TRISOPLAST

MINERAL LINERS

LANDSCAPING

< Trisoplast mixture ready for installation

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W W W . T R I S O P L A S T . C O M

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Landfills, Remediation & Mining

Landscaping

Infrastructure & Construction

Industry

INTRODUCTION

If you are looking for a robust material for creating natural-looking ponds, lakes, reservoirs, waterways or wetlands, Trisoplast is your answer.

This patented cost-effective and durable mineral barrier has been used since 1995 mainly for landfill applications, but is becoming increasingly popular amongst landscapers all over the world. And for a good reason: Trisoplast consists of more than 99% natural materials and has a hydraulic performance which is generally 100 to 1000 times better than that of traditional clay barriers whilst offering a chewing gum like flexibility at the same time. This enables you to create any shape required and use almost any covering material desired – wherever and whenever you like.

COMPOSITION

Trisoplast consists of bentonite swelling clay and a special polymer mixed with sand. When hydrated the clay particles and the polymer bond into a spider web-like gel structure.

"Trisoplast is the perfect way to create natural-looking water features and reservoirs"

SELF HEALING

The ability to deform and swell repetitively gives Trisoplast its considerable self-healing capacity in the event of damage, whilst the gel formation prevents the leaching of clay particles.

DURABILITY

"Strength combined with flexibility ensures high durability"

Mineral barriers are often used in landscaping for their robustness and considerable natural durability. Trisoplast takes these qualities to an even higher level. Used in landfill barriers world-wide Trisoplast has been tested extensively by renowned independent institutes under the supervision of federal and local authorities. Various (field) tests have confirmed its high resistance to drying out, shrinkage during wet-dry and frost-thaw cycles as well as to UV radiation, making Trisoplast particularly suitable for use in ponds in most climates.

Due to its excellent self-healing properties Trisoplast is able to seal various small damages e.g. around roots or sharp particles penetrating from the overlying or underlying layer. This means little or no maintenance cost after installation and, of course, fewer worries.

INSTALLATION

Trisoplast can bring your plans to life, quicker and easier than you would expect. First of all, this unique material is easy to install on various surfaces and seals seamlessly to all sorts of structures, fittings and protrusions. The fairly dry Trisoplast mixture is produced in a mobile mixing plant and is best installed using a hydraulic excavator. Sufficient compaction can be achieved using a small compactor, a roller or a vibrating plate. Furthermore, Trisoplast will save you time and money as it requires no additional protection layers to prevent damage by sharp particles penetrating from the subgrade or the covering layer.

DELIVERY

Trisoplast can be delivered as a ready-mixture in big-bags or as a truck load. For larger projects Trisoplast is generally mixed on site using locally excavated materials (normally sand) as a mineral filler. The mixture can be stored in on-site depots.

"Easy to install in any shape or size"

CONNECTIONS
Trisoplast seals seamlessly and safely to all kinds of structures, materials and protrusions – rocks, walls, pipes etc. A simple wedge-shaped thickening of the layer is applied around the protrusion, if necessary by hand, in order to easily achieve an extra secure connection.

NATURAL

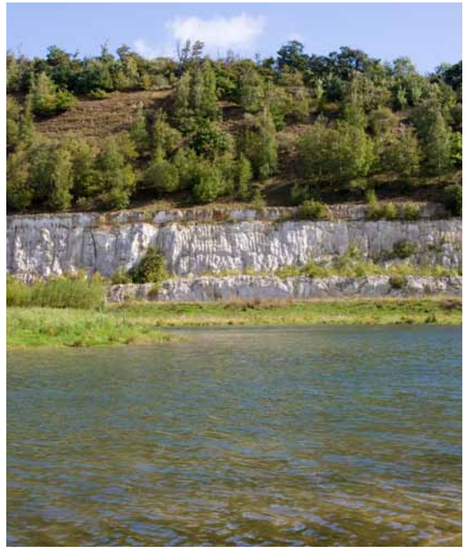
"Create any natural shape or form"

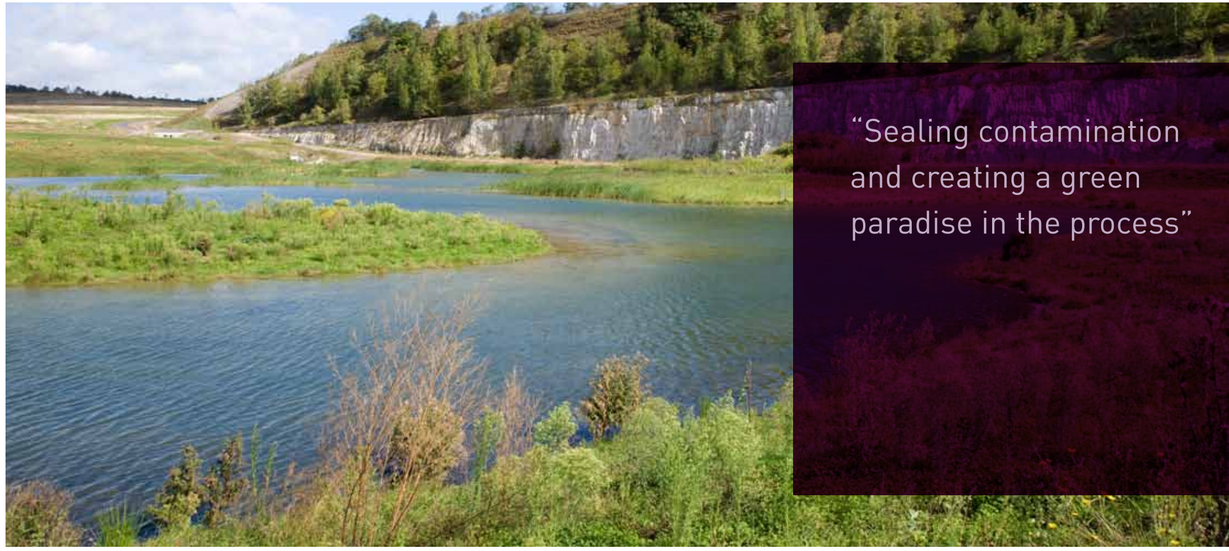
No sharp edges, folds, unattractive plastic rims or seams. Trisoplast is easy to use and you can create a water feature that looks like one formed by nature itself, even with fluctuating water levels. But Trisoplast not only looks natural, it is in fact almost completely natural, consisting of more than 99% natural materials. Natural properties are combined and further improved by modern environmentally friendly polymer technique that does not affect plant or water life. The Trisoplast layer simply follows the natural shapes and deformations of the underground without causing continuous stress that could accelerate aging or lead to cracking, which is typical for plastic materials.

ENVIRONMENTAL PROTECTION
In addition to being used for normal water-insulating and landscaping purposes, Trisoplast's extreme sealing ability means it is also ideal for preventing contaminated water from entering the environment.

CUSTOMER CASE

In 2008 Eastern Quarry, a former chalk quarry near London was redeveloped as part of the Ebbsfleet Valley project. Comprising over 1,000 acres in the heart of the Thames Gateway, Ebbsfleet Valley is part of one of the largest regeneration areas in Europe. The derelict site is now an ornamental lake of almost 18 hectares, giving room to nature and recreation. Due to its location in a water-collection area extra protective measures had to be taken to prevent contamination of the groundwater. UK's largest property developer Land Securities decided using Trisoplast for its durable and natural properties. In two phases a total of 175.000 m² of surface area was covered with 7 centimetres of Trisoplast, creating a lake that looks as though it has always been there - and will be for generations to come.





"Sealing contamination and creating a green paradise in the process"

SPECIFICATIONS

Typical mix composition (based on dry weight)	to	1,000.0 kg	sand
	add	130.0 kg	bentonite
	add	2.6 kg	polymer*
	equals	1,132.6 kg	Trisoplast
Thickness	7 cm +/- 2 cm		
Proctor density	1.6 - 1.8 g/cm^3		
Optimum moisture content on installation	7 - 12%		
Moisture content after saturation	20 - 30%		
Permeability with water, typically	K from 1 * 10^{-12} m/s to 5 * 10^{-11} m/s		
Covering (ballast) layer	preferably > 0.4 m		
Specific gravity	approximately 1,700 kg		

* The special Trisoplast polymer is produced under license of Trisoplast Mineral Liners International BV

TEN REASONS FOR USING TRISOPLAST IN LANDSCAPING PROJECTS:

1. **Any desired form can be created in a natural looking way**
2. **Quick and easy installation**
3. **Cost-effective in installation and maintenance**
4. **Easy and safe sealing to all types of constructions**
5. **Extremely low permeability achieved from only a thin layer**
6. **Long life expectancy**
7. **Flexible and thus resistant to soil deformation**
8. **Highly resistant to drying out, sharp objects, frost and UV radiation**
9. **Use of natural materials**
10. **Self-healing ability**

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Disclaimer

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