



TITAN TIMES

2015 HIGHLIGHTS

Completion of an Impressive
Geodesic Dome Project

More Inside!

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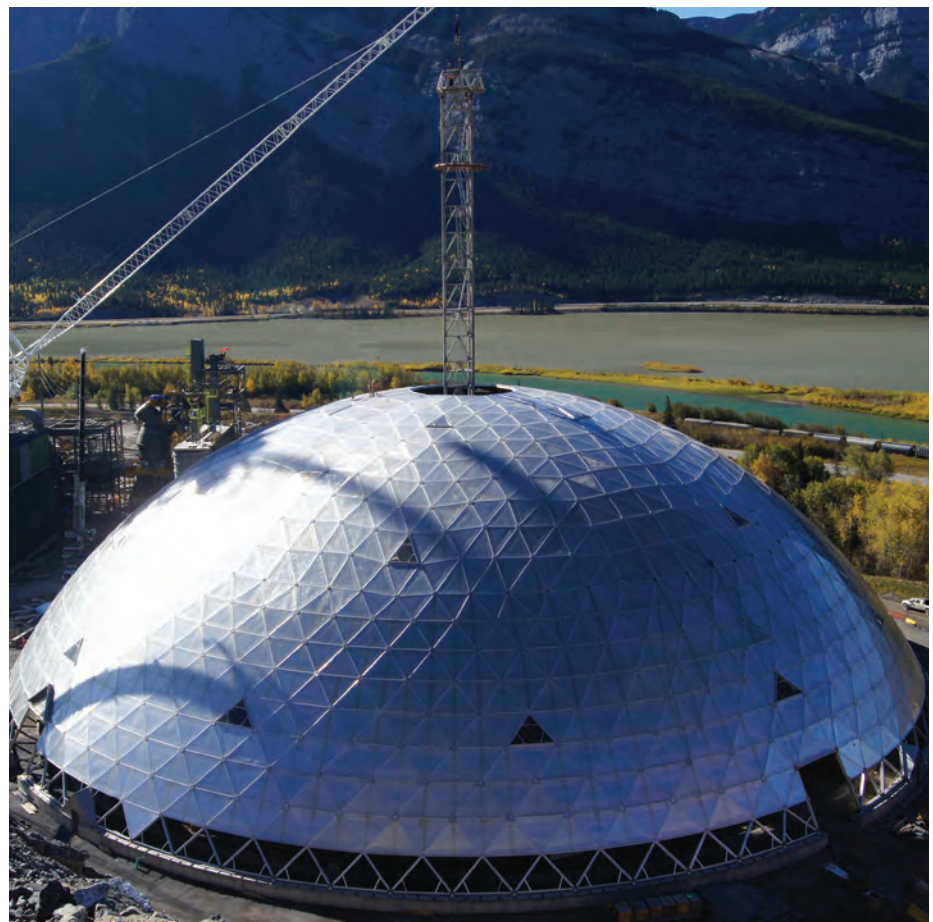
2015 HIGHLIGHTS



PROJECTS

▶ Titan Erects One of Canada's Largest Geodesic Domes

We are proud to have played a major role in the construction of one of Canada's largest aluminum geodesic domes at a site in Alberta. Measuring an impressive 46 meters (150 ft) high and spanning 111 meters (364 ft), about the length of a football field, the dome sits on a concrete footing and provides weather proof storage for dry lime used in cement manufacturing. Titan was responsible to build the entire dome which included assembling and utilizing an impressive 91 meter (300 ft) centrally located tower to facilitate construction and lifting of the dome in sections. Construction began in March and finished in mid-October.



▼ Cutting-Edge Landfill Cover System Installed in Western Canada

Titan is thrilled to have supplied and installed the first ClosureTurf® landfill closure system in Western Canada. Owned and patented by Watershed Geosynthetics, ClosureTurf®, is a unique cutting-edge three-component system closure system, comprised of a structured impermeable geomembrane, an engineered turf, and a specialized sand infill. The heavy duty geomembrane, manufactured by AGRU America, includes studs on the top for high capacity drainage of rainfall, and spikes on the bottom providing the highest interface friction on the market.

Designed to handle gas pressure build up, eliminate releases and avoid soil sliding, ClosureTurf® is proven to significantly outperform traditional vegetative closure methods as far as installation, maintenance and environmental compliance. Normally manufactured in green ClosureTurf® can also be produced in a tan colour which the client chose to allow the landfill cap to blend-in with the dry vegetative surroundings. In addition to its aesthetic appeal ClosureTurf® was also chosen for its low maintenance requirements and long-term cost savings.



Because the system is very detailed only certified ClosureTurf® installers are approved to install it ensuring precision for effective performance and final aesthetics. A manufacturer representative is also required on site at every installation to ensure compliance with their license agreements. In addition to ClosureTurf® installation certification, Titan's field crew for this project had extensive geosynthetics installation experience which made for a very smooth and efficient install.



▼ Building Under-River Tunnels

After months of coordination and working with a multiple stakeholders, Titan joined forces with Ward & Burke Microtunnelling to build a new sewer tunnel system under Calgary's Bow River. We supplied and helped install 640—3 meter (10 ft) long sections of concrete pipe lined with a studded protective geomembrane and ranging from 1.5-1.8 meters (5-6 ft) in diameter.

As sections were put into place and butted against each other, Titan technicians capped the joints using extrusion welders to form an impressive network of 6 tunnels covering a total distance of 2 km.

The project is expected to be completed in early 2016.



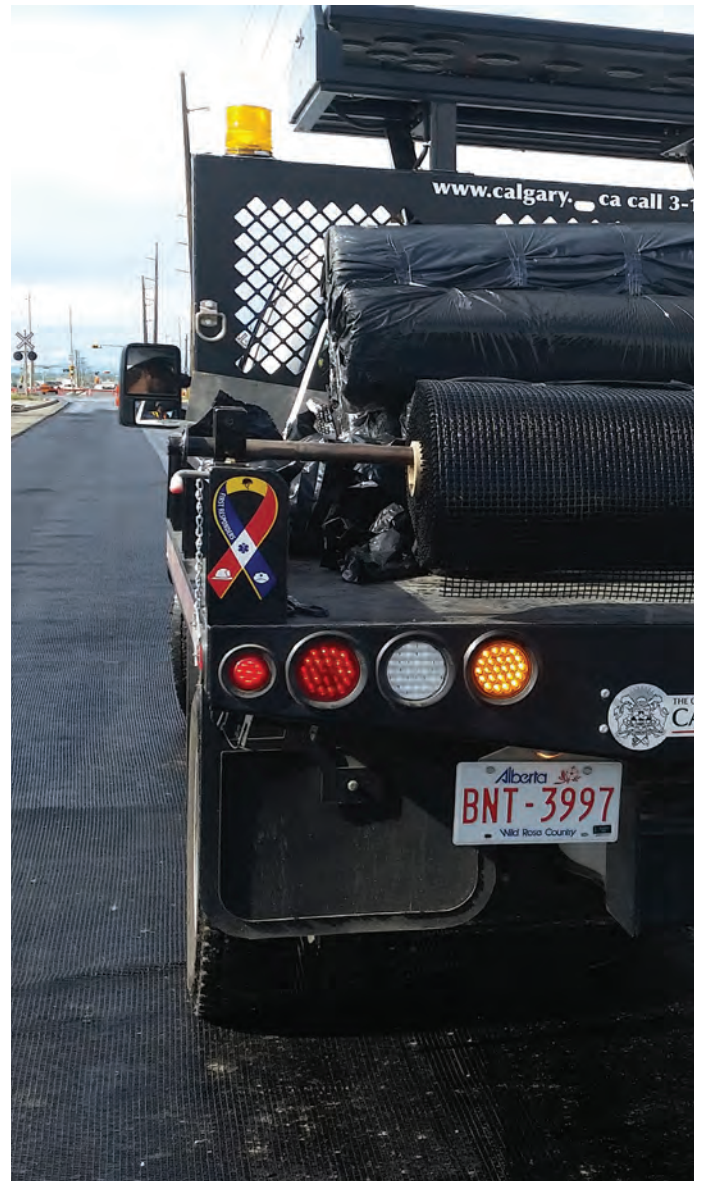
City of Calgary Chooses Titan Geogrid

Changing climates can cause roads to deteriorate faster than they should. Although asphalt is a durable and economical material for road construction, maintenance problems occur when cracks form within the base layers of the road and are reflected up into the top layers. These cracks form due to very low temperatures, the freeze-thaw cycle, moisture penetration and traffic fatigue. That is why, the City of Calgary chose an innovative approach to road construction using Titan's fiberglass geogrid system. Developed after a series of technological advancements and rigorous R&D, our fiberglass geogrids are designed to improve the service life of roads and reduce lifecycle costs.

The most recent project involved using Titan's TE-FGC 10 fiberglass geogrid composite to rehabilitate a section of road that had wheel path fatigue cracking indicative of deficient pavement structure.



The typical solution to this problem would be to repair the road by milling and applying a new inlay and overlay however this does nothing to enhance pavement performance or longevity. Because this was a priority, TE-FGC 10 was placed between the asphalt's base and top layer to reinforce the overlay / inlay and increase the strength and stiffness of the asphalt. In addition to reduced overlay thickness which helped speed up road construction and decrease costs, expected results of using TE-FGC 10 include rutting prevention; decreased fatigue cracking; extended inlay life due to minimized and retarded reflective cracking; increased pavement fatigue life; and reduced pavement water infiltration which otherwise weakens the road base and subgrade.



Working with Canada's Largest Energy Company

After extensive consultation and technical support Titan is thrilled to have worked with Canada's largest energy company on a project that involved supply and installation of a unique lining system over a coke material landfill in Northern Alberta. The challenge with this project involved a weak sub-grade which was compromising the landfill's structural stability. Taking an innovative approach we designed a structural lining system using a combination of Titan's TE-BXC-30 geogrid composite, GCL and HDPE geomembrane to stabilize the landfill base before covering it. The project has been successfully completed and is a prime example of environmental and engineering solutions working hand-in-hand.

*For more information contact Robert Pellerin,
Alberta Operations Manager at 780-297-8692.*

SAM'S GEOGRID CORNER

NEW TE Geogrid Advancement!

Our TE geogrids represent the very latest in geogrid technology and excel in performance parameters in international and US geosynthetics testing laboratories. We are excited to have brought to market TE-FGC, a brand new geogrid composite with reinforcement and filtration properties. A high modulus polymer coated bi-axial fiberglass geogrid bonded to 150gsm non-woven polypropylene geotextile, TE-FGC offers effective structural reinforcement for asphalt while providing a continuous water deforming barrier.



INTERNATIONAL ROUND-UP

New Zealand Irrigation Channel

Titan product has made its way around the world to New Zealand. Offering the most cost-effective and environmentally friendly solution, we were awarded a tender by the New Zealand Government to supply materials for a prestigious 1 million square meter irrigation channel lining project. The project was completed in the spring and included our heavy-duty TE-GTX 600R non-woven geotextile as a cushion layer under HDPE geomembrane to protect the channel walls against erosion.



Launching TE Geogrid in Latin America

We are happy to report that we continue to make headway in the Latin American Market, with our TE-FG Fiberglass Geogrid, specifically in Mexico. Designed for road reinforcement there is tremendous opportunity for this product to improve road systems that are quickly deteriorating due to weak and saturated sub-base soils.

ODDS & ENDS

Giving Back Through R & D

Our R & D unit remains strong, and we are pleased to continue to grow and support the engineering community with a number of our technical papers having recently been published and presented at various industry events. Below is a sneak peek...look for these on our website soon!

REMOVAL OF PHOSPHORUS AND OTHER COMPONENTS FROM EUTROPHIC LAKE WATER (7th International Congress on Environmental Geotechnics—Melbourne, Australia, November 2015)

POLYMER GEOGRID, AND GEOCOMPOSITE SOLUTIONS FOR HIGHWAY AND MINING APPLICATIONS (II National Congress of Geosynthetics—Lima Peru, March 2015)

USE OF POLYMER GEOGRID COMPOSITE TO SUPPORT RAIL TRACK OVER WEAK SATURATED SUBGRADE – A Case Study. (14th Global Joint Seminar on Geo-Environmental Engineering—Concordia University, Montreal, Québec, May 2015)

INSIGHTS INTO THE EFFECT OF GEOMEMBRANE WELDING PARAMETERS ON COLD CLIMATE WELDING

Titan was successful in helping former summer student William Francey obtain a grant from the Natural Sciences and Engineering Research Council of Canada (NSERC) to examine cold weather welding of high-density polyethylene (HDPE) geomembrane. William is working towards his masters in Civil Engineering under Dr. Kerry Rowe at Queens University in Kingston Ontario.

COMING SOON:

TE Fiberglass Geogrid Lecture Series!

Starting in March, Titan's Chief Technical Officer, Sam Bhat, and John Mooney, Titan's VP of Sales & Marketing will be teaming up to deliver a series of information sessions across Canada focusing on our TE Fiberglass Geogrid System. Stay tuned for details as they become available!

New Partnership



Collaborating with Firestone Building Products we are pleased to have successfully completed 3 major geomembrane lining projects using Firestone Geoguard™ EPDM Geomembrane. One project was in Eastern Canada and involved installing a total of 197,000 sq. ft of EPDM geomembrane lining a series of waste water treatment lagoons. The other project included installing nearly 263,000 sq.ft of EPDM geomembrane to line a civic snow melt pond. Titan is pleased with the outcome of these projects and looks forward to a continued partnership with Firestone.





WE'RE TURNING 10!

In April 2016, Titan will officially celebrate its 10th Anniversary! From modest beginnings in a backyard shop to moving into our current location in Manitoba, and expanding across Canada, Titan has experienced tremendous growth during the last 10 years. We are excited to reach this important milestone and thank all those that have made this possible.

STAFF UPDATES

Here's what's been happening at Titan with internal staff appointments and new additions to our team;

Tanis Smyrski, new Administrative Assistant.

Janelle Hébert, Customer Service Representative for Manitoba.

Tasha Sullivan (Gordon) returned to Manitoba and now works in an Inside Sales role supporting our Manitoba, B.C. and Alberta offices.

Vicki Tomaschewski joined Titan in a new position as Sales/ Customer Service Representative for Saskatchewan at our Regina/ Emerald Park location.

Stéphane Trudeau, who previously worked in the field, joined our Project Management Unit in a new Project Coordinator position.

Robert Pellerin, from our Project Management Unit, was promoted to Alberta Operations Manager and has relocated to our Alberta location.

Ron Martel joined us as Manitoba Sales Representative bringing an extensive industry background to the sales team.

Derek Bishop, Titan's newest hire, joins us as our new Controller bringing valuable experience not only in a controller capacity but also in the construction industry. We are pleased to welcome Derek to the team.

All Titan staff can be reached at 1-866-327-1957 or info@titanenviro.ca