**Table NG7/1 Particular** **Requirements for Bituminous Bound Materials**

The following particular requirements should be included in Sheets 1 and 2 as appropriate.

| **Clause** | **Material / Technique** | **Particular Requirement**  |
| --- | --- | --- |
| 2.2 | Regulating | Use of a bond coat for each layer of regulating course  |
| 3 | Asphalt Concrete Products | Alternative requirements for binder *(3.2.1)*Coarse Aggregates for Surface Courses *(3.2.2)* |
| 4 | Hot Rolled Asphalt Products | Alternative requirements for binder *(4.2.1)*Properties of coated chippings *(4.2.4)* |
| 5 | Stone Mastic Asphalt Products | Mixture designations 5.1.2 and 5.1.4 not permitted on certain roads *(5.1)*Alternative requirements for binder *(5.2.1)*Coarse Aggregates for Surface Courses *(5.2.2)* |
| 6 | Porous Asphalt Products | Alternative requirements for binder *(6.2.1)*Coarse Aggregates for Surface Courses *(6.2.2)* |
| 7 | Surface Treatments:7.1 – Microsurfacing7.2 – Surface Dressing (Recipe Surface Dressing and Surface Dressing Product) 7.3 – High Friction Surfacing | Products covered by a harmonised European Standard shall be subject to a Type Approval Installation Trial *(7.1.4.2, 7.2.3.5.2)*High Friction Surfacing shall be subject to a provisional Type Approval Installation Trial (prTAIT) *(7.3.3)* The Producer shall continue to monitor the TAIT/prTAIT site and declare the period for which the performance characteristics have been retained *(7.1.4.3, 7.2.3.5.3, 7.3.3.1)* |
| 8 | Miscellaneous Products and Processes:8.1 – Low Energy Bound Mixtures8.2 – Retexturing8.3 – Geotextiles8.4 – Permanent Repair Material Systems8.5 – Localised Surface Repair Systems8.6 – Emergency Repair Materials Systems | LEBM shall be subject to an Initial Type Test *(8.1.2)*Retexturing, PRMS and LSRS shall be subject to a provisional Type Approval Installation Trial (prTAIT) *(8.2, 8.4.2, 8.5.2)* ERMS shall be replaced as soon as practicably possible after installation *(8.6)* |
| 9 | Reclaimed Asphalt |  |
| 10 | Works  | Weather Conditions specific to laying Porous Asphalt and Polymer Modified Stone Mastic Asphalt mixtures *(10.1.5.1)*Laying conditions specific to Hot Rolled Asphalt mixtures *(10.1.7.1)*Laying conditions specific to Porous Asphalt mixtures *(10.1.7.2)*Nominal and minimum compacted layer thicknesses for the particular mixtures *(10.1.7)*Compaction Control specific to Asphalt Concrete mixtures -Base and Binder Course *(10.1.9.1)*Compaction Control specific to Hot Rolled Asphalt Mixtures *(10.1.9.2)*Compaction Control specific to Stone Mastic Asphalt Mixtures *(10.1.9.3)*Compaction Control specific to Porous Asphalt Mixtures *(10.1.9.4)*Use of Surfaces by Traffic - requirements specific to Porous Asphalt Mixtures *(10.1.12)* |

**Table NG7/2 Particular Requirements for Unbound and Cement Bound Mixtures**

The following requirements are to be reflected in Sheets 1 and 2 as appropriate:

|  |  |  |
| --- | --- | --- |
| **Clause** | **Description** | **Particular Requirement** |
| 802 | Unbound Mixtures  | Whether subbase material may be spread in more than one layer (802.4).Requirements for a Trafficking Trial (802.12 & 802.14). |
| 809 | Unbound Mixtures | Proximity of unbound materials to metallic structural elements (809.1). |
| 820 | Aggregates for HBM | Testing of existing pavement layer to be used to produce HBM to confirm compliance with sub-Clause 820.1. (820.2).Requirement for rock coarse aggregate (820.3 & Table 8/13). |
| 821 | Cement bound granular mixtures A (CBGM A) | Whether induced cracking is required (817.1).Laboratory mechanical performance category: C 3/4, C 5/6, C 8/10; T1, T2, T3 (821.5). |
| 822 | Cement bound granular mixtures B (CBGM B) | Whether induced cracking is required (817.1).Laboratory mechanical performance category: C 8/10, C 12/15, C 16/20, C 20/25; T3, T4, T5 *(822.5).*Crushed or broken particles Category and Los Angeles Coefficient (Table 8/13). |
| 823 | Cement bound granular mixtures C (CBGM C) | Whether induced cracking is required (817.1).Laboratory mechanical performance category: C 8/10, C 12/15, C 16/20, C20/25; T3, T4, T5 (823.6).Crushed or broken particles Category (Table 8/13). |
| 824 | Soil Cement(SC) | Laboratory mechanical performance requirements (824.1, 824.3 and 824.5). |

Table NG7/3 Particular Requirements for Concrete Materials

The following requirements are to be reflected in Sheet 2 as appropriate:

|  |  |  |
| --- | --- | --- |
| **Clause** | **Description** | **Particular Requirement** |
| 1001 to 1034 and 1044 | Continuously Reinforced Concrete Slabs (CRCP) | Longitudinal steel reinforcement: (1008.9).Hot-applied sealant Type N1 or Type F1 (except for construction joints) (1017.2). |
| 1001 to 1034 | Continuously Reinforced Concrete Base (CRCB) | Longitudinal steel reinforcement: [1008.9 ]:Hot-applied sealant Type N1 or Type F1 [1017.2]: |

# NG Sample Appendices

NG SAMPLE APPENDIX 7/1: PERMITTED PAVEMENT OPTIONS

*[Note to compiler: Complete one sheet per option - See NG 701]*

**Sheet 1 - Flexible or Flexible Composite Pavement Type A**

|  |  |  |
| --- | --- | --- |
| **1** | ***Location:***  | **General Requirement** |
| **2** | Grid for checking surface levels of pavement courses, if different from the requirements of Cl 702.4: | Long dim: | N/A |
| Trans dim: | N/A |
| **3** | Surface regularity (Cl 702.7 and Cl 702.8): | Category of Road | *[A or B]* |
| Long Reg.: |  |
| Trans Reg.: |  |
| **4** | Requirements for coarse aggregates - Polished Stone Value (PSV), Aggregate Abrasion Value (AAV)(Series 900 Cl 3.2.2, 5.2.2, 6.2.2, 8.4.1.1, 8.6.1.1): |  | N/A |
| **5** | Requirements for pre-coated chippings - Polished Stone Value (PSV) for general use mixtures, PSV for mixtures for roundabouts, Aggregate Abrasion Value (AAV)(Series 900 Cl 4.2.4): |  | N/A |
| **6** | Requirement for testing for Polished Stone value using the friction after polishing test(NRA HD 300 Clause 2.26) |  | *[Yes/No]* |
| **7** | Freezing and thawing (soundness) category if different from the requirements of Series 900 Tables 1, 4, 7, 10 and 17: |  | N/A |
| **8** | Compaction control and extraction of cores if different from the requirements of Series 900 Cls 10.1.9, 10.1.9.1, 10.1.9.2, 10.1.9.3, 10.1.9.4. |  | N/A |
| **9** | Sealant to be applied to the whole of any freestanding edge on the outside of the finished pavement on the low side of the camber (Series 900 Cl 10.1.8): |  | *[Yes/No]* |
| **10** | Any tests additional to those required by IS EN 13108–20, IS EN 13108–21 or the relevant SRW (Series 900 Cl 1.2 and 1.3): |  | N/A |
| **11** | Whether subbase material may be spread in more than one layer (Cl 802.4). |  | *[Yes/No]* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pavement Course | Clause | Mixture Designation / Material | Thickness (mm) | Particular Requirements *[Insert appropriate requirements from Tables NG 7/1 to 7/2]* |
| Surface Course |  |  |  |  |
| Binder Course |  |  |  |  |
| Base |  |  |  |  |
| Sub-base |  |  |  | *[Whether material may be frost susceptible (801.4)].* |
| Total Pavement Thickness (excluding sub base) |  |  |

**Notes:**

1. Capping is not / is required as described in Appendix 6/7. *[Compiler to delete as appropriate]*
2. Bond coat to be applied to all surfaces including HBM layers.
3. *[Any specific requirements – e.g. Geotextile, High Friction surfacing, msa design requirements].*

NG SAMPLE APPENDIX 7/1: PERMITTED PAVEMENT OPTIONS

**Sheet 2 - Rigid Pavement Type B**

|  |  |  |
| --- | --- | --- |
| **1** | ***Location:***  | **General Requirement** |
| **2** | Grid for checking surface levels of pavement courses, if different from the requirements of Cl 702.4: | Long dim: | N/A |
| Trans dim: | N/A |
| **3** | Surface regularity (Cl 702.7 and Cl 702.8): | Category of Road | *[A or B]* |
| Long Reg.: |  |
| Trans Reg.: |  |
| **4** | Whether subbase material may be spread in more than one layer (Cl 802.4): |  | *[Yes/No]* |
| **5** | Size of Coarse Aggregates in Exposed Aggregate Concrete Surface (Cl 1044.5 (i)): |  |  |
| **6** | Polished Stone Value (PSV) of the coarse aggregate determined in accordance with IS EN 1097-8 (Cl 1044.5): |  |  |
| **7** | Aggregate Abrasion Value (AAV) of the coarse aggregate determined in accordance with IS EN 1097-8 (Cl 1044.5): |  |  |
| **8** | Macrotexture Depth Requirements (Cl 1044.27): | Average |  |
| Maximum |  |
| Minimum |  |
|  |  |  |  |  |
| Pavement Course | Clause | Mixture Designation / Material | Thickness (mm) | Particular Requirements *[Insert appropriate requirements from Tables NG 7/1 to 7/3]* |
| Surface Course |  |  |  |  |
| Binder Course |  |  |  |  |
| Continuously Reinforced Concrete Base (CRCB) |  |  |  | *[Spacings for Transverse Joints (1009.1)]**[Requirements for concrete conformity if different from sub-Clause 1001.2]* |
| Sub-base |  |  |  | *[Whether material may be frost susceptible (801.4)].* |
| Total Pavement Thickness (excluding sub base) |  |  |

**Notes:**

1. Capping is not / is required as described in Appendix 6/7. *[Compiler to delete as appropriate]*
2. *[Any specific requirements – e.g. Geogrid, High Skid resistant surfacing, msa design requirements].*

NG SAMPLE APPENDIX 7/1: PERMITTED PAVEMENT OPTIONS

**Sheet 3 – Summary of Alternatives**

|  |
| --- |
| **Sheet 3 - Summary of Alternatives** |
| **Drawing Ref.** | **Location** | **Permitted Pavement Options** |
| *[e.g., Pav 702-705, etc.]* | *[e.g., Mainline, ramps, side road, etc. as appropriate]* | *[e.g., Flexible Pavement Type A, etc.]* | *[e.g., Flexible Pavement Type B, etc.]*  | *[e.g., Flexible Composite Type A, etc.]* | *[e.g., Flexible Pavement with LEBM, etc.]* |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

ng Sample APPENDIX 7/2: Excavation and Reinstatement of Existing Surfaces

*[Note to compiler: Include here details of:]*

### **1** Additional requirements for carrying out excavations in paved areas constructed as part of the Works *[706.2].*

### **2** Dimensions of excavations in paved areas constructed as part of the Works *[706.2].*

### **3** Requirements for backfilling of excavations if different from the appropriate Clauses in Series 500, 600, 1200, 1300 and 1400 *[706.6].*

### **4** Additional requirements for reinstatement of excavations in paved areas constructed as part of the Works *[706.7].*

### **5** Reinstatement of the concrete slab *[706.7].*

### **6** Locations of any trenches, pits, etc., which require to be excavated in existing paved surfaces in order to carry out the Works. Include references to any drawings giving further details *[706.11].*

### **7** Additional requirements for carrying out and reinstatement of excavations and trimming of existing paved areas not constructed as part of the Works *[706.11].*

### **8** Areas, thicknesses and types of new construction (regulating course and surface course) in overlays *[706.12].*

### **9** Details of junctions between concrete pavements and between concrete and bituminous pavements with reference to relevant RCDs *[706.12].*

### **10** Full depth repairs and reinstatements in Concrete Pavements

####  (i) Repair criteria if different from sub-Clause 1033.4

#### (ii) Requirement for full bay replacement *[1033.7]*

#### (iii) Reinstated subbase material *[1033.9]*

#### (iv) Stitched crack repair type *[1033.12]*

#### (v) Filling of slots *[1033.13]*

#### (vi) Longitudinal joint grooves to be re cut *[1033.15]*

#### (vii) Transverse joint grooves to be re cut *[1033.16]*

### **11** Joint Seals in Concrete Pavements

#### (i) Colour of the joint seal material *[1017.1]*

**NG SAMPLE APPENDIX 7/3: SURFACE DRESSING PRODUCT (END PERFORMANCE)**

**SHEET 1: Information to be provided by the Purchaser**

*[Note to compiler: Complete one sheet per section]* *[Series 900 Clause 7.2.1 and 10.2.3.1]*

1. Location and Site Category.
2. Minimum binder peak cohesion required. *[Series 900 Clause 7.2.3.1.1]*
3. Minimum declared PSV of chippings. *[Series 900 Clause 7.2.3.1.2 and NRA HD 36 Table 4.1]*
4. Maximum AAV of chippings. *[Series 900 Clause 7.2.3.1.2 and NRA HD 36 Table 4.2]*
5. Category for accuracy of spread of binder required. *[Series 900 Clause 7.2.3.2.2 and Table 22a]*
6. Category for accuracy of spread of chippings required. *[Series 900 Clause 7.2.3.2.3 and Table 22a]*
7. Category for tolerance on rate of spread of binder required. *[Series 900 Clause 7.2.3.2.2 and Table 22a]*
8. Category for tolerance on rate of spread of chippings required. *[Series 900 Clause 7.2.3.2.3 and Table 22a]*
9. Frequency of testing required for binder and chipping application. *[Series 900 Clause 7.2.3.2.2, 7.2.3.2.2 and Table 22b]*
10. Design Working Life. *[normally 5 years]*
11. Traffic Volume. *[cv/lane/day]*
12. Description of existing surface.
13. Pre-treatment *[type, design, process]*
14. Type of surface dressing permitted. *[Series 900 Clause 7.2.3.2.1 - for example: any, not single, racked-in, double or multiple-layered when tyre-road noise generation to be minimised]*
15. Macrotexture. *[Series 900 Clause 10.2.3.2.3 – minimum performance category]*
16. Category of fatting up, tracking and bleeding. (% Area - P1) acceptable *[Series 900 Clause 10.2.3.2.3]*
17. Category of scabbing and tearing (% area affected - P2) acceptable. *[Series 900 Clause 10.2.3.2.3]*
18. Category of fretting (% chipping loss - P3) acceptable. *[Series 900 Clause 10.2.3.2.3]*
19. Category of streaking. (Length of streaking - P4) acceptable *[Series 900 Clause 10.2.3.2.3]*
20. Specific weather requirements

*[Note to compiler: If a number of sites are involved then it would be convenient to set out the above data in tabular form]*

**NG SAMPLE APPENDIX 7/3: SURFACE DRESSING PRODUCT (END PERFORMANCE)**

**SHEET 2: Information to be provided by the Producer**

The Producer shall provide the following information with his tender:

1. A copy of IS EN ISO 9001 certificate showing at least the name of the Producer, the name of the certification body and the reference number and date of the certificate. A copy of the relevant part of the Producer’s Quality Assurance (QA) document showing the appropriate scope (surface dressing product) and the quality management scheme described in Appendix A and limitations of the certification. The Purchaser will wish to inspect all or any of the Producer’s QA documentation as part of the vendor assessment system and may wish to satisfy itself on the nature of the QA systems of the Producer’s material suppliers.
2. Design proposal for surface dressing product for each location. *[Series 900 Clause 7.2.3]*
3. Declaration of the Design Working Life.
4. Proposed binder together with their DoP and CE Marking, product identification data and cohesivity data as specified along with any weather requirements specified by the binder manufacturer. *[Series 900 Clauses 7.2.3, 7.2.3.1.1, Appendix 7/3 sheet 1]*
5. Proposed source or sources of chippings, together their DoP and CE Marking, along with statement of properties including type, target grading, target flakiness, resistance to fragmentation, resistance to freezing and thawing - soundness, resistance to freezing and thawing - water absorption, PSV and AAV. *[Series 900 Clauses 7.2.3, 7.2.3.1.2, Appendix 7/3 sheet 1]*
6. A works proposal for each site or group of similar sites detailing the proposed method of executing the Works in accordance with the Specification. *[Series 900 Clause 10.2.3.2.1]*

*[The Producer will be expected to commit enough resources to carry out the* *proposed design in one single continuous pass, for example if a double surface dressing is proposed on a heavily trafficked* *road then 2no. binder sprayers, 2no. chipping spreaders, 2no. rollers and 2no. sweepers will be a minimum requirement. The type of plant,* *age and number should be detailed for example, 2no. computer controlled sprayers three years old].*

1. Proposals for reaction times for carrying out remedial measures where required, sweeping and site visits for monitoring purposes.
2. Contingency plans in the event of any breakdown of plant or failure of the surface dressing.
3. A TAIT certificate with CE marking a statement of any previous applications on roads with similar characteristics and traffic category to that to be treated in the Contract, containing the data as specified. *[Series 900 Clauses 7.2.3, 7.2.3.5, and Appendix 7/3 sheet 3]*
4. A statement of relevant experience and expertise, naming managers, supervisors and teams responsible for and allocated to the Contract.
5. For the performance specification, the results of any other tests or other data the Producer considers relevant. *[Series 900 Clauses 7.2.3.4, and 10.2.3.2.3]*

**NG SAMPLE APPENDIX 7/3: SURFACE DRESSING PRODUCT (END PERFORMANCE)**

**SHEET 3: TAIT Certificate Information to be provided by the Producer**

The Producer shall provide the TAIT Certificate containing at least the following information with his tender:

1. Company Name and Address:
2. QA reference number and certifying body:
3. TAIT reference number:
4. Location of TAIT (road number, start and end points, site category and description):
5. TAIT family:
6. Date of TAIT:
7. Name of Notified Body which has certified the surface dressing product:
8. Proprietary Name (if applicable):
9. Description of material:
10. Design procedure or method:
11. Relevant test results of materials used, FPC documentation for the section used for the TAIT:
12. Rate and accuracy of spread of both binder and chippings used for the TAIT:
13. Macrotexture depth after eleven months and before thirteen months (as measured):
14. Visual assessment results after eleven months and before thirteen months:
15. Colour retention (if applicable):
16. Other optional claims as declared by the Producer (e.g. reduced tyre-road noise emission, ability to accommodate a variable substrate, skid resistance if greater than PSV and macrotexture would indicate, etc.)
17. Period for which the performance characteristics have been retained:
18. Field of application for the particular material:
* Traffic - maximum commercial vehicles per lane per day:
* Traffic - total traffic per lane per day:
* Traffic - Speed limit:
1. Constraints on application for the particular material:
* Time of year:
* Temperature (minimum/maximum, road/ambient):
* Weather:
* Variability of existing surface hardness or type:
* Other as declared by the Producer:
1. Name and signature of company representative responsible for the TAIT:

**NG sample APPENDIX 7/4: Bituminous Sprays**

*[Note to compiler: Include here details of:]*

### **1** Specified Requirements for surface preparation in addition to Series 900 *[Series 900 Clause 10.1.4].*

NG sample APPENDIX 7/5: Road PAvements: NRA Road Construction Details

*[Note to compiler: List the relevant Series 700 RCDs]*

## Clause No. Road Construction Detail Drg No.

#### 701 RCD/700/1, 2, 3, 4, 5 & 6.

NG sample APPENDIX 7/6: Breaking Up or Perforation of Redundant Pavement

*[Note to compiler: Include here details of the treatment required, cross referencing to drawings as necessary].*

NG SAMPLE APPENDIX 7/7: Not Used

NG SAMPLE APPENDIX 7/8: Not Used

NG SAMPLE APPENDIX 7/9: COLD-MILLING (PLANING) OF BITUMINOUS BOUND FLEXIBLE PAVEMENT

*[Note to compiler: Include here details of:]*

### **1** Cross reference to Appendix 7/2 listing the drawings identifying where cold-milling is required.

### **2** For each location where cold-milling is required specify whether profile planing or constant depth planing is required, giving details of the alignments or depths as appropriate *[Series 900 Clause 2.1]* The location references should correspond with those listed in Appendix 7/1.

### **3** Sweeping of areas prior to cold-milling. *[Series 900 Clause 10.1.1.1]*

### 4 Requirement for fine-milling – Yes/No [NRA HD 300 Chapter 2, Clause 3.36 (v) and Clause 5.31 (v)]

|  |
| --- |
| Schedule: Sweeping Areas Prior to Cold-milling |
| Drawing No. | Location |
|  |  |
|  |  |

**NG SAMPLE APPENDIX 7/10: MICROSURFACING**

**SHEET 1: Information to be provided by the Purchaser**

*[Note to compiler: Complete one sheet per section][Series 900 Clause 7.1 and 10.2.2]*

1. Location. *[NRA HD 300 Clause 3.36 (i)]*
2. Traffic Volume. *[NRA HD 300 Clause 3.36 (ii) – cv/lane/day]*
3. Traffic speed. *[NRA HD 300 Clause 3.36 (iii) - 85 percentile and site speed limit]*
4. Site Category. *[NRA HD 300 Clause 3.36 (iii)]*
5. Description of existing surface. *[NRA HD 300 Clause 3.36 (iv)]*
6. Pre-treatment. *[NRA HD 300 Clause 3.36 (v) – responsibility, type, design, process]*
7. Surface Preparation. *[7.1.2.3 and NRA HD 300 3.36(v) – surface milling or retexturing where applicable]*
8. Type of microsurfacing permitted – if different from Series 900 requirements *[Series 900 Clause 7.1.2.1 and NRA HD 300 3.36 (vi)]*
9. Thickness. *[NRA HD 300, 3.36 (vii) - where applicable]*
10. Minimum declared PSV of chippings. *[Series 900 Clause 7.1.1.2, NRA HD 300 Clause 3.36 (ix) and NRA HD 36 Table 4.1]*
11. Maximum AAV of chippings. *[Series 900 Clause 7.1.1.2, NRA HD 300 Clause 3.36 (ix) and NRA HD 36 Table 4.2]*
12. Macrotexture. *[Series 900 Clause 10.2.2.2, NRA HD 300 Clause 3.36 (xi) – minimum performance category]*
13. Design Working Life. *[Series 900 Clause 10.2.2.2, NRA HD 300 Clause 3.36 (x) – normally 5 years]*
14. Category of bleeding, fatting up and tracking. (% area affected - P1) acceptable *[NRA HD 300 Clause 3.36 (xii) ]*
15. Category of delamination, loss of aggregate, wearing, lane joint gaps, rutting or slippage (% area affected - P2) acceptable. *[NRA HD 300 Clause 3.36 (xii)]*
16. Category of corrugation, bumps and ridges (% area affected - P3) acceptable. *[NRA HD 300 Clause 3.36 (xii)]*
17. Category of groups of small and repetitive defects in not more than rectangles (n). (% area affected - P4(n)) acceptable *[NRA HD 300 Clause 3.36 (xii) ]*
18. Category of linear defects *(m per 100m) acceptable [NRA HD 300 Clause 3.36 (xiii)]*
19. Surface shear strength test required – Yes/No. *[Series 900 Clause 7.1.2.5 and NRA HD 300 Clause 3.36 (xiv)]*
20. Surface shear strength test frequency - after curing and at 1 year where applicable *[NRA HD 300 3.36(xiii) and NRA HD 300 Clause 3.36 (xiv)]*

*[Note to compiler: If a number of sites are involved then it would be convenient to set out the above data in tabular form]*

**NG SAMPLE APPENDIX 7/10: MICROSURFACING**

**SHEET 2: Information to be provided by the Producer:**

The Producer shall provide the following information with his tender:

1. A copy of IS EN ISO 9001 certificate showing at least the name of the Producer, the name of the certification body and the reference number and date of the certificate. A copy of the relevant part of the Producer’s Quality Assurance (QA) document showing the appropriate scope (microsurfacing) and the quality management scheme described in Appendix A and limitations of the certification. The Purchaser will wish to inspect all or any of the Producer’s QA documentation as part of the vendor assessment system and may wish to satisfy itself on the nature of the QA systems of the Producer’s material suppliers.
2. Design proposal for microsurfacing for each location. *[Series 900 Clause 7.1]*
3. Declaration of the Design Working Life.
4. Proposed binder and bond coat together with their DoP and CE Marking, product identification data and cohesivity data as specified along with any weather requirements specified by the binder manufacturer. *[Series 900 Clause 7.1.1.1, Appendix 7/3 sheet 1]*
5. Proposed source or sources of aggregate, together their DoP and CE Marking, along with statement of properties including type, target grading, declared PSV and AAV *[Series 900 Clauses 7.1, 7.1.1.2, Appendix 7/10 sheet 1]*
6. Proposed source or sources of fine aggregate, together their DoP and CE Marking, including target grading and other constituents together with statements of properties. *[Series 900 Clause 7.1.2.2]*
7. A works proposal for each site or group of similar sites detailing the proposed method of executing the Works in accordance with the Specification. *[Series 900 Clause 10.2.2.1]*

*[The Producer will be expected to commit enough resources to carry out the proposed design; the type and age of the Microsurfacing machine should be detailed]*

1. Proposals for reaction times for carrying out remedial measures where required, sweeping and site visits for monitoring purposes.
2. Contingency plans in the event of any breakdown of plant or failure of the microsurfacing.
3. A TAIT certificate with CE marking a statement of any previous applications on roads with similar characteristics and traffic category to that to be treated in the Contract, containing the data as specified. *[Series 900 Clauses 7.1, 7.1.4 and Appendix 7/10 sheet 3]*
4. A statement of relevant experience and expertise, naming managers, supervisors and teams responsible for and allocated to the Contract.
5. For the performance specification, the results of any other tests or other data the Producer considers relevant. The following information should be provided, if available. *[Series 900 Clauses 7.1.3, 10.2.2.2, and NRA HD 300 Clause 3.36 (xv)]*
	1. Test method for binder content.
	2. Test for thickness of microsurfacing.
	3. Trafficability time, including method of test. *[Appendix 7/10, sheet 1 preferred]*
	4. Bond test results.

**NG SAMPLE APPENDIX 7/10: MICROSURFACING**

**SHEET 3: TAIT Certificate: Information to be provided by the Producer**

The Producer shall provide the TAIT Certificate containing at least the following information with his tender:

1. Company Name and Address:
2. QA reference number and certifying body:
3. TAIT reference number:
4. Location of TAIT (road number, start and end points):
5. Date of TAIT:
6. Name of Notified Body which has certified the microsurfacing product:
7. Proprietary Name (if applicable):
8. Description of material:
9. Design procedure or method:
10. Relevant test results of materials used, FPC documentation for the section used for the TAIT:
11. Material thickness (if applicable):
12. Macrotexture depth after eleven months and before thirteen months (as measured):
13. Visual assessment results after eleven months and before thirteen months:
14. Colour retention (if applicable):
15. Other optional claims as declared by the Producer (e.g. reduced tyre-road noise emission, ability to accommodate a variable substrate, skid resistance if greater than PSV and macrotexture would indicate, etc.)
16. Period for which the performance characteristics have been retained:
17. Field of application for the particular material:
* Traffic - maximum commercial vehicles per lane per day:
* Traffic - total traffic per lane per day:
* Traffic - Speed limit:
1. Site category and description, see NRA HD 36 for categories:
2. Constraints on application for the particular material:
* Time of year:
* Temperature (minimum/maximum, road/ambient):
* Weather:
* Variability of existing surface hardness or type:
* Other as declared by the Producer:
1. Name and signature of company representative responsible for the TAIT:

**NG SAMPLE APPENDIX 7/11: HIGH FRICTION SURFACING**

**SHEET 1: Information to be provided by the Purchaser**

*[Note to compiler: Complete one sheet per section] [Series 900 7.3.1 and 10.2.4]*

1. Location *[NRA HD 300 Clause 5.31 (i)]*
2. Traffic Volume. *[NRA HD 300 Clause 5.31 (ii) – cv/lane/day]*
3. Site Category and Investigatory Level. *[NRA HD 300 Clause 5.31 (iii)]*
4. Description of existing surface. *[NRA HD 300 Clause 5.31 (iv)]*
5. Pre-treatment. *[NRA HD 300 Clause 5.31 (v) – responsibility, type, design, process]*
6. Length of application if greater than 50m *[NRA HD 300 Clause 5.31 (vi)]*
7. Type of binder – if different from Series 900 *[Series 900 Clause 7.3.2.1 and NRA HD 300 Clause 5.31 (vii)]*
8. Minimum declared PSV of chippings – if different from Series 900 requirements. *[Series 900 Clause 7.3.2.2, Table 23a and Table 23b, and NRA HD 300 Clause 5.31 (viii)]*
9. Maximum AAV of chippings – if different from Series 900 requirements. *[Series 900 Clause 7.3.2.2, Table 23a and Table 23b, and NRA HD 300 Clause 5.31 (viii)]*
10. Design Working Life. *[Series 900 Clause 10.2.4.7, NRA HD 300 Clause 5.31 (ix) – normally 5 years]*
11. Macrotexture *[Series 900 Clause 7.3.3.2 and HD 300 Clause 5.31(x)]*
12. Level of fatting up (% area affected – P1) acceptable *[Series 900 Clause 7.3.3.1 and HD 300 Clause 5.31 (xi)]*
13. Level of delamination (% area affected – P2) acceptable *[Series 900 Clause 7.3.3.1 and HD 300 Clause 5.31 (xi)]*
14. Level of fretting (% area affected – P3) acceptable *[Series 900 Clause 7.3.3.1 and HD 300 Clause 5.31 (xi)]*
15. Level of grinning (% area affected – P4) acceptable *[Series 900 Clause 7.3.3.1 and HD 300 Clause 5.31 (xi)]*
16. Pull Off test frequency - after curing and at 1 year where applicable *[NRA HD 300 Clause 5.31(xii)]*

*[Note to compiler: If a number of sites are involved then it would be convenient to set out the above data in tabular form]*

**NG SAMPLE APPENDIX 7/11: HIGH FRICTION SURFACING**

**SHEET 2: Information to be provided by the Contractor**

The Producer shall provide the following information with his tender:

1. A copy of IS EN ISO 9001 certificate showing at least the name of the Producer, the name of the certification body and the reference number and date of the certificate. A copy of the relevant part of the Producer’s Quality Assurance (QA) document showing the appropriate scope (high friction surfacing) and the quality management scheme described in Appendix A and limitations of the certification. The Purchaser will wish to inspect all or any of the Producer’s QA documentation as part of the vendor assessment system and may wish to satisfy itself on the nature of the QA systems of the Producer’s material suppliers.
2. Declaration of the Design Working Life.
3. Proposed binder and bond coat together along with any weather requirements specified by the binder manufacturer. *[Series 900 Clause 7.3.1, 7.3.2.1, Appendix 7/11 sheet 1]*
4. Proposed source of manufactured and/or natural aggregate(s), together with associated DoP and CE Marking, along with statement of properties including type, target grading, particle angularity, particle density, resistance to freezing and thawing – water absorption, PSV and AAV. *[Series 900 Clause 7.3.2.2, Table 23a and Table 23b, Appendix 7/11 sheet 1]*
5. A works proposal for each site or group of similar sites detailing the proposed method of executing the Works in accordance with the Specification. *[Series 900 Clause 10.2.4.1]*

*[The Producer will be expected to commit enough resources to carry out the proposed design; the type and age of the high friction surfacing should be detailed]*

1. Proposals for reaction times for carrying out remedial measures where required, sweeping and site visits for monitoring purposes. *[Series 900 Clause 10.2.4.7]*
2. Contingency plans in the event of any breakdown of plant or failure of the high friction surfacing. *[Series 900 Clause 10.2.4.7]*
3. A prTAIT certificate with a statement of any previous applications on roads with similar characteristics and traffic category to that to be treated in the Contract, containing the data as specified. *[Series 900 Clauses 7.3, 7.3.3, 7.3.4 and Appendix 7/11 sheet 3]*
4. A statement of relevant experience and expertise, naming managers, supervisors and teams responsible for and allocated to the Contract.
5. For the performance specification, the results of any other tests or other data the Producer considers relevant. *[Series 900 Clauses 7.3.3, 10.2.4.6, and NRA HD 300 Clause 5.31 (xiii)]*
6. Proposals for product/system storage at and transport to site *[Series 900 Clause 10.2.4.3]*
7. Weather requirements for installation of high friction surfacing and contingency plans in the event of any adverse weather impacting the application of high friction surfacing. *[Series 900 Clause 10.2.4.4]*
8. Proposals for time period between completion of works and opening to live traffic. *[Series 900 Clause 10.2.4.7]*

**NG SAMPLE APPENDIX 7/11: HIGH FRICTION SURFACING**

**SHEET 3: prTAIT Certificate: Information to be provided by the Contractor**

The Contractor shall provide the prTAIT Certificate containing at least the following information with his tender:

1. Company Name and Address:
2. QA reference number and certifying body:
3. prTAIT reference number:
4. Location of prTAIT (road number, start and end points):
5. prTAIT family *[NRA HD 301 Table 2C.1]*:
6. Date of prTAIT:
7. Name of Notified Body which has certified the high friction surfacing product/system:
8. Proprietary Name (if applicable):
9. Description of product/system (method of application, binder type, aggregate grade, etc. For hot screeded thermoplastic, include measured indirect tensile strength):
10. Design procedure or method:
11. Storage and transportation requirements:
12. Rate and tolerance of spread of both binder and aggregate:
13. Macrotexture depth after eleven months and before thirteen months (as measured):
14. Visual assessment results after eleven months and before thirteen months:
15. Colour retention (if applicable):
16. Other optional claims as declared by the Producer (e.g. reduced tyre-road noise emission, ability to accommodate a variable substrate, skid resistance if greater than PSV and macrotexture would indicate, etc.)
17. Period for which the performance characteristics have been retained:
18. Time period between completion of works and opening to live traffic *[Series 900 Clause 10.2.4.7]*:
19. Constraints on application for the particular product/system:
* Time of year:
* Temperature (minimum/maximum, road/ambient):
* Weather:
* Variability of existing surface hardness or type:
* Other as declared by the Producer:
1. Name and signature of company representative responsible for the prTAIT:

**NG SAMPLE APPENDIX 7/12: LOW ENERGY BOUND MIXTURES**

**SHEET 1: Information to be provided by the Purchaser**

*[Note to compiler: Complete one sheet per section] [Series 900 Clauses 8.1 and 10.3.1]*

1. Location. *[NRA HD 300 Clause 6.57 (i)]*
2. Design traffic. *[NRA HD 300 Clause 6.57 (ii) – msa]*
3. Description of existing surface. *[NRA HD 300 Clause 6.57 (iii)]*
4. Existing pavement structure. *[NRA HD 300 Clause 6.57 (iv)]*
5. Existing pavement subgrade. *[NRA HD 300 Clause 6.57 (v)]*
6. Existing pavement material. *[NRA HD 300 Clause 6.57 (vi)]*
7. Binder requirements if different from Series 900. *[Series 900 Clause 8.1.1.1 and NRA HD 300 Clause 6.57 (vii)]*
8. The conditioning requirements (e.g. temperature, duration) for representative specimens prior to testing if different from 40 °C for 72 hours. *[NRA HD 300 Clause 6.57 (viii)]*
9. Sealant required on completion of compaction *-* Yes/No. *[Series 900 Clause 10.3.1.9 and NRA HD 300 Clause 6.57 (ix)]*
10. Rate of spread of sealant required if different from Series 900. *[Series 900 Clause 10.3.1.9 and NRA HD 300 Clause 6.57 (vi)]*
11. End performance testing regime if different from Series 900. *[Series 900 Clause 10.3.1.11 and NRA HD 300 Clause 6.57 (x)]*

*[Note to compiler: If a number of sites are involved then it would be convenient to set out the above data in tabular form]*

**NG SAMPLE APPENDIX 7/12: LOW ENERGY BOUND MIXTURES**

**SHEET 2: Information to be provided by the Producer**

The Producer shall provide the following information with his tender:

1. A copy of IS EN ISO 9001 certificate showing at least the name of the Producer, the name of the certification body and the reference number and date of the certificate. A copy of the relevant part of the Producer’s Quality Assurance (QA) document showing the appropriate scope (LEBM) and the quality management scheme described in Appendix A and limitations of the certification. The Purchaser will wish to inspect all or any of the Producer’s QA documentation as part of the vendor assessment system and may wish to satisfy itself on the nature of the QA systems of the Producer’s material suppliers.
2. Proposed binders together with their DoP and CE Marking, product and identification data as specified along with any weather requirements specified by the binder manufacturer. *[Series 900 Clauses 8.1.1, 8.1.1.1, Appendix 7/12 sheet 1]*
3. Proposed source or sources of aggregate and filler together with their DoP and CE Marking along with statement of properties including type, fines content, grading, flakiness, resistance to fragmentation, and resistance to freezing and thawing - water absorption and soundness,. *[Series 900 Clauses 8.1.1, 8.1.1.2, 8.1.1.3]*
4. A proposal for each mixture detailing the proposed method of consistently producing the material and calibration certificates for the plant flow meters to be used in the Works. *[Series 900 Clauses 8.1.2, 8.1.2.1]*
5. A works proposal for each site or group of similar sites detailing the proposed method of executing the Works in accordance with the Specification. *[Series 900 Clause 10.3.1.2]*

*[The Contractor will be expected to commit enough resources to carry out the* *proposed design in one single continuous pass, for example if in situ recycling is proposed then a water tanker coupled to a recycler followed by grader and compactor in succession will be the minimum requirement for 1no. lane. The type of plant,* *age and number should be detailed for example, 1no. computer controlled recycler three years old].*

1. Contingency plans in the event of any adverse weather impacting the laying or production of the low energy bound mixture. *[Series 900 Clause 10..3.1.4]*
2. Contingency plans in the event of any breakdown of plant or failure of the low energy bound mixture.
3. A statement of relevant experience and expertise, naming managers, supervisors and teams responsible for and allocated to the Contract.
4. The results of any other tests or other data the Producer considers relevant. *[NRA HD 300 Clause 6.57 (xi)]*

**NG SAMPLE APPENDIX 7/21: RECIPE SURFACE DRESSING**

**SHEET 1: Information to be provided by the Purchaser**

*[Note to compiler: Complete one sheet per section] [Series 900* *Clauses 7.2.1 and 0.2.3.1]*

1. Location and Site Category.
2. Traffic Volume. *[cv/lane/day]*
3. Description of existing surfacing
4. Pre-treatment. *[responsibility, type, design, process]*
5. Type of surface dressing required. *[Series 900 Clause 7.2.2.2]*
6. Minimum binder peak cohesion required.
7. Rate of spread of binder. *[Series 900 Clause 10.2.3.1.3]*
8. Requirements for chippings if not different to the requirements of Series 900 *[Series 900 Clause 7.2.2.1.2, Table 17 and 18]*
9. Chipping size(s) required.
10. Minimum declared PSV of chippings. *[Series 900 Clause 7.2.2.1.2 and NRA HD 36 Table 4.1]*
11. Maximum AAV of chippings. *[Series 900 Clause 7.2.2.1.2 and NRA HD 36 Table 4.2]*
12. Category for accuracy of spread of binder required. *[Series 900 Clause 10.2.3.1.3 and Table 22a]*
13. Category for accuracy of spread of chippings required. *[Series 900 Clause 10.2.3.1.4 and Table 22a]*
14. Category for tolerance on rate of spread of binder required. *[Series 900 Clause 10.2.3.1.3 and Table 22a]*
15. Category for tolerance on rate of spread of chippings required. *[Series 900 Clause 10.2.3.1.4 and Table 22a]*
16. Frequency of testing required for binder and chipping application. *[Series 900 Clauses 10.2.3.1.3, 10.2.3.1.4 and Table 22b]*
17. Time for the Works to be carried out. *[Series 900 Clause 10.2.3.1.8 - if outside April and August period]*
18. Specific weather requirements. *[Series 900 Clauses 10.2.3.1.3, 10.2.3.1.8 – for example: Limitations of work in adverse weather]*
19. Period for monitoring dressing if different from minimum of 2 hours. *[Series 900 Clause 10.2.3.1.10]*
20. Minimum time period before unrestricted traffic may use the surface dressing. *[Series 900 Clause 10.2.3.1.10]*

*[Note to compiler: If a number of sites are involved then it would be convenient to set out the above data in tabular form]*

**NG SAMPLE APPENDIX 7/21: RECIPE SURFACE DRESSING**

**SHEET 2: Information to be provided by the Producer**

The Producer shall provide the following information with his tender:

1. A copy of IS EN ISO 9001 certificate showing at least the name of the Producer, the name of the certification body and the reference number and date of the certificate. A copy of the relevant part of the Producer’s Quality Assurance (QA) document showing the appropriate scope (recipe surface dressing) and the quality management scheme described in Appendix A and limitations of the certification. The Purchaser will wish to inspect all or any of the Producer’s QA documentation as part of the vendor assessment system and may wish to satisfy itself on the nature of the QA systems of the Producer’s material suppliers.
2. Proposed binders together with their DoP and CE Marking, product identification data and cohesivity data as specified along with any weather requirements specified by the binder manufacturer. *[Series 900 Clauses 7.2.2, 7.2.2.1.1, Appendix 7/3 sheet 1]*
3. Proposed source or sources of chippings together their DoP and CE Marking along with statement of properties including type, target grading, target flakiness, resistance to fragmentation, resistance to freezing and thawing - soundness, resistance to freezing and thawing - water absorption, PSV and AAV. *[Series 900 Clauses 7.2.2, 7.2.2.1.2, Appendix 7/3 sheet 1]*
4. Calibration certificate for proposed binder sprayer to be used in the Works, to confirm compliance with the categories specified in Appendix 7/21. *[Series 900 Clause 10.2.3.1.3]*
5. Calibration certificate for proposed chipping spreader to be used in the Works, to confirm compliance with the categories specified in Appendix 7/21. *[Series 900 Clause 10.2.3.1.4]*
6. A works proposal for each site or group of similar sites detailing the proposed method of executing the Works in accordance with the Specification. *[Series 900 Clause 10.2.3.1.1]*

*[The Producer will be expected to commit enough resources to carry out the* *proposed design in one single continuous pass, for example if a double surface dressing is proposed on a heavily trafficked* *road then 2no. binder sprayers, 2no. chipping spreaders, 2no. rollers and 2no. sweepers will be a minimum requirement. The type of plant,* *age and number should be detailed for example, 2no. computer controlled sprayers three years old].*

1. A statement of previous use of the combinations of binder and chippings proposed for use together with any measures or tests undertaken to ensure their compatibility. *[Series 900 Clauses 7.2.2.1, 10.2.3.1.1, 10.2.3.1.3, 10.2.3.1.4 and Tables 15, 17 and 18; for example - the use of adhesion agents or* *cohesion properties (pendulum tests)]*
2. Proposals for traffic control and aftercare for each site, and reaction times for carrying out remedial measures, sweeping and site visits. *[Series 900 Clauses 10.2.3.1.1, 10.2.3.1.10]*
3. Contingency plans in the event of any breakdown of plant or failure of the surface dressing.
4. A statement of relevant experience and expertise, naming managers, supervisors and teams responsible for and allocated to the Contract.