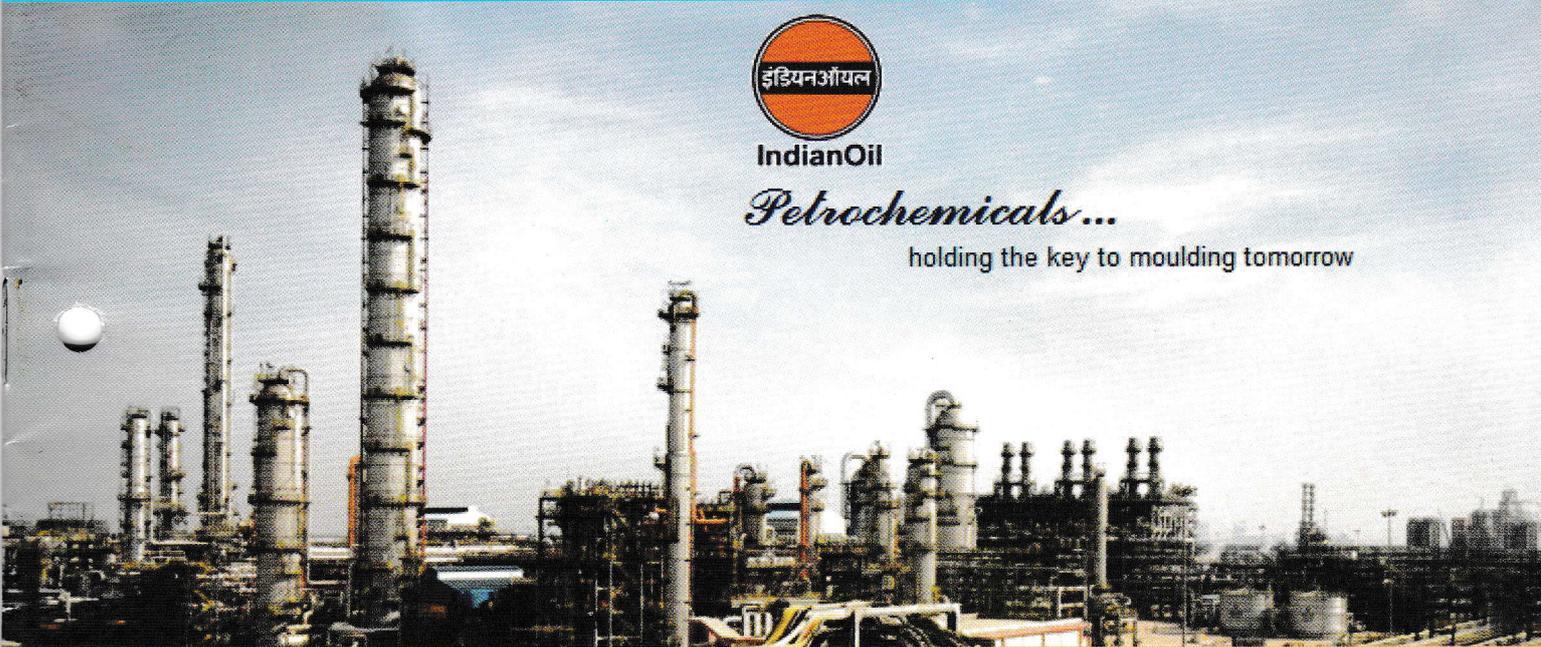




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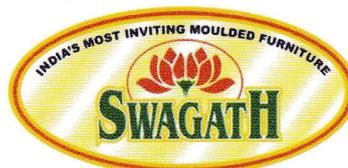
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A journal for the growth and development of plastics trade & industry

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Editorial



Dear Members,

Good day!

INDPLAS'12 exhibition is fast approaching. I am sure, like me other Office-Bearers, Executive Committee, Sub-Committee and all other members are eagerly looking forward it to happen. You are all happy to know that everything is going well as per program chalked out.

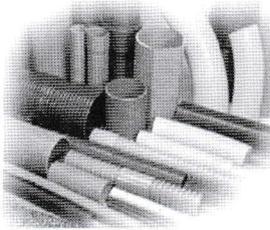
Indplas'12 is the biggest show of Plastic industry in Eastern India, spread across 11 hangers with a covered area of 1.12 lakh sq ft. We have received overwhelming response for the exhibition and trying to accommodate as many exhibitors as possible.

The Exhibition is a platform used widely to market Technology, Innovation, Automation and Future Vision. It is time for all who are connected with plastic to seek Infinite opportunities for the growth and betterment of their business, which is a life line in the modern world. We can't grow without this extraordinary material which has replaced metal, paper, wood, and glass and also have helped improve save energy and environment.

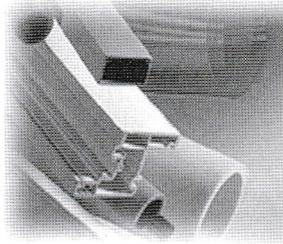
For the convenience of the visitors and ensuring maximum footfalls for the exhibitors, we have started online registration without any charges. Visitors can log in to our website www.indplas.in and get their name registered online. Don't miss the golden opportunity. Your participation or visit will add value to your business and also success of the exhibition.

Yours truly,

Pradip Nayyar
Editor

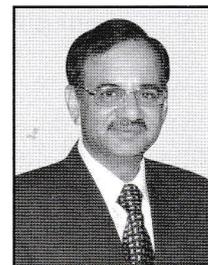


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PRESIDENTIAL ADDRESS



Dear Members,

I hope that you are doing well in spite of a slow growth of the overall economy. West Bengal is still behind from the other states in regard to per capita consumption of plastics. Production of plastic products is also falling short of the actual demand which makes us import goods from other states. Therefore, there is an immense scope of development of plastic processing industries in the eastern part of India.

There are people who want to come into plastics but cannot do so for want of **Technical Knowhow**. There is an acute shortage of trained manpower today. Indian Plastics Federation (IPF) is planning to start a course for skill development in support from **Central Institute of Plastics Engineering and Technology (CIPET)** in coming times.

Dear Members, **INDPLAS'12 – 6th International Exhibition on Plastics** is now round the corner. Hard work is being put by the INDPLAS'12 team to make it a grand success. Your participation is required to see INDPLAS'12 and it should become one of the best International Exhibition in India on Plastics. Please come forward and lend your hand to the Chairman. It is your show and also your duty to make it a grand success.

With warm regards

A handwritten signature in black ink, appearing to read 'Rajesh Mohta'.

Rajesh Mohta

President

SECRETARIAL REPORT



Dear Members,

Indplas'12 – 6th International Exhibition on Plastics to be held at Science City, Kolkata is less than two months away. The countdown to the exhibition has started and Indplas'12 team is working hard to make the exhibition a grand success.

Plastindia Foundation, Mumbai will form their new Managing Committee for the term 2012-2015. They have requested IPF to send the names of two nominees to represent IPF in their Managing Committee. The Federation has recommended the names of Shri R. A. Lohia and sitting President of IPF Shri Rajesh Mohta as IPF nominees.

A very successful Seminar on “Eco-Friendly Management of Plastics Waste for Construction of Durable and Cost Effective Roads” was held at the Auditorium of Indian Chamber of Commerce, Kolkata on 25th July 2012. The Seminar was held in association with Kolkata Metropolitan Development Authority. Janab Firhad Hakim, Hon'ble Minister of Municipal Affairs and Urban Development was the Chief Guest; Shri Vivek Bharadwaj IAS, CEO KMDA, and Smt. Smita Pandey IAS Special Secretary, KMDA were the Guests of Honour. Large number of officials from the Government, Municipalities and the media participated in the Seminar.

The undersigned represented the Federation in a Seminar – “PlastMart” organised by Confederation of Indian Industry, Odisha State Branch at Hotel Bhojan Traditional, Balasore on 7th August 2012. The theme of the Seminar was “Growth Prospect of Plastic Industry with a better Market Linkage”. During the Balasore visit the undersigned had discussions with Government officials for participating in Indplas'12 for promotion of the first plastic cluster coming up near Balasore and also for promoting the Small and Medium industries in the State.

The Federation has received clearance from the Ministry of External Affairs, New Delhi for participation of overseas participants from China / Taiwan.

The Inauguration of Indplas'12 will be held in the Mini Auditorium of Science City on 5th October 2012 at 3.30 pm. The Federation has requested many Senior officials to Inaugurate Indplas'12, to be the Chief Guest, Guest of Honour and deliver the Key Note address. Their reply is awaited. IPF members are cordially invited to attend the Inauguration programme.

On 5th October 2012 during the Inauguration ceremony, Indplas'12 Exhibitor's Directory will be released. Members are requested to release their advertisement in the Exhibitor's Directory. The Exhibitor's Directory Advertisement Form along with tariff details for various positions can be down loaded from our website www.indplas.in Every effort is being made to make the Directory self-financing.

With best wishes,

Pradip Nayyar

Hony. Secretary

Use of Plastics Waste in the Construction of Tar Road

Excerpts from the paper submitted for Seminar on Integrated Development of Rural and Arterial Road Network for Socio-Economic Growth. This project was co-sponsored by ICPE.

Introduction

Bitumen is an useful binder for road construction. Different grades of bitumen like 30/40, 60/70 and 80/100 are available on the basis of their penetration values. The steady increase in high traffic intensity in terms of commercial vehicles, and the significant variation in daily and seasonal temperature demand improved road characteristics. Any improvement in the property of the binder is *the need of the hour*.

Elastomers like natural rubber, crumb rubber, SBR, etc., as well as Plastomeric substances like Polyethylene, Ethylene Vinyl Acetate and Ethylene Butyl Acrylates are mixed with bitumen to modify the properties. Modified Bitumen possesses better quality.

Today the availability of the waste plastics is enormous, as

the plastic materials have become part and parcel of daily life. They either get mixed with Municipal Solid Waste and/or thrown over land area. If not recycled, their present disposal is either by **land filling** or by **incineration**. Both the processes have certain impact on the environment. Under this circumstance, an alternate use for the waste plastics is also *the need of the hour*.

Thinner polythene/polypropylene carry bags are the most abundantly disposed of wastes, which do not attract the attending rag pickers for collection for onward recycling, for lesser value.

Again, these polythene/polypropylene bags are easily compatible with bitumen at specified conditions.

The waste polymer bitumen blend can be prepared and a study of the properties can throw

Compiled by :
Shri Sourabh Khemani,
Environment Chair,
Indian Plastics Federation

more light on their use for road laying.

Understanding plastics

The most used plastics/polymer materials are polyethylene, polypropylene, polystyrene and polyvinyl chloride. Almost 90% of the polymeric materials are made up of either polyethylene or polypropylene or polystyrene.

Around 130-140°C they get softened without releasing any gaseous products (Table - 1).

Extraction Procedure of Toxicity (EPT) - 5% of Acetic acid solution.

It is to be noted that when PVC is incinerated (>700°C), it releases carbon, and gases like CO, CO₂, Cl₂, etc. In the presence of oxygen, chlorine, carbon and metals like copper and around 350°C it may produce gases like Dioxins (the Toxic gases).

Table - 1 : Thermal Behaviour of Polymer

Polymer	Solubility		Softening Temp. range in Deg.C	Products reported	Decomposition Temp. range in Deg.C	Products reported	Ignition temp. range in Deg. C	Products reported
	Water	EPT						
PE	Nil	Nil	100-120	No gas	270-350	CH ₄ , C ₂ H ₆	>700	CO,CO ₂
PP	Nil	Nil	140 - 160	No gas	270-300	C ₂ H ₆	>700	CO,CO ₂
PS	Nil	Nil	110-140	No gas	300-350	C ₆ H ₆	>700	CO,CO ₂
PVC	Nil	Nil	200-220	HCl	320-350	C ₂ H ₆ , HCl	>700	CO,CO ₂ , Cl ₂ & HCl

Disposal of plastics

The present day disposal of plastic waste, especially Municipal Solid Waste containing plastics, is carried out by 1. **Land filling** and 2. **Incineration**.

Land filling is a process in which the waste materials are buried in a specific area, away from the city. This process is purely temporary. This may result in (1) affecting water recharge, (2) reducing soil microbial activity, (3) clogging the drainage and (4) water line clogging. Such clogging may result in the production of gases like methane, which affects Green House effect. Above all, land availability for filling is also a problem.

Incineration is normally carried out above 700°C. Incineration of polymers like PE, PP, PS produces gases like CO, CO₂, etc. and these gases cause global warming, air pollution, monsoon failure, etc. If PVC is mixed with the waste, it may result in the production of HCl, Cl₂ and sometime Dioxin, the poisonous gas.

Modified Bitumens

Addition of natural or synthetic polymers to bitumens is known to impart enhanced service properties. By adding small amounts of polymers to bitumen, the life span of the road pavement may be considerably increased. The purpose of bitumen modification using polymers is to achieve desired engineering properties such as increased shear modulus and reduced plastic flow at high temperatures and/or increased resistance to thermal fracture at low temperatures.

Homopolymers, like high and low density polyethylene and polypropylene, as well as random and block copolymers, like

ethylene-vinyl acetate, ethylene/propylene, styrene-b-butadiene-b-styrene and styrene-b-ethylene-co butylene-b-styrene, have been used as bitumen modifiers.

However, the major obstacle to widespread usage of polymer-modified bitumen in paving practice has been their tendency towards gross phase separation under quiescent conditions at elevated temperatures. A precise study on processing conditions of binders and polymeric additives selection are, thus required.

Moreover, incompatibility, un-stabilisation of emulsions, higher cost of polymer and cumbersome procedure of the preparation of the mix add to the complexity of the process.

Reuse of Waste Plastics

Plastics – as Binder and Modifier

Waste plastics (polythene carry bags, etc.) on heating softens at around 130°C. A study using thermo gravimetric analysis has shown that there is no gas evolution in the temperature range of 130-180°C. Moreover the softened plastics have a binding property. Hence, the molten plastics materials can be used as a binder and/or they can be mixed with binder like bitumen to enhance their binding property. This may be a good modifier for the bitumen, used for road construction.

Study on Waste Plastics for Road Construction:

Determination of solubility of polymer in bitumen.

The waste polymers such as polyethylene (as sheets), polypropylene (sheets; film) and polystyrene (thermocole) are soluble to

the extent of 1 to 2% of the bitumen.

It was observed that we need to characterise the two types: 1) waste plastics-bitumen blend containing <2% and 2) the mix containing >2%.

Samples were used to carry out the following tests, namely:

1. Softening Point, 2. Penetration Value, 3. Flash & Fire Point, and 4. Ductility Test.

Determination of softening point:

It is observed that the softening point increases by the addition of polymer to the bitumen. The influence over the softening point is depended on the chemical nature of the polymer added.

Penetration Value:

The increase in the percentage of polymer decreases the penetration value. This shows that the addition of polymer increases the hardness of the bitumen.

Ductility:

Data shows that the ductility increases by the addition of polymer to bitumen.

The increase in the ductility value may be explained as follows. The long polymer molecules when mixed hot, physically interlock the material and this may help to reduce cracking at the surface.

Flash and fire point

The study of flash and fire points of the polymer-bitumen blend helps to understand the inflammability nature of the blend.

Characterisation of Waste Plastics-Bitumen-Aggregate mix for flexible Pavement:

The utility of the Waste Plastics-Bitumen-Aggregate mix for

flexible pavement construction is characterised by studying
 1) Stripping value, and
 2) Marshall stability value of the mix.

Method - i

Soluble region (<2% plastics) waste

Stripping value

Waste plastics are dissolved in bitumen (2% PE) and the blend is coated over aggregate. It is tested by immersing in water. Even after 72 hrs., there is no stripping showing increased resistance to water. This shows that the blend has better resistance towards water. This may be due to better binding property of the polymer-bitumen blend.

Marshall Test:

The Marshall Stability Values were determined for the waste polymer bitumen blend having the percentage of maximum 2%.

Marshall Stability Value

Percentage of Waste Polymer	Marshall Stability Value in kg
0	1100
1	1600
1.5	1680
2	1780

The study shows that waste plastic-bitumen blend has higher strength compared to pure bitumen, whose value is approx. 1100 kg.

Note: The percentage of polymer added is always with respect to the weight of bitumen used.

Addition of waste plastics 10% - *(for illustration only)*
 Wt. of Aggregate: 1200 gms
 Wt. of Bitumen: 60 gms
 Wt. of Waste Plastics: 0.6 gms

Method - II:

Modified process (Higher percentage region)

Alternate method was innovated to find an effective way of using higher percentage of waste plastics-bitumen mix. In this method, initially the aggregates were heated to around 170°C. Then the plastic wastes, in the form of small pieces (passing 4.75 mm sieve - normally with a thickness of 60 micron and below) were added to the heated aggregate. This has enabled to give an uniform coating of plastics waste over the aggregates. To this hot plastics coated aggregates, the hot bitumen was added. An uniformly coated mix was obtained. This was used for carrying tests: (1) Stripping Test, and (2) Marshall Test.

1) Stripping Test:

The aggregate was coated with waste plastics with a known percentage and then the bitumen is coated at hot condition. The waste plastic-bitumen-aggregate mix was immersed in water. Even after 96 hrs., there was no stripping. This again shows that the waste plastic-bitumen coated mix has good resistance towards water. This may be due to (1) Increased binding of the waste-plastics-bitumen blend, and (2) Coating of polymer (a non-wetting material) over the aggregate.

2) Marshall Test:

Effect of addition of waste plastics (Table - 2).

It is observed that the addition of waste plastics (PE) increases the Marshall Stability Value.

It is observed that the Marshall Stability Value obtained is generally much higher than for the pure bitumen mix. It is also observed that the addition of waste plastics reduces the need of bitumen and the addition of lower percentage of bitumen with waste plastics blend shows much higher Marshall Stability Value. It is also helping to reduce the quantity of bitumen to the extent of 10% to 15%.

Effect of Variation of Polymer content with the variation of bitumen

The study of the effect of both the variation of waste plastics content and the bitumen content in the waste plastics-bitumen-aggregate mixture was carried out and Marshall values are given in Table-3.

It is observed that the addition of waste plastic increases the Marshall Stability Value to a fairly high value. It is also observed that the addition of 10% waste plastics gives higher value at the optimum percentage of bitumen (4.6%). Higher percentage of waste plastics, though give higher Marshall Stability Value, they need increased percentage of bitumen. In general, it may also be concluded that this method is the best suited process for the use of higher percentage of plastics waste and for higher performance of the flexible pavement.

Table -2 : Marshall Stability Value

% of Binder Content	Percentage of Waste Polymer	Marshall Stability Value in kg
4.6	0	1150
4.6	5	2010
4.6	10	2540

Hence it may be inferred on the basis of Marshall Stability Value that the 10% blend of waste plastics is an optimum percentage for road construction, considering the cost factor and the consumption of bitumen.

Results and discussion

It is observed that the polymer-blended bitumen has better properties regarding Softening Point, Penetration Point, Ductility, Stripping Value and Marshall Stability Value. Hence the blend can be used for laying flexible pavement.

Method I:

The blending was tried by directly mixing the shredded polymer with hot bitumen at 160°C. Here the mixing of higher percentage of polymer was rather difficult due to large difference in the viscosity of the molten polymer and that of bitumen. A powerful mechanical stirring was needed to ensure effective mixing to get a better blend. This also needed the addition of stabilizers and proper cooling, yet the blend was not stable and the maximum percentage that can be added was around 2%. Only test roads were laid using this method.

Method II:

A novel technique is developed to use higher percentage of waste plastics in road construction and using this technique an alternate method is being used.

In this method, the waste polymer was added on the hot aggregate (170°C). The polymer was coated over the aggregate. Here the spreading was easy. The hot aggregate was coated with polymer uniformly. Then the bitumen was added. The mixing of bitumen with polymer was taking

place at the surface of the aggregate. The temperature was around 155-163°C. Both the polymer and bitumen were in the liquid state. With the increase of surface area of contact, the mixing of polymer film with bitumen film would be better as both are similar in chemical nature and are in liquid state. And thus a better blend is formed. This blend is having better binding property, which is observed from its properties like Marshall Stability Value, etc.

The formation of fairly uniform coating is also observed from the experimental results (Table - 3). This technique was used for the construction of road using Mini Hot Mix plant.

On the basis of above reasoning various aspects regarding the Polymer-Bitumen Road are also being discussed below:

Stripping Test

Most of the aggregates used in road construction have greater affinity for water due to inherent wetting nature of the aggregate than for bitumen. This results in the penetration of water between aggregate and bitumen layer. Thus bitumen film is often stripped off the aggregates in the presence of water.

This stripping results in pot-hole formation.

When polymer is coated over aggregate, the coating reduces its affinity for water due to non-wetting nature of the polymer and this resists stripping. Moreover the polymer-bitumen blend is having higher binding property too. This also resists stripping and hence pot-hole formation is very much reduced.

Leaching Test

Polymers are not soluble in water or acids and even in most of the organic solvents. The Toxicity test solution is 5% acetic acid. The polymer waste is tested with this 5% acetic acid solution (EPT) and it is observed that there is no dissolution of polymer. Therefore it may be concluded that polymer will not leach out of the bitumen layer, even after laying the road using waste plastics-bitumen-aggregate mix.

Pot-hole Formation

Stagnation of water over bituminous surface results in stripping of bitumen. This subsequently results in pot-hole formation. In the case of polymer bitumen blend, the penetration of water is not much. Hence the pot-holes are not formed easily. This is observed in the various test

Table - 3 : Effect of Variation of Polymer content with the variation of bitumen

% of Bitumen	% of Polymer	Marshall Value
4.6	0	1150
4.6	5	2010
4.6	10	2540
4.6	15	2440
4.6	20	2300
5.0	15	2670
5.0	20	2040
5.5	20	1830

Contd.....P/15

GLIMPSES

Construction of Asphalt Road with Plastics Waste at Chandannagar and Ashoknagar near Kolkata

Since 2005-06, ICPE has been propagating on the usefulness of Utilisation of Plastics Waste for the Construction of asphalt Roads through its Newsletters and various Seminars, Exhibitions and Workshops throughout the country. The successful trial of constructing a stretch of 1.5 Km Asphalt Road in Kalyani Municipality (near Kolkata) was reported in earlier ENVIS Newsletter. Encouraged by this success and due to keen follow-ups by Indian Plastics Federation (IPF), Kolkata, another two Municipalities near Kolkata came forward to construct such roads in their areas. ICPE provided the on-the-field support and assistance for the construction.

Chandannagar Municipality Corporation – 17th March, 2010

A stretch of about 1 KM road in the Ward No. 19 was selected by the local authority for the trial construction. The Municipality purchased the plastics waste as they were convinced that they would save in cost due to partial substitution of bitumen with plastics waste. Batch mixing machine was used.

The Chairman, the Mayor-in-Council and the Chief Engineer of the Municipality were present during the trial. Contractors, who were awarded the work order for constructing roads in other parts of the Ward, were also present during this trial so that they could construct the road themselves without any further technical assistance from ICPE or IPF.



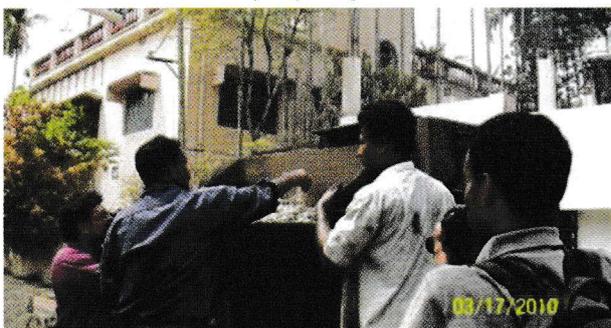
Hot bitumen being added to the heated aggregate – plastics waste mix



Charge outlet



Mayor, Mayor-in-council & Chief Engineer of Chandannagar Municipality being briefed

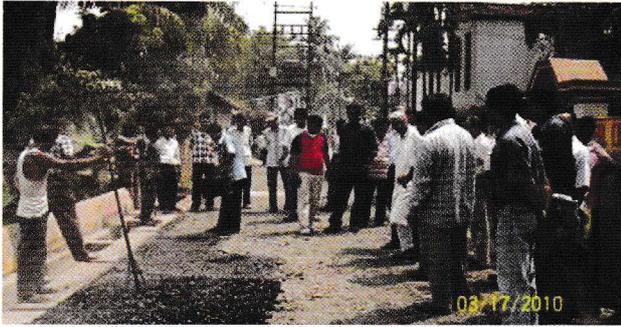


Shredded plastics waste being added to aggregates



Road to be constructed with bitumen – aggregate

GLIMPSES



Road under construction



Selected road for laying



Road laying using plastics waste under progress



Chairperson and Mayor formally inaugurate the process of mixing plastics waste

Ashok Nagar Kalyangarh Municipality – 18th March, 2010

Total length of about 1 KM was selected by the Municipality authority for the trial construction of asphalt road with plastics waste. Municipality Chairperson, Mayor, Mayor-in Council, Chief Engineer, Leader of the opposition party – all attended and witnessed the trial. The Municipality Chairperson informed that after observing the performance of the road in the coming monsoon, all roads of the municipality would be constructed using waste plastics in future. They also informed that they were encouraged by the good performance of the road constructed at Kalyani municipality last year.

Formulation was similar to the one conducted at Chandannagar. Seal coat was used on the top layer.



Plastics waste being spread over aggregates



Inaugural function



Charge being taken out

GLIMPSES



Chairperson carrying the trolley load of mix



Chairperson herself pouring down the mix on to the road.
Also seen in the picture: Mayor and other VIPs.



Seal coat being laid



Constructed road

Construction of road at Kalyani Municipality in April 2009 and its good performance report encouraged other Municipality authorities to take decision to replicate the same in their areas too.

People of Ashok Nagar, having 100% literacy rate (it has 100 primary schools) and Chandannagar Municipality – a former French Colony, basically do not indulge in littering in general. IPF team's persuasion helped the civic authorities to take decision of disposing of the plastics waste in a scientific way. ICPE had provided all technical assistance before and during the road construction.

The great enthusiasm showed by the Heads of the Civic Authorities and the conviction of the Executive Engineers of both the Municipalities helped in undertaking the trial constructions. It is hoped that the awareness programmes would help spread the message to other areas as well facilitating disposal of waste plastics in an environment friendly manner and at the same time enhancing the life of the Asphalt Roads at a lower cost.

Polymerized Road Tarring at Cochin



On 27th January, 2010 Cochin Corporation under the supervision of BPCL has constructed a stretch of asphalt road using plastics waste at Kaloor Manapatty Road. The plastics waste was shredded by CREDAI Clean Kochi Movement for Road Tarring.

City Mayor and other officials of the civic authority were present during the construction period. The demonstration brought confidence among all that plastics waste which is difficult for recycling could be utilized for road construction. The organisers used, among other types of waste, shredded PS foam (Expanded Polystyrene) waste for the construction of asphalt road.



Plastics Waste In Road Construction

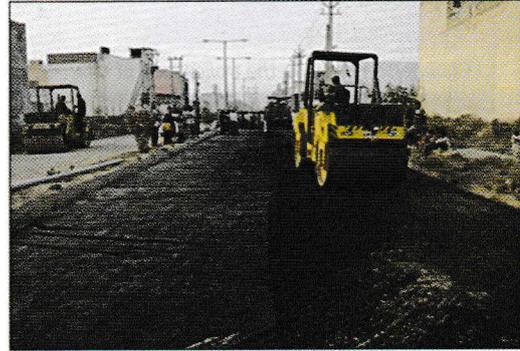


Prof. V. S. Aghase Road, Dadar, Mumbai

**Improves Quality of Asphalt Road Reduces Cost of Construction
Addresses Disposal Issue of Plastics Waste**



Plastics Waste In Road Construction

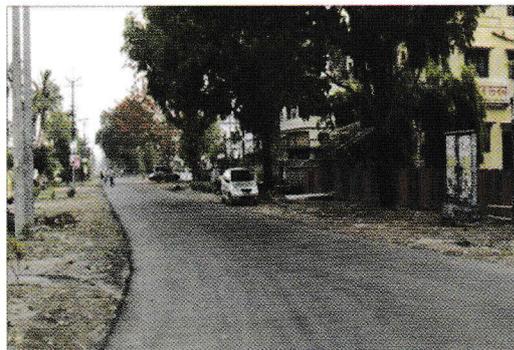


Bawana, Delhi

**Improves Quality of Asphalt Road Reduces Cost of Construction
Addresses Disposal Issue of Plastics Waste**



Plastics Waste In Road Construction



Vidyasagar Street – Kalyani, West Bengal

**Improves Quality of Asphalt Road Reduces Cost of Construction
Addresses Disposal Issue of Plastics Waste**



stretches laid by the author at different places.

Dioxin Formation

The fear about the formation of Dioxin, the toxic compound, during the heating of polymers is always in the mind of people.

In the process of the preparation of polymer-bitumen aggregate mix, the temperature used is only $\approx 170^{\circ}\text{C}$ and no chlorine or copper is present in the system. Moreover, the polymer materials used are polyethylene, polypropylene and are polystyrene only and we do not use polyvinyl chloride. Hence, there is no possibility of presence of chlorine in the system. Hence Dioxin does not form during the use of waste polymer for road construction. So it is a **safe disposal of waste polymers**.

Effect of Bleeding

The increase in the softening point shows that there will be less bleeding during summer. Bleeding accounts, on one side, increased friction for the moving vehicles and on the other side, if it rains, the bleedings accounts for the slippery condition. Both these adverse conditions are much reduced by polymer-bitumen blend.

Special Aspects

- The whole process is very simple.
- It needs no new machinery.
- The technology is also very simple.
- The waste plastics available in the surrounding area can be used then and there.

- Moreover crumb rubber required 180°C whereas 60/70 grade bitumen needs 160°C only. This accounts for fuel conservation.

Roads – already laid: Using waste polymer bitumen aggregate mix, roads have been laid at different places at Tamil Nadu using different surface area and different composition. The conditions of roads are under observation and they are performing well till today.

A scheme for laying Waste Plastics – Tar road in rural area for 1000 km was launched on 16th July, 2003 at Namakkal by the Honourable Chief Minister of Tamil Nadu Dr. J. Jayalalitha.

Significance and Utilization Potential

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> • The polymer bitumen blend is a better binder compared to plain bitumen. • The blend has increased Softening Point and decreased Penetration Value with a suitable ductility. • When used for road construction it can withstand higher temperature. Hence it is suitable for tropical regions. • It has decreased Penetration Value. Hence its load carrying capacity is increased. • The blend with aggregate has no Stripping Value. So it can resist the effect of water. • The Marshall Stability Value is high. • The bitumen required can be reduced depending upon the % of polymer added. It is a good saving too. | <p>If 1 ton of Crumb is used, the cost is Rs. 13,000.</p> <p>If 1 ton 60/70 grade bitumen is used, the cost is Rs. 10,000.</p> <p>4% of bitumen is saved. Hence the cost is Rs. 9,600.</p> <p>100 kg of waste plastics costs Rs. 500.</p> <p>Total cost Rs. 10,100.</p> <p>The quality is definitely better than CRMB with the saving of Rs. 2,500/ton</p> <p>Moreover CRMB requires 180°C whereas 60-70 grade bitumen requires 160°C. This helps fuel conservation.</p> <ul style="list-style-type: none"> • The waste polymer, otherwise causing disposal problem by way of land filling and incineration has a better place to stay. | <ul style="list-style-type: none"> • The operation temperature is below $160-170^{\circ}\text{C}$. • No toxic gas is produced. Dioxin is not formed during this process. • Disposal of waste plastic will no longer be a problem. • The binding properties of polymer also improve the strength of mastic flooring. • The use of waste plastics on the road has helped to provide better place for burying the plastic waste without causing disposal problem. At the same time, a better road is also constructed. It also helps to avoid the general disposal technique of waste plastics namely land-filling and the incineration, which have certain burden on ecology. • By spraying the waste polymer pieces (passing 4.5 mm) the mixing is done. The process is simple and easy. |
|--|--|--|

Use of Plastics Waste in the Construction of Asphalt Road

At least two or three technologies have been developed and demonstrated in the country during the early 2000, for using plastics waste in the construction of asphalt road. In these processes, there is scope of using low-end plastics waste of the MSW stream by blending with Bitumen and / or Aggregates without elaborate cleaning and at the same time improving the overall quality and life of the road. The processes replace about 8 – 15 % of Bitumen in comparison to the normal technology. The cost of plastics waste being less than that of Bitumen, there is a scope of reduction of the overall cost of the road construction to that extent.

The State of Tamil Nadu was the pioneer in implementing this technology developed by Thiagarajar College of Engineering, Madurai. Simultaneously, an entrepreneur of Bangalore had purchased / obtained a technology from Central Road Research Institute (CRRI), Delhi and started implementing the same in Bangalore and other parts of the Karnataka State. Authorities in some cities of Kerala State have also taken initiatives for implementing either of the two technologies in their areas. Recently in November 2011, the Government of Tamilnadu has decided to use plastics waste in the construction of all asphalt rural roads in the State.

ICPE has taken initiatives to popularise this technology throughout the country as this provides one of the answers to resolve the plastics waste management issue in an environment friendly manner. ICPE has undertaken projects jointly with CRRI to construct a Demonstration Road in Delhi area for wider scale appreciation of the process and subsequent implementation by more State Government Authorities in their respective States.

Municipality Corporation of Greater Mumbai (MCGM) has taken interest in such development and with the technical assistance from ICPE, has already constructed a public road near Dadar Railway Station in Mumbai. The road – Prof. Agashe Road, was constructed by using plastics waste in April 2008. After 3 monsoons, the quality of the road remains in good condition. Public Roads were also laid in Kalyani (2009), Ashoknagar and Chandannagar (2010) – near Kolkata, using plastics waste.

Government of Gujarat has approved such construction on experimental basis near Baroda City and more such roads are planned to be constructed in the near future. Some corporate houses like Reliance Industries Limited, CIPET, Shriram Institute of Industrial Research (SIIR), Delhi and others have taken initiatives to construct such roads in their respective complexes.

These initiatives resulted in finding a scientific yet simple method of disposing of low-end plastic waste and also creating a value to the infrastructure of the country for mass benefit.

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GLIMPSES

AN INDUSTRY MEET AT SILIGURI

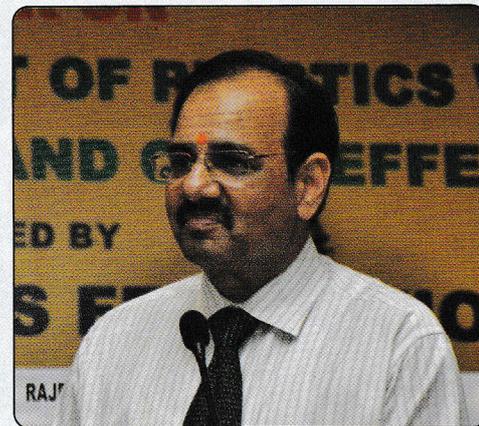
Shri Pradip Nayyar, Hony. Secretary and Shri Hemant Goenka, Hony. Treasurer, Indian Plastics Federation visited Siliguri when an Industry Meet was organised at Sinclairs Hotel on 11th July 2012, Siliguri wherein members of the North Bengal Plastics Federation (NBPF) attended the Meet. Around 70 members were present and spontaneously 2 companies came forward to book stalls in Indplas'12. NBPF has also promised to book 25 sq. m. space for its members.



A SEMINAR ON "ECO-FRIENDLY MANAGEMENT OF PLASTIC WASTE FOR CONSTRUCTION OF DURABLE AND COST EFFECTIVE ROADS" AT KOLKATA

Indian Plastics Federation in association with Kolkata Metropolitan Development Authority organised a Seminar on "Eco-Friendly Management of Plastic Waste for Construction of Durable and Cost Effective Roads" at the Indian Chamber of Commerce Auditorium on 25th July 2012 from 3.00 pm to 5.00 pm. Janab Firhad Hakim, Hon'ble Minister of Municipal Affairs and Urban Development, Govt. of West Bengal was the Chief Guest, Shri Vivek Bharadwaj IAS, CEO KMDA and Smt. Smita Pandey, IAS, Special Secretary, KMDA, Govt. of West Bengal were the Guests of Honour. The target audience were Chairmen of various municipalities, government officials involved in the construction of roads and officials of KMDA, PWD, KMC etc. who are also engaged in road construction.

The programme commenced with the lighting of the lamp by the dignitaries. Shri Rajesh Mohta, President, IPF who welcomed the dignitaries and gathering introduced the Federation and talked about its various activities.



GLIMPSES

Shri Sourabh Khemani, Environment Chair, IPF explained the rationale for using plastic waste in road construction, a novel way of disposal of plastic waste and offered technical assistance to the municipalities in the training / and supervision of roads using plastic waste.

Shri T. K. Bandyopadhyay, Senior Technical Manager, Indian Centre for Plastics in the Environment (ICPE), Mumbai made a power point presentation on the subject. He also gave a cost-benefit analysis on the advantages of using plastic waste in road construction. A few snap shots on the work done by ICPE in this connection was also shown.

Shri Vivek Bharadwaj IAS, CEO, KMDA spoke on the need to keep pace with the times for remaining ahead of others.

Smt. Smita Pandey appreciated how the polluter becomes a partner for the useful use of plastic waste, where as in many countries the polluter is expected to pay to the authorities for waste generation.

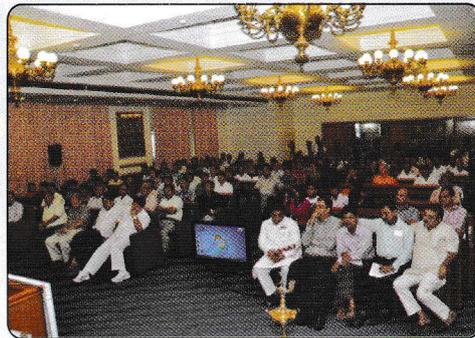
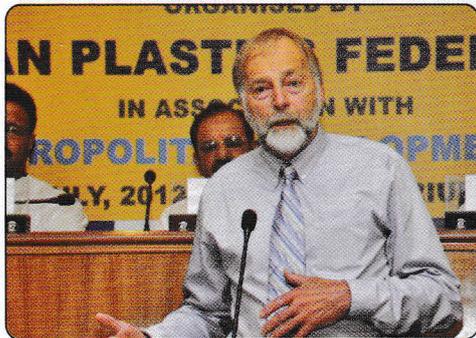
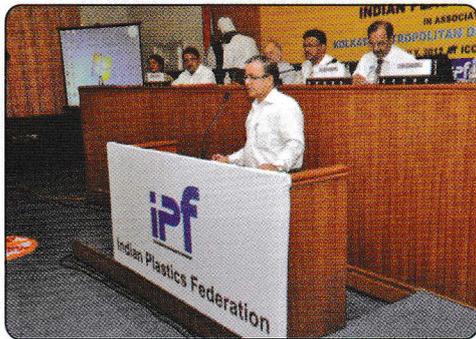
Janab Firhad Hakim, the Hon'ble Minister spoke about his own experience in waste collection in his ward when he was a councilor and the practical problems faced during waste collection.

Shri Amar Seth, Chairman of Indplas'12, EOC welcomed the guests to visit Indplas'12 exhibition being held at Science City, Kolkata, from October 5-8, 2012.

Shri Pradip Nayar, Hony. Secretary of the Federation who was also the master of ceremonies gave the Vote of Thanks and invited the gathering for High Tea.

During the Seminar a short film titled "Notun Pather Khoje" was shown. The film developed by IPF, shared its experience on the conversion of plastic waste into a resource through road construction.

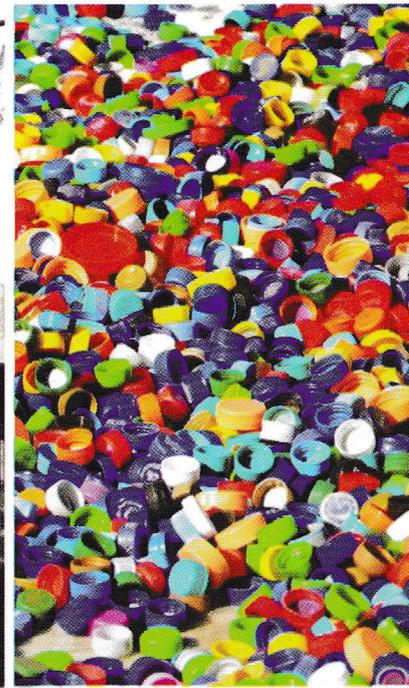
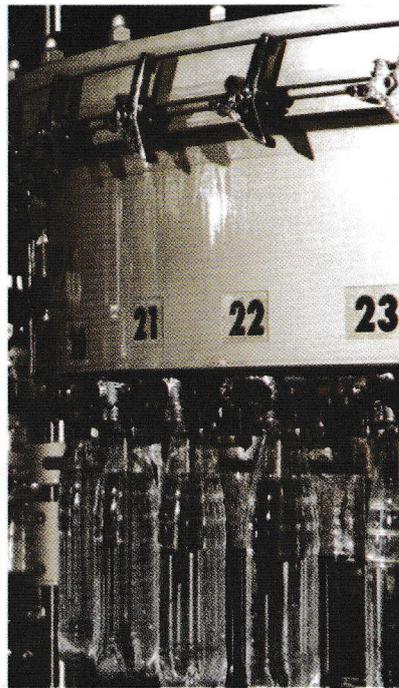
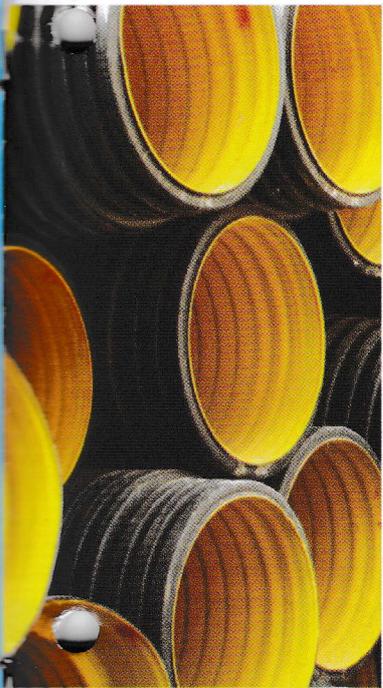
There were around 140 persons present in the Seminar that included **Chairmen and municipal commissioners, government engineers and several industry representatives.**



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11 September 2012, Hotel Grand Hyatt Mumbai, India

Press Release

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India has already emerged as a large consumer for Speciality Films and Flexible Packaging for food and non-food applications. The growth is being led by high growth FMCG sector and retail revolution taking place in India.

The Speciality film sector has witnessed a sustained growth in excess of 15% compounded, which will double over the next four to five years. This vibrant sector will call for innovation and new investments to meet the growing demand across a variety of end users.

To address the needs of various industry segments like FMCG and Retailers, Speciality Film manufacturers, Compounders and Convertors, Printers, Metallizers and Laminators, Chemical/Raw Material Manufacturers and Suppliers, Machinery Manufacturers and Suppliers, Brand Managers of FMCG, Food and Dairy Products, Nodal agencies for Design & Evolution of packing materials, Master badge producers, ink & adhesive manufacturers, end consumers like Consumer Packaging companies- food and non- food sectors etc, first ever conference on this subject is being organized by **Chemicals and Petrochemicals Manufacturers Association (CPMA)** and **Elite Plus Business Services (EPBS)**.

This one day conference is supported by **Indian Plastics Institute (IPI)** and **All India Plastics Manufacturers Association (AIPMA)**.

The conference will provide a unique opportunity to meet and network with experts and leaders from the entire industry. Over 300 delegates are expected to attend this conference. This will be the first time that all sectors connected to the Speciality Films and Packaging sector from resin producer to end users will come on the same platform. Various leaders of the Speciality Films and Packaging sector and renowned speakers from India and abroad are addressing the conference.

Main highlight of the conference are the distinguished Speakers representing global leaders in their field. Some the speakers will be as below

Key Note Speakers:

Mr. Chitranjan Dar, Divisional Chief Executive of Food Division - **ITC Limited**

Mr. Ulrich Reifenhauer, Managing Director-**Reifenhauer GmbH & Co. Maschinenfabrik**

Distinguished Speakers:

Mr. Karan Sehgal	-Euromonitor;
Mr. Roger Kant	-Du Pont;
Mr. Ajay Bijwe	-Ampacet;
Mr. Choate Xu	-BASF;
Mr. Nilesh Shah	- Exxon;
Mr. Carl Johnson	- Gloucester Engineering USA;
Mr. Raymond van Hoorn	- Windmüller&Hölscher, Germany;
Mr. Kurt L. Freye	- Reifenhauerkiefel, Extrusion GmbH, Germany;
Mr. Helme Hassan	- Davis Standard;
Mr. Jan Homan	- Constantia;
Mr. P. Dasgupta	- ITW, Ex Hindustan Unilever Ltd;
Mr. S. V. Mathur	- Max Speciality Films;
Mr. A. Venkatrangan	- Paper Products Ltd;
Mr. Pratik Pota	-NourishCo Beverages Ltd;
Ms. Mamtha Shankar	- Dow USA;
Mr. Christian Fellner	- NGR, Austria;
Mr. Fabian Siberdt	- INEOS Technologies;
Mr. Frank Bernotat	- Hosakawa Alpine;
Mr. Gustavo Guzzi	- Waterline , Switzerland;
Mr. Holger Niemeier	- Blown Films;
Mr. Jeevraj Pillai	-Uflex;
Mr. Mannar Manan	- A. Schulman Plastics;

The conference will be beneficial to the participating delegates in areas such as:

- Hear top international and national experts talk about key packaging technology
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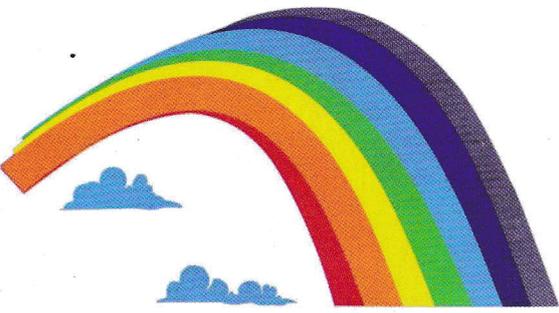
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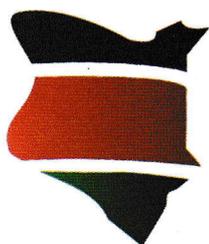


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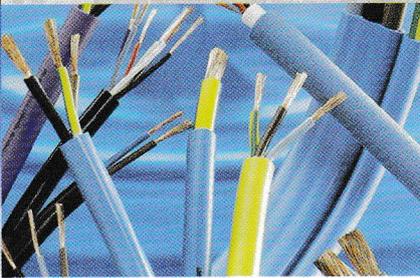
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Sinopec and SK Group sign MoU on strategic cooperation in central China

China Petroleum & Chemical Corp (Sinopec) and Korea's SK Group inked a Memorandum of Understanding (MoU) on strategic cooperation, including a joint investment on an 800,000 tpa ethylene project in central China, according to Reuters. "The two parties will continue exploring the joint investment in the Wuhan ethylene project," Sinopec

said in a brief statement. No financial details were revealed. Sinopec started building the Wuhan petrochemical complex around the end of 2007. In February, SK Group aimed to hold a 35% stake in the joint venture with Sinopec. The total cost of the Wuhan petrochemical project was estimated at US\$2.88 - 2.97 bln.

LG Chem to partner with Kazakh companies to build PE complex

LG Chem Ltd. plans to build a US\$4.2 bln petrochemical complex in Kazakhstan with two partners, according to Bloomberg. The project will be funded by US\$2.97 bln of loans and US\$1.27 bln of investment by the venture partners.

LG Chem plans to pay 716.9 bln won (US\$636 mln) for a 50% stake, while Kazakhstan's state-run United Chemical Co. and privately held SAT will each own 25%. The proposed project in the Atyrau area will produce 800,000 tpa of polyethylene.

Pakistan seeks JV with Japan for naphtha cracker

Pakistan exported a total of US\$270 mln worth of naphtha to Japan in 2010. However, this naphtha was not sent directly to Japan as Pakistan lacks naphtha processing or cracking facility. Japan imports naphtha from Pakistan via some other countries – South Korea and/or Singapore, where it is processed, as per fibre2fashion. Under the customs rules, a product has to undergo at

least two processes for a change in the name of the country of origin. Since Pakistani naphtha undergoes only one process in South Korea or Singapore, it lands up in Japan as a product of Pakistan. Therefore, it makes economic sense to mull a Pakistan-Japan naphtha joint venture. Japan will then get the naphtha at a cheaper price and Pakistan will get a good price as well.

Prompt HDPE film availability tight in Turkey

In Turkey, an increasing number of distributors are complaining about tight HDPE film supplies for prompt delivery, as they fail to find materials to replenish their stocks. According to ChemOrbis most of these distributors commented that sellers prefer to offer their already limited materials to converters first. This situation has caused HDPE film demand to improve and the market to become more active this past week. Intensifying interest for HDPE stands in stark contrast to slow LDPE film demand and normal buying interest for LLDPE c4 film cargoes.

BASF to build its first plant outside German for Ultrason

BASF is building its first plant outside Germany for the high-temperature polymer PESU (Ultrason). Production of the 6,000 tpa unit to be located in S Korea, will begin in early 2014. Currently, BASF produces the polymer only at its main site in Ludwigshafen. Since Ultrason is used mainly in electronics, automotive and aeronautics, carbon fibre composites, the new facility is part of the group's plan to move closer to its downstream customers and lift its profile in the fast-growing Asia-Pacific region.

Dainik Jagran, Date : 26.07.2012

पहल : सड़क निर्माण में बेकार प्लास्टिक के इस्तेमाल पर जोर

पहले विकास फिर राजनीति : फिरहाद

कोलकाता, जागरण संवाददाता : राज्य व लोगों के विकास के लिए वर्तमान सरकार तत्पर है। विकास सरकार की प्राथमिकता है जबकि राजनीति बाद का मुद्दा है। राज्य के नगर विकास मंत्री फिरहाद हकीम ने बुधवार को इंडियन प्लास्टिक फेडरेशन के सेमिनार को संबोधित करते हुए यह बात कही। उन्होंने कहा कि राज्य की बेहतरी के लिए सरकार नई तकनीकी को अपनाने के लिए तैयार है। बेकार प्लास्टिक से रोड का निर्माण करने की पहल राज्य सरकार ने पहले से ही शुरू कर दी है। इसके तहत हुगली के छह नगर पालिका क्षेत्रों में कार्य चल रहा है। इनमें उत्तरपाड़ा-कोतरंग, बैद्यवाटी, कोन्नगर, चांपदानी, रिसड़ा और श्रीरामपुर शामिल हैं। इसके साथ ही ईएम बाइपास में भी योजना को शुरू किया जाएगा। कुछ जगहों पर इसका प्रयोग करने के बाद इसे लोक निर्माण विभाग के अंतर्गत शामिल कर विस्तार किया जाएगा। यह विस्तार आईपीएफ के सहयोग से किया

जाएगा। इससे जहां बेकार प्लास्टिक की खपत होगी वहीं रोजगार की संभावनाएं भी बढ़ेंगी। मंत्री ने इस क्षेत्र में विकास के लिए आईपीएफ को निरंतर प्लास्टिक सामग्री की आपूर्ति करने की सलाह दी।

इंडियन चेंबर आफ कामर्स सभा कक्ष में केएमडीए के सहयोग से उक्त परिचर्चा का आयोजन किया गया था। परिस्थितिक तंत्र के अनुरूप बेकार प्लास्टिक के प्रबंध से कम खर्च पर टिकाउ रोड निर्माण इस परिचर्चा का विषय था। इस अवसर पर केएमडीए के मुख्य कार्यकारी अधिकारी विवेक भारद्वाज, विशेष सचिव स्मिता पांडेय, आईपीएफ के अध्यक्ष राजेश मोहता, एनवायरमेंट सब-कमेटी के चेयरमैन सौरभ खेमानी, इंडप्लास-12 इग्जिविशन आर्गनाइजिंग कमेटी व आईपीएफ नालेज सेंटर के चेयरमैन अमर सेठ, कल्याणी नगर पालिका के चेयरमैन डा. पीके सुर, कांचरापाड़ा नगर पालिका के चेयरमैन सुदामा राय, विधायक अर्जुन सिंह

सहित सालिड वेस्ट मैनेजमेंट के विशेषज्ञ उपस्थित थे। रोड के निर्माण में बेकार प्लास्टिक की उपयोगिता बताने के लिए यहां लघु मूवी नतून पथेर खोजे का प्रदर्शन भी किया गया। आईपीएफ का सांकराइल में पाली पार्क बन रहा है।

श्री भारद्वाज ने बताया कि केएमडीए नई तकनीकी को अपनाते हुए काम करता है। ई-टेडर का काफी फायदा मिल रहा है। 15 दिनों में ई-पेमेंट प्रणाली भी शुरू होगी। इससे पेमेंट सीधा खाते में जाएगा।

श्री मोहता ने बताया कि बेकार प्लास्टिक का महत्व बताने के लिए साईस सिटी में अंतर्राष्ट्रीय प्रदर्शनी इंडप्लास-12 का आयोजन किया गया है।

यह प्रदर्शनी 5 से 8 अक्टूबर तक चलेगी। राज्य में कल्याणी में सर्वप्रथम प्लास्टिक का उपयोग कर रोड का निर्माण किया गया है। अब बार्हपुर और भाटपाड़ा नगर पालिका क्षेत्र में भी यह प्रयोग किया जाएगा।

Sanmarg, Date : 26.07.2012

'जनता के हित के लिए सभी उपाय अजमायेगी सरकार'

कोलकाता : राज्य के शहरी विकास मंत्री फिरहाद हकीम ने कहा कि राज्य की जनता के हित के लिए मुख्यमंत्री ममता बनर्जी काफी गंभीर हैं। मुख्यमंत्री ने पहले ही कह दिया है कि जनता के हित के लिए सभी उपाय अजमाये जायेंगे। बुधवार को इंडियन प्लास्टिक फेडरेशन (आईपीएफ)

और कोलकाता मेट्रोपोलिटन डेवलपमेंट अथॉरिटी (केएमडीए) की ओर से आयोजित एक सेमिनार में हकीम ने कहा कि जनता के हित के लिए आईपीएफ ने एक अच्छा कदम बढ़ाया है। इस कदम को सरकार ने काफी सराहा है। हमलोग आईपीएफ के साथ काम

करने को तैयार हैं। रॉव मैटेरियल कहां से आयेंगे? इस बात को लेकर सरकार विचार कर रही है। इस मौके पर केएमडीए के सीईओ विवेक भारद्वाज ने बताया कि बहुत जल्द ही केएमडीए में 'ई-पेमेंट' सिस्टम शुरू

किया जायेगा। इस सिस्टम के शुरू हो जाने से कंट्रेक्टर, जमीन खरीद-बिक्री करने वालों को काफी आसानी होगी। ये लोग इस सिस्टम के जरिए ही अपना पेमेंट कर सकते हैं। इस कार्यक्रम को संबोधित करते हुए केएमडीए की स्पेशल सेक्रेटरी स्मिता पाण्डेय ने कहा



कि हुगली जिले के चांपदानी नगरपालिका, बैद्यवाटी नगरपालिका, रिसड़ा नगरपालिका, श्रीरामपुर नगरपालिका, कोन्नगर नगरपालिका तथा उत्तरपाड़ा-कूतरन नगरपालिका के अन्तर्गत पड़ने वाली छोटी-छोटी सड़कों को प्लास्टिक और बिटुमीन को मिलाकर सड़कों की मरम्मत करने

के लिए कोलकाता सोलिड वेस्ट मैनेजमेंट इम्प्रूवमेंट प्रोग्राम (केएसडब्ल्यूएमआईपी) शुरू किया गया है। इस मौके पर आईपीएफ के अध्यक्ष राजेश मोहता, सौरभ खेमानी तथा पॉल सहित कई लोग उपस्थित थे।

Prabhat Khabar, Date : 26.07.2012

राज्य में प्लास्टिक से तैयार हो रही हैं सड़कें

■ आम सड़कों की मुकाबले ज्यादा मजबूत होगी, लागत भी आयेगी काफी कम

कमलकाता ■ पश्चिम बंगाल भी उन राज्यों में शामिल होने जा रहा है, जहां की सड़कें प्लास्टिक से जगमगायेंगी. विशेषज्ञों का दावा है कि बिटोमीन के मुकाबले प्लास्टिक से निर्मित सड़कें न केवल अधिक मजबूत होती हैं, बल्कि इनके निर्माण में खर्च भी कम आता है. इसकी जानकारी बुधवार को इंडियन प्लास्टिक फेडरेशन द्वारा आयोजित एक सेमिनार में दी गयी.

यहां कल्याणी नगरपालिका के चेयरमैन ने बताया कि राज्य में पहली बार 2009 में कल्याणी में प्रयोग के रूप में बिटोमीन के साथ प्लास्टिक का मिश्रण कर एक किलोमीटर सड़क तैयार की गयी थी. तीन वर्ष गुजर जाने के बाद भी वह सड़क बिल्कुल उसी तरह है. जबकि केवल बिटोमीन से तैयार की गयी सड़क में गड्ढे पड़ चुके हैं. प्लास्टिक से सड़क तैयार करने पर खर्च में दस प्रतिशत की भी कमी होती है.

वहीं, शहरी विकास मंत्री फिरहाद हकीम ने बताया कि उनकी सरकार नयी तकनीक को प्रोत्साहित कर रही है. प्लास्टिक से सड़क तैयार करने का आइडिया काफी अच्छा है. हम लोग



इंडियन प्लास्टिक फेडरेशन के सेमिनार का उद्घाटन करते मंत्री फिरहाद हकीम, साथ में विधायक अर्जुन सिंह, मुजफ्फर खान व अन्य.

अब इ-पेमेंट शुरू करेगा केएमडीए

राज्य में पहली बार किसी सरकारी विभाग में इ-टेंडर शुरू करने का श्रेय लेनेवाला केएमडीए जल्द ही एक और नयी शुरुआत करेगा. केएमडीए के सीइओ विवेक मारुज ने अनुसार, 15 दिनों में ही उनके विभाग में इ-पेमेंट सिस्टम शुरू होगी. श्री मारुज ने कहा कि अब ठेकेदारों को बकाया वसूली के लिए विभाग के चक्कर लगाने नहीं पड़ेंगे, घर बैठे ही उनका पेमेंट उन्तक पहुंच जायेगा. विभाग के बिजली बिल में कमी लाने के लिए केएमडीए एस्को नामक एक एनर्जी सेविंग कंपनी के साथ समझौता करने जा रहा है, जिसके अंतर्गत वह कंपनी अपने पैसे से केएमडीए के सभी पंपिंग स्टेशनों समेत बिजली के तमाम उपकरणों की मरम्मत कर उनकी स्थिति को बेहतर करेगी.

पहले ही इस पर काम कर रहे हैं. के विस्तारिकरण परियोजना के अंतर्गत पाइलट प्रोजेक्ट के रूप में इएम बाइपास बननेवाली सड़क को प्लास्टिक से तैयार

किया जायेगा. इसके अलावा हुगली जिला के पांच नगरपालिकाओं में भी काफी सड़कें प्लास्टिक से तैयार की जायेंगी. प्लास्टिक से सड़क तैयार करने में सबसे बड़ा रोड़ा माल की कमी है. सड़क तैयार करने के लिए प्लास्टिक हमें कौन देगा, इसकी हम लोग तलाश कर रहे हैं.

मौके पर मौजूद केएमडीए की विशेष सचिव रिमता पांडे ने बताया कि भारत सरकार ने जापान के जापान इंटरनेशनल कॉ-ऑपरेशन एजेंसी के साथ मिल कर हुगली जिले में कोलकाता सॉलिड वेस्ट मैनेजमेंट इम्पुवमेंट प्रोग्राम नामक एक परियोजना शुरू की है. इस पर 170 करोड़ रुपये खर्च होंगे.

इस परियोजना के लिए जिला के पांच नगरपालिकाओं उत्तरपाड़ा, वैद्यबाटी, रिषड़ा, कोननगर, श्रीरामपुर एवं चांपदानी को चुना गया है. इंडियन प्लास्टिक फेडरेशन के अध्यक्ष राजेश मोहता ने कहा कि सामानों की कमी काम में बाधा नहीं होगी. अगर सरकार निश्चित कर ले तो काफी कंपनियां सामने आ जायेंगी. फिलहाल राजपुर-सोनारपुर में एकमात्र कंपनी काम कर रही है.

Prabhat Varta, Date : 26.07.12



आईपीएफ द्वारा आयोजित कार्यक्रम का उद्घाटन करते शहरी विकास मंत्री फिरहाद हकीम व विधायक अर्जुन सिंह

● अलोक मित्रा

Rajasthan Patrika, Date : 26.07.2012

अलकतरा के मुकाबले अधिक मजबूत साबित, प्लास्टिक कचरे पर जागरूकता जरूरी, बोले नगर विकास मंत्री हकीम

सड़क निर्माण में प्लास्टिक कचरा उपयोगी

कोलकाता. राज्य के नगर विकास मंत्री फिरहाद हकीम ने कहा कि सड़क निर्माण में अलकतरा के साथ प्लास्टिक कचरे का मिश्रण अधिक टिकाऊ साबित हो रहा है। किफायती लागत में सड़कों का निर्माण समय की मांग है। सरकार हर पल नई तकनीक पर काम करने के लिए वचनबद्ध है। इंडियन चेम्बर ऑफ कॉमर्स में बुधवार को आयोजित एक संगोष्ठी में वे बोल रहे थे।

उन्होंने कहा कि प्लास्टिक कचरा संग्रह करना सबसे कठिन काम है। इसके लिए इंडियन प्लास्टिक फेडरेशन को आगे आना चाहिए। उनका मानना है कि समाज के हित में किसी काम को ग्रहण करना सरकार की प्राथमिकता है। हकीम ने रा'य की नगरपालिकाओं के पदाधिकारियों से अपील करते हुए कहा कि इलाके में प्लास्टिक कचरा प्रसंस्करण यूनिट स्थापित करने में वे दिलचस्पी दिखाएं। पांच लाख की लागत आने वाली यूनिट किफायती और पर्यावरण हितैषी साबित होगी।

नगर विकास विभाग के विशेष सचिव स्मिता पांडे ने कहा कि ठोस कचरा प्रबंधन के मामले में असंगठित



क्षेत्र खासकर कबाड़ियों को संगठित तथा प्रशिक्षित करना जरूरी है। उन्होंने कहा कि जापान इंटरनेशनल को-ऑपरेशन एजेंसी के तहत हुगली जिले की छह नगरपालिकाओं उत्तरपाड़ा-कोतरंग, बैद्यबाटी, कोन्ननगर, चापदानी, रिसड़ा और श्रीरामपुर में कोलकाता ठोस वर्ज्य कचरा प्रबंधन विकास परियोजना पर काम हो रहा है।

संगोष्ठी में हिस्सा लेते हुए कोलकाता मेट्रोपोलिटन विकास प्राधिकरण (केएमडीए) के मुख्य अधिशासी अधिकारी विवेक भरद्वाज ने कहा कि केएमडीए ने सबसे पहले ई-टेंडरिंग सिस्टम को लागू किया। यही नहीं केएमडीए अपने ठेकेदारों को ऑनलाइन के माफ़त भुगतान करने की व्यवस्था करने जा रही है। उन्होंने कहा कि प्लास्टिक कचरा के

इस्तेमाल की तकनीक को पीडब्ल्यूडी की सूची में शामिल करने की जरूरत है। तभी हम इसका अधिक से अधिक इस्तेमाल किया जा सकता है।

इंडियन प्लास्टिक फेडरेशन के अध्यक्ष राजेश मोहता ने कहा कि प्लास्टिक कचरे का इस्तेमाल सड़क निर्माण के वक्त अलकतरा के साथ किया जा सकता है। यह न केवल किफायती बल्कि अधिक टिकाऊ साबित हो रहा है। उनके अनुसार देश में सबसे पहले मद्राई में इस तकनीक का इस्तेमाल किया गया। बाद में कर्नाटक, केरल समेत अन्य रा'यों में किया गया। पश्चिम बंगाल के कल्याणी में इस तकनीक के तहत सड़क निर्माण किया गया जो मानसून की तीन बारिश को झेलने के बाद भी पहले जैसा ही है। उनका मानना है कि सात फीट चौड़ी और एक किलोमीटर सड़क के निर्माण में अलकतरा के मुकाबले प्लास्टिक कचरे के इस्तेमाल पर करीब पंद्रह हजार रुपए की बचत होती है। इस तरह के तीन लाख किमी. सड़क के निर्माण पर तीन साल में करीब 450 करोड़ रुपए की बचत का अनुमान है।

Prabhat Khabar,
Date : 25.07.2012

शहरनामा

सेमिनार

■ इंडियन प्लास्टिक फेडरेशन व केएमडीए के तत्वावधान में सेमिनार का आयोजन, दोपहर 2:45 बजे, आइसीसी परिसर, 4 इंडिया एक्सचेंज प्लेस, कोलकाता.

Azad Hind, Date : 26.07.2012

کسی تکنالوجی سے سماج کی فلاح ہوتی ہے تو اسے ہم ضرور اپنائیں گے: فرہاد حکیم
سڑکوں کی تعمیر میں ریکار پلاسٹک کے استعمال کے سلسلے میں ہونے والے سیمینار سے خطاب



کو کا 25% جلائی۔ حکومت مغربی بنگال نے یہ فیصلہ کیا ہے کہ ریاست اور سماج کی فلاح میں اگر کسی تکنالوجی کا استعمال کیا جاتا ہے تو اسے ضرور اپنایا جائے گا۔ ریاست کے وزیر شہری ترقی فرہاد حکیم نے انڈین پلاسٹک فیڈریشن اور کے ایم ڈی اے کے تحت خراب پلاسٹک کے استعمال کے سلسلے میں ہونے والے سیمینار سے خطاب کرتے ہوئے حکومت کی مذکورہ بالا بات دوہرائی۔ انہوں نے کہا کہ ترقی کا کوئی بھی ایجنڈا ہو ہم ضرور اس پر عمل کریں گے۔ پلاسٹک کی وجہ سے ماحولیات کو نقصان پہنچ رہا ہے۔ اگر پلاسٹک کو کام میں لگایا جاتا ہے تو یہ اچھی بات ہے۔ واضح رہے کہ ریاست کے کئی ضلعوں میں سڑکوں کی تعمیر میں ریکار پلاسٹک کا استعمال کیا جا رہا ہے۔ اس سے سڑکوں کی تعمیر میں ایک طرف خرچ کم ہو گیا اور دوسری طرف یہ بارش میں خراب بھی نہیں ہو رہا ہے اور کافی دنوں تک چل بھی رہا ہے۔ ندیا ضلع کے کلیانی میں اسی طرح کی سڑک کی تعمیر کی گئی ہے۔ دھیرے دھیرے پوری ریاست میں اسی طرح کی سڑکوں کی تعمیر کے بارے میں غور کیا جا رہا ہے۔ بجلی ضلع میں اسی طرح کا منصوبہ بنایا گیا ہے۔ وہاں شری رام پور، چا پدانی، اتر پاڑہ، دشواہ وغیرہ سب سے چھ میونسپلٹی علاقوں میں اسی طرح کی سڑکوں کی تعمیر کی جائے گی۔ جاپان نے اس سلسلے میں 170 کروڑ روپے کا فنڈ فراہم کیا ہے۔ سڑکوں کی تعمیر کے لئے ریکار پلاسٹک کی ضرورت ہوتی ہے لیکن پلاسٹک کیسے حاصل کیا جائے گا یہ ایک مسئلہ ہے۔ انہوں نے کہا کہ ریکار پلاسٹک کی تجارت کرنے والوں کو اس میں شامل کیا جائے گا تاکہ یہ کام بھی ہو اور روزگار کے مواقع بھی پیدا کیا جاسکیں۔ فی الحال کلیانی، بھات پاڑہ اور برنی پور میونسپلٹی علاقوں میں پتھر، بیٹومین کے ساتھ پلاسٹک ملا کر راستوں کی تعمیر کی جائے گی بعد میں دیگر میونسپلٹیوں میں بھی اس پر کام ہوگا۔ انڈین پلاسٹک فیڈریشن کو بھی اس کام میں مدد دینے کو کہا گیا ہے۔ کوکا تائیس فی الحال اس پر کام نہیں ہوگا کیوں کہ اس پروجیکٹ کے لئے بڑی زمین کی ضرورت ہے۔ مذکورہ بالا میونسپلٹی علاقوں میں زمین دستیاب ہے۔ مشین بھانے پر تین لاکھ روپے خرچ آئیں گے۔ حکومت نے میونسپلٹیوں کو یہ فنڈ فراہم کرنے کا فیصلہ کیا ہے۔ واضح رہے کہ مدورانی، کیرالا، کرتاک، مہاراشٹر اور گجرات وغیرہ میں پلاسٹک ملی سڑکوں کی تعمیر ہو رہی ہے۔ اب مغربی بنگال میں بھی یہ کام شروع ہو گیا ہے۔ اس سے خراب پلاسٹک کو کام میں لایا جاسکے گا اور ماحول کو آلودگی سے بھی بچایا جاسکے گا۔ اس موقع پر موجود کے ایم ڈی اے کے سی ای او یو ایک بھاروداج نے کہا کہ کے ایم ڈی اے کے زیادہ تر کام کمپیوٹر کے تحت ہو رہا ہے۔ جس سے کام تیز ہونے کے علاوہ خرچ بھی کم ہو گیا ہے۔ ای ٹنڈرنگ شروع کی گئی۔

बेकार प्लास्टिकों का सड़क निर्माण में उपयोग करेगी सरकार

कोलकाता, 25 जुलाई (संवाददाता)। शहरी विकास मंत्री बाँबी हकीम ने आज कहा कि नष्ट प्लास्टिक का उपयोग सड़क निर्माण में सरकार करेगी। वे आज इंडियन प्लास्टिक फेडरेशन की ओर से एवं कोलकाता मेट्रो पोलिटन डेवलपमेंट ऑथरिटी की सहयोग से आयोजित परिचर्चा को संबोधित कर रहे थे। उन्होंने कहा कि कल्याणी में एक किलोमीटर सड़क का निर्माण नष्ट प्लास्टिक से किया गया है जो काफी मजबूत साबित हो रहा है। उन्होंने कहा कि हुगली एवं ईएम बाईपास में भी बेकार प्लास्टिक को सड़क निर्माण में उपयोग करने पर विचार किया जा रहा है। मंत्री ने कहा कि धापा में काफी संख्या में बेकार पड़े हुए हैं इसका उपयोग किस तरह से किया जाए इस पर सरकार गंभीरता से विचार कर रही है।



शहरी विकास मंत्री बाँबी हकीम परिचर्चा का उद्घाटन करते हुए। साथ में राजेश मोहता, अमर सेन एवं अन्य।

उन्होंने कहा कि बेकार प्लास्टिक से बनाये गये सड़क काफी मजबूत साबित हो रहे हैं, इसीलिये इसकी उपयोगिता को और बढ़ाने पर हम विचार कर रहे हैं। प्लास्टिक फेडरेशन के अध्यक्ष राजेश मोहता एवं परिचर्चा कमिटी के चैयरमैन अमर सेन भी उपस्थित थे।

Chhapte Chhapte
Date : 26.07.2012

शहरे अ्यासफलेटर प्रलेपे प्लास्टिक व्यवहारेर परामर्श

निज्म प्रतिनिधि, कलकाता: रास्ताय मेरामतेर ये विटमिन व्यवहार कवा हय, तार दाम बाजारे एखन उर्ध्वुथी। এই অবস্থায় রাস্তার খানখন্দে প্রলেপ দেওয়ার জন্য পুরসভাগুলি নিম্নমানের বিটমিন ব্যবহার করছে বলে অভিযোগ। যার ফলে কাজের দেড় মাসের মাথায় রাস্তাগুলির অবস্থা শোচনীয় হয়ে পড়ছে। সেই জায়গা থেকে রেহাই পেতে অশোকনগর, চন্দননগর ও কল্যাণী পুরসভার কয়েকটি এলাকায় বর্জ্য হিসাবে ব্যবহৃত প্লাস্টিকগুলিকে বিটমিনের সঙ্গে ব্যবহার করে রাস্তায় পিচের উপকরণ হিসাবে ব্যবহার করা হচ্ছে। যার ফলে অন্যান্য রাস্তা তুলনায় এই রাস্তাগুলি টিকছে অনেকদিন। বুধবার ইন্ডিয়ান চেম্বার অব কমার্স আয়োজিত প্লাস্টিক নিয়ে একটি অনুষ্ঠানে এই বক্তব্য পেশ করলেন ইন্ডিয়ান প্লাস্টিক ফেডারেশনের (আই পি এফ) কর্তারা। অনুষ্ঠানে উপস্থিত থেকে রাজের পুরমন্ত্রী ফিরহাদ হাকিম আগামীদিনে কে এম ডি এর সব এলাকাতেই অ্যাসফলেটের প্রলেপের সঙ্গে প্লাস্টিক ব্যবহার করার কথা জানিয়েছেন।

এদিন ইন্ডিয়ান সেন্টার ফর প্লাস্টিক ইন দি এনভায়রনমেন্টের টেকনিক্যাল অ্যাডভাইজার টি কে বন্দোপাধ্যায় উদাহরণস্বরূপ জানিয়েছেন, সাত ফুট চওড়া, এক কিলোমিটার রাস্তায় প্লাস্টিক সমেত বিটমিনের প্রলেপ দিতে প্রায় ১৫-২০ হাজার টাকা সাশ্রয় হয়। মূলত, দশ টন অ্যাসফলেটের প্রলেপে নয় টন বিটমিন থাকে ও বাকি এক টন বর্জ্য পদার্থ প্লাস্টিককে গুঁড়ো করে ওই প্রলেপে মেশানো হয়। ন্যাশনাল প্রমোশন কমিটির পূর্বাঞ্চলীয় শাখার

চেয়ারম্যান সৌরভ খেমামি জানিয়েছেন, তিনটি পুরসভার রাস্তায় এই প্লাস্টিক মিশ্রিত অ্যাসফলেটের প্রলেপ থাকায়, সেগুলি দীর্ঘদিন টেকসই ছিল।

এদিন পুরমন্ত্রী জানিয়েছেন, কল্যাণী পুরসভা এই কাজে সাফল্যের মুখ দেখেছে। বারুইপুর, ভটিপাড়া, কল্যাণী পুরসভাকে আগামী দিন সব এলাকাগুলিতে এই প্রক্রিয়ায় রাস্তার মানোন্নয়ন করার নির্দেশ দিয়েছেন তিনি। তবে কলকাতার রাস্তায় এই ধরনের কাজ এখনই শুরু করা হবে না বলেই জানা গিয়েছে আই পি এফ সূত্রে। কারণ, কলকাতা শহরতলির এলাকাগুলিতে এই ধরনের বর্জ্য প্লাস্টিক মিশিয়ে অ্যাসফলেট প্রলেপে রাস্তা তৈরির পর কতটা মান উন্নত হচ্ছে, তা দেখেই শহরের রাস্তায় প্রলেপ পড়ার সম্ভাবনা রয়েছে। তামিলনাড়ু, কর্ণাটক, গুজরাত, দিল্লি, মহারাষ্ট্রসহ দেশের বিভিন্ন রাজ্য এই প্লাস্টিক সমেত অ্যাসফলেটের প্রলেপের রাস্তায় উপকৃত হওয়া সত্ত্বেও এই রাজ্য কেন এখনও পর্যন্ত বিকিণ্ডভাবে এই পথ অবলম্বন করছে? উত্তরে টি কে বন্দোপাধ্যায় জানিয়েছেন, কল্যাণী, চন্দননগর, অশোকনগর পুরসভার এই কাজে সাফল্য পাওয়ার পর রাজ্য সরকারের সঙ্গে আলোচনা করা হয়েছে। যার ফলেই আরও তিনটি পুরসভাকে এই পরিবেশবান্ধব রাস্তা তৈরির পরিকল্পনা গ্রহণ করতে বলা হয়েছে। তবে তাঁরা কেন্দ্রীয় সরকারের স্বীকৃত ইন্ডিয়ান রোড কংগ্রেস থেকে অনুমতি পেয়ে গেলেই রাজ্য সরকারের সহযোগিতায় এ রাজ্যের সব জায়গায় ওই রাস্তা তৈরি করা যাবে বলে তিনি জানিয়েছেন।

Bartaman
Date : 26.07.2012

The Times of India, Date : 26.07.2012

Only plastic ban won't do, experts seek law to stop littering

Krishnendu Bandyopadhyay / TNN

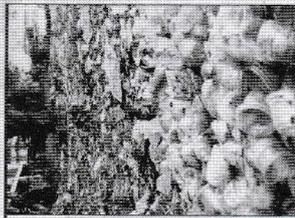
Kolkata: "Two rams choked on plastic bags and died while grazing on the Maidan a couple of days back," said Mrityunjay Sarkar, an animal activist, who runs an animal rehab centre at his Watganj house. "I saw them dying after a convulsion during my regular morning walk. I spoke to the shepherd boy who said this was not the first time this had happened to his sheep. But these deaths never get registered. If they did, we would have had a horror story, just by bombing plastic bags below 40 microns in thickness, the authorities are making it just another bureaucratic affair, without any purpose or zeal," added Sarkar.

A senior state pollution control board scientist echoed Sarkar: "The plastic is getting us really choked and such days are not far away when life will come to a standstill because of our callous habit of littering plastic. Unfortunately, there has been no campaign against plastic littering."

A TOI survey revealed that plastic littering is all pervasive. No road, no ground and no water body - including Lal Dighi in front of Writers' Buildings, perhaps the most well-kept waterbody of the city, and those at Victoria Memorial - has been able to escape the menace.

The Kolkata Municipal Corporation (KMC) is only enforcing a ban on the use of plastic bags below 40 microns in thickness. "But who will prevent plastic tea-cups, gutka or shampoo sachets which are worse polluters? They easily slip through manholes or the concrete filters of the underground drainage system. These elements are no less chokers for drainage pumping sets," said a Kolkata Metropolitan Development Authority officer.

Interestingly, however, the Supreme Court has banned the packing of gutka in plastic sachets. Following the Supreme Court order, the environment ministry had



HOW TO MANAGE PLASTIC WASTE

► According to rules, the municipal authority shall be responsible for setting up, operationalisation and coordination of the waste management system and for performing the associated function:

- A. To ensure safe collection, storage, segregation, transportation, processing and disposal of plastic waste to ensure that no damage is caused to the environment.
- B. To ensure setting up of collection centres for plastic wastes involving manufacturers.
- C. To ensure its channellisation to recyclers.
- D. To create awareness among all stakeholders, including waste-pickers.
- E. To encourage agencies or group working in the waste management waste collection centres.
- F. To ensure no open burning of plastic waste

► The municipality may ask the manufacturers, either collectively or individually, to provide the required finance for establishing waste collection centres

► The municipal authority shall encourage the use of plastic waste by adopting suitable technology such as in road construction, concentrated

also banned the packaging of gutka products in sachets (Rule 5 of the Plastic Waste Management and Handling) Rules, 2011, prohibits the use of plastic materials in sachets for storing, packaging or selling gutka, tobacco and pan-masala. But the plastic sachets containing tobacco are everywhere in the city and there is no compliance of the central rule.

State environment secretary RPS Kahlon said, "We do not have any legal provision against plastic littering. But eventually, we have to enact a law so that an offender does not get away by throwing plastic bags and sachets. Spot-fines could be introduced to penalize offenders." He admitted that littering is worrisome in the state as it is in other parts of the country. Kahlon said that PCB is suffering from a severe manpower shortage. It is a matter to be handled by municipal bodies.

"I found the mere ban on plastic bags below 40 micron thickness is somewhat untenable. Who will measure whether a particular bag is below 40 micron or not? The city has become a paradise for littering plastic wastes. There is no dearth of rules in our country. Only its effective enforcement can inculcate a habit of proper disposal of plastic waste. Littering is an offence in most of the developed countries, where penalty comes in the form of hefty fines or sustained community services or both by state statutes or city ordinances," said environment activist Subhas Data.

In India, Meghalaya is stringent against littering. The Goa government is becoming an exception by making littering of plastic at roadsides and beaches a cognizable offence. Chief minister Manoj Prarikar himself announced that PCB will take the legislative assembly that the government is mulling to make plastic littering a cognizable offence by December this year and to punish the offender with a severe penalty.

As early as in August, 2002, the government prohibited carrying use-and-throw non-biodegradable PET bottles and plastic carry bags in certain coastal regulation zones in Panaji and neighboring Caranzalem and Dona Paula, while for other beach areas in Goa, the matter would be taken up in consultation with all stakeholders.

Even Indian Plastic Federation officials want stringent enforcement against littering. "Plastic is so popular because of its utilitarian value. It is disposed of properly, plastic will continue to do good for mankind. But because of its low-cost existence in our life we tend to throw them away without understanding its consequences. If this continues, the authority will be forced to ban plastic which will turn a huge workforce jobless," said an IPF official. In fact, the Supreme Court threatened to enforce a complete ban on the use of plastic in the interests of animals and the environment.

KMDA to utilise solid waste, to make plastic roads

OUR CORRESPONDENT KOLKATA

The Kolkata Metropolitan Development Authority (KMDA) has decided to mix plastic waste with bitumen to construct roads on the E M Bypass extension to make them durable and cheaper. Aided by KMDA, which ran a series of successful pilot projects at Kalyani, Ashoknagar and Chandernagore, where public roads were laid using low-end plastic waste generated in urban areas every day, now plans to help civic bodies in using the technology to construct durable and cost-effective roads.

"We are going to use plastic waste for road construction on the E M Bypass extension



Urban development minister Firhad Hakim (centre) inaugurates a seminar at the Indian Chamber of Commerce on Wednesday

project and if we attain success, we would include the technology in the work schedule of the PWD," state municipal affairs and urban development minister Firhad Hakim said on the sidelines of a seminar organised by the Indian Plastics Federation of Commerce, Industry and Industry.

Hakim told reporters that following the success of the pilot projects at Kalyani and Ashoknagar, the KMDA has decided to use plastic waste in the construction of roads for the E M Bypass extension project. According to experts, a kilometre of road with a width of seven feet using plastic waste can save around Rs 15,000.

Hakim, however, pointed

out that while pilot projects are fine, for major projects, a huge amount of plastic would be required and how such a large volume would be supplied for road construction is a question mark. He also said that presently, no major municipality or municipal corporation follows a segregation process for solid waste generated by households.

"We had earlier tried to experiment with pilot projects where we engaged local entrepreneurs to collect plastic from households at Rs 10 per kg. However, the plan backfired and we had to stop the project midway. For using plastic waste in major road construction projects, the IPF would have to ensure that shredded plastic waste is readily available," the minister said.

Apart from the E M Bypass extension, plastic roads are also being constructed at six locations across Hooghly where solid waste management projects are coming up. These include Uttarpara, Baidyabati, Konnagar, Rishra, Champdani and Seranipore. According to special secretary, KMDA, Smita Pandey, the Kolkata Solid Waste Management Improvement Project is being executed in the six locations across the Hooghly in association with the Japan International Cooperation Agency. The approach roads to the compost plant in all the six locations would be constructed using plastic waste, she said.

The Bengal Post, Date : 26.07.2012

MONTHLY CIRCULAR OF THE FEDERATION

CIRCULAR NO. 63/2012 :

20th August 2012

Sub: Membership of the Federation

The Federation has received the following application for membership of the Federation :

1. a) Name & Address of the Applicant Firm : **M/S. ASSOCIATED PLASTICS**
114F/1D, Selimpore Road,
Kolkata - 700 031
- b) Class of membership : **Manufacturer Member**
- c) Proposed by : M/s. Harshit Polymers (I) Pvt. Ltd.
- d) Seconded by : M/s. Ever Bright Plastic Works
- e) Name of representative : Mr. Rajesh Kumar Nahata
- f) Items of manufacture : Manufacturer of Plastic Caps & Closures.

2. a) Name & Address of the Applicant Firm : **M/S. PERFECT PLASTIC INDUSTRIES**
16/D, Chaul Patty Road
Kolkata - 700 010
- b) Class of membership : **Manufacturer Member**
- c) Proposed by : M/s. Harshit Polymers (I) Pvt. Ltd.
- d) Seconded by : M/s. Ever Bright Plastic (P) Ltd.
- e) Name of representatives : 1) Mr. Rana Podder
2) Mr. Susanta Podder
- f) Items of manufacture : Manufacturer of Plastic Products -
Blow & Injection

3. a) Name & Address of the Applicant Firm : **M/S. NOVA SYNTHETICS**
1/2T/1, Ram Krishna Naskar Lane
Kolkata - 700 010
- b) Class of membership : **Life Dealer Member**
- c) Proposed by : M/s. Plastic Engineers
- d) Seconded by : M/s. Ever Bright Plastic Pvt. Ltd.
- e) Name of representatives : 1) Mr. Jayanta Chakraborty
2) Ms. Irina Chakraborty
- f) Items dealt in : Dealer of SRF Limited for Nylone-6, 66 & PBT

4. a) Name & Address of the Applicant Firm : **M/S. EUROPLAST PVC PROFILE**
74, N. S. Road, Kodalía
Kolkata - 700 146
- b) Class of membership : **Life Dealer Member**
- c) Proposed by : M/s. Rajda Sales (Cal) Pvt. Ltd.
- d) Seconded by : M/s. Stretch Plast
- e) Name of representative : Mr. Akhil Ranjan Basu
- f) Items dealt in : Dealer of PVC Profile

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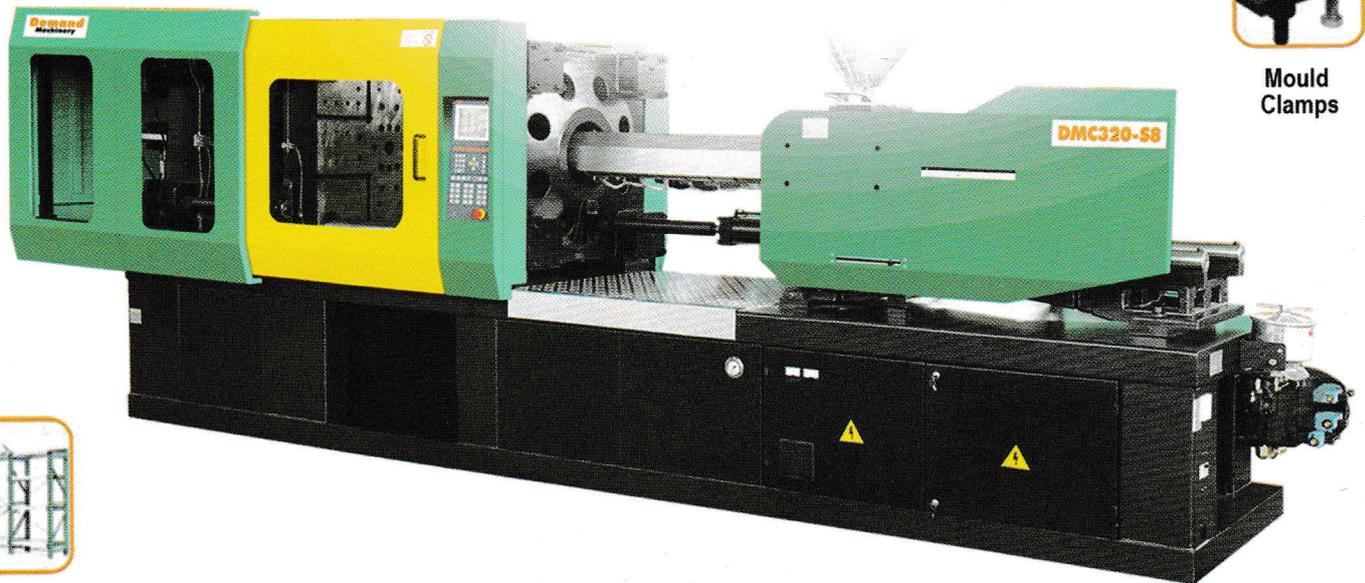
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