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Delivering value through Geosynthetics
Durability and strength are the main advantages of using Geosynthetics manufactured from Reliance Polypropylene for roads, airfields, railroads, reservoirs and dams. With excellent material properties like resistance to wear and tear and tolerance to excessive pressure, Reliance Polypropylene Geosynthetics not only strengthen the structures they are used to build, but also lower the cost of repair and maintenance.
Reliance Industries Limited

Reliance Industries Limited (RIL) is India’s largest private sector company and one of the leading global companies operating across various sectors like oil & gas, petrochemicals, polymers, petrochemicals, chemicals, renewables, and engineering. RIL is recognized as one of the top 5 companies in terms of profit and is amongst the 35 largest companies in Asia. The company ranks amongst the top 5 percent of publicly traded companies in terms of market capitalization.

Reliance Polymers

Reliance Polymers is one of the world’s largest producers of polymers with a current capacity of 9.3 MMT per annum. It operates world-scale plants for Polyethylene (PE), Polypropylene (PP), Polyvinyl chloride (PVC), using state-of-the-art technology enabling global leadership in product quality and services.

A wide range of grades in each category provides solutions for diverse applications across agriculture, Intermediate, Textiles, Organised Retail and SEZs. RIL’s businesses straddle across various sectors, through innovation, customization and material substitution.

Reliance PP in Geosynthetics

Geosynthetics comprise a range of products used to offer geotechnical solutions. Geotextiles, Geogrids, Geonets, Geomembranes and Geocomposites.

These products have a wide range of applications and are used in many civil and general construction, civil and building construction, transport, industrial, agriculture, and environmental engineering. Geosynthetics are manufactured in number of staple fibres tailored to properties for use in making Geosynthetics.

Repol Polypropylene

Repol Polypropylene is a product made from Repol Polypropylene and is mainly used in the end application.

The following table shows the product application matrix for Geosynthetics.

<table>
<thead>
<tr>
<th>Application</th>
<th>Filtration</th>
<th>Drainage</th>
<th>Separation</th>
<th>Reinforcement</th>
<th>Protection</th>
<th>Barrier</th>
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</thead>
<tbody>
<tr>
<td>Geotextiles</td>
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<td>Geogrids/Geonets</td>
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<td>Gabions</td>
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<tr>
<td>Geocomposites</td>
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</tr>
</tbody>
</table>

Geotextiles

Geotextiles are used in nearly all geotechnical application, whether it is to control erosion, subgrade filtration, separation, or protection of a river or coastal sea bed to protect the shore from damage due to storms and hurricanes.

Geogrids

Geogrids are used to reinforce soil mass by increasing the shear strength of the soil mass. Geogrids are also used to prevent the lateral spread of a river or coastal sea bed to protect the shore from damage due to storms and hurricanes.

Gabions

Gabions are made from Repol Polypropylene and are used to produce an effective filtration system for controlling erosion on marshy/wet land reclamation. PVDs are widely used for marshy/wet land reclamation. PVDs are widely used for marshy/wet land reclamation.

Geocomposites

A Geocomposite is a product made from two or more different Geosynthetics. The combination depends on the function required to be carried out by the Geocomposite.

Galleries

Rope galleries made from Repol Polypropylene and used in crew training and used protection applications. The rope is made into a net form and then connected to a low structure. At the time of installation, these ropes are filled with water and tied to the required structure.

Geosynthetics’ Application areas and Usages

Repol Polypropylene for various Geosynthetics

Geosynthetics

Geosynthetics are a major category in Geosynthetics and are divided into three subcategories: Geotextiles, Geogrids, Geonets and Geocomposites.

Geotextiles

Geotextiles are made from various types of synthetic fibres and are used to offer geotechnical solutions. Geotextiles are mainly used in the end application.

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Geogrids and Geonets are used to reinforce soil mass by increasing the shear strength of the soil mass. Geogrids are also used to prevent the lateral spread of a river or coastal sea bed to protect the shore from damage due to storms and hurricanes.

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Reliance Polymers

Reliance Polymers is one of the world’s largest producers of polymers with a current capacity of 4.4 MMT per annum. It operates world-class plants for Polypropylene (PP), Polyethylene (PE) and Polyvinyl chloride (PVC) using state-of-the-art technology enabling global benchmarks in product quality and services. A wide range of grades in each category provides solutions for diverse applications across agriculture, automation, building and construction, healthcare, infrastructure, and consumer goods. RIL’s grading flexibility enables it to deliver the right polymer for the right application.

Repol Polypropylene

Polypropylene (PP), with its versatility, does just that – turn an idea into a business success. That’s ideation. Repol Polypropylene (PP), with its versatility, does just that – providing new cost-effective applications, across various sectors, through innovation, customization and material substitution. It can be imagined. Reliance Polymers can help convert it into a business success. That’s ideation. Repol Polypropylene (PP), with its versatility, does just that – providing new cost-effective applications, across various sectors, through innovation, customization and material substitution. As one of the top 5 manufacturers of Polypropylene in the world, Reliance Polymers offers a wide range of Repol Homopolymer, Random and Impact Copolymer grades. With capacity of over 2.7 MMT per annum, Repol Polypropylene offers applications for all.

Repol PP in Geosynthetics

Geosynthetics comprise of a range of synthetic products used to offer specialized solutions. Geotextiles, geogrids, geonets, geocomposites and geonets serve to separate two layers of soil with different particle sizes, like preventing road base materials from penetrating into sub-drainage units, and providing stability. Interaptor also help prevent the flow of road subgrade materials from being pumped into permeable gravel road base.

Functions of Geosynthetics

<table>
<thead>
<tr>
<th>Applications</th>
<th>Filtration</th>
<th>Reinforcement</th>
<th>Protection</th>
<th>Separation</th>
<th>Drainage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geotextiles</td>
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<td>Geocells</td>
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</table>

Geosynthetics’ Application areas and Usages

Geosynthetics are a major category in Geosynthetics and are divided into three subcategories: geotextiles, geogrids, geocomposites, drainage, reinforcement, protection and separation. Geosynthetics are manufactured from two or more materials, and are used in a variety of applications. For example, geotextiles are used in river training and coast protection applications. The following table shows the product application matrix for Geosynthetics.

- **Filtration**: Geotextiles are used to separate two layers of soil with different particle sizes, like preventing road base materials from penetrating into sub-drainage units, and providing stability. Interaptor also help prevent the flow of road subgrade materials from being pumped into permeable gravel road base.
- **Reinforcement**: Geotextiles are used to reinforce road bases, by increasing the effective angle of slope and the stability of an earth structure. Geosynthetics are used to reinforce the weak subgrade for road construction activities.
- **Protection**: Geosynthetic waste containment systems act as a barrier against the contamination of ground water.
- **Separation**: Geotextiles serve to separate two layers of soil with different particle sizes, like preventing road base materials from penetrating into sub-drainage units, and providing stability. Interaptor also help prevent the flow of road subgrade materials from being pumped into permeable gravel road base.
- **Drainage**: Geotextiles are virtual in nearly all geotechnical system, whether it is used to remove surface water from a sports field, to reduce lateral pressures or retaining wall. A single layer of Geotextile can produce the required results.
- **Reinforcement**: Geosynthetics straddle across various sectors, through innovation, customization and material substitution. Geosynthetics are used in river training and coast protection applications. The following table shows the product application matrix for Geosynthetics.

Repol Polypropylene for various Geosynthetics

- **Slope Protection**: Geosynthetics are used to prevent seepage or protect a structure from seepage. Slopes are made from Repol Polypropylene that are anchored in the body of the structure. As one of the top 5 manufacturers of Polypropylene in the world, Reliance Polymers offers a wide range of Repol Homopolymer, Random and Impact Copolymer grades. With capacity of over 2.7 MMT per annum, Repol Polypropylene offers applications for all.
- **Rockfall Protection**: Geosynthetics are used to prevent the flow of rock from being pumped into permeable gravel road base.
- **Slope Reinforcement**: Geosynthetic waste containment systems act as a barrier against the contamination of ground water.
- **Erosion & Sediment Control**: Geosynthetics are used to prevent soil erosion and sedimentation into water canals.
- **Lining**: Geosynthetics are used to prevent the flow of water from being pumped into permeable gravel road base.

All products are manufactured by customers of Reliance Industries Limited.
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Repol PP in Geosynthetics

Geosynthetics comprise a range of products used to offer geotechnical solutions. Geosynthetics include geotextiles, geogrids, geogrids, geonets, geocomposites, geomembranes for use in various sectors. The following table shows the product application matrix for Geosynthetics.

<table>
<thead>
<tr>
<th>Functions of Geosynthetics</th>
<th>Applications</th>
<th>Protection</th>
<th>Drainage</th>
<th>Separation/Filtration Layers</th>
<th>Reinforcement on Weak Soils</th>
<th>Rockfall Protection</th>
<th>Geosynthetics’ Application areas and Usages</th>
</tr>
</thead>
</table>
| Geotextiles                 | Geotextile.   | Prefabricated Vertical Drains (PVDs) | Geothanks to Repol Polypropylene by reducing the effective angle of cleavage and the stability of an earth embankment. Geosynthetics are used to reinforce the weak subsoil for road construction activities. 

Repol Polypropylene

Repol Polypropylene offers a wide range of Repol Geocomposites. Repol and Geocomposites offer a wide range of Repol Geocomposites. Repol offers Grade PP in Geosynthetics. Repol offers Grade PP in Geosynthetics. Repol Polypropylene is an excellent blend of properties to be used for making engineering applications including roads, airfields, and geocomposites.

Drainage

Drainage is critical in nearly all geotechnical structures, whether it is used to remove surface water from a structure or to reduce lateral pressure on a retaining wall. A single layer of Geotextile can provide the required drainage.

Protection

In some geotechnical applications it is necessary to separate or protect one section of the work from another improvement scheme or protect a structure from the effects of erosion. Geosynthetics can provide a range of separation and protection of soils. Geosynthetics, Geonets, and Geomats are used in these applications.

Reinforcement

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