**SCOPE 188 ЛИ**

**Sofia, 03.04.2025**

**BUILD LAB LTD.**

**ROAD CONSTRUCTION TESTING LABORATORY, BOTEVGRAD**

**Management and laboratory address:**

2163 Skravena, Proizvodstven Complex

**To perform testing of:**

| **Type of the scope:** *flexible* | | | |
| --- | --- | --- | --- |
| **№** | **Tested Products** | **Type of Test/Characteristic** | **Testing methods**  **(standard / validated method)** |
| 1 | 2 | 3 | 4 |
| 1. | Bituminous mixtures | 1.1. Soluble binder content | БДС EN 12697-1  Annex В, cl. 1.7 |
| 1.2. Particle size distribution (grain size distribution) | БДС EN 12697-2 |
| 1.3. Maximum density | БДС EN 12697-5  Procedure А |
| 1.4. Bulk density | БДС EN12697-6  Procedures А, В, D |
| 1.5. Void characteristics | БДС EN 12697-8, cl. 4 |
| 1.6. Compaction degree | \*\*БДС EN 12697-9 |
| 1.7. Stability by Marshall test method (stability; flow) | БДС EN 12697-34 |
| 1.8. Dimensions of a bituminous specimen | БДС EN 12697-29 |
| 1.9. Affinity with bitumen (degree of preservation of the bituminous coating) | БДС EN 12697-11, cl. 7 |
| 2. | Bitumen | 2.1. Penetration at 25°С | БДС EN 1426 |
| 2.2. Softening point  - Ring and Ball method | БДС EN 1427 |
| 3. | Construction soils (1)  / Rock materials (2)  / Unbound and hydraulically bound mixtures (3) | 3.1. Particle size distribution | БДС EN 933-1 (2) (3)  БДС EN ISO 17892-4, cl.5.2 (2) (3) |
| 3.2. Fine fraction content passing through 0,063 mm sieve | БДС EN 933-1 (2), (3) |
| 3.3. Flakiness index | БДС EN 933-3 (2), (3) |
| 3.4. Shape index | БДС EN 933-4 (2), (3) |
| 3.5. Content of:  - totally crushed particles,  - crushed particles,  - totally rounded particles | БДС EN 933-5 (2) |
| 3.6. Sand equivalent value | БДС EN 933-8+А1 (2), (3) |
| 3.7. Methylene blue value | БДС EN 933-9 (2) (3) |
| 3.8. Loose bulk density | БДС EN 1097-З+  Correction 1 (2), (3) |
| 3.9. Water content | БДС EN 1097-5 (2), (3)  БДС EN ISO 17892-1+А1 (1) |
| 3.10. Particle density:  - specific particle density,  - particle bulk density after drying,  - saturated*-*surface*-*dry*(*SSD*)* particle density  - specific density of pre-dried grains,  - bulk density of grains water-saturated to constant mass | БДС EN 1097-6 (2) cl. 7; cl. 8; cl. 9  Annex А (2)  it. А.З Annex А (2)  it. A 4 Annex В (2) |
| 3.11. Water absorption | БДС EN 1097-6 cl. 7; cl. 8,  cl. 9  Annex В (2) |
| 3.12. Resistance in Mg2S04  solution | БДС EN 1367-2 (2) |
| 3.13. Humus content | БДС EN 1744-1+А1, cl. 15.1 (2) |
| 3.14. Determination of elastic module using a circular table load | БДС 15130 (1) |
| 3.15. Deflection modulus under circular plate load | БДС 15130 (1) |
| 3.16. Deflection modules ration E2:E1 under circular plate load | БДС 15130 (1) |
| 3.17. Proctor maximum density | БДС EN 13286-2 cl. 7.1.;  cl. 7.2; cl. 7.4; cl. 7.5  (1) (2) (3)  БДС 17146 cl. 3.3.1;  cl. 3.3.2 (1) (2) (3) |
| 3.18. Reference water content | БДС EN 13286-2 cl. 7.1.;  cl. 7.2; cl.7.4; cl. 7.5  (1) (2) (3)  БДС 17146 cl.3.3.1;  cl. 3.3.2 (1) (2) (3) |
| 3.19. Determination of bulk density of soil by sand replacement | Annex №18 to Art. 168, Para 1 of Ordinance № РД-02-20-2, SG 79/2018 (1) (2) (3) |
| 3.20. Compaction degree | Annex №18\*\* to Art. 168, Para 1 of Ordinance № РД-02-20-2, SG 79/2018 (1) (2) (3) |
| 3.21. Compressive strength | БДС EN 13286-41 (3) |
| 3.22. Resistance to fragmentation - the Los Angeles coefficient | БДС EN 1097-2 (2) |
| 3.23. California bearing ratio (CBR) | БДС EN 13286-47 (1) (2), (3) |
| 3.24. Linear swelling | БДС EN 13286-47 (1) (2), (3) |
| 3.25. Liquid limits | БДС EN 17892-12  Casagrande method (1) (2)  Annex № 15 to Art. 160 cl. 3 of Ordinance № РД-02-02-2, SG 79/2018 (1) (2) |
| 3.26. Plastic limits | БДС EN 17892-12 (1), (2)  Annex № 16 to art. 160 cl. 3 of Ordinance № РД-02-02-2, SG 79/2018 (1) (2) |
| 3.27. Plasticity index | БДС EN 17892-12 (1), (2)  Annex № 16 to Art. 160 cl. 3 of Ordinance № РД-02-02-2, SG 79/2018 (1) (2) |
| 4. | Fine fillers  (mineral flour) | 4.1. Particle size distribution | БДС EN 933-1 |
| 4.2. Methylene blue value | БДС EN 933-9 |
| 4.3. Water content | БДС EN 1097-5 |
| 4.4. Particles density | БДС EN 1097-7 |
| 5. | Grout for prestressing tendors | 5.1. Compressive strength | БДС EN 445, cl. 4.6;  БДС EN 196-1 |
| 6. | Grouted anchors | 6.1. Bearing capacity of anchors:  displacement/elongation at specified tensile force | БДС EN ISO 22477-5,  cl. 10.4 |
| 7. | Waterproofing | 7.1. Adhesion to the concrete base under tensile loading | БДС EN 13596 |
| 8. | Road pavements | 8.1. Deflection (using the Benkelman Beam) | БДС EN 15131 |
| 9. | Concrete mixtures | 9.1. Slump | БДС EN 12350-2 |
| 10. | Hardened concrete | 10.1. Compressive strength | БДС EN 12390-3 |
| 10.2. Compressive strength of cylindrical concrete specimens (cored specimens) removed from structures | БДС EN 12504-1 |
| 11. | Young sprayed concrete | 11.1. Compressive strength of young sprayed concrete | БДС EN 14488-2 Method A: needle penetration |

**To perform sampling of:**

|  |  |  |
| --- | --- | --- |
| **Type of the scope:** *flexible* | | |
| **№** | **Product** | **Sampling Testing methods**  **(standard / validated method)** |
| 1 | 2 | 3 |
| 1. | Bituminous mixtures | БДС EN 12697-27,  cl. 4.1, cl. 4.3, cl. 4.4, cl. 4.6, cl. 4.7 |
| 2. | Bitumen | БДС EN 58, cl. 8.1, cl. 8.2.1 |
| 3. | Construction soils (1)  / Rock materials (2)  / Unbound and hydraulically bound mixtures (3) | БДС EN 932-1 (1) (2), (3) |
| 4. | Fine fillers (mineral flour) | БДС EN 932-1, cl. 8.3, cl. 8.4, cl. 8.5, cl. 8.7 |
| 5. | Concrete mixtures | БДС EN 12350-1 |
| 6. | Hardened concrete | БДС EN 12504-1 |

\*\* БДС EN 12697-9 - 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 the laboratory.*

**Reference:**

Annex № 15 to Art. 160, Para. 3 of Regulation № РД-02-20-2, SG 79/2018 - Method for determining the soil liquid limit.

Annex № 16 to Art. 160, Para. 3 of Regulation № РД-02-20-2, SG 79/2018 - Method for determining the soil plastic limit and plasticity index.

Annex № 18 to Art. 168, Para. 1 of Regulation № РД-02-20-2, SG 79/2018 - Method for determining the bulk density of construction soils in situ by replacement sand..