



भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
(सड़क परिवहन और राजमार्ग मंत्रालय)  
**National Highways Authority of India**

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(Ministry of Road Transport and Highways)

जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली - 110 075

G-5 & 6, Sector-10, Dwarka, New Delhi-110075

No. 11041/218/2007-Admn.

Dated: 04.08.2010

**POLICY MATTERS - TECHNICAL [ 64 / 2010]**

(Decision taken on PQ division's file no.11018/02/2010/PQ)

**Sub.: Use of Viscosity grade bitumen as per IS 73:2006 in Highway Projects and testing of modified bitumen.**

Bureau of Indian Standards has changed the grading of bitumen from penetration grade to viscosity grade with publication of IS 73:2006 (Paving Bitumen - Specification - Third Revision). Considering the revision in IS:73, Ministry of Shipping, Road Transport & Highways vide letter No.RW/NH-33041/3/2001-S&R(R)-Vol.III dated 4.8.2008 (copy enclosed) has issued guidelines regarding selection of an appropriate grade of bitumen based upon the viscosity grade.

2. NHAI vide policy circular 22/2008 dated 12.11.2008 (copy enclosed) issued instructions to use viscosity grade bitumen in all future projects and explore the possibility of use of equivalent viscosity grade bitumen for ongoing projects depending on the availability of the bitumen. Now, the oil companies have started producing viscosity grade bitumen against penetration bitumen. In view of the easy availability of viscosity grade bitumen, it has been decided that only viscosity grade bitumen should be allowed on NHAI projects as per the latest IS 73:2006 guidelines.

3. As per the data collected, it is noted that the testing for modified bitumen such as penetration test, softening point test, separation test, elastic recovery test etc. are not being conducted at site laboratories due to non-availability of equipments. It is also observed during inspections by PQ division that equipment for testing of viscosity of VG grade bitumen is not mostly available in the site laboratories. It should be noted that the site laboratory should have facility for testing of viscosity of VG grade bitumen and required equipments should also be available for conducting following tests on modified bitumen.

- (i) Penetration test
- (ii) Softening point test
- (iii) Separation test
- (iv) Elastic Recovery test

4. This issues with the approval of Chairman.

*(Handwritten signature)*  
4/8/10

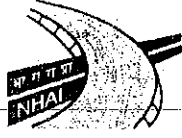
(A.K. Singh)

General Manager (PQ)

To:

All NHAI/ALL ROs/ALL PIUs/ALL CMUs

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भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
(पोत परिवहन, सड़क परिवहन और राजमार्ग मंत्रालय)  
**National Highways Authority of India**

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(Ministry of Shipping, Road Transport and Highways)

जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110 075

G-5 & 6, Sector-10, Dwarka, New Delhi-110075

No. 11041/218/2007-Admn

12.11.2008

**POLICY MATTERS – TECHNICAL [22/2008]**  
(Decision taken on PQ division's file no. 11018/10/2006/PQ)

**Sub.: Use of Viscosity grade bitumen as per IS 73:2006 in Highway Projects.**


Bureau of Indian Standards has changed the grading of bitumen from penetration grade to viscosity grade with publication of IS 73:2006 (Paving Bitumen – Specification – Third Revision). The viscosity grade bitumen has been classified into following 4 categories:

- (i) VG-10 with minimum absolute viscosity of 800 Poises at 60°C
- (ii) VG-20 with minimum absolute viscosity of 1600 Poises at 60°C
- (iii) VG-30 with minimum absolute viscosity of 2400 Poises at 60°C
- (iv) VG-40 with minimum absolute viscosity of 3200 Poises at 60°C

Considering the revision in IS:73, Ministry of Shipping, Road Transport & Highways vide letter No. RW/NH-33041/3/2001-S&R(R)-Vol.III dated 4.8.2008 (copy enclosed) has issued guidelines regarding selection of an appropriate grade of bitumen based upon the viscosity grade. These guidelines are as under:

- (i) VG-10 grade may be used in place of 80-100 penetration grade bitumen.
- (ii) VG-20 grade may be considered for special cases only.
- (iii) VG-30 grade may be used in place of 60-70 penetration grade bitumen.
- (iv) VG-40 grade may be used in place of 30-40/40-50 penetration grade bitumen.

In view of above all the future projects may provide for viscosity grade bitumen subject to availability. For ongoing projects, possibility of use of equivalent viscosity grade bitumen may be explored depending upon the availability.

  
(V.K. Sharma)  
General Manager (Admn.)

To:

1. All Members
2. All CGMs/CVO
3. All GMs/DGMs/Managers
4. All PDs of PIUs/CMUs/SPVs

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1. PS to Chairman
2. Librarian/Hindi Officer

Government of India  
Ministry of Shipping, Road Transport & Highways  
Department of Road Transport & Highways

Transport Bhawan,  
1, Parliament Street,  
New Delhi - 110 001

No.RW/NH-33041/3/2001-S&R(R)-Vol.III

Dated: 04.08.2008

To

1. Secretary / Chief Engineer / Engineer-in-Chief of State PWDs dealing with National Highways.
2. The Chairman, National Highways Authority of India, G-5&6, Sector - 10, Dwarka, New Delhi - 110 075.
3. Director General, Border Roads, Seema Sadak Bhawan, New Delhi.
4. The Secretary General, Indian Roads Congress, Kama Koti Marg, Sector - 6, R.K. Puram, New Delhi - 110 022.
5. The Director, NITHE, A-5, Sector - 62, NOIDA - 201301.
6. The Director, CRRI, Mathura Road, New Delhi - 110 020.

Subject: Paving Bitumen - Specification (Third Revision) published by Bureau of Indian Standards in July 2006 reg. Use of viscosity grade bitumen in road construction.

Sir,

Bureau of Indian Standards has revised the specifications of paving bitumen with publication of IS 73: 2006 (Paving Bitumen - Specification (Third Revision) in July 2006. This Specification, inter-alia, specifies the Grades of Paving Bitumen, based on viscosity as against the previous grading based on penetration in IS 73:1992.

2. As per IS: 73-2006, paving grade bitumen have been classified into 4 types, viz. VG-10, VG-20, VG-30 & VG-40. The minimum absolute viscosity (in Poises) of these 4 grades at 60° C are 800, 1600, 2400 & 3200 respectively when tested in accordance with IS: 1206 (Part-2). In other words, index of VG multiplied by 80 gives the minimum absolute viscosity (in Poises) of the particular grade of bitumen at 60° C. From the comparison

of the requirements for paving bitumen as per IS: 73-2006 with that of IS: 73-1992 (as amended in 2002), VG-30 may replace 60 -- 70 penetration grade bitumen; similarly, VG-10 & VG-40 may replace 80 -- 100 and 30 -- 40/40-50 penetration grade bitumen respectively. As regards VG-20, this may be considered for special cases only.

3. The Flexible Pavements Committee of the IRC has since given their recommendation for issuing the corrigendum in this regard to Section 500 of the Ministry's Specifications for Road & Bridge Works -- 2001 (Fourth Revision). Considering the above, it has been decided that all future estimates for road projects in central sector shall provide for viscosity grade bitumen as per IS: 73-2006. However, during the transition period, for the ongoing projects / projects sanctioned with a particular penetration / viscosity grade of bitumen, the equivalent viscosity / penetration grade of bitumen as per para 2 above may be allowed depending on availability.

Yours faithfully;  
Richpal Singh  
(Richpal Singh)

Assistant Executive Engineer (Roads) Standards & Research  
For Director General (Road Development) & SS

o/c

Copy to ROs / ELOs

Copy to all Technical Officers in Headquarters.