प्रस्तावित मसौदा

प्रलेख प्रेषण संज्ञापन	
संदर्भ	**दिनांक**
पी सी डी 06(14176) पी	**12-12-2017**

तकनीक समी ति पी सी डी 07

प्रेषिती

पैट्रोलियम तकनीक समीति, पी सी डी 06 के समस्त सदस्य।

महोदय/महोदया,

आपके अवलोकन हेतु निम्नलिखित मसौदा संलग्न है:

मसोदा संख्या	**वि षय**
पीसीडी 06(14176)पी	TRACKLESS EMULSION – SPECIFICATION

सम्मति भेजने की अंतिम तिथि : 26-06-2019

सम्मति कृपया संलग्न प्रारूप में अधो-हस्ताक्षरी को भेजें ।

धन्यवाद,

भवदीय

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प्रतिः उपरिलिखित

PRELIMINARY DRAFT

Document Dispatch Advice

Ref.	Date
PCD 06 (14176)P	**04 June 2019**

Technical Committee: Solid Mineral Fuels Sectional Committee, PCD 7

Addressed to:

All Members of Bitumen, Tar and Related Products Sectional Committee (PCD 06)

Dear Sir(s)/Madam(s),

Please find enclosed the following document:

Doc No.	*Title*
PCD 06 (14176) P	TRACKLESS EMULSION – SPECIFICATION

Last date for comments: **26-06-2019**

Comments if any; may please be made in the format as given overleaf and mailed to the undersigned at the above address.

The document is also hosted on BIS website www.bis.org.in.

Thanking you,

Nisha Bura
Sc. 'C' (PCD)
Office Telephone No.: 23608323
E-mail: pcd6@bis.org.in

Encl.: As above.

FORMAT FOR SENDING COMMENTS ON BIS DOCUMENTS

(Please use A4 size sheet of paper only and type within fields indicated. Comments on each clauses/sub-clauses/table/fig. etc be started on a fresh box. Information in Column 4 should include reasons for the comments and suggestions for modified wording of the clauses when the existing text is found not acceptable. Adherence to this format, in word document only, facilitates Secretariat's work)

Doc. No.: PCD 06 (14176) C TITLE: TRACKLESS EMULSION – SPECIFICATION

LAST DATE OF COMMENTS: **26 June 2019**

NAME OF THE COMMENTATOR/ORGANIZATION: _____

Sl. No.	Clause/Subclause/ para/table/fig. No. commented	Commentator/ Organization/ Abbreviation	Type of Comments (General/Editorial/ Technical)	Justification	Proposed change

For BIS Use Only **Doc: PCD 06(14176) P**
June 2019

BUREAU OF INDIAN STANDARDS

PROPOSED
Draft Indian Standard

TRACKLESS EMULSION – SPECIFICATION
(Working Draft prepared by Sh. T. K. Subhaash, Hindustan Colas Ltd., Mumbai)

Not to be reproduced without the permission of BIS or used as STANDARD	Last date for receipt of comments: **26 June 2019**

ICS 93.080.20

FOREWORD
(Formal clauses shall be added later)

Trackless emulsions may be used as a binder for tack coat, penetration macadam, surface dressing (chip seal), fog seal, cold recycling, and preparation of cold pre-mix for construction and maintenance of roads as well as a binder for micro-surfacing and slurry seal applications.

One of the major constraints for bitumen emulsions when used for tack coat is that bitumen residue sticks to the construction truck tyres which leads to inefficient tack coat. Therefore, to address such issue, trackless emulsion may be used as a binder for tack coat. However, its application is not limited to the tack coat and fog sealing. These may also be used for other applications of construction and maintenance like cold mixes, storable cold mixes for patch repairs etc. These applications are not covered in this standard. In the preparation of this standard, considerable assistance has been derived from the Japan Emulsified Asphalt Association standard on Trackless Asphalt Emulsion (PKM – T).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values *(revised)’.* The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1 SCOPE

This draft Indian standard specifies the requirements and methods of sampling and tests of trackless emulsions for various roads construction and maintenance activities like tack coat, cold mixes etc.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to an agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

IS No.	*Title*
73 : 2013	Paving bitumen ─ Specification (*Fourth revision*)
334 : 2002	Glossary of terms relating to bitumen and tar (*Third revision*)
1201 : 1978	Methods of testing tar and bituminous materials: Sampling (*First revision*)
1203 : 1978	Methods of testing tar and bituminous materials: Determination of penetration (*First revision*)
1205 : 1978	Methods for testing tar and bituminous material: Determination of softening point (*First revision*)
1216 : 1978	Methods of testing tar and bituminous materials: Determination of solubility in trichloroethylene (*First revision*)
3117 : 2004	Specification for bitumen emulsion for roads and allied applications (anionic type) (*First revision*)
8887 : 2004	Specifications for cationic bitumen emulsion
15462 : 2019	Polymer modified bitumen (PMB) — Specification *(First Revision)*
17079 : 2019	Rubber modified bitumen (RMB) — Specification

3 TERMINOLOGY

For the purpose of this standard, the definition given in IS 334 shall apply, in addition to the following:

3.1 Trackless Emulsion

A cationic emulsion in which the cation of the emulsifier is at the interface of the bitumen particle; an emulsion in which the particles are positively charged and the aqueous phase is acidic. Breaking of these emulsions occurs by neutralization of charge.

4 REQUIREMENTS

4.1 Material — Any suitable grade of bitumen as given in IS 73 or polymer modified bitumen as given in IS 15462 or rubber modified bitumen as given in IS 17079 with or without addition of suitable flux, shall be used. For modification in bituminous phase, modifier shall be compatible with bitumen.

4.2 Any emulsifying agent or any other ingredient, which either quality-wise or quantity-wise, is likely to affect or harden the residue bitumen beyond the limits specified of Table 1, Sl. No. (iv) shall not be used.

4.3 Trackless emulsion shall be homogeneous without any separation of components, undispersed bitumen within six months of manufacturing after thorough mixing.

4.4 Trackless emulsions shall also comply with the requirements specified in Table **1**.

TABLE 1 REQUIREMENTS OF TRACKLESS EMULSION
(*Clause* **4.4**)

Sl No.	Characteristics	Requirements	Methods of Test Ref to IS
(1)	**(2)**	**(3)**	**(4)**
i)	Residue on 600 µm Sieve[1], percent by mass, *Max*	0.3	Annex B of IS 8887
ii)	Residue by evaporation, percent, *Min*	50	Annex J of IS 8887
iii)	Saybolt Furol Viscosity (SFS) at 25°C, s	10 - 50	Annex A of IS 3117
iv)	Storage Stability after 24 h, percent, *Max*	1	Annex D of IS 8887
v)	Coagulation of emulsion at low temperature[2]	Nil	Annex C of IS 8887
vi)	Particle charge	Positive	Annex E of IS 8887
vii)	Miscibility with water	No Coagulation	Annex H of IS 8887
viii)	Tests on Residue by evaporation		Annex J of IS 8887
	a) Penetration at 25°C, 100 g, 5 s	5 - 20	1203
	b) Softening point, °C, *Min*	55	1205
	c) Solubility, percent, *Min*	97.5	1216

[1] The sieve result is tested for reporting purpose only or as agreed between buyer and supplier.
[2] This requirement shall be applicable only under conditions where the ambient temperature is below 15°C.

5 SAMPLING

5.1 For the purpose of testing, the size of the sample and the sampling procedure from drums, barrels or bulk supply shall be as described in IS 1201 subject to the following:

a) From Drums or Barrels — The content of drum or barrel from which the sample is to be taken shall be thoroughly mixed by rolling the container to and for a period of 2 to 3 min, for a distance of 50 m, successively in opposite direction, allowing at least five revolutions of the container in each direction and then up-ending the container through two revolutions first in one direction and then in the opposite direction.

b) From Bulk — Where practicable, bulk delivery of bitumen emulsion shall be agitated by the forced circulation or air agitation, before sampling.

c) The sample of bitumen emulsion shall be drawn within 24 h after delivery and tested within 7 days from the date of the drawing unless otherwise specified.

5.2 Preparation of Samples

Before carrying out any of the tests, the sample shall be mixed by gentle shaking to ensure uniformity.

5.3 If the single sample from a single run fails to fulfill the test requirements specified in **4**, the sample shall be drawn on the basis of **5.1** for testing in the same manner. If these samples conform to the requirement of **4,** the lot shall be accepted otherwise the lot shall be rejected.

6 MARKING

6.1 Each container shall be legibly and indelibly marked with the following:

a) Indication of the source of manufacture;
b) Month and year of manufacture;
c) Batch number; and
d) Date of expiry.

6.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the BIS Act, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the standard mark.