

(a) Type A Seal Coat : Liquid seal coat comprising of an application of a layer of bituminous binder followed by a cover of stone chips. The stone chips shall be 6.7 mm size defined as 100 percent passing through 11.2 mm sieve and retained on 2.36 mm sieve. The quantity used for spreading shall be 0.09 cum per 10 sqm area.

II) SEAL COAT

Aggregate		Binder (Quantities in terms of straight run bitumen)		Total	
(a) Nominal Stone Size 13.2 mm (passing 22.4 mm sieve and retained on 11.2 mm sieve)	0.18 cum	(a) For 0.18 cum of 13.2 mm nominal size stone at 52 kg bitumen per cum.	9.5 kg	(b) For 0.09 cum of 11.2 mm nominal size stone at 56 kg bitumen per cum.	5.1 kg
(b) Nominal Stone Size 11.2 mm (passing 13.2 mm sieve and retained on 5.6 mm sieve)	0.09 cum				0.27 cum
Total		Total		Total	
0.18 cum		14.6 kg		14.6 kg	

Quantities of Materials Required for 10 sqm of Road Surface for 20 mm Thick Premix Carpet Using Suitable Grade of Bitumen

I) OPEN GRADED PREMIX CARPET

अतः एतद् द्वारा निर्दिष्ट किया जाता है कि Premix Carpet के समस्त कार्यों हेतु Mix Hot Mix Plant के माध्यम से ही तैयार कराया जाए तथा Paver के द्वारा ही बिछाया जाए। Ministry of Rural Development (MORD) की विधिबिधियों के अन्तर्गत Open Graded Premix Carpet, Seal Coat, Close Graded Premix Carpet (Mix Seal Surfacing) एवं Surface Dressing की विधिबिधियों के संक्षेप में निम्न विधिबिधियों का पालन सुनिश्चित किया जाए :

अथोद्देश्यकारी के विभिन्न कार्यस्थलों के भ्रमण के दौरान यह दृष्टिगोचर हुआ है कि Premix Carpet का कार्य विधिरित मानकों एवं विधिबिधियों के अन्तर्गत नहीं कराया जा रहा है। विशेषकर इस कार्य में प्रयुक्त होने वाले Aggregate की Grading विधिबिधियों के अन्तर्गत नहीं है। इस कारण ऐसे मार्गों पर Premix Carpet की सतह अपनी विधिरित समय सीमा पूर्ण करने से पूर्व ही क्षतिग्रस्त हो जाती है।

कार्यालय द्वारा

पत्रांक:- 804/1031/2014 दिनांक 2/9/2014
 Website-<http://pwd.uk.gov.in>
 E-Mail-cepdua@rediffmail.com

उत्तराखण्ड सरकार

कार्यालय प्रमुख अभियन्ता एवं विभागाध्यक्ष, लोनिठोला



Approximate Number of Commercial Vehicles with a Laden Weight Greater than 3.0 tonnes Currently Carried per day in the lane Under Consideration

Annual Rainfall (cm)	<1000	Less than 20	Type B Seal Coat	20-200	Type B Seal Coat	More than 200	Type C Seal Coat
	1000 - 1500	Less than 20	Type B Seal Coat	20-200	Type B Seal Coat	More than 200	Type C Seal Coat
	>1500	Less than 20	Type A Seal Coat	20-200	Type A Seal Coat	More than 200	Type A Seal Coat

Guidelines On the type of Seal Coat

Type of Seal Coat	Per 10 sqm Area	
	Bitumen (Kg)	Bitumen Emulsion(Kg)
Type A : Liquid Seal Coat	9.8	12 to 14
Type B : Premix Seal Coat	6.8	10 to 12
Type C : Premixed Seal Coat using stone chips of 6.7 mm size	4.5	9 to 11

Required Quantities of Binder for Seal Coat

(c) **Type C Seal Coat** : Premixed seal coat comprising of an application of 6.7 mm size stone chips premixed with bituminous binder. The stone chips shall be 6.7 mm size defined as 100 percent passing through 9.5 mm sieve and retained on 2.36 mm sieve. The quantity for spreading shall be 0.09 cum per 10 sqm area.

(b) **Type B Seal Coat** : Premixed seal coat comprising of a thin application of fine aggregate premixed with bitumen binder. The aggregate shall pass 2.36 mm sieve and be retained on 180 micron sieve. The quantity used for premixing shall be 0.06 cum per 10 sqm area.

CLOSE GRADED PREMIX CARPET (MFX SEAL SURFACING)

III)

Aggregate Gradation and Quantity of Binder

IS Sieve Designation (mm)	Cumulative percent by weight of total aggregate passing	
	Type A (For Areas having Rainfall Less than 1500 mm)	Type B (For Areas having Rainfall More than 1500 mm)
13.2 mm	-	100
11.2 mm	100	88 - 100
5.6 mm	52 - 88	31 - 52
2.8 mm	14 - 38	5 - 25
0.090 mm	0 - 5	0 - 5
Total quantity of aggregate per 10 sqm area	0.27 cum	0.27 cum
Quantity of binder used for premixing in terms of straight run bitumen (per 10 sqm area)	22 kg	19 Kg

SURFACE DRESSING IV)

Grading Requirements For Aggregates For Surface Dressing

IS Sieve Designation mm	Cumulative per cent by weight of total aggregate passing for the following nominal size (mm)			
	19	13	10	6
26.5	100	-	-	-
19.0	85-100	100	-	-
13	0-40	85-100	100	-
9.5	0-7	0-40	85-100	100
6.3	-	0-7	0-35	85-100
4.75	-	-	0-10	-
3.35	-	-	-	0-35
2.36	0-2	0-2	0-2	0-10
0.60	-	-	-	0-2
0.075	0-1.5	0-1.5	0-1.5	0-1.5
Minimum 65% by weight of aggregate	Passing 19 mm, retained on 13.2 mm	Passing 13.2 mm, retained on 9.5 mm	Passing 9.5 mm, retained on 6.3 mm	Passing 6.3 mm, retained on 3.35 mm

Very Hard	Surfaces such as concrete or very lean bituminous structures with dry stony surfaces into which negligible penetration of chippings will occur under the heaviest traffic.
Category of Surface	Definition

The assessment of hardness of the existing road surface shall be made on the basis of judgement with the help of the definitions given below:

Note : The size of stone chippings is related to the midpoint of each lane traffic category. Light traffic conditions may make the next smaller size of stone more appropriate.

Very Soft	19	13	10
Soft	13	10	6
Normal	10	6	6
Hard	10	6	6
Very Hard	6	6	6
	200-1000	20-200	Less than 20
Type of Surface	Approximate Number of Commercial Vehicles with a Laden weight Greater than 3.0 tonnes Currently Carried per day in the Lane Under Consideration		

Recommended Nominal Sizes of Stone Chippings (MM)

Precoated Chips : As an alternative to the use of an adhesion agent the chips may be precoated before they are spread except when the sprayed binder firm is a bitumen emulsion. Precoating the chips may be carried out by mixing aggregates with 0.75 to 1.0 percent of bitumen by weight of chips in a suitable mixer.

Note : In the case of two coat surface dressing using emulsion, emulsion quantity for each coat may be added and 40 to 50 percent is applied in the first coat and remaining in second coat. Bitumen for coated aggregates excludes quantity of bitumen required for coating.

Nominal Aggregate Size (mm)	Bitumen	Emulsion	Bitumen	6
	Uncoated Aggregates		Emulsion	10
	Coated Aggregates	Bitumen	Emulsion	13
Aggregates Cum/ m ²	Binder (Kg/m ²)		Emulsion	19
	Coated Aggregates	Bitumen	Emulsion	6

Notional Rates Of Application For Binder And Aggregates



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- पर upload कर दें।
9. Head IT(Operations) को इस आशय से कि उपरोक्त कार्यालय को एक निर्माण विभाग की website पर upload कर दें।
 8. कनिष्ठ अभियन्ता (प्रिओ), कार्यालय विभाग/एड्युके, लोक निर्माण विभाग, देहरादून।
 7. वरिष्ठ स्टाफ ऑफिसर I, II / समस्त अधिशासी अभियन्ता कार्यालय प्रमुख अभियन्ता लॉनिओविओ
 6. अधिशासी अभियन्ता टीओसीओ विल विभाग, उत्तराखण्ड शासन।
 5. अधिशासी अभियन्ताओं को उपलब्ध कराना सुनिश्चित करें।
 4. समस्त अधिशासी अभियन्ता, स्थिति लोक निर्माण विभाग उत्तराखण्ड। अधिशासी अभियन्ता अपने स्तर से
 3. क्षेत्रीय प्रमुख अभियन्ता लॉनिओविओ, पीडी / देहरादून / अन्नाडा / हलद्वानी।
 2. तकनीकी सलाहकार, प्रमुख सचिव, लोक निर्माण विभाग उत्तराखण्ड शासन।
 1. प्रमुख सचिव, लोक निर्माण विभाग उत्तराखण्ड शासन।

प्रतिनिधि निम्नलिखित को संपूर्ण एवं आवश्यक कार्यवाही हेतु प्रेषित :

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शुद्ध संपूर्ण PC तथा Surface Dressing के कार्य हेतु उपरोक्त विधि/विधियों का शत प्रतिशत अनुपालन सुनिश्चित किया जाये।

In selecting the nominal size of chippings for two coat surface dressings, the size of chippings for the first layer shall be selected on the basis of the hardness of the existing surface and the traffic category as indicated above. The nominal size of chipping selected for the second layer shall then be about half the nominal size of that of the first layer to promote good interlock between the layers.

Hard	Surfaces into which chippings will penetrate only slightly under heavy traffic.
Normal	Surfaces into which chippings will penetrate moderately under medium and heavy traffic.
Soft	Surfaces into which chippings will penetrate considerably under medium and heavy traffic.
Very Soft	Surfaces usually rich in binder into which even large aggregates will be submerged under heavy traffic.