

IN THE HON'BLE HIGH COURT OF HIMACHAL PRADESH  
AT SHIMLA

C.W.P. No.: of 2018

In the matter of:

People for Responsible Governance (PeRGo)

..... Petitioner

Versus

Union of India through Secretary (Road Transport &  
Highways) & Others

..... Respondents

INDEX

| Sl. No. | Description of Documents   | Page No. |
|---------|--|----------|
| 1       | Court Fee  | A-C      |
| 2       | List of Events   | 1        |
| 3       | Memo of Parties, Ground for Writ Petition along with Affidavit   | 2-8      |
| 4       | List of Documents  | 9        |
| 5       | Annexure: P-1: Copy of Resolution dated 09.05.2018   | 10       |
| 6       | Annexure: P-2: Copy of News report   | 11-13    |
| 7       | Annexure: P-3: Copy of News report published in the Newspaper, Times of India  | 14-15    |
| 8       | Annexure: P-4: Copy of news report regarding use of waste plastic for road construction by Madhya Pradesh Rural Development Department | 16-17    |
| 9       | Power of Attorney  | 18       |

PETITIONER

Through Counsel

Place: Shimla

Dated: May 14, 2018

Rajnish Maniktala  
Advocate

Ballesh Chauhan  
Advocate

**IN THE HON'BLE HIGH COURT OF HIMACHAL PRADESH  
AT SHIMLA**

C.W.P. No.:        of 2018

In the matter of:

**People for Responsible Governance (PeRGo)**

..... Petitioner

Versus

**Union of India through Secretary (Road Transport & Highways) & Others**

..... Respondents

**Chronological List of Events**

| Date/ Year | Events   |
|------------|--|
| 20.6.2014  | Times of India reports the use of waste Plastic in road construction in Madhya Pradesh utilizing 200 tonnes of waste for 3000kms of roads annually |
| 30.6.2016  | The Guardian reports that 21000 kms of roads have been constructed in India using waste plastic and half of them are in Tamil Nadu.                |
| 28.3.2018  | Times of India reports use of Waste Plastics in road construction in Pune based on technology of CSIR-Central Road Research Institute              |
| 14.5.2018  | Present petition is being filed.   |

**PETITIONER**

Through Counsel

Place: Shimla

Dated: May 14, 2018

Rajnish Maniktala  
Advocate

Rakesh Chauhan  
Advocate

IN THE HON'BLE HIGH COURT OF HIMACHAL PRADESH  
AT SHIMLA

C.W.P. No.: of 2018

In the matter of:

People for Responsible Governance, Himprasth Bhawan,  
Bemloe, SHIMLA-171 001 (H.P.) through Its Secretary,  
Shri Ashok Kumar

..... Petitioner

Versus

1. Union of India through Its Secretary, Ministry of Road Transport & Highways, Transport Bhawan, 1, Parliament Street, New Delhi-110001
2. State of Himachal Pradesh through Principal Secretary (Environment), Himachal Pradesh Secretariat, SHIMLA-171 002 (H.P.)
3. State of Himachal Pradesh through Principal Secretary (PWD), Himachal Pradesh Secretariat, SHIMLA-171002 (H.P.)
4. Central Pollution Control Board through Its Member Secretary, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
5. Himachal Pradesh Pollution Control Board through Its Member Secretary, Him Parivesh Bhawan, New Shimla, SHIMLA-171 009 (H.P.)
6. Central Road Research Institute through Its Director, Delhi - Mathura Road, Post Office - CRRI, New Delhi 110025

..... Respondents



CIVIL WRIT PETITION UNDER ARTICLE 226 OF THE CONSTITUTION OF INDIA FOR THE ISSUANCE OF APPROPRIATE WRIT ORDER OR DIRECTION TO THE FOLLOWING EFFECTS:

- (i) That the respondent Nos. 2,3 & 5 may be directed to adopt the process of use of waste plastics in construction of roads in the state of Himachal Pradesh.
- (ii) That the respondent Nos. 1, 4 & 6 may be directed to transmit necessary technology to respondent Nos. 2, 3 & 5 for use of plastic waste in construction of roads.
- (iii) That the respondent Nos. 2 & 3 may be directed to construct the roads in the state of Himachal Pradesh using the plastic waste in accordance with the technology so transmitted.
- (iv) That the respondents may be directed to produce entire record pertaining to the case before this Hon'ble Court.
- (v) Any other order deemed just and proper may also be passed in the facts and circumstances stated hereinabove in favour of the petitioner.

PETITIONER

Through Counsel

Place: Shimla

Dated: May 14, 2018

Rajnish Maniktala  
Advocate

Rakesh Chauhan  
Advocate

**Respectfully Sheweth:**

1. That the present Petition is being in public interest. The petitioner happens to be a Society registered under the provisions of Himachal Pradesh Societies Registration Act. The present Petition is being filed through its Secretary, who has been authorized to do so by virtue of resolution dated 09.05.2018, a copy whereof is being placed on record as Annexure P-1. It is one of the objectives of the petitioner Society to take steps in furtherance of fundamental duties enshrined under Article 51A of Constitution of India. Since the present petition involves scientific use of waste plastic in construction of roads, it shall go a long way towards preserving the environment, the petitioner as such is entitled to file and maintain the present Writ Petition.
  
2. That as already submitted the issue raised in the present centers around the use of plastic waste in construction of roads. A number of such ventures have already taken place across the world and India as well. Some of such instances as reported by the Newspapers, "The Guardian" are being reproduced below:
  - (i) The Central Pollution Control Board has reported more than 21,000 miles of plastic roads have been constructed in India and roughly half of them happen to be in the state of Tamilnadu.
  
  - (j) North America uses the polymer added asphalt. 35% of the total global roads using plastics are in North America.
  
  - (ii) Illinois uses with plastic to build high traffic truck roads.

- (iii) Washington State uses plastic in road construction, for noise reduction and in Ontario, Canada, the plastics are used to prevent the road from cracking after a harsh winter.
- (iv) The plastics are widely used for road construction in Middle East because the plastic roads do not melt unless the temperature goes beyond 66°C.
- (v) Dr. R. Vasudevan, a Chemistry Professor, Thiagaraj College of Engineering in Madurai has patented the process of using plastics along with tar for road construction in the year 2006.
- (vi) Indian Government has announced that the plastic roads would be default method of construction for most city streets.

A copy of the News report is being annexed herewith and is marked as Annexure P-2.

3. That the Public Works Department, Pune is using a study by CSIR - Central Road Research Institute, for constructing the roads from plastic waste and tar. A copy of the report published in the Times of India is being placed on record as Annexure P-3.
4. That similarly, Madhya Pradesh Rural Development Department is also using waste plastic for road construction. As a pilot project, a road from the capital of the State was constructed up to Pipaliya. The Department has planned to construct 3000 kilometers of road per year, which will use at least 200 tonnes of plastic waste. A copy of the report is being annexed herewith and is marked as Annexure P-4.
5. That the use of waste plastic in road construction will not only reduce the problem of waste disposal but at the same time the problem of disposal of plastic shall be reduced considerably. This would be towards furtherance



of fundamental duties and Right to Life as enshrined under Articles 51A and Article 21 of the Constitution of India.

6. That the petitioner has not filed any other petition in the Hon'ble Supreme Court of India or any other Court for the same cause of action and he has no other alternative efficacious remedy for the redressal of his grievances except this Writ Petition under Article-226 of Constitution of India.

It is, therefore respectfully prayed that the Civil Writ Petition may be allowed and an appropriate writ order or direction may issued to the following effects:

- (i) That the respondent Nos. 2,3 & 5 may be directed to adopt the process of use of waste plastics in construction of roads in the state of Himachal Pradesh.
- (ii) That the respondent Nos. 1, 4 & 6 may be directed to transmit necessary technology to respondent Nos. 2, 3 & 5 for use of plastic waste in construction of roads.
- (iii) That the respondent Nos. 2 & 3 may be directed to construct the roads in the state of Himachal Pradesh using the plastic waste in accordance with the technology so transmitted.
- (iv) That the respondents may be directed to produce entire record pertaining to the case before this Hon'ble Court.
- (v) Any other order deemed just and proper may also be passed in the facts and circumstances stated hereinabove in favour of the petitioner.

PETITIONER

Through Counsel

Place: Shimla

Dated: May 14, 2018

Bajnish Maniktala  
Advocate

Rakesh Chauhan  
Advocate



IN THE HON'BLE HIGH COURT OF HIMACHAL PRADESH  
AT SHIMLA

C.W.P. No.: of 2018

In the matter of:

**People for Responsible Governance (PeRGo)**

..... Petitioner

**Versus**

**Union of India through Secretary (Road Transport &  
Highways) & Others**

**Affidavit**

I, Ashok Kumar, aged 35 years, Son of Shri Loharu Ram, Occupation - Advocate, H.P. High Court, Shimla, Resident of Village - Shepur, Post Office - Binga, Tehsil - Dharampur, District - Mandi, (H.P.), Secretary People for Responsible Governance (PeRGo), Himprasth Bhawan, Bemloe, SHIMLA-171 001 (H.P.), do hereby state on solemn affirmation that I am competent to file the present Writ Petition, which has been drafted at instance and under my instructions. I have gone through it and that the contents of Paragraphs 1 to 6 are true to my personal knowledge and from official records. No part of it is false and nothing material has been concealed therefrom.

I solemnly swear/ affirm that this Affidavit is true, no part of it is false and nothing has been concealed therein.

Verified at Shimla on this 14<sup>th</sup> day of May 2018.

DEPONENT

**IN THE HON'BLE HIGH COURT OF HIMACHAL PRADESH  
AT SHIMLA**

C.W.P. No.:        of 2018

In the matter of:

**People for Responsible Governance (PeRGo)**

..... Petitioner

**Versus**

**Union of India through Secretary (Road Transport & Highways) & Others**

..... Respondents

**LIST OF DOCUMENTS**

| Sl. No. | Description of Documents   | Page No. |
|---------|--|----------|
| 1.      | Annexure: P-1: Copy of Resolution dated 09.05.2018   |          |
| 2.      | Annexure: P-2: Copy of News report   |          |
| 3.      | Annexure: P-3: Copy of News report published in the Newspaper, Times of India  |          |
| 4.      | Annexure: P-4: Copy of news report regarding use of waste plastic for road construction by Madhya Pradesh Rural Development Department |          |

**PETITIONER**

Through Counsel

Place: Shimla

Dated: May 14, 2018

Rajnish Maniktala  
Advocate

Rakesh Chauhan  
Advocate

Resolution

It has been resolved that by the General Body of the Society in its meeting held on 12.5.2018 that a Public Interest Litigation be filed in Himachal Pradesh High Court Shimla raising the issue of use of waste plastic in road building. The Secretary of the Society, Mr. Ashok Sharma has been authorized to file the Petition and do the needful that is required for pursuing the petition.

  
Treasurer





## Plastic roads: India's radical plan to bury its garbage beneath the streets

In India, roads made from shredded plastic are proving a popular solution to tackling waste and extreme weather

**Sribala Subramanian**

Thu 30 Jun 2016 12:00 BST

Jambulingam Street, Chennai, is a local legend. The tar road in the bustling Nungambakkam area has weathered a major flood, several monsoons, recurring heat waves and a steady stream of cars, trucks and auto rickshaws without showing the usual signs of wear and tear. Built in 2002, it has not developed the mosaic of cracks, potholes or craters that typically make their appearance after it rains. Holding the road together is an unremarkable material: a cheap, polymer glue made from shredded waste plastic.

Jambulingam Street was one of India's first plastic roads. The environmentally conscious approach to road construction was developed in India around 15 years ago in response to the growing problem of plastic litter. As time wore on, polymer roads proved to be surprisingly durable, winning support among scientists and policymakers in India as well as neighboring countries like Bhutan. "The plastic tar roads have not developed any potholes, rutting, raveling or edge flaw, even though these roads are more than four years of age," observed an early performance report by India's Central Pollution Control Board. Today, there are more than 21,000 miles of plastic road in India, and roughly half are in the southern state of Tamil Nadu. Most are rural roads, but a small number have also been built in cities such as Chennai and Mumbai.

Adding flexible materials to strengthen tar roads is not a new idea. Commercially made polymer-modified asphalts first became popular in the 1970s in Europe. Now, North America claims 35% of the global market. Modified asphalts are made from virgin polymers and sometimes crumb rubber (ground tires). They are highly versatile: Illinois uses them to build high-traffic truck roads, Washington State uses them for noise reduction and in rural Ontario they are used to prevent roads from cracking after a harsh winter. Polymerized asphalts also tend not to buckle in extreme heat the way conventional roads do - plastic roads will not melt unless the temperature goes beyond 66C (150F), compared to 50.2C (122.5F) for ordinary roads - and are frequently used on roads in the Middle East.



But even in the US, cost is a significant barrier. The most widely used polymer, styrene-butadiene-styrene, can increase the price of a road by 30-50%. In India, high-stress roads like runways and expressways are increasingly using polymer modified asphalts made by manufacturers like DuPont.

While polymer roads in the US are made with asphalt that comes pre-mixed with a polymer, plastic tar roads are a frugal invention, made with a discarded, low-grade polymer. Every kilometer of this kind of road uses the equivalent of 1m plastic bags, saving around one tonne of asphalt and costing roughly 8% less than a conventional road. Dr R Vasudevan, a chemistry professor and dean at the Thiagarajar College of Engineering in Madurai, came up with the idea through trial and error, sprinkling shredded plastic waste over hot gravel and coating the stones in a thin film of plastic. He then added the plastic-coated stones to molten tar, or asphalt. Plastic and tar bond well together because both are petroleum products. The process was patented in 2006.



Dr R Vasudevan, a chemistry professor and dean at the Thiagarajar College of Engineering in Madurai. Photograph: Sribala Subramanian

A modified version of the road which adds road scrap to plastic-coated gravel was tested out in March this year on a highway connecting Chennai with Villupuram. It was the first time plastic road technology was used for a national highway. It is expected to reduce construction costs by 50%.

Dr Vasudevan's lab contains all the raw materials he needs to make a plastic road: shredders, a gas cylinder, a wok - and a pile of garbage. "This is my raw material," Vasudevan says, pointing to a small pile of bags, plastic cups and foam packaging. These materials are the dregs of the plastic world, worthless even to rag pickers who cannot recycle them. Vasudevan melts shredded plastic over low heat to avoid emissions. Polystyrene is toxic when burned but, when softened, it makes an excellent pothole filler.

In India, plastic roads serve as a ready-made landfill for a certain kind of ubiquitous urban trash. Flimsy, single-use items like shopping bags and foam packaging are the ideal raw material. Impossible to recycle, they are a menace, hogging space in garbage dumps, clogging city drains and even poisoning the air. Delhi's air, in particular, has been called a "toxic pollutant punchbowl" partly due to contaminants from plastic-fueled street bonfires.

However, urban plastic roads are still a rarity in India. Chennai was an early adopter of the technology, building its plastic roads from waste materials donated by the public. One satellite town even offered a gram of gold as an incentive for citizens to collect discarded plastic bags in 2012. But a year later, the plan was abandoned, because the city could not produce enough shredded plastic waste. It was also rumored that influential road builders, threatened by the prospect of pothole-free roads, had scuttled the project. Late last year, the mayor of Chennai



announced the plastic road project was being revived, triggered in part by the devastation to Chennai's roads after the floods of 2015.

Last November, the Indian government announced that plastic roads would be the default method of construction for most city streets, part of a multibillion-dollar overhaul of the country's roads and highways. Urban areas with more than 500,000 people are now required to construct roads using waste plastic. The project even has the blessing of India's prime minister, Narendra Modi, who has made "Swachh Bharat" (which translates to "Clean India") a kind of personal crusade.

India's road upgrade is long overdue. A recent road safety report by the World Health Organization (WHO) found that 17% of the world's traffic fatalities occur in India, with crumbling roads partly responsible for the high death toll. In 2014, potholes alone caused more than 3000 deaths. According to the latest budget released by the Indian government, more roads projects were greenlit in 2015 than in previous years.

With so many projects underway, the Indian government is looking to a range of alternative materials to lower costs. The Delhi-Meerut Expressway, for example, which is currently under construction, may use unsegregated trash from one of the capital's overflowing landfills to build its base and embankments. In an interview with the Times of India, India's roads minister Nitin Gadkari said: "Delhi will get rid of these mounds and we will get the material for laying base with little expense."

The reintroduction of plastics into the environment is not entirely without consequence. Old roads or poorly built ones are likely to shed plastic fragments into the soil and eventually waterways when they deteriorate as a result of photodegradation, which causes plastics to break down when exposed to environmental factors such as light and heat.

These minute plastic particles called microplastics act like magnets for pollutants like polychlorinated biphenyls (PCBs) and can have an impact on their surroundings. "Once in the soil, these particles may persist, accumulate, and eventually reach levels that can affect the functioning and biodiversity of the soil," writes Matthias C Rillig, a professor of plant and soil ecology at Freie Universität Berlin.

In the short run, the bigger challenge for plastic roads is execution. They require a hefty dose of government intervention to succeed. Tamil Nadu was the first state in India to actively develop a cottage industry around shredded plastic. Most plastic shredders are women who buy subsidized shredding machines and sell their finished product for a small profit. Job creation for waste pickers and small entrepreneurs is an added benefit of the roads - a point not lost on India's prime minister.

## Since you're here ...

... we have a small favour to ask. More people are reading the Guardian than ever but advertising revenues across the media are falling fast. And unlike many news organisations, we haven't put up a paywall - we want to keep our journalism as open as we can. So you can see why we need to ask for your help. The Guardian's independent, investigative journalism takes a lot of time, money and hard work to produce. But we do it because we believe our perspective matters - because it might well be your perspective, too.

*I appreciate there not being a paywall: it is more democratic for the media to be available for all and not a commodity to be purchased by a few. I'm happy to make a contribution so others with less means still have access to information. Thomasine, Sweden*

If everyone who reads our reporting, who likes it, helps fund it, our future would be much more secure. **For as little as £1, you can support the Guardian - and it only takes a minute. Thank you.**

Support The Guardian



Topics

- Guardian sustainable business
- Circular economy
- Road transport
- Plastics
- features



Printed from

THE TIMES OF INDIA

# PWD to use plastic waste to build 'superior quality' roads

TNN | Mar 28, 2018, 07:35 AM IST



PUNE: The state public works department (PWD) will use the waste generated at various recycling points after the plastic ban in building asphalt roads.

B Bawiskar, executive engineer, PWD (Pune division), said the department will use the plastic waste in road construction on pilot basis. "Based on a study by CSIR-Central Road Research Institute, the roads built using plastic waste and tar will not just be cheap but also of superior quality than the prevailing asphalt roads," he added.

The Central Pollution Control Board in its recommendations has stated that using plastic waste with tar to build roads improves the quality as well reduces soil pollution.

"In the beginning, municipal corporations with a population of over 5 lakh and municipal councils with a population of over 2 lakh will be asked to include plastic waste for building roads in 50km radius," a PWD official said.

Studies have revealed that plastic waste have great potential for use in bituminous construction as its addition in small doses, about 5-10% by weight of bitumen, helps in substantially improving strength, fatigue life and other desirable properties of bituminous mix, leading to improved longevity and pavement performance.

According to PWD officials, plastic waste in road construction ensures higher resistance to deformation, water-induced damages, increase durability and strength.

When it comes to Pune, PMC is already tying up with firms like Rudra Environment for setting up hot mix plant in Yerawada where plastic trash would be mixed with tar for a proposed 25km road. "The firm will collect the plastic waste from the city and process it at the plant to be eventually mixed with tar," PMC officials said.



Printed from  
THE TIMES OF INDIA

## In a first, Madhya Pradesh Road Development Authority agency used plastic waste to make 24 roads

TNN | Jun 20, 2014, 08:53 AM IST

BHOPAL: In a first in the state Madhya Pradesh Rural Road Development Authority (MPRRDA) has put to constructive use plastic waste to lay 22 roads.

MPRRDA has so far utilized at least 17 tonnes of plastic waste for construction of these roads which cumulatively will measure 35 km in length, going by the fact that it takes .5 tonne of such waste to make each km of road.

"As a pilot project, we first started laying roads in four districts of Bhopal, Indore, Jabalpur and Raisen," MPRRDA CEO Aika Upadhyay told TOI.

The state capital's road connecting Sehore road to Pipaliya Dhakad village was first such road constructed using plastic waste.

"In preparing roads using plastic waste, 10% of the waste is used as substitute to traditional materials," Upadhyay said, adding, "These roads are tested for quality and there is no compromise on quality."

After the success of the pilot project, roads were constructed in other districts, including Rajgarh, Dhar, Badwani, Ujjain, Khargone, Dewas, she said.

"The roads have been tested on parameters like abrasion value, water absorption, impact value and have been found to be of higher strength. These roads were constructed on controlled conditions and several test conducted on site," she said.



Now, MPRRDA plans to construct 15% of roads with plastic waste, MPRRDA chief general manager A D Kapaley said.

"On an average we make 3,000 km-long roads every year and 15 of these means utilizing more than 200 tonnes of such waste, which otherwise is a problem for civic bodies and an environmental hazard," he said.

"And plastic below 40 micron in thickness, which is most hazardous, is best material in constructing roads," he said.