**SCOPE 159 ЛИ**

**OF GBS INFRASTRUCTURE CONSTRUCTION AD**

**MOBILE CONSTRUCTION LABORATORY**

**Management address:** 1619, Sofia, 3-5, Damyanitsa Str.

**Laboratory address:** 3945, Gara Oreshets, Dimovo Municipality, Geopecha Quarry

**To perform testing of**:

| **Type of scope:** *flexible* | | | |
| --- | --- | --- | --- |
| **№** | **Tested products** | **Type of test/ characteristic** | **Testing methods**  **(standard/validated method)** |
| 1 | 2 | 3 | 4 |
| 1. | Bitumens and bituminous binders | 1.1 Penetration | БДС EN 1426 |
| 1.2 Softening point | БДС EN 1427 |
| 1.3 Elastic recovery | БДС EN 13398 |
| 1.4 Resistance to hardening by RTFOT method  - Change of mass  - Retained penetration  - Rise of softening point | БДС EN 12607-1  БДС EN 1426  БДС EN 1427 |
| 1.5 Flash and fire point by Cleveland open cup method | БДС EN ISO 2592 |
| 1.6 FRAASS breakening point | БДС EN 12593 |
| 1.7 Deformation energy by the forced ductility method | БДС EN 13589 |
| 1.8 Storage stability  - Difference in penetration  - Difference in softening point | БДС EN 13399  БДС EN 1426  БДС EN 1427 |
| 2. | Aggregates | 2.1 Particle size distribution | БДС EN 933-1  AASHTO T 88, item 7, item 13 |
| 2.2 Flakiness index | БДС EN 933-3 |
| 2.3 Shape index | БДС EN 933-4 |
| 2.4 Percentage of:  - crushed particles;  - totally crushed particles;  - totatlly rouned particles; | БДС EN 933-5 |
| 2.5 Sand equivalent | БДС EN 933-8+A1 |
| 2.6 Resistance to fragmentation - Los Angeles coefficient | БДС EN 1097-2 |
| 2.7 Loose bulk density and voids  -Loose bulk density  -Voids | БДС EN 1097-3 |
| 2.8 Water content | БДС EN 1097-5  БДС ЕN ISO 17892-1 |
| 2.9 Particle density (ρa, ρrd, ρssd) and water absorption | БДС EN 1097-6, cl. 7, cl. 8, cl. 9 and Annex B |
| 2.10 Particle density. Pyknometer method | БДС EN 1097-7 |
| 2.11 Resistance to fragmentation under static load | БДС EN 206**+**А2/NА |
| 2.12 Magnesium sulfate value | БДС EN 1367-2 |
| 2.13 Maximum density of skeleton at optimum water content. Proctor method. | БДС EN 13286-2 |
| 2.14 Bearing coefficient – CBR | БДС EN 13286-47 |
| 2.15 Elastic module.  Deformation module:  - Е1  - Е2  - ratio Е2/Е1 | БДС 15130 |
| 2.16 Maximum density of skeleton at optimum water content. Proctor method. | БДС 17146 |
| 2.17 Liquid limit | AASHTO T 89  Ordinance № РД-02-20-2,  SG 79/2018, Annex № 15 |
| 2.18 Plastic limit | AASHTO T 90  Ordinance № РД-02-20-2,  SG 79/2018, Annex № 16 |
| 2.19 Plasticity index | AASHTO T 90  Ordinance № РД-02-20-2,  SG 79/2018, Annex № 16 |
| 2.20 Density in-place by the sand replacement method | AASHTO T 191 |
| 3. | Bituminous mixtures.  Road pavements | 3.1 Particle size distribution | БДС EN 12697-2+A1 |
| 3.2 Soluble binder content | БДС EN 12697-1, Annex В,  cl. В.2.1 |
| 3.3 Bulk density | БДС EN 12697-6 |
| 3.4 Maximum density | БДС EN 12697-5 |
| 3.5 Air voids content | БДС EN 12697-8, cl. 4 |
| 3.6 Conventional reference density | БДС EN 12697-9\*  БДС EN 12697-6 |
| 3.7 Flow | БДС EN 12697-34 |
| 3.8 Stability | БДС EN 12697-34 |
| 3.9 Dimension of a bituminous specimen | БДС EN 12697-29 |
| 3.10 Compaction degree | БДС EN 12697-9\* |
| 3.11 Thickness of a bituminous pavement | БДС EN 12697-36, cl. 6.1 |
| 3.12 Irregularities of the pavement | БДС EN 13036-7 |
| 4. | Fresh concrete | 4.1 Slump | БДС EN 12350-2 |
| 4.2 Density | БДС EN 12350-6 |
| 4.3 Flow table test | БДС EN 12350-5 |
| 5. | Concrete | 5.1 Compressive strength | БДС EN 12390-3 |
| 5.2 Density | БДС EN 12390-7 |
| 5.3 Surface moisture | ASTM F 2659 |
| 5.4 Bond strength by direct tension | БДС EN 14488-4+A1 |
| 5.5 Probable compressive strength by surface hardness | БДС EN 12504-2  БДС EN 13791 |
| 6. | Waterproofing of bridge facilities | 9.1 Bond strength | БДС EN 13596 |
| 7. | Hydraulically bound mixtures | 7.1 Compressive strength | БДС EN 13286-41 |

**To perform sampling of:**

|  |  |  |
| --- | --- | --- |
| **Type of the scope:** *flexible* | | |
| **№** | **Product** | **Sampling methods**  **(standard/validated method)** |
| 1. | 2 | 3 |
| 1. | Bitumens and bituminous binders | БДС EN 58 |
| 2. | Aggregates | БДС EN 932-1 |
| 3. | Bituminous mixtures | БДС EN 12697-27 |
| 4. | Concrete. Fresh concrete | БДС EN 12350-1  БДС EN 14488-1  БДС EN 12504-1 |

*\*Repealed but not replaced standard with regard to the testing method.*

***Flexible scope:*** *Implementing a new version of standards/documents or standards/ documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by laboratory.*

**References:**

1. Annex № 15 to Art. 160, item 3 of Ordinance № РД-02-20-2/28.08.2018 for road design of Ministry of Regional Development and Public Works /MRDPW/, published SG, № 79/25.09.2018.

2. Annex № 16 to Art. 160, item 3 of Ordinance № РД-02-20-2/28.08.2018 for road design of Ministry of Regional Development and Public Works /MRDPW/, published SG, № 79/25.09.2018.