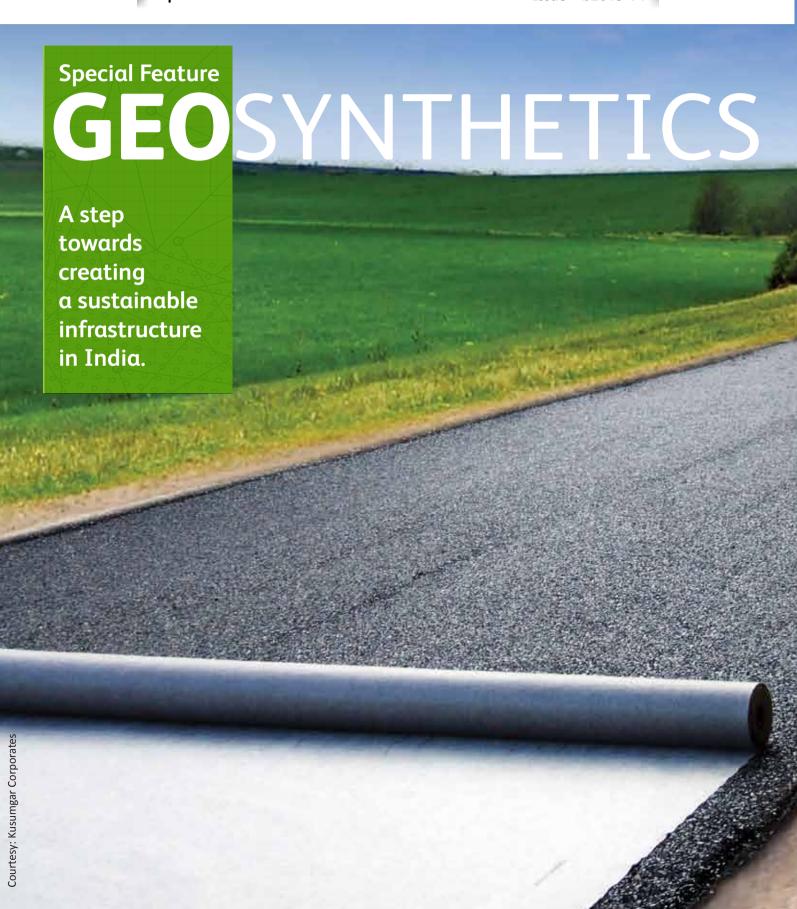






Repol Newsletter

Issue - 4/2013-14



RELIANCE POLYMERS 360° PARTNERSHIP DELIVERING VALUE



Enables Growth

- Sector-specific, process focused developmental, approach from 'Molecule to Marketplace'.
- Product, application and market development.
- Structured Sector Management programmes.
- Trends Transplantation.
- Market extension in conjunction with nodal agencies, machinery manufacturers and leading processors.

Supports Development • Technical support.

- Quality assurance.
- Post-trial vendor development.
- Advisory services.
- An exclusive entrepreneur development program.
- Collaborative research with scientific institutions.
- Partnerships with government bodies and instituions for developing new standards and specifications.
- Capability and capacity development.

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4 360° PARTNERSHIP

Enriches Relationships

- Knowledge Transfer.
- Sharing of Intellectual capital and technical resources.
- Customer meets.
- Manpower Training.

Ensures Sustainability

- Development of Sustainable, cost-effective and environment
 friendly solutions.
- Easing the pressure on natural resources.
- Focus on renewable resources.
- Balancing economic growth with improved quality life.







From the Editors Desk Mr. Puneet Madan



Greetings to all Repol Konnect readers!

The first 3 months of 2014 have been all about consolidation of the business post the numerous challenges it faced during the previous year. We had to grapple with high costs, low demand and fluctuating exchange rate but with the support of our customers we were able to negotiate the turbulent waters. We thank you all for your support.

Meanwhile, we have increased our efforts towards increasing the Polypropylene market by carrying out numerous business developmental activities in various sectors. In this edition of Repol Konnect, we are pleased to highlight the usage of Geosynthetics and our efforts to promote the same for the benefit of the Indian infrastructure sector.

Let me also report a few changes in our Polymers organization. I will now continue handling the Supply Chain Management of the Polymers group and Mr. Unmesh Nayak will be the new Polypropylene Business head. I welcome him to the team and wish him great times as the new editor of Repol Konnect.

My personal thanks to all of you for your patronage over all these years. Enjoy Reading the newsletter!

Meet Our Leaders Mr. Unmesh Nayak



We are pleased to announce that Mr. Unmesh Nayak is our new Business Head for Polypropylene Business. After successfully guiding the Polypropylene business, Mr. Puneet Madan will now look after Supply Chain Management for the Petrochemical sector. Repol Konnect team wishes Mr. Unmesh Nayak & Mr. Puneet Madan success in their new roles.

Polypropylene usage in Appliances

Delhi Regional Office organised a customer meet to highlight trends and opportunities with Polypropylene in appliances sector. The event was attended by 100+ customers/OEMs and was well appreciated by Samsung, LG, Whirlpool, Onida, Panasonic, Dixon to name a few. Excellent display of unique samples and explanation of their details attracted customer's attention and generated lots of interest amongst most of the OEMs. Imported plastic body fully automatic top loading washing machine displayed as innovative samples was the main attraction of the CRM for which inquiries were received from Appliances majors. Overall, this event turned out to be great business platform for everyone involved.









CUSTOMER SPEAK



Dugar Polymers

Mr. Manoj Dugar, Chairman



Mr. Rajesh Dugar, Managing Director



Dugar Polymers is an ISO 9001:2008 Certified Company which manufactures and exports diversified extruded products. Their product range includes sheets, packaging Films & Solid Rods, foam board, stretch film etc. for various applications using PPCP / PPHP / HDPE / PVC. They have multi-locational manufactruing facilityies viz, silvassa, Dadra, Hazira and Hyderabad, to cater seamlessly to the end users. The company is led by their Chairman Mr. Manoj Dugar who has in-depth knowledge and immense experience in the Polymer Industry.

Dugar Polymers Limited was established with the inherent strength and capability to provide its customers with ideal solutions to the growing need for polymer Sheets & Rods and Packaging Film. A modest beginning in 2004, Dugar Polymers has now transformed into an organization which caters to the entire needs of Engineering Plastics. In India Dugar Polymers Limited manufactures maximum width (upto 2000mm) and thickness (200mm) extrusion sheets and are pioneers in introducing very high thick sheets in India, suitable for chemical tanks and components.

Dugar Group is being facilitated with "Rasthriya Nirman Ratan Award" By Indian Organization for Business Research & Development for contributing to National Development & Growth at Delhi. Apart from the business, the company is also socially active towards the needs of society by providing education to the poor and needy under the name of "Chandantara Foundation". They have a very close relation with Reliance Polymers Team and appreciate their support in developing innovation and value added products which have contributed to the success of their group.

Reliance Polymers & Rajuvas join hands for innovation in Silage Bag





Inspired by the success of its innovative concept of Silage bag, Reliance Polymers signed an MoU with Rajasthan University of Veterinary & Animal Sciences for developing REPOL PP FIBC bags & Relene PE Liners to preserve fodder for the milch animals in arid regions. The occasion was attended by eminent persons / doctors / scientists from the field of veterinary, animal husbandry, animal science. Host of media people (newsprint/electronic) were also present to capture the moment. Chief Guest Prof. (Maj. Gen.) Shrikant Sharma, VC, LalaLajpat Rai University, Hissar also expressed his desire to initiate developmental work of this kind in the northern region for the benefit of the farmers and livestock.



GUEST COLUMN



European plastics demand set to rise on booming manufacturing



European demand for plastics is expected to rise over the next few months after key industry data showed the car, manufacturing and construction industries grew in January at the fastest pace for multiple years. Data provider Markit's purchasing managers' index (PMI) for European manufacturing, a key benchmark for the strength of the economy and demand for plastics in general, hit 54 in January, up from 52.7 a month earlier, marking its fastest expansion since May 2011.

With plastics demand driven by the packaging industry (39.4%) followed by the building and construction sector (20.5%) and then the automotive industry (8.3%), demand for plastics such as polyethylene, polypropylene and polyvinyl chloride (PVC) is expected to rise. The rebound was led by Europe's biggest manufacturing nation Germany, whose PMI rose to a near three-year high of 56.5 in January from 54.3 in December.

But the rebound was also aided by acceleration in the south of the region, particularly in Spain and Greece. Both countries posted PMIs at fresh highs in January, with Spain's PMI rising to 52.2, marking a three-and-a-half-year high, and Greece's PMI rising to 51.2, marking a five-and-a-half-year high. The eurozone manufacturing recovery gained significant further momentum in January. However, perhaps the most important development in the report is the further revival of manufacturing in the region's periphery, said Chris Williamson, chief economist at Markit.

According to car manufacturing figures, a similar pattern of rising plastic demand has emerged in both northern and southern Europe. In the automotive sector - the demand provider for polypropylene, butadiene, styrene and synthetic rubber -- the number of western European automotive sales in January rose 5.1 % to 900,791 units from 857,278 units a year earlier, according to data company LMC Automotive.

By country, Spanish car registrations rose 7.6% to 53,436 units from 46,673 units a year earlier, aided by government incentives, while in France car registrations rose by 0.5% year on year to 125,477 units, the data showed. Italian car registrations also increased by 3.2% year on year to 117,802 units in January, according to new car registration data released by the Italian Transport and Infrastructure Ministry. This compares with a 7.6% increase in UK car registrations to 154,562 units and a 7.2% increase in German car registrations to 206,000 units, according to LMC Automotive.

However, fears have started to emerge that growth in car sales in the UK and Spain may only be temporary, with the situation being supported by government subsidies and a wave of compensation payments worth GBP20 billion and paid out by banks to millions of their customers for mis-selling insurance.

Emerging Business: Polypropylene FIBC Silage bag

India is world's largest milk producing country but the average milk yield of cattle in India is very low (50% of global average). One of the main reasons attributed to this is acute shortage of green fodder for cattle. Prolonged preservation of Fodder in the form of Silage (chopped green fodder packed in airtight conditions) is the key requirement in this case.



Traditionally Mud, Underground or Concrete Silos were used for making Silage but usage of Polypropylene FIBC Silage bags have recently emerged as an innovative way of making Silage as it is portable & cost effective. Many successful trials were conducted across the country for its suitability. As the result these FIBC Silage bags of 500 kg capacity are now used by small farmers in many parts of the country and a huge demand is expected in near future. State of Maharashtra has given subsidy for usage of this bag recently and other states are expected to follow. The need of the hour is to ensure that this huge demand is pacified by an equally adept supply chain.

Majority of the silage is being supplied to the small farmers by the silage manufacturers or traders having an excellent network. Tapping them for usage of FIBC silage bags will ensure good business. With a total potential of around 125 KT, there is a big opportunity for every stakeholder involved in the value chain to benefit from it.





Geosynthetics: Key to developing sustainable Infrastructure

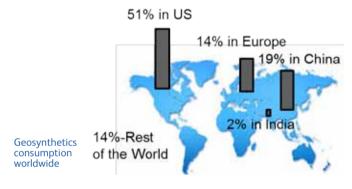
Indian economy valued in terms of GDP 1.85 Trillion US\$ is bigger and with the primary focus being economic development, our economy will get even bigger. We have to make sure that the development is a self-accelerating process which can sustain for a longer term. To fulfil that objective it is necessary that progress in development is preceded, accompanied, and followed by progress in infrastructure.

It is clear that India's existing infrastructure cannot fulfil the country's expectation of economic growth so vast investments will be needed in everything from roads to railways to coastal works. Goldman Sachs has estimated that India will require \$1.7 trillion in infrastructure investment over the next 10 years. Looking ahead, we believe that it is imperative that infrastructure development occurs in a sustainable manner with longer life cycles and lesser carbon footprint. The Indian Government must maintain a commitment to ensure that infrastructure projects play a key role in ensuring the success of 'green growth'.

It is here that Geosynthetics can play a major role. Geosynthetics is the term coined to describe a class of synthetic materials that has been developed for geotechnical applications, i.e., applications relating to geological materials, earth structures and foundations. Geotextiles made from natural fibers have been used for thousands of years. For example, they were used to stabilize roadways in ancient Egypt, where the dryness of the climate offset natural fibers' tendency to deteriorate when submerged in the soil.

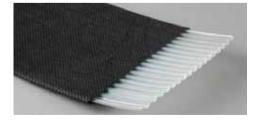
They are especially useful in an environment of increasing land scarcity, increased awareness of seismic hazards, and more stringent environmental regulations and help to increase the life cycle of the project and reduce the carbon footprint. Today, Geosynthetics are used in a growing range of applications like separation, reinforcement, filtration, drainage & containment and can be classified into eight main categories all of which can be used for one or more functions.

Geosynthetics can be used for roads, railways, coastal/river and landfill sector in a variety of ways but its usage has still not taken-off in India (2% of the world's total consumption). Lack of awareness of its benefits and lack of necessary standards have been two of the major bottlenecks which have prevented the sector to blossom. However, the scenario is fast changing with organizations like IGS and ITTA conducting awareness programs throughout India to highlight the benefits of Geosynthetics.



Reliance Polymers, with the help of its customers, is also putting a concerted effort to develop standards on Geosynthetics. Its only a matter of time before India takes clue from the developed countries and makes Geosynthetics an integral part of the its infrastructure story. With huge influx of investment forthcoming in the sector, the future certainly looks bright for Geosynthetics.

Type of Geosynthetic	Primary Functions				
	Separation	Reinforcement	Filtration	Drainage	Containment
Geotextile	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Geogrid		<u> </u>			
Geostrap		<u> </u>			
Geonet				~	
Geomembrane					
Geocell		<u> </u>			
Geocomposite	~	~		~	~



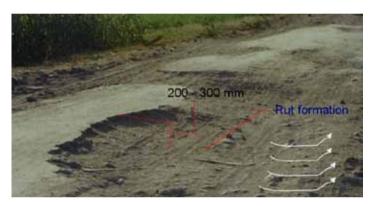






Geosynthetics for Roads

India's road network, spanning across 4.69 million km, is the third-largest road network in the world, next in line only to the US and China. The country relies heavily on its road network that carries almost 65 per cent of freight and 80 per cent of passenger traffic. These facts highlight the importance of road infrastructure in the country. In India the road network though extensive suffers from a number of deficiencies like ruts & pot holes, is unable to handle high traffic density at many places and has poor riding quality in some parts.



Geosynthetics can play an important part in tackling these issues. Geosynthetics usage decreases the life cycle cost of the road i.e. sum total of initial construction cost & maintenance cost, increases the life and strength of the roads which in turn decreases traffic congestion & saves fuel and reduces the carbon footprint.

They can be used for reinforcing the subgrade (the soil layer beneath the road) by introducing a layer of Geotextile or Geogrid between the sub-base & subgrade. It improves the strength of road and increases its life. It can also be used beneath the upper layer of roads in the form of Geotextile or Geocomposite as pavement overlays for maintenance purposes. The additional layer decreases the maintenance period of the roads from 3 years to approximately 5 years.





It is worth noting that nearly 70% of the new road construction is happening in the rural sector where roads are not long lasting and need to be repaired time and again. Sensing a potential opportunity, Reliance Polymers is actively trying to push the usage of Geosynthetics in rural roads by working closely with NRRDA for the PMGSY scheme. As per NRRDA guidelines, Reliance is developing case studies in 5 different states (MAH/GUJ/ORISSA/MP/RAJ) on the successful performance of which, NRRDA will incorporate Geosynthetics in their 'Standard Book of Design', the book used for designing rural roads. This will ensure the cyclical usage of Geosynthetics in rural roads.



Also, the work of incorporating Geosynthetics in the Indian standard code, IRC-37, for Major District Roads/State Highways/National Highways has been initiated. Our long-term vision of providing the designer with an option of using Geosynthetics (by incorporating it in codes) is tedious but will yield huge volumes of Geosynthetics in the future. For promoting the concept in the short-term, we are actively pursuing Roads & Bridges, PWD dept. of various states for developing trial projects in their territory. Idea being, the success of these projects will generate new projects with Geosynthetics resulting in sustainable growth.







Geosynthetics for Coastal / River Protection

Coastal erosion & River Bank erosion is a problem commonly met within different parts of India, calling for protection to cultivate lands, valuable properties, sea side resorts bordering along the shore. There are many causes, both natural & man made but the most serious incidents of erosion occur during storms & floods. Based upon the statistics provided by the States for the period 1953-2010, it has been reported that damages by floods in the country are more than Rs. 1800 crores per annum besides the loss of precious human & cattle lives. Hence it is very important to use preventive measures for protecting the coastal/river adjoining areas.





There are many types of shore protection measures such as Sea Walls / Bulkheads / Revetments / Groynes /Jetties / Offshore Breakwaters and they make use of different kind of materials.Boulders, timber are in use since ages, but due to their increased usage in other sectors and their environment un-friendly nature, use of them now-a-days is decreasing. High wear and tear of timber structures in underwater and near water situation makes it less suitable for their use in anti-erosion measures. Now—a-days, new innovative materials like Geotextile Filters, Geobags (for core), and Geotubes are being increasingly used in construction of defence structures. These materials are used due to their unique characteristics like durability, resistance to salinity & chemical waste, environment friendly nature, easiness in installation etc. Reliance Industries has realized the benefits of Geobags and

has joined hands with Indian Technical Textile Association for promoting the use of Geosynthetics for coastal/river works throughout India. Various seminars & forums have been used to promote Geosynthetics in coastal & river works and many pilot projects have been conducted in affected areas to educate the stakeholders involved about the advantages it offers. Many regulatory bodies have also been approached to incorporate Geosynthetics in their standards and work is in progress of standardizing Geobags specification with the BIS committee.



The efforts are bearing fruit and many tenders are being invited in the North & North Eastern regions for Geobags & Geotubes (tenders worth 6 kT of PP were released in 2013-14). Its only a matter of time when the concept will spread throughout India and huge volumes of Geobags, Geotubes will be required.







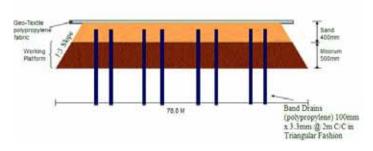


Geosynthetics for Railways

Indian Railways has a total route network of about 64,600 kilometres (km) spread across 7,146 stations and operates more than 19,000 trains every day. Over 30 million passengers travel by trains on a daily basis in India and around 975.2 million tonnes (MT) of freight was transported via trains in FY12. All these numbers are huge but they are bound to rise in the near future with the Indian Railways determined to get the related infrastructure and ancillary services at par with international standards and infuse significant funds for construction of new tracks and maintenance of existing tracks. Geosynthetics can be used in the railway sector to ensure quality and sustainable structures. These materials when used during construction ensure long term stability and serviceability and can be used for-

Track Bed Stabilization to ensure containment of ballast and spread the loading area.

Ground Improvement to facilitate quick consolidation of the ground water and for reinforcement.

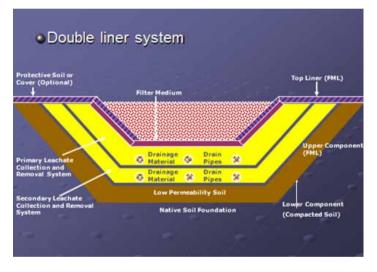


Reliance Polymers is trying to propagate the use of Geosynthetics in railways by approaching various railway zones to conduct trial projects for the above two applications using Geosynthetics. We are hopeful that once the railway authorities witness successful performance of the tracks with Geosynthetics they will execute more projects with the same.



Geosynthetics for Landfills

Trash and garbage is a common sight in urban and rural areas of India. Indian cities alone generate more than 100 million tons of solid waste a year. Organisation for Economic Cooperation and Development estimates that up to 40 percent of municipal waste in India remains simply uncollected. These problems can be tackled by Landfilling which can manage various amounts of waste including hazardous waste and industrial waste. When a landfill is complete, it can be reclaimed, built on or used as parks or farming land. Ex-Westview Sanitary Landfill in Georgia now a cemetery, Griffith Park in Caloifornia used for hiking trails, Settler's Hill Landfill in Illinois – now a golf course.



In 2000, India's Supreme Court directed all Indian cities to implement a comprehensive waste-management programme that would include household collection of segregated waste, recycling and composting. It is sincerely hoped that all India will adopt safe and secure landfill containment regulations under the caveat that it does not merely co-opt other countries regulations but adjust their systems to their particular environmental needs using a much wider choice of materials.





CUSTOMER MEET



Krishi Vasant, Nagpur: Feb 9th -13th, 2014





The biggest ever farm exposition, inaugurated by Honourable President Shri Pranab Mukherjee, turned out to be an excellent platform to promote and share new ideas in agriculture sector. Nearly 5 lakhs farmers visited the exposition and benefitted from the vast array of ideas & products that were on display. Reliance Polymers participated and displayed complete range of PP market development related products-PP FIBC silage bags, PPNW banana covers and fruit covers, to continue its efforts of revolutionizing the agricultural sector.

Promotion of Nonwoven skirting bags at KVK Navsari: Feb 23rd, 2014





In an effort to promote nonwoven skirting bags in South Gujarat belt which accounts for 3% of Mango exports of the country, a CRM was organised at KVK Navsari. Daman office made a presentation on emerging opportunities of PP nonwoven in agri sector and explained in local dialect about silage, its benefits and better price realisation in exports market.

Bhima Krishi, Kolhapur: Jan 23rd-26th, 2014





Bhima Krishi 2014 was a platform to create awareness about new concepts in the field of agriculture where in Reliance Polymers was the main sponsor. 700 stalls were visited by more than 2 lac farmers. At our stall was on show the polymer products related to Pre and Post-Harvest Management in Agriculture. Also on display was the documentary on Silage, Skirting Bags and PP Leno bags which attracted many farmers and helped propagate our ideas in a better way.

Progressive Punjab Agro Summit: Feb 16th -19th, 2014



The summit was organized by Punjab govt. to address farming issues and share the agricultural progress made in Punjab with other states. Reliance Polymers displayed the nonwoven products related to agriculture sector-Silage bags, Leno bags, Skirting covers. Lot of farmers showed keen interest in the products and enquired about their availability. This exhibition was a great success for us and helped us to propagate our new ideas in the whole Northern region.



RANDOM MUSINGS



Promotion of Geosynthetics in Infrastructure sector

Reliance Polymers attended the 1st meeting of the core group members on "Enhancing the Application of Geosynthetics for Infrastructure Sector" organized by CII at Ahmedabad. The huge potential of Geosynthetics in India was highlighted by RIL and the importance of incorporating Geosynthetics in Indian codes was communicated. Members also concurred on developing projects in Road, Coastal, Railways and Landfill to push the usage of Geosynthetics in India.

Industrial Refrigerator Liners



Industrial Refrigerator Liners are normally manufactured with ABS material. Reliance Polymers has supported the initiatives taken by the customer for replacing ABS with Repol Grade B120 MA. All required tests like dimensional, PU adhesion and Ageing test in hot and cold chamber for 100 hrs in +45°C and -30°C at the interval of 10 hrs., were carried out successfully.

Introducing Geobags standards in BIS



Reliance Polymers is working actively towards introducing Geobags for Shore Protection works in the BIS standards. BIS core committee meeting was attended and the idea of using Geobags was proposed. Also, highlighted were the properties of these bags which make them suitable for protection works. Suitable specs of Geobags which can be incorporated in the BIS standards are under preparation and will be sent to the committee shortly.

Industry Events

- Index Summit, Switzerland: 8th 11th April, 2014
- Chinaplas, Shanghai: 23rd 26th April, 2014
- Plastics for Packaging, Mumbai: 26th April, 2014
- Agritex, Hyderabad: 24th 27th April, 2014

- APIC, Thailand: May: 15th –16th, 2014
- Nonwoven Tech Asia, Gujarat: June 5th 7th 2014
- AgriIntex, Tamil Nadu: July 18th 21st 2014
- Agritech Asia, Gujarat: September 3rd 5th, 2014





Please Visit us at N2/G03

The 28th International Exhibition on Plastics and Rubber Industries will be held from 23-26 April 2014, at the Shanghai New International Expo Centre, PR China. Chinaplas has become a distinguished meeting and business platform for the Plastics and Rubber industries and is one of the largest and most influential exhibition in the industry. With an area of 220,000 sq. mtrs and more than 2900 exhibitors from 38 countries across the world, the no. of visitors is expected to be more than 120,000.

Reliance will be present in the Chemicals & Raw Materials Zone, in Hall N2, along with major PETCHEM manufacturers like ExxonMobil, SABIC, Dow, Borouge etc.

We cordially invite you and look forward to welcoming you at our stand.







HIGHER YIELDS AT LOW COST WITH POLYPROPYLENE NON-WOVEN CROP AND FRUIT COVERS



Applicable for

Crops: Potato, Tomato, Brinjal, Cabbage and Tinda Fruits: Banana, Mango, Pomegranate, Litchi and Grapes Protecting precious crops and fruits can be expensive for many farmers. But an economical and effective solution is here - Polypropylene Non-woven crop and fruit covers. With it, farmers can protect their crop and ensure a great harvest.





Advantages of Polypropylene Non-woven Crop and Fruit Covers

- · Protection from fluctuating weather patterns
- · Protects the crop against frost
- · Permeable allows air and aids crop growth
- · Protects the crop from insect and bird attacks
- · Increases yield and produces a healthier crop
- · Advances fruit maturity



POLYPROPYLENE BUSINESS DEVELOPMENT GROUP

Reliance Corporate Park, Building No. 8, First Floor, 'A' Wing, Thane-Belapur Road, Ghansoli, Navi Mumbai 400 701

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