



# Newsletter

October 2012 EDITION

The South African Chapter of  
the International Geosynthetic  
Society



Established in 1994 and Dedicated to the Scientific and  
Engineering Development of Geosynthetics and Associated  
Technologies

A newsletter of the Geosynthetics Interest Group of South  
Africa in Association with the South African Institution of Civil  
Engineering

PRODUCED BY GIGSA : [www.gigsa.org](http://www.gigsa.org)

# Fibertex Nonwovens Manufactures Geotextiles in South Africa

Fibertex AS, a geotextile manufacturer for 44 years, based in Denmark, has invested in South Africa to form Fibertex SA (Pty) Ltd, a joint venture between Fibertex A/S, Safyr (Pty) Ltd and the IFU (International Funding Unit).



Fibertex SA's state-of-the-art manufacturing plant



Fibertex SA's quality control laboratory

Fibertex SA manufactures a versatile range of internationally proven Fibertex™ nonwoven needlepunched, staple fibre geotextiles. These geotextiles are designed specifically for use in civil engineering construction works, the building industry, agriculture, as well as marine and coastal engineering. The most common applications are roadworks, drainage and filtration systems, hydraulic works, dam, river and water structures, mining applications, waste disposal (landfills), ground systems and erosion control, to name a few.

Fibertex's quality management system is certified in accordance with the most comprehensive standards set by the international organisation DQS, (the German equivalent of the South African Bureau of Standards), and IQNet (the German controlling body), namely ISO 9001:2008. This means that the quality management system has been implemented and verified at all levels within the organisation. The ISO quality management system accreditation benefits both customers and suppliers. The net result is that customers are guaranteed satisfaction when dealing with suppliers.



## BENEFACTOR MEMBERS (IN ORDER OF JOINING)

Engineered Linings • Kaytech • Aquatan • Geotextiles Africa • SRK Consulting • Jones & Wagener • Gundle Geosynthetics • ARQ Consulting Engineers  
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...continued

## Fibertex Nonwovens Manufactures Geotextiles in South Africa

Fibertex SA's factory is based in Hammarsdale, KwaZulu-Natal, with Fibertex's head office and a regional office on the same site. Geotextiles Africa acts as Fibertex's agent and distributor with regional offices in Johannesburg and Cape Town. The two companies have a wealth of experience and knowledge for clients, design engineers, specifiers and contractors to draw on.

Fibertex SA has noted additional opportunities arising in other regions of the African continent, the Indian Ocean Islands, Australia and New Zealand. In keeping with the company's strategic goal to be close to its customers, it has established a sales team dedicated to servicing these specific regions, and to setting up subsidiaries and distribution networks. Furthermore, over the years the company has set up strategic partnerships in the quest for growth and synergy. The Fibertex and Geotextiles Africa team actively offer technical advice, installation assistance and training within the entire African, Indian Ocean and Australasian region.

A worldwide technical service is offered by visiting the company website at [www.fibertex.com](http://www.fibertex.com). This site has up-to-date company, product and technical literature, all of which can be downloaded.

Fibertex's global success has been demonstrated by the supply of geotextiles into some of the world's largest construction projects, including the Hong Kong International Airport and Palm Island - Dubai.

Within South Africa, Fibertex SA has also successfully supplied geotextiles to a number of prestigious projects including the Namibian Road Authority's road rehabilitation project, as well as the dry ash stacks at the new Medupi and Kusile Power Stations.

Eskom, South Africa's national power utility/supply company, has commenced construction of the two new coal-driven power stations. With the inclusion of power generation facilities in the National Environmental Management: Waste Act (Act no 59 of 2008), ash-deposit facilities must be lined with geocomposite lining systems. Fibertex geotextiles are being used as separation and protection layers in these composite liners. Geotextiles Africa has supplied 850 000 m<sup>2</sup> of Fibertex™ GRI 13 class 2 separation-grade geotextile. Significantly, Fibertex has the capability of developing specific geotextiles and supplying geotextiles that meet stringent international specified grades.



Picture courtesy of Geotextiles Africa and Gast International

Fibertex geotextile separation layer below clay-liner layer, Medupi Power Station



Picture courtesy of Geotextiles Africa and Gast International

Fibertex geotextile protection layer above the new membrane liner, Medupi Power Station

In keeping with global geotextile requirements Fibertex SA is able to manufacture products to many international specifications and test standards. These specification and standards include American Standards (ASTM), Australian (AS), European and International ISO (EN – ISO) and South Africa (SANS).

Fibertex South Africa supports Broad-based Black Economic Empowerment (BBBEE), a government policy to advance economic transformation and enhance the economic participation of all people in the South African economy.



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# Prez Sez

Dear Members,

As the year races on we are pleased to present our final newsletter for 2012. Our main event is fast approaching and we look forward to Prof. Fannin's visit (see newsletter for detail).

It is good to see that a number of geotextile specifications that are in the process of being adopted verbatim from the ISO suite of specifications are currently out for public comment in South Africa. The specifications relate to terms and definitions, tensile strengths, thickness measurements as well as sampling and preparation. We have posted these drafts on our website for easy reference.

An interesting topic that we have tabled as committee is to discuss (in the coming months) a means of trying to establish the market value of our industry. The benefits of this may not immediately be evident but is a statistic that, for instance, the SABS is interested in once they start investing in national standards relating to a specific industry. This is not a simple task and we will have to appoint an independent party to administer this process and GIGSA may just be the forum to initiate it. We will keep you informed in this space of the newsletter itself as the concept develops - hopefully to fruition. Any ideas, suggestions or past experience with regards to such an exercise will be most welcome.

This is my last commentary for the current term of office that ends in 2013. It has been a privilege to occupy the GIGSA President's chair, and to those that follow our newsletter we hope that this blog and the newsletter in general added value or was, an interesting read.

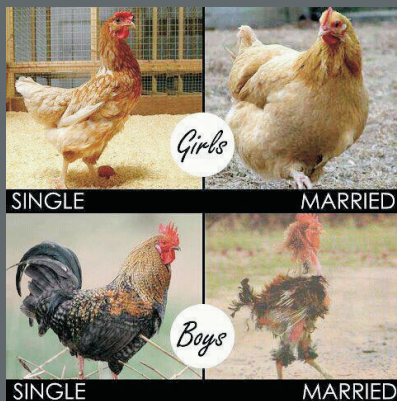
All the best,



*Geosynthetic Greetings,*  
**Anton Bain**  
President

anton@jaws.co.za

*"scientia potentia est"* (Attrib Sir Francis Bacon)



signs of the times



## Geocontainers Provide Access Platform for SANRAL Sundays River Bridge Twinning Project

In order to ease the traffic flow along SANRAL's N2, Section 11 from Coega to Colchester, which includes the Sundays River Bridge, construction of a 2-lane twin bridge alongside the existing structure was planned to carry westbound traffic. Working on bridges where there is little or no adjacent access to the works can present many difficulties, and Kaytech's geocontainers presented a solution when a temporary earthen construction platform was to be constructed within the river and erosion protection of the embankment was required.

A challenge for consulting engineers Aurecon and the contractor, Concor Roads & Earthworks, was to provide the temporary construction platforms alongside the existing bridge to provide access for heavy (84 ton) piling equipment and other plant and materials, while work on the bridge foundations took place. Kaytech's glazed bidim A6 sand-filled geocontainers provided a low cost solution for containment of the earth fill used to create these temporary construction platforms. The A6 grade was selected for the geocontainers, as the strongest but most economical option, as there were no large or sharp objects in the dune sand geocontainer fill, thus reducing risk of damage. The bidim A6 was 'heat-glazed' prior to manufacture of the bags at Kaytech's CMT (Cut, Manufacture and Trim) plant at Atlantis, thus providing a strengthened water-facing surface. This was required, as river velocity was anticipated being up to 2.5 m/s past the geocontainer facing.



Geocontainer filling operation

The geocontainers also prevented contamination of the river by the platform fill and reduced the volume of this fill by enabling the steepening of the water-facing slope to around 1:1. The bags were dry-filled in a purpose-made formwork frame, stockpiled and then placed in position by a crane.

The Sundays River at this location is, on average, 2.5m – 3.0m deep and Aurecon estimated the average river velocity at approximately 2.2 m/s for the duration of the project. The working platform was first constructed on the eastern bank of the river. Once work here was complete, the bags were extracted and emptied of sand, then discarded. The fill sand stockpile was then used to create the geocontainer-protected platform on the western side of the river and the bags were finally discarded on completion of the project.



Stockpiling of sand-filled bidim geocontainers

As a temporary work, the cost of this protection layer played a significant role in the choice of solution and the bidim A6 Geocontainer solution met this criterion. An alternative would have been the use of gabions, which would have been considerably more expensive. This section of the project lasted 17 months during which time both platforms were successfully protected by the geocontainer bags.



Completed eastern platform

For more information contact:

**Julian Maastreht  
Kaytech**

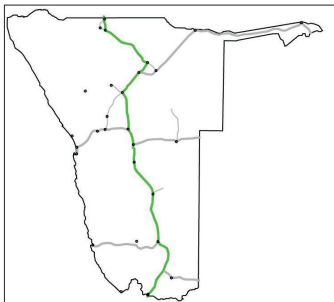
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julian@kaytech.co.za



## Historical Use of Geotextiles on Namibian Roads

**Historical Use of Geotextiles on Namibian Roads**  
 Namibia's 44 500 kilometre road network, administered and maintained by the Namibian Roads authority is regarded as one of the best on the continent. Included in the distribution of road surfaces are 6 664 kilometres of standard bitumen road.

One of the most important major roads in Namibia is the B1 from Noordoewer (South African border) to Oshikango (Angolan border), 1694 km in length. The road passes through the centre of the country in a north-south direction connecting important cities and towns such as Ondangwa, Tsumeb,, Windhoek, Rehoboth, Mariental, Keetmanshoop and Noordoewer.

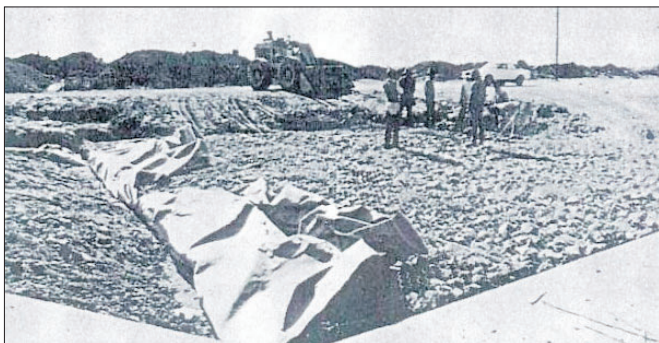


National Route B1, Namibia between linking the Angolan and South African borders

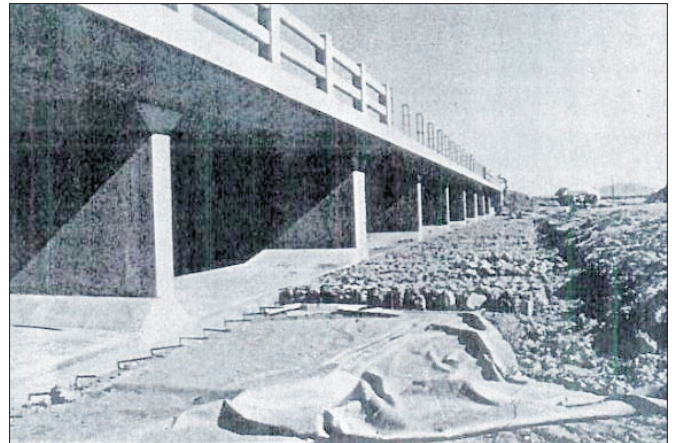
Dating back to 1977, Fibertex AS (then a subsidiary of the East Asiatic Company) supplied geotextiles to a number of projects through its office in South Africa.

One notable project was in Namibia for the then SWA Administration Roads

Department. The national route B1 road was built bypassing Rehoboth, 90 kilometres south of Windhoek. The road crossed several flat sandy river flood plains by means of cellular type bridge structures. The bridge foundations were protected from scour by means of Reno mattresses, which were underlaid by a layer of Fibertex S300, placed as filtration layer below the mattresses.



Fibertex geotextile filtration layer below the Reno-mattress bridge foundations, Rehoboth, Namibia - 1977



Fibertex geotextile filtration layer below the Reno-mattress, bridge foundations, Rehoboth, Namibia -1977

Thirty five years later, the Namibian Road Authority is currently rehabilitating the same road, part of a regional project. The rehabilitation consists of a new single seal wearing course. The pothole repair and crack sealing are undertaken before full width geotextile stress relieving and waterproofing overlay of Fibertex AM2 SA is placed. Messrs Geotextiles Africa will be supplying in excess of 1 000 000 m<sup>2</sup> of Fibertex road rehabilitation geotextile for the project. The road temperature recorded at 16:15 in the afternoon was as high as 57 degrees Celsius, making challenging installation conditions for the contractor.



Fibertex geotextile stress relieving and waterproofing layer placed onto the road surface, Route B1 Namibia - 2012



Road surface temperature of 57 degrees Celcius at 16:15 in the afternoon whilst installing the Fibertex geotextile, Route B1 Namibia - 2012

For more information contact:

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## Final Announcement

### **GIGSA Presents Short Courses on Filtration and Drainage in Pretoria, Durban and Cape Town over 5 – 9 November 2012**

**GIGSA is preparing to present CPD-accredited short courses on:**

#### **Geosynthetic Reinforced Soil Geotextiles in Filtration Applications**

To download the complete South African course prospectus and to register, go here: [www.gigsa.org](http://www.gigsa.org)

**Presenter: Professor Jonathan Fannin DPhil, P.Eng  
Professor and Associate Head (Graduate Programs)  
University of British Columbia, Canada**

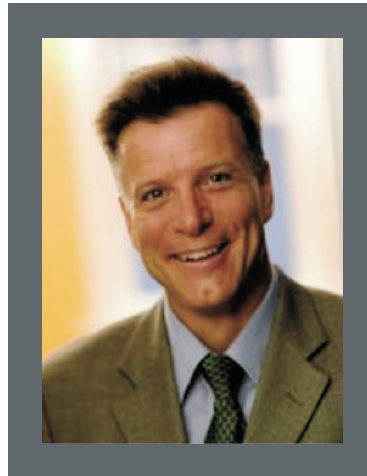
Jonathan Fannin obtained a B.Sc. (Civil Engineering) from the Queen's University of Belfast, and a D. Phil. (Geotechnical Engineering) from the University of Oxford for studies on geosynthetics for soil stabilisation. Thereafter, he joined the Norwegian Geotechnical Institute, Foundation Engineering Section. He moved to the University of British Columbia, joining the faculty in 1989, and attaining promotion to Full Professor in 2001. His professional service has included Chair of the Canadian Geotechnical Society (CGS) Geosynthetics Division, Board Member of the North American Geosynthetics Society, and Associate Editor of the Canadian Geotechnical Journal.

He lectures on soil mechanics and the practice of geotechnical engineering, with application to civil engineering earthworks, and to natural resources engineering in the forest sector.

Courses taught at the undergraduate level include introductory soil mechanics (CIVL 210). Subjects taught at the graduate level include advanced soil mechanics (CIVL 570) and designing with geosynthetics (CIVL 579). Additionally, he has delivered professional short courses on specialist topics to practising engineers in Canada, the USA, Europe and SE Asia. He has twice been recognised by the University of British Columbia for his outstanding contributions to teaching excellence, with a Killam Teaching Prize (1998 and 2004), and, more recently, received the President's Teaching Award from the Association of Professional Engineers and Geoscientists (2008).

Jonathan has authored or co-authored over 100 papers in

journals, conference proceedings and research reports as well as authored or made contributions to 4 books. His current research activities focus on ground improvement with geosynthetics; slope stability and landslide risk management as well as seepage-induced internal instability and piping phenomena in soils. For a list of his publications, go here: [http://www.civil.ubc.ca/documents/faculty\\_publications/FA\\_NNIN\\_Full-Pub-Record\\_April-2011.pdf](http://www.civil.ubc.ca/documents/faculty_publications/FA_NNIN_Full-Pub-Record_April-2011.pdf)



For more information about Prof Fannin, go here: <http://www.civil.ubc.ca/people/faculty/faculty-fannin.php>

#### **Why you should attend**

This short course will offer insight into the state of the art use of geosynthetics in reinforcement and filtration. If you are involved in the design or construction of reinforced soil structures or drainage applications such as earth embankment dams, roadside drainage, structure basements, landfills, tailings dams or even golf course construction, you cannot afford to miss this course.

#### **Continuous Professional Development**

Accreditation of CPD points (1 point for full day course and 0.5 points for half day course) are pending and will be finalised following the course. Refer to [www.gigsa.co.za](http://www.gigsa.co.za) for confirmation in December 2012.

0.2 CPD points will be awarded for attending Prof Fannin's lecture following the GIGSA AGM.

#### **GIGSA AGM**

The AGM is planned from 14h30 to 15h30 on Tuesday 16th November at Stone Cradle near Rietvlei Dam outside Pretoria (see <http://www.stonecradle.com/contact-us.html> for directions), immediately followed by the lecture on 'Critical filters in dams and dam applications: granular and geosynthetic' by Prof Fannin



# CONFERENCE CALENDER 2012

some important Geosynthetic Seminars and Conferences in 2012 and 2013

International Conference on

## Ground Improvement and Ground Control

Transport Infrastructure Development and Natural Hazards Mitigation

ICGI Wollongong 2012 - (30 October - 2 November 2012)

University of Wollongong

<http://www.icgiwollongong.com/index.cfm>

"This Conference will act as a platform to disseminate the most recent research and field advances to the geotechnical community around the globe and is expected to be the biggest Ground Improvement conference to be held in Australia. Outstanding keynote lectures, State of Art (SOA) presentations, heritage lectures and numerous technical discussions will contribute three days of scientific and technical discourse followed by attractive excursion encompassing the natural landscape of the south coast of New South Wales."

OCTOBER

# GA2012

## GEOSYNTHETICS ASIA 2012

5th Asian Regional Conference on Geosynthetics

10 to 14 December 2012 Bangkok, Thailand

Deadline for Submission of Abstracts to GA2012: 31 May 2011

<http://geosynthetics-asia2012.com/>

DECEMBER

## Geosynthetics 2013

April 1-4, 2013  
Long Beach, California

[www.geosynthetics2013.com](http://www.geosynthetics2013.com)

<http://www.geosynthetics2013.com/index.cfm>

GRI-25: A 25-Year Retrospective of Geosynthetics and Glimpses Into the Future. Geosynthetics 2013 is honoured to host the annual GSI Conference (GRI-25). Speakers will address the history and background of environmental and transportation regulations; resin and additive developments; manufacturing of all of the different types of geosynthetics; ASTM, ISO and GRI standards developments; development of generic specifications; progression of design methods; trends in contracting; and institutional developments like IGS, NAGS, GSI, GMA, etc... etc.

APRIL 2013

<http://www.10icg-berlin.com/>

IGS

21 to 25 SEPT 2014 BERLIN

# 10

10th International Conference on Geosynthetics

Organized by DGGT  
Deutsche Gesellschaft  
für Geotechnik e.V. and German GSI Chapter

## International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures



Faculty of Engineering, Bologna University, Bologna, Italy: 14-16 October, 2013

<http://www.civil.columbia.edu/bologna2013/>

The Symposium is organized under the auspices of the Department of Civil, Environmental and Materials Engineering (DICAM), University of Bologna, Italian Geotechnical Association, International Geosynthetics Society, and Technical Committees TC 101 (Laboratory Stress Strength Testing of Geomaterials) & TC 305 (Geotechnical Infrastructure for Megacities and New Capitals) of the International Society of Soil Mechanics and Geotechnical Engineering

OCT 2013

SEPT 2014

## New GIGSA Newsletter Editor to be Appointed

This is GIGSA's last newsletter for 2012, and a farewell from me. Having been an original founder of GIGSA in 1994, and having served as our newsletter editor for more years than I care to remember, and having retired once before (and been resurrected), I am finally stepping off the GIGSA committee at the AGM on 6 November. The new committee formed then will hopefully appoint one of their members as Newsletter Editor.

Our newsletter is read all over the world, as while being published by GIGSA on its website at [www.gigsa.org](http://www.gigsa.org) (where back copies may also be found) it is also published on the IGS website at [www.geosyntheticsociety.org](http://www.geosyntheticsociety.org) as well on the fantastic geosynthetics resource website at [www.geosynthetica.net](http://www.geosynthetica.net). The potential readership thus runs into thousands around the world.

The IGS Council values the GIGSA newsletter highly, as South Africa one of the few IGS chapters that actually publishes regularly (as may be seen on the IGS website, where only ours and the Indian Chapter's newsletter may be found – and at time of writing there are 35 chapters).



Peter Davies

This newsletter is the primary communication GIGSA has with our members, and its importance cannot be overstated. It has thus always been a puzzle to me why so many of our

members – particularly the corporate ones who spend fortunes on advertising, are so tardy to submit material for publication on the projects they have to GIGSA. The market for geosynthetics in South Africa alone runs into hundreds of millions of Rand per annum and there are some projects out there where geosynthetics constitute a very significant part of the total costs. This newsletter is a primary link to those who have expressed an interest in geosynthetics and it costs absolutely nothing to publish case histories and projects in this medium.

Peter Davies

So, in closing, to all our readers (- If the supermarkets can do it in October, why can't I?)



**Happy Christmas to all of you!**

May 2013 bring you all the best you wish for yourselves and your loved ones!

Peter Davies



*Parting Shot (now that Mangaung is around the corner):*

**Politics: strife of interests masquerading as a contest of principles. The conduct of public affairs for private advantage.**  
~Ambrose Bierce, *The Devil's Dictionary*, 1911





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## Fibertex

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Welcome to our newest benefactor members :  
*Plasti-Weld and Rho-Tech*

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