

Viscosity-Graded Asphalt Cement

AC-2.5 · AC-5 · AC-10 · AC-20 · AC-30 · AC-40

In accordance with AASHTO M 226, Table 2 / ASTM D3381, Table 2 — Graded by viscosity at 60 °C on the original binder

1. Description

Viscosity-graded (AC) asphalt cement is a hydrocarbon binder obtained as a residue from the distillation of crude petroleum, whose designation is established from the absolute viscosity measured at 60 °C on the original binder. Unlike penetration grading, this system controls binder consistency at pavement service temperature, which reduces the variability of field performance. The designation number corresponds to the nominal viscosity in hundreds of poises: an AC-20 has a viscosity at 60 °C of 2,000 ± 400 poises.

2. Applications

- Hot mix asphalt for medium- and high-traffic pavements (AC-20, AC-30, AC-40).
- Mixes for cold climates and levelling courses (AC-2.5, AC-5, AC-10).
- Hot surface treatments, sprays and seals.
- Feedstock for asphalt emulsions and cutback asphalts.

3. Specifications

Property	Method	AC-2.5	AC-5	AC-10	AC-20	AC-30	AC-40
Absolute viscosity at 60 °C (poises)	T 202	250 ± 50	500 ± 100	1,000 ± 200	2,000 ± 400	3,000 ± 600	4,000 ± 800
Kinematic viscosity at 135 °C (cSt), min.	T 201	125	175	250	300	350	400
Penetration at 25 °C, 100 g, 5 s (0.1 mm), min.	T 49	220	140	80	60	50	40
Flash point, Cleveland open cup (°C), min.	T 48	163	177	219	232	232	232
Solubility in trichloroethylene (%), min.	T 44	99.0	99.0	99.0	99.0	99.0	99.0
Tests on residue from the thin-film oven test (TFOT) — AASHTO T 179							
Viscosity at 60 °C of residue (poises), max.	T 202	1,000	2,000	4,000	8,000	12,000	16,000
Ductility of residue at 25 °C (cm), min.	T 51	100	100	75	50	40	25

Values from AASHTO M 226, Table 2. Important note: ASTM D3381, Table 2, sets higher maximum limits for TFOT residue viscosity than AASHTO (1,250 / 2,500 / 5,000 / 10,000 / 15,000 / 20,000 poises respectively). PRO-ROAD® supplies to the more restrictive criterion (AASHTO) unless the project specification expressly calls for ASTM D3381. AASHTO M 226 footnote: if ductility is less than 100 cm, the material is accepted if ductility at 15.6 °C is 100 cm minimum.

4. Storage and transport

Bulk storage shall be in clean tanks to avoid product contamination. The tank must have a heating system distributed along its length and an agitation and/or recirculation system that guarantees thermal homogeneity of the product. Transport from the production plant is carried out hot and in bulk, in tank trucks with adequate heating systems and thermometers located in visible places.

At 130 °C the product behaves as a stable liquid and its road transport presents no risk in transit. It is stable at plant or site working temperature (130 to 170 °C); however, above 230 °C the vapours emitted may ignite in the presence of a flame. Handling the product above 195 °C is not recommended, both because of the risk of toxic vapour emission and because of the loss of its physico-chemical properties.

5. Packaging and logistics

In bulk in heated tank trucks from 9 to 35 t · steel drums of 180–200 kg · Bitubags (thermally lined big bags) of 1,000–1,300 kg · 25 kg block packaging with anti-adhesive film for dry-container export. HS code: 2713.20 (petroleum bitumen).

6. Quality control

Every batch shipped is accompanied by a laboratory-issued quality certificate reporting the tests required by the applicable standard, with traceable batch identification. Additional testing or independent third-party inspection (SGS, Bureau Veritas, Intertek, Cotecna) at origin or destination can be arranged at the customer's request.

Consult the product Safety Data Sheet (SDS) before handling.

The information in this data sheet is offered in good faith, based on PRO-ROAD®'s technical knowledge of its products and on the requirements of the standards cited. It does not constitute a sales specification or a warranty of results. The customer is responsible for verifying the suitability of the product for its intended use, for its correct handling and for its application in accordance with project specifications. Values guaranteed per batch are certified in the corresponding quality certificate.

