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European foreword

This document (EN 13880-3:2024) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2025, and conflicting national standards shall be withdrawn at the latest by February 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13880-3:2003.

EN 13880-3:2024 includes the following significant technical changes with respect to EN 13880-3:2003:

— clarification of the test to improve the performance of the test method.

This document is one part of the EN 13880 series of standards, *Hot applied joint sealants*, which consists of the following parts:

— *Part 1: Test method for the determination of density at 25 °C.*

— *Part 2: Test method for the determination of cone penetration at 25 °C.*

— *Part 3: Test method for the determination of penetration and recovery (resilience).*

— *Part 4: Test method for the determination of heat resistance - Change in penetration value.*

— *Part 5: Test method for the determination of flow resistance.*

— *Part 6: Method for the preparation of samples for testing.*

— *Part 7: Function testing of joint sealants.*

— *Part 8: Test method for the determination of the change in weight of fuel resistance joint sealants after fuel immersion.*

— *Part 9: Test method for the determination of compatibility with asphalt pavements.*

— *Part 10: Test method for the determination of adhesion and cohesion following continuous extension and compression.*

— *Part 11: Test method for the preparation of asphalt test blocks used in the function test and for the determination of compatibility with asphalt pavements.*

— *Part 12: Test method for the manufacture of concrete test blocks for bond testing (recipe methods).*

— *Part 13: Test method for the determination of the discontinuous extension (adherence test).*

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies a test method as an indicator both for the penetration resistance (hardness) and elastic recovery after de-loading (resilience) of hot applied joint sealants according to EN 14188-1 at 25 °C using a standard penetrometer fitted with a ball penetration tool.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1426, *Bitumen and bituminous binders — Determination of needle penetration*

EN 13880-6, *Hot applied joint sealants — Part 6: Method for the preparation of samples for testing*

EN 58, *Bitumen and bituminous binders — Sampling bituminous binders*

EN 14188-1, *Joint fillers and sealants — Part 1: Specifications for hot applied sealants*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
resilience
R
product's elastomeric properties under standard test conditions, determined as relative value [%] (percentage of recovery) related to an initial penetration value P plus additional 10 mm penetration depth recorded under a controlled time-dependent loading and de-loading test regime

3.2
penetration
P
product's penetration resistance as a measure of its hardness under standard test conditions, measured as initial absolute ball penetration depth in [mm] under a controlled time-dependent load

3.3
final penetration
F
penetration depth at the end of the testing time (see 8.7)

4 Principle

A representative portion of the sealant (test sample according to EN 58) is poured into two metal containers (see 5.4) to provide two test specimens; these are cooled in air and then lidded prior to immersion respectively. directly water contact in a constant temperature water bath. After the period of conditioning, the specimens are taken from the water bath, the lids are removed and both test specimen shall be tested. The test shall be performed immediately.