# NG SAMPLE APPENDIX 17/1: SCHEDULE FOR THE SPECIFICATION OF DESIGNED CONCRETE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| These mixes below shall be supplied as designed mixes in accordance with the relevant clauses of I.S. EN 206-1 | | | | | | |
| 1. Mix reference | |  |  |  |  | |
| 1. Strength class | |  |  |  |  | |
| 1. Nominal maximum size of aggregate, in mm (D) | |  |  |  |  | |
| 1. Types of aggregate | Coarse | I.S. EN 12620 |  |  |  | |
|  | Other [specify requirements] |  |  |  |  | |
|  | Fine | I.S. EN 12620 |  |  |  | |
|  | Other [specify requirements] |  |  |  |  | |
| 1. SulfateSulfate class [ring as appropriate] | | XA 1 |  |  |  | |
|  | | XA 2 |  |  |  | |
|  | | XA 3 |  |  |  | |
| 1. Cement type(s) or combinations complying with   [ring those permitted] | |  |  |  |  | |
| CEM I N I.S. EN 197-1 | | CEM I N |  |  |  | |
| CEM I R I.S. EN 197-1 | | CEM I R |  |  |  | |
| CEM I SR B.S. 4027 | | CEM I SR |  |  |  | |
| Others [specify requirements] | |  |  |  |  | |
| 1. Exposure Class (As in I.S. EN 206-1) | | X0 |  |  |  | |
| (or combinations) | | XC1, XC2, XC3, XC4 |  |  |  | |
|  | | XS1, XS2, XS3 |  |  |  | |
|  | | XD1, XD2, XD3 |  |  |  | |
|  | | XF1, XF2, XF3, XF4 |  |  |  | |
|  | | XA1, XA2, XA3 |  |  |  | |
| 1. Chloride Class | | Cl 1,0 |  |  |  | |
|  | | C1 0,30 |  |  |  | |
|  | | Cl 0,20 |  |  |  | |
|  | | Cl 0,10 |  |  |  | |
| 1. Minimum cement content, kg/m3 | |  |  |  |  | |
| 1. Maximum free water/cement ratio | |  |  |  |  | |
| 1. Quality assurance requirements | |  | (1) | (1) | (1) | |
| 1. Rate of sampling intended by the purchaser for strength testing (for information) | |  | (2) | (2) | (2) | |
| 1. Other requirements [alkali, colour, etc. as appropriate] | |  |  |  |  | |
| In the case of fresh concrete the following shall be completed by the purchaser | | | | | | |
| 1. Consistence | [Choose one method] |  |  |  | |  |
|  | Slump Class | S1, S2, S3, S4, S5 |  |  | |  |
|  | Vebe Class | V0, V1, V2, V3, V4 |  |  | |  |
|  | Compaction Class | C0, C1, C2, C3 |  |  | |  |
|  | Flow Class | F1, F2, F3, F4, F5, F6 |  |  | |  |
| 1. Method of placing (for information) | |  |  |  | |  |
| 1. Other requirements by the purchaser of fresh concrete *[only if appropriate]* | |  |  |  | |  |

[Notes to compiler:

(1) Cross-reference should be made to Appendix 1/24 and /or 1/25 as appropriate.

(2) Cross-reference should be made to Appendix 1/5 and/or 1/6 as appropriate.]

# NG SAMPLE APPENDIX 17/2: CONCRETE – IMPREGNATION AND COATING SCHEDULE

[Notes to compiler: Areas to be impregnated, or impregnated and coated should be scheduled. If considered preferable the schedule can be placed on a drawing and this Appendix should cross-refer].

# NG SAMPLE APPENDIX 17/3: CONCRETE – SURFACE FINISHES

[Note to compiler: Include here]

* 1. Requirements for trial panels *[1708.1].*
  2. Requirements for surface finishes [1708.4] [cross-referring to the drawings as appropriate].
  3. Positions where internal ties are permitted (other than in rebates) for Class F4 finish *[1708.4(i)].*
  4. Locations where a regular *pattern* of formwork joints is unnecessary *[1708.4(i)].*

# NG SAMPLE APPENDIX 17/4: CONCRETE – GENERAL

[Note to compiler: This should include]

* 1. Requirements for concrete if different from the requirements of sub-Clause 1701.1.
  2. Details of any parts of the structure to be constructed in accordance with an execution class other than execution class 3. [1701.4]
  3. Additional requirements when using special technologies, other materials (e.g. fibres, FRPs) or innovative designs [See NG 1701.4]
  4. Whether the use of cements or combinations other than to Clause 1702.1 is permitted.
  5. Requirements for lightweight aggregates if different from the requirements of sub-Clause 1702.2.
  6. Requirements for admixtures if different from the requirements of sub-Clause 1702.3.
  7. Requirements for sampling and testing if different from the requirements of sub-Clause 1707.1. Whether identity testing is required, the identity test rates and, if not restricted to cases of doubt or random spot checks, type of tests, volume of concrete and number of tests *[[Guidance is given in 1707 and NG 1707]]. [Cross-reference should be made in Appendix 1/5 and/or Appendix 1/6 as appropriate].*
  8. Requirements for construction joints *[1710.1].*
  9. Whether retarding agents may be used *[1710.1].*
  10. Requirements for permanent formwork, special formwork or slipforming [1710.2(iv), 1710.3 and NG 1701.4].
  11. Details of parts of the structure for which a curing class other than 3 is to be used. [1710.5(i)]
  12. Details of any special curing requirements. [1710.5(i)]
  13. References to documents and drawings which show the lifting scheme and support points for precast concrete elements, including constraints during handling and storage instructions [1710.8(iv)(b) and (iv)(c
  14. Requirements for assembly and erection of precast concrete members *[1710.8(iv].*
  15. Whether welding or reinforcement other than steel fabric reinforcement is permitted *[1717.1].*
  16. Requirements for time of stressing if different from the requirements of sub-Clauses 1724.3 and 1724.4.
  17. Requirements for protection of prestressing tendons *[1725.1].*
  18. Requirements for inspection and testing of structures and components [1701.5 and 1727.1]. [Guidance is given in NG 1701.6 and NG 1727. Tests should be scheduled in Appendix 1/5 and Appendix 1/6].
  19. Requirements for particular curing methods for deep / bulky elements, elements containing unusually high proportion of cement or precast units subject to special or accelerated curing methods. [1710.5 and NG1710.5].
  20. Details of parts of the structure that require third party inspection by an organisation different from that which executed the Works [1701.5 and NG 1701.6].
  21. Details of tighter or additional tolerances, required for aesthetics, durability, fit or special structures. [1728]

# NG SAMPLE APPENDIX 17/5: NOT USED

# NG SAMPLE APPENDIX 17/6: GROUTING AND DUCT SYSTEMS FOR POST-TENSIONED TENDONS

**TENDON REFERENCE:**

[Note to compiler: complete this for each different group or type of tendons]

**GROUT DEFINITION:**

|  |  |  |  |
| --- | --- | --- | --- |
| Grout type: | Grout |  |  |
| Maximum water/cement ratio: | [0.30-0.40] |  |  |

**REQUIREMENTS FOR TRIALS/TESTS:**

Drawing Reference:

[full details including trial element size, concrete grade, cover to reinforcement and tendons, reinforcement and tendons details, location of cuts and requirements for testing and investigation should be defined on drawing]

Time at which trials are to be carried out (days before planned use in the permanent works: *[56 days]*

[Note to compiler: Testing requirements to prove protection against ingress of contaminants are given in Section 8 of the Concrete Society Technical Report 72 ‘Durable Post-tensioned concrete structures’.].

Duct assembly tests required [Yes/No]

Required duct assembly testing pressure: *[0.01 N/mm2]*

Minimum duct wall thickness as manufactured: *[2.0mm] [4.0mm for external tendons]*

Minimum duct wall thickness after tensioning: *[1.5mm]*

Minimum duct to concrete ultimate bond length: *[50-100 diameters]*

Additional testing requirements [-]

**REQUIREMENTS FOR DUCT SYSTEM:**

Distance beyond crests to next vent: [Horizontally, to the point where the duct is half the diameter lower than at the crest, or 1m, whichever is the lesser]

Maximum vent spacing *[15m]*

Minimum vent height above highest point *[500mm]*

Other requirements *[-]*

Requirements for Grouting:

Maximum rate of grouting of ducts *[10m/min]*

Minimum volume of grout expelled after visual test *[5 litres]*

[Note: Default values shown in brackets]

# NG SAMPLE APPENDIX 17/7: PRECAST CONCRETE PRODUCTS

[Note to compiler: Include here, for each type of precast product:]

1. Reference to the relevant Product Standard or I.S. EN 13369 as appropriate [1710.8(ii)].

2. Where applicable, required method of CE marking with reference to Annex ZA of the relevant Product Standard [1710.8(ii) and NG 1710(ii)].

3. Reference to relevant drawings and other technical data prepared by the designer and, where all of part of the design is undertaken by the manufacturer, reference to all information necessary for design [Guidance is given in NG 1710.8(ii)].

4. List of the technical data identified in item 3 above to be cited on the CE marking label [Guidance is given in NG 1710.8(ii)].