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الإصدار الثالث

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(تَبَيَّنَ مُعَدَّل)

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المستخدم في الرصفات الأسفلتية

*Petroleum and petroleum products – Standard specification for penetration-
graded asphalt binder for use in pavement construction*

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المملكة الأردنية الهاشمية

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This Jordanian Standard cancels and replaces the same Jordanian Standard issued in 2019.

Foreword

Jordan Standards and Metrology Organization is the national standardization body in Jordan. The work of preparing Jordanian Standards is normally carried out by technical committees composed of the interested parties, which are involved in the scope of the standard. All the interested parties have the right to comment on the draft Jordanian Standard during the inquiry stage, taking into consideration the importance of harmonizing Jordanian Standards with the international, regional or national standards (as much as possible) for the purpose of eliminating technical barriers to trade and facilitating the international trade.

Jordanian Standards are drafted in accordance with the rules given in the Jordanian Directive 1-2:2005, part 2: Rules for the structure and drafting of Jordanian Standards related to standardization department*.

The permanent technical committee for Petroleum and petroleum products 6 has studied the Jordanian Standard 612:2019 related to **Petroleum and petroleum products — Asphalt — Standard specification for penetration graded asphalt binder for use in pavement construction**, and the prepared project 612:2026 related to **Petroleum and petroleum products — Standard specification for penetration-graded asphalt binder for use in pavement construction**, and has recommended to approve the amended project as a Jordanian Standard 612:2026, according to article (12) of Standards and Metrology Law No. (22) For the year 2000 and its amendments.

This Jordanian Standard 612:2026 is a modified adoption of the ASTM D946/D946M:20 **Standard specification for penetration-graded asphalt binder for use in pavement construction**, using reprint method, single vertical bars (|) in the margins are used to indicate the applicable technical modifications which have been changed and shown in annex NA, and single vertical dotted bars (|) in the margins are used to indicate the applicable editorial modifications which have been changed and listed below.

For the purposes of this Jordanian Standard, the following editorial changes have been made applying the Jordanian Directive 1-2:2005, part 2: rules for the structure and drafting of Jordanian Standards.

- Substitution of “this specification”, by “this Jordanian Standard”.
- Substitution of “D 6373”, by “JS 2426” wherever it is mentioned.
- Deletion of clause 1-3 and clause 1-4 because they relate to ASTM requirements.
- Inclusion the number of ASTM test method in table 1.
- Change the name of clause 5 from “Methods of Sampling and Testing” to “Method of Sampling” due to inclusion the number of ASTM test method in table 1.
- Deletion of footnote ^{b)} in table 1, due to inclusion the number of ASTM test method in table 1 and renumbering the last footnotes.
- Deletion of United States customary units.
- Deletion the number of subclause 3-1.
- Deletion clause 6.

* under amendment.

Petroleum and petroleum products – Standard specification for penetration-graded asphalt binder for use in pavement construction

1- Scope

1-1 This Jordanian Standard covers asphalt binder for use in the construction of pavements.

Note: For asphalt binders graded by viscosity at 60 °C, see Specification ASTM D3381/D3381M. For performance-graded asphalt binder, see Specification JS 2426.

1-2 This Jordanian covers the following penetration grades:

- 40–50,
- 60–70,
- 85–100,
- 120–150,
- 200–300

2- Normative references

The following referenced documents are indispensable for the application 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. Indexes for published standard can be found in JSMO's library.

- ASTM D5/D5M, Test method for penetration of bituminous materials.
- ASTM D36/D36M, Test method for softening point of bitumen (ring-and-ball apparatus).
- ASTM D92, Test method for flash and fire points by cleveland open cup tester.
- ASTM D113, Test method for ductility of asphalt materials.
- ASTM D140/D140M, Practice for sampling asphalt materials.
- ASTM D1754/D1754M, Test method for effects of heat and air on asphaltic materials (thin-film oven test).
- ASTM D2042, Test method for solubility of asphalt materials in trichloroethylene.
- ASTM D2872, Test method for effect of heat and air on a moving film of asphalt (rolling thin-film oven test).
- ASTM D3381/D3381M, Specification for viscosity-graded asphalt binder for use in pavement construction.
- ASTM D7553, Test method for solubility of asphalt materials in N-propyl bromide.
- JS 2426, Petroleum and petroleum products – Standard specification for performance-graded asphalt binder.

3- Manufacture

Asphalt binder shall be prepared by the refining of crude petroleum by suitable methods.

4- Properties

4-1 The asphalt binder shall be homogeneous and shall not foam when heated to 175 °C.

4-2 The physical specifications of asphalt binder shall conform to the requirements given in table 1.

Table 1 – Requirements for penetration-graded asphalt binder for use in pavement construction

	Penetration grade										ASTM Test method
	40-50		60-70		85-100		120-150		200-300		
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
Penetration at 25 °C, 100 g, 5 s	40	50	60	70	85	100	120	150	200	300	D5/D5M
Flash point, °C (Cleveland open cup)	230	-	230	-	230	-	220	-	175	-	D92
Ductility at 25 °C, 5 cm/min, cm	100	-	100	-	100	-	100	-	100 ^{a)}	-	D113
Solubility, %	99.0	-	99.0	-	99.0	-	99.0	-	99.0	-	D2042 or D7553
Retained penetration after thin-film oven test, %	55+	-	52+	-	47+	-	42+	-	37+	-	D5/D5M
Ductility at 25 °C, 5 cm/min, cm after thin-film oven test ^{b)}	-	-	50	-	75	-	100	-	100 ^{a)}	-	D113
Softening Point, °C ^{c)}	49	-	46	-	42	-	38	-	32	-	D36/D36M

^{a)} If ductility at 25 °C is less than 100 cm, material will be accepted if ductility at 15 °C is 100 cm minimum at the pull rate of 5 cm/min.

^{b)} The reference test method is D1754/D1754M. Optionally, Test Method D2872 may be used as agreed between the purchaser and the seller. The two test methods give different degrees of heat conditioning (D2872 is more severe), so the two methods may give different results for retained penetration and ductility.

^{c)} Non-mandatory requirement, tested upon request.

5- Method of Sampling

The material shall be sampled according to ASTM D140/D140M.

6-Labeling

The following information shall be written clearly, visible and difficult to remove in Arabic and/or English:

- a) The name of the product.
- b) The name and address of the manufacturer and importer. The trademark may be mentioned (if any).
- c) Penetration-grade.
- d) Warning statements and/or warning symbols for the transfer, handling and/or use.
- e) Storage conditions.
- f) Weight, volume, or nominal capacity using international standard units (SI).
- g) Country of origin.

Annex NA
(Normative)
National technical modifications

Table NA – 1 illustrates the technical national deviations from ASTM D946/D946M:20 adopted as a Jordanian Standard, where single vertical bars (|) in the margins are used to indicate these technical national modifications have been changed.

Table NA – 1 – List of national technical modifications

Clause	Modification	Explanation
4	Deletion of table 2	Technical Committee decision, because it contains the same physical properties and values as in Table 1, with the exception of Softening Point test which is non-mandatory requirement, tested upon request.
4	Add Softening point to table 1	Technical Committee decision, because of deletion of table 2.
4	Add footnote ^{c)} to table 1	Technical Committee decision, to determine when Softening Point test required.
4	Amendment the text of the clause 4-2	Technical Committee decision, due to the deletion of table 2.
6	Add clause for Labelling	Applying the Jordanian Technical Regulation 119:2022 "Labeling – Labeling of industrial products".