SERIES NG 2100
BRIDGE BEARINGS

Contents

BRIDGE BEARINGS

NG 2101 (02/16) General

1 (02/16) Contract specific Appendix 21/1 should be used by the compiler to detail the performance requirements of bearings using a bearing schedule. This should include information on the performance characteristics to be demonstrated by the Declaration of Performance, contract compliance testing requirements, and corrosion protection requirements.

2 (02/16) With respect to CE marking of the bearings the various parts of BS EN 1337 allow for two systems of 'attestation of conformity' (or 'assessment and verification of consistency of performance (AVCP)' as it is defined in the Construction Products Regulation.) These are detailed in Annex ZA of each part of BS EN 1337. All bearings on highway structures should be classed as 'critical' since in the case of failure all, or part, of the structure is likely to be placed beyond serviceability limits. The required system of 'attestation of conformity' is therefore System 1 or equivalent AVCP system.

3 (02/16) The specification and installation of bearings should be undertaken using the guidance given in BS EN 1337 and appropriate parts of PD 6703 Structural bearings – Guidance on the use of structural bearings, in addition to specific installation procedures recommended by the manufacturer. The PD gives some guidance on structural issues that would affect the type of bearing specified in terms of loading and movement. It also gives some minimum performance levels for the use of bearings in the UK, where appropriate these should be adopted. The compiler should identify each aspect that requires consideration for the particular structure and bearing, and include the required levels of performance in the contract specific Appendix.

4 (02/16) Where the Contractor is to design the bearings and/or the structure the design requirements should be given in the contract specific Appendix. This should also require the Contractor to design using BS EN 1337 and the appropriate, relevant parts of PD 6703. Where proprietary bearings are to be used the Contractor should design the bearings. All items to be designed by the Contractor are to be listed in contract specific Appendix 1/10.

5 (02/16) The compiler should identify the contract compliance testing to be carried out by the Contractor and list the requirements in contract specific Appendix 1/5, details of the testing can be included in contract specific Appendix 21/1. See section 9.2 of PD 6703 for guidance regarding load testing.

6 (02/16) Reports, as required by sub-Clause 2101.6 should contain sufficiently detailed information to identify the form, type, operational requirements and specific information on any special measures for removal/replacement.

(02/16) NG SAMPLE CONTRACT SPECIFIC APPENDIX 21/1: BRIDGE BEARING SCHEDULE

[Note to compiler: include the following items as required]

1 (02/16) Bearing Schedule. *[This schedule is to be prepared using items 1 to 64 of Table A1 of PD 6703 adapted to include the information required in 3 below or reference to it. The acceptance testing requirements are to be replaced by load testing requirements, see 5 below and section 9.2 of PD 6703.]*

2 (02/16) Design requirements. *[Where design is to be carried out by the Contractor, the schedule should state the bearing design requirements, including method of fixing (see NG 2101). Contract specific Appendix 1/10 should cross-refer.]*

3 (02/16) Performance requirements. These are to be demonstrated by the Declaration of Performance. *[Include values and units for the following as appropriate to the type of bearing(s) specified. These requirements may be included in the schedule or referenced in it. See Annex ZA of the relevant part of BS EN 1337 for specific details to include.]*

Essential characteristic	Requirements to be stated
Load bearing capacity / load bearing resistance / lateral load bearing capacity, (including of sliding elements)	Design value(s) Shear modulus Shear bond Compressive stiffness Resistance to repeated loading in compression Design rules Basis of design
Rotational capacity or capability	Design value(s) in radians Design rules Design strain due to angular rotation Limiting conditions Forces, moments and deformations exerted on the structure
Friction / Coefficient of friction	Design Value
Durability (including of sliding elements)	Physical and mechanical properties Design rules Performance Durability against repeated loading Durability against low and high temperatures Durability against corrosion Ozone resistance

4 (02/16) Protection against corrosion requirements. *[Where this is not covered in 3 above. Cross reference contract specific Appendix 19/1, Steel components of bearings are to have their surface preparation and protection requirements stated in contract specific Appendix 19/1 individually for different treatments.]*

[Where surface preparation and corrosion protection is not to be as given in Series 1900 the requirements should be stated in this contract specific Appendix, including those for the protection of aluminium alloy and ferrous components where permanently exposed (2102).]

5 (02/16) Testing requirements, and details. *[List the bearings which are to be tested for contract compliance by the Contractor and any special requirements of the tests, and cross-refer with contract specific Appendix 1/5. See section 9.2 of PD 6703].*

6 (02/16) The maximum allowable stress in the bedding mortar at the time of loading *[2103].*

7 (02/16) Requirements for vibration resistant bolts or screws *[see section 7.1.1 of PD 6703].*

8 (02/16) Requirements for presetting sliding or roller bearings at time of clamping.

9 (02/16) Requirements for installation of bearings.

10 (02/16) Interchangeability of corresponding parts.

11 (02/16) Structure Specific requirements *[i.e position of jacking points, loading limits, If replacement needs specific sequencing, etc.]*

12 (02/16) Reporting requirements, including timescale for submission of reports to the Overseeing Organisation. *[2101.6]*