST4 and ST5 mixes.
- 3 Foundations for traffic sign supports, lighting columns and safety fence anchors, should, where necessary, be structural concrete complying with the 1700 Series and be shown on the Drawings accordingly.

NG SAMPLE APPENDIX 26/1: ANCILLARY CONCRETE

[Note to compiler: Special requirements for Ancillary Concrete, e.g. sulphate-resisting cement, etc. should be listed here. Also to distinguish different mix designs, mix references should be listed here but differentiated from those for structural concrete in Appendix 1711J]

NG SAMPLE APPENDLX 26/2: BEDDING MORTAR

[Note to compiler: Include here:]

- 1** Compressive strength requirements. *[Where different from 2601. 1(i)]*
- 2** Locations at which permanent metal shims are acceptable.
- 3** Early loading requirements *[For bridge bearings, cross-reference should be made to Appendix 2111].*

NG SAMPLE APPENDIX 26/3: CORED THERMOPLASTIC NODE MARKERS

[Note to compiler: Include here:]

- 1** Locations of node markers *[2606.1]*.
- 2** Copies of existing site records.
- 3** References for the re-establishment of existing node markers.