

रूपा मिश्रा

संयुक्त सचिव एवं राष्ट्रीय मिशन निदेशक

ROOPA MISHRA

Joint Secretary & National Mission Director  
Swachh Bharat Mission - Urban



सत्यमेव जयते



एक कदम स्वच्छता की ओर

भारत सरकार  
आवासन और शहरी कार्य मंत्रालय

GOVERNMENT OF INDIA  
MINISTRY OF HOUSING AND URBAN AFFAIRS

D.O.No.2/1/2024-SBM-IV

8<sup>th</sup> July, 2024

Dear Madam/Sir,

### Use of Waste Plastic in Bituminous Road Construction

As you would appreciate, managing plastic waste is a challenge in cities. States and ULBs have made much progress in managing plastic waste through recovery for recycling through organised sorting facilities of MRFs. Yet, a substantial quantity of plastic waste which is unfit for recycling is either dumped or leaks into environment.

2. To address this problem, MoRTH has issued guidelines for adding a portion of suitable plastic waste to Bituminous Roads as a part of plastic waste management. The Indian Road Congress (IRC) has prepared guidelines for such utilisation as per IRC:SP: 98-2020 up to 8% by weight of Bitumen, which also improves the longevity and pavement performance of Bituminous Roads. (<https://sbmurban.org/storage/app/media/Ticker/Guidelines%20waste%20plastic%20in%20hot%20bituminous%20mixes.pdf>)

3. On this issue, the Secretaries of MoRD, MoHUA, MoRTH and DDWS have jointly issued an advisory on the use of waste plastic in Bituminous Road construction vide D.O. No.S-16011/2/2022-SBM-DDWS dated 28th June, 2024. (Copy attached)

4. I request you to proactively take steps for the implementation of IRC guidelines for utilizing plastic waste in Bituminous Roads wherever they may be constructed such as all departmental roads including internal roads in housing colonies, treatment plants for water supply, sewerage and solid waste, office complexes etc. to give a fillip to proper utilisation of non-recyclable plastic waste with suitable changes in bid documents.

5. I also request you to take up the issue with major road construction departments in your State such as PWD, R&B/B&R, Rural Development, Panchayati Raj etc. for utilising suitable waste plastic in the construction of Bituminous Road as per IRC codes. This matter may be reviewed in the SHPC under the chairmanship of the Chief Secretary.

Warm regards,

Yours sincerely,

(Roopa Mishra)

To  
Principal Secretary/ Secretary,  
Urban Development, Municipal Administration and LSG Departments,  
All States and UTs.

Vini Mahajan  
Secretary (DW&S)



Anurag Jain  
Secretary (RT&H) & (H&UA)

Shailesh Kumar Singh  
Secretary (RD)

D.O No. S-16011/2/2022-SBM-DDWS

Dated: June 28, 2024

Dear Chief Secretary,

### Use of Waste Plastic in Bituminous Road Construction

As you are aware, plastic products have become an integral part of our daily lives, leading to increased plastic consumption even in rural areas. Consequently, plastic waste has emerged as a significant environmental challenge that must be addressed on priority. As a non-biodegradable material, plastic does not decompose over time. Even when dumped in landfills, it can re-enter the environment through air and water erosion. Plastics can contaminate groundwater, block drainage channels, and be ingested by grazing animals, causing illness and death. The safe disposal of plastic waste is therefore imperative.

2. The Department of Drinking Water and Sanitation (DDWS) is looking after plastic waste management in rural areas under Swachh Bharat Mission (Grameen) Phase-II by promoting the collection and segregation of waste, setting up of segregation sheds at village/GP level and Plastic Waste Management Units (PWMUs) at Block/District level and establishing forward linkages including use of waste plastic in bituminous road construction. As per the Swachh Bharat Mission (Grameen) Phase-II operational guideline, there must be one PWMU in each Block, if clustering of Block is not possible, for which upto Rs.16 Lakh has been provisioned. The PWMUs shall ensure that forward linkages exist for safe disposal of end-of-life plastic waste.

3. Similarly, plastic waste in urban areas poses a challenge which the Ministry of Housing and Urban Affairs (MoHUA) is addressing through the MRF facilities and forward linkages with recyclers, waste to electricity plants etc. These initiatives are aligned with the broader objectives of the Swachh Bharat Mission (Urban) to promote cleanliness and sustainable waste management practices. MoHUA works with ULBs to ensure that plastic waste is effectively managed, reducing landfill burdens and supporting recycling and reuse.

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4. The Ministry of Road Transport and Highways (MoRTH) has been advocating that waste plastic should be used in the bituminous road construction as one of the environmentally safe solutions to mitigate the challenge of waste plastic. It has numerous environmental and economic benefits. However, ensuring the size, quality, and grade of plastic as per the guidelines in bituminous wearing course is important. As per the guidelines issued by Indian Road Congress, MoRTH (IRC: SP:98-2020), waste plastics have great potential for use in bituminous construction as its addition in small doses, i.e. 8% by weight of bitumen improves longevity and pavement performance. MoRTH has already mandated the use of plastic waste in the weathering coat of Service Roads and Slip Roads throughout National Highways apart from in periodical renewal coat of main carriageway on National Highways within 50 kms periphery of urban area having population more than 5 lakhs.
5. The Ministry of Rural Development has also recognised the use of waste plastic in construction of rural roads in the Vision Document on New Technology Initiatives & Guidelines-2022 in Pradhan Mantri Gram Sadak Yojana (PMGSY) road. The Vision Document has suggested that waste plastic can be used as a modifier for bituminous hot mixes. As per New Technology Vision 2022 compulsory use of waste plastic is mandated in at least 70% length out of the eligible proposed length involving Hot Mix process. Use of waste plastic in road constructions is one of the environment friendly solutions for safe disposal of waste plastic. The advantages of waste plastic are that there is increased road strength, better resistance to water and water stagnation, increased binding and better bonding of the mix, increased load withstanding capacity and road life period is substantially increased leading to considerable reduction in carbon emissions also. The MoRD has sanctioned 52,132 km of road length using waste plastic under PMGSY out of which 38,106 km has been completed. This initiative can be replicated in the rural roads being constructed under other schemes in the country.
6. The Plastic Waste Management Rule 2016 issued by MoEFCC also clearly says that *"local bodies shall encourage the use of plastic waste (preferably the plastic waste which cannot be further recycled) for road construction as per Indian Road Congress guidelines or energy recovery or waste to oil etc. The standards and pollution control norms specified by the prescribed authority for these technologies shall be complied with"*.
7. In this context, it is requested to ensure the availability of appropriate quality waste plastic and review the usage of waste plastic in road construction within the respective States/UTs by giving necessary directions to all concerned Departments. States/UTs must prioritize establishing comprehensive framework for the utilization of waste plastic in bituminous road construction across all types of roads, including rural, urban, State, and national highways. It is essential to conduct State-level consultations and generate adequate awareness among contractors and plastic waste aggregators/ vendors to mainstream the use of waste plastic in all types of bituminous

road construction. Necessary changes in the DPR/tender /EPC documents must also be done to expand the use of waste plastic. Additionally, instructional videos in regional languages on the use of waste plastic through hot mix plants may be prepared and used for awareness generation as well as capacity building of relevant stakeholders. It is suggested that a task force be constituted to monitor and maximize the use of waste plastic in bituminous road construction in an environmentally safe method.

8. This initiative aims to promote the environmental and economic benefits of using waste plastic in road construction. We look forward to your active support in this endeavour.

With regards,


Yours sincerely,



(Shailesh Kumar Singh)  
Secretary  
Ministry of Rural  
Development



(Anurag Jain)  
Secretary  
Ministry of Housing &  
Urban Affairs,  
Ministry of Road Transport  
& Highway



(Vini Mahajan)  
Secretary  
Department of Drinking  
Water & Sanitation  
Ministry of Jal Shakti

To

Chief Secretary  
All States/UTs