

ROADS & RAIL



SMART. CHOICE.

Since 1977, Nilex has stayed committed to working with our clients to unearth better results on their civil, environmental, and construction projects by applying the latest engineered, technically advanced materials and construction techniques in five key application areas:

-  Roads & Rail
-  MSE Walls & Slopes
-  Erosion & Sediment Control
-  Water Management
-  Containment

The Nilex Road Advantage

- **Technical** - Engineered solutions, design software, roads and rail specialist, site support and experience since 1977.
- **Economical** - Optimization of structure section thickness results in lower aggregate processing, transportation and placement costs, as well as increased life expectancy.
- **Environmental** - Thickness savings provide reductions in greenhouse gas emissions associated with the mining, processing and handling of natural aggregate materials.

Design/Build

Nilex has the experience and capacity to partner with design/build teams providing crucial input to reap significant economies over conventionally designed projects.

Whenever materials need to be moved, removed, imported, or protected, Nilex offers innovative options to simply build better, and at lower cost.

Nilex provides professional design and engineering support to help customers utilize Nilex technologies and increase project quality and life expectancy while reducing costs.

Distribution

Nilex products are available at convenient regional locations across Canada and the United States. We offer our customers the availability of in-stock product and speedy delivery, often required to meet changing project deadlines.



ROAD & RAILWAY SOLUTIONS

Nilex's engineered road and rail improvement systems make the construction of roads, highways, pads, runways, yards and light to heavy Class 1 rail structures and intermodal facilities more economical. When compared to traditional construction methods, Nilex's systems significantly reduce the amount of natural aggregate required while increasing structural performance and life expectancy.

Structures built with Nilex geosynthetic products cost less, are faster to build, last longer and minimize environmental impact by using less gravel and energy in construction.

Technical Support

Nilex's Roadway Solutions team includes professional engineers with in-depth knowledge. They can provide assistance in determining the best solution for the challenges you face at any stage of a project.

By engaging Nilex at the earliest stages of your project, our experienced technical support team can assist in developing concepts to support or undertake full construction design, and provide advice and site support to assist customers in effectively installing our products and systems.

Quantifiable Savings

Nilex can calculate the economic and environmental benefits of implementing our engineered geosynthetic products in any road or rail construction design, versus conventional construction methods, using our proprietary and validated* ECO₂ Calculator.

Types of Projects

Over the years we have built:

- Paved highways & secondary roads
- Unpaved roadways
- Parking areas for commercial & industrial facilities
- Freight distribution centers & terminals
- Heavy equipment yards at port, rail, intermodal and industrial facilities
- Heavy haul & access roads
- Airport runways & taxiways
- Railways

** The ECO₂ Calculator's calculations and data sources are all validated by the Delphi Group - a strategic consultancy and solution provider specializing in climate change and corporate sustainability.*



TriAx™ Geogrid



EasyGrid™ (Geocomposite)



Geotextile & Geogrid



EnviroGrid (Geocell)

SUBGRADE & SUBBALLAST STABILIZATION

Often poor subgrade soils do not possess the strength to support construction activities and the subsequent intended vehicle or train loads.

Nilex's line of reinforcement and stabilization materials maximize load distribution and increase the effective bearing capacity of the subgrade to help provide a stable foundation layer from which a permanent or temporary road/trackbed can be built.

Incorporating Nilex's biaxial and triaxial geogrids, woven, high strength woven and nonwoven geotextiles, and cellular confinement systems in road and railway design improves the subgrade support - and ultimately the life span of the structure - by reducing and spreading the stress on the weak subgrade.

MECHANICALLY STABILIZED BASE & BALLAST LAYERS

From haul roads to railways, Nilex's geosynthetics provide a proven solution to base reinforcement, ballast stabilization and optimization.

Road & rail structures can fail prematurely due to the lateral displacement and weakening of base course aggregate or ballast fouling. The structural strength provided by Nilex's products allows for the installation of thinner aggregate sections, reduced asphalt thickness, or the improved performance of conventionally designed structures.

The structural benefits of using Nilex's geosynthetics in road and rail construction include:

- Reduced lateral spreading of the aggregates
- Increased confinement leading to a stiffer section
- Reduced asphalt fatigue
- Mitigating ballast fouling

Overall, roads and railways designed with geosynthetics can see increased load bearing capacity, a longer service life and reduced section thicknesses.

PAVEMENT PRESERVATION

Pavement cracking on roads, highways, parking lots and airport runways and aprons is a common problem. The intrusion of water through surface cracks and into the base structure accelerates deterioration of the roadway structure.

Resurfacing the road can improve the situation but only until cracks in the underlying layers reflect through the new surface. Nilex's line of pavement interlayers and additives can reduce maintenance costs and extend the roadway lifespan by:

- Providing reinforcement between the levelling and surface course of the pavement to resist the migration of reflective cracks.
- Preventing surface water infiltration by forming a moisture barrier and stress absorption layer, improving the pavement's resistance to reflective and fatigue cracking.
- Providing an enhanced Asphalt Concrete mix design utilizing a specific dispersing agent to allow aramid fibers to be adequately and proportionally mixed at the plant to mitigate cracking and rutting in the final structure.

**Some solutions are location specific and may not be available in all areas. Contact a Nilex office to check availability.*

POTHOLE REPAIR SOLUTION

Pothole formation and repair is an ongoing issue for anyone that owns asphalt/pavement. Fortunately, Nilex has a new liquid-activated asphalt mixture suitable for use as a permanent pothole repair solution for asphalt and concrete applications. This product is a blend of asphalt aggregates, asphalt cement binder and organic additives that react with liquids, typically water, to create a chemical reaction that causes the asphalt mixture to rapidly harden and become asphalt pavement.

The gradation of aggregate used to make this product is similar to asphalt surface course mixes, making it a permanent solution, saving you time and money from ongoing maintenance.





DrainTube



Multi-Flow



WickDrain



PaveDrain

SUBSURFACE DRAINAGE & PERMEABLE PAVERS

One critical design component of any road and railway structure design is drainage. Stormwater management is vital to ensuring the long-term success of our structures. Proper infiltration, storage, conveyance and drainage beneath these structures creates a safe mode of transportation by minimizing structure failure, ponding and sheeting.

Nilex offers an assortment of drainage systems that complement our other road and railway products and provide maximum drainage capacity with a minimum need for trenching and processed aggregate. Our solutions include edge drains, strip drains, drain tubes, engineered synthetic subsurface drainage layers and permeable pavers which provide rapid drainage of water entering the structure, reducing long-term maintenance costs.

When used in place of conventional drainage structures, such as French drains, Nilex's prefabricated drains provide equivalent or higher drainage capacity in a fraction of the space. The streamlined design of the prefabricated drainage systems provide significant cost savings and environmental benefits in the excavation and removal of material and the transportation and placement of drain rock, within the roadway or trackbed structures.

Nilex's permeable articulating concrete block system is built to effectively manage stormwater runoff. It combines a patented arch design in a concrete block to create an internal storage chamber. The arch forms a reservoir for stormwater runoff while simultaneously providing strength for heavy vehicular loads.

“Effective drainage is critical to the long-term integrity of the road structure.”



Custom Fabrication

Nilex's in-house fabrication facility has the ability to convert existing geosynthetic products into custom sizes, including geomembrane seaming and geotextile sewing, to increase the width and/or roll size of the original product to meet the needs of a project. In addition, Nilex can fabricate a wide range of erosion and sediment control materials in custom sizes including silt fence, silt curtains, dewatering bags, etc.

Project Services

Nilex provides installation services for projects where geosynthetics and geoenvironmental products are utilized. Areas of specialization include liner containment systems, site amoring and erosion control applications.

Depending on the size of the project, nature of the work, and owner's requirements, Nilex can provide services as a subcontractor, general contractor, or joint venture partner.





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