

COMPLET LIST OF TEST

SOIL TESTS

- Gradation test by wet sieving — LNEC E 239
- In situ dry density (sand replacement method) — LNEC E 204
- In situ dry density (using non-nuclear densimeter)
- CBR — LNEC E 198
- Immediate CBR — NF P 94-078
- Proctor compaction — LNEC E 197
- Determination of particle density — NP 83
- Plate load test (LCPC procedure)
- Plate load test (NLT standard) — NLT 357
- Sand equivalent — LNEC E 199
- Attenberg limits — NP 143
- Organic matter content — LNEC E 201
- Methylene blue value (NF standard — aggregates) — NF P 18-592
- Methylene blue value (NF standard — soils) — NF P 94-068

TESTS ON CEMENT-SOIL

- Diametral compression in core samples taken from pavement — ASTM C 496
- Diametral compression in laboratory-made specimens (Brazilian test) — ASTM C 496

TESTS ON AGGREGATES AND FILLERS

- Sampling of aggregates — NP EN 932-1
- Gradation test (LNEC specification) — LNEC E 233
- Gradation test of aggregates (EN standard) — EN 933-1 + A1
- Gradation test of rockfill (EN standard) — EN 13383-2
- Dry bulk density “in situ” (using a nucleometer)
- Bulk density and void ratio — NP EN 1097-3
- Proctor compaction (LNEC spec.) — LNEC E 197
- Proctor compaction (EN standard) — EN 13286-2
- Density and water absorption of crushed stone and gravel — NP 581
- Density and water absorption (basket method) — NP EN 1097-6 + A1
- Density and water absorption (pycnometer method) — NP EN 1097-6 + A1
- Sample splitting — NP EN 932-2
- Abrasion resistance — Micro Deval test — NP EN 1097-1
- Water content (NP standard) — NP 84
- Length of ballast particles — NP EN 13450
- Density and water absorption of rockfill (EN) — EN 13383-2
- Fragmentability test — NF P 94-066
- Degradability test — NF P 94-067
- Los Angeles test (LNEC spec.) — LNEC E 237
- Sand equivalent (LNEC specification) — LNEC E 199

- Sand equivalent (EN standard) — NP EN 933-8
- Shape ($L/E > 3$) of rockfill (EN) — EN 13383-2
- Flattening index — NP EN 933-3
- Elongation and lamellation indices — BS 812
- Shape index — EN 933-4
- Attenberg limits — NP 143
- Bulk density and water absorption of sand — NP 954
- Resistance to fragmentation — Los Angeles test — EN 1097-2
- Compressive strength — NP EN 1926
- Water content (EN standard) — NP EN 1097-5
- Methylene blue value — NF P 18-592
- Methylene blue value — EN 933-9

TESTS ON BITUMENS

- Determination of softening point by the ‘Ring and Ball’ method — NP EN 1427
- Needle penetration test — NP EN 1426

TESTS ON FRESH AND HARDENED CONCRETE

- Sampling — NP EN 12350-1
- Slump test — NP EN 12350-2
- Execution and curing of test specimens for mechanical strength tests — NP EN 12390-2
- Density — NP EN 12350-6
- Compressive strength of test specimens — NP EN 12390-1 and NP EN 12390-3*

TESTS ON BITUMINOUS MIXTURES

- Aggregate/binder affinity — EN 12697-11
- Sampling of bituminous mixtures (EN standard) — EN 12697-27
- Theoretical maximum density (ASTM standard) — ASTM D 2041
- Theoretical maximum density (EN standard) — EN 12697-5
- Void characteristics (EN standard) — EN 12697-8
- Core sampling of bituminous mixtures
- Determination of density (ASTM standard) — ASTM D 2726
- Determination of density (EN standard) — NP EN 12697-6 + A1
- Determination of resistance to sliding — British pendulum method — EN 13036-4
- Determination of fatigue resistance (4PBT) — NO STANDARD
- Wet Cantabro (abrasion resistance) test — NLT 362
- Marshall compression test (ASTM standard) — ASTM D 1559
- Marshall compression test (EN standard) — NP EN 12697-34 + A1
- Production of bituminous mixtures in the laboratory (EN standard) — EN 12697-35
- Retained Strength Index (MIL-STD) — MIL-STD-620a
- Measurement of evenness with a 3 m straightedge — NP EN 13036-7
- Percentage of bitumen by centrifugation with recovery of fines (ASTM standard) — ASTM D 2172
- Percentage of bitumen by centrifugation with recovery of fines (EN standard) — NP EN 12697-1
- Percentage of bitumen by ignition (ASTM standard) — ASTM D 6307
- Percentage of bitumen by ignition (EN standard) — EN 12697-39

- Mass loss — EN 12697-17
- In situ permeability LCS — NLT 327
- Preparation of slabs in roller compactor — EN 12697-33
- Preparation of test specimens in impact compactor (EN standard) — EN 12697-30
- Depth of surface texture (sand patch) — NF P 98-216-1
- Resistance to permanent deformation (wheel tracking test) — EN 12697-22+A1
- Water sensitivity — ITSR — EN 12697-12

SONIC TESTS

* The Tecnovia Laboratory in Rio Maior is accredited by the Portuguese Accreditation Institute (IPAC) to carry out [compressive strength testing on concrete, in accordance with standard NP EN 12390-3](#).