

IGS NEWS

NEWSLETTER OF THE INTERNATIONAL GEOSYNTHETICS SOCIETY

Dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies

VOLUME 15 NO. 1

MARCH 1999

The IGS Education Committee: Helping the IGS Achieve its Objectives by James Paul, Chairman, IGS Education Committee

One of the main objectives of IGS is to collect and disseminate knowledge on all matters relevant to geotextiles, geomembranes and related products. The Education Committee is charged with tackling this objective at all levels from students through potential users and even those who are considered experts in the field.

It is necessary, therefore, for the problem to be tackled in several different ways, each with a different objective and a different target audience. Consequently, the projects and tasks faced by the Education Committee have been quite varied as they undertook methods to reach each of these various audiences.

The following are some of the projects of the IGS Education Committee.

Videos

The IGS has created two videos: "Geosynthetics in Transportation Applications" and "Geosynthetics in Landfills". Work is now proceeding to create a third video titled "Geosynthetics in Reinforcement". Visual materials such as film, slides and video are being sought for inclusion in this project. Sponsorship is also available. Contact the Secretary of the IGS, for details (p12). This video will be most useful to practitioners.

Copies of the IGS videos are available at no charge to

educators who are teaching courses in geosynthetics and are nominated through their IGS chapter. Copies may also be purchased from the American Society of Civil Engineers (ASCE), the Industrial Fabrics Association International (IFAI) and in some cases directly from the IGS Secretariat. Each video is priced at US\$100.

Notes of the US Dept of Transportation, FHWA course: Geosynthetic Design and Construction Guidelines

The US National Highway Institute (NHI) has made their notes from the above course available to IGS Chapters (other than NAGS) for use in the IGS international education program. These notes cover a wide range of geosynthetic applications, including roadways and pavements, reinforced slopes, reinforced soil walls, erosion control systems, subsurface drainage and geosynthetic barriers. In each application the notes examine the problems which can be solved using geosynthetics and the design philosophies which may be followed as well as durability, installation and cost considerations. A large slide set accompanies the notes and will be used as an education resource.

Copies of the notes will be mailed to Chapters in 1999. Chapters are encouraged to make these documents available to educators that are members of the IGS and are teaching geosynthetics at their universities.

IN THIS EDITION:

- Dr. Mercer passes away p2
- Brazilian Chapter Report p2
- Call for IGS Awards Nominations p3
- Western Pacific Chapter Forms p4
- ASTM Symposium on Geosynthetic Grips p4

- Call for IGS Council Candidates p5
- Geosynthetics at TRB meeting p6
- Geosynthetics '99 Conference coming in April p8

Visit the IGS Web site at
<http://igs.rmc.ca>

A session on geosynthetics was held for the first time at a Brazilian national conference on geotechnical engineering during the XI Brazilian Conference on Soil Mechanics and Geotechnical Engineering – XI COBRAMSEG, held in Brasilia, Brazil, from 5 – 10 November 1998.

The conference is organized every four years in different cities of Brazil by the Brazilian Society of Soil Mechanics and Geotechnical Engineering (ABMS). This time 506 professionals attended the event. Eighteen papers on geosynthetics were selected after peer review and are published in the conference proceedings (sixteen of them in Portuguese and two in English) which consists of a three volume set with a total of about 2000 pages. The Keynote Speakers of the sessions were Prof. Richard J. Bathurst, President of the IGS, Canada, and Dr. Ennio M. Palmeira, University of Brasilia, Brazil, who was also the President of the Organizing Committee of the Conference.

The following geosynthetics manufacturers were among the sponsors of the conference: Huesker Geosynthetics of Brazil and Bidim-BBA Geosynthetics of Brazil. Booths of geosynthetics manufacturers were also present in the exhibition hall with geosynthetics applications and products from Huesker, Bidim-BBA, Maccaferri, Amoco, Construserv and Synthetic Industries. A one day course on geosynthetics applications was also delivered during the conference by Dr. Ennio M. Palmeira (University of Brasilia) and Dr. Mauricio Abramento (São Paulo Technological Research Institute – IPT). Additional information on the XI COBRAMSEG can

be obtained from Dr. Ennio M. Palmeira, University of Brasilia, Dept. of Civil Engineering-FT, 70910-900 Brasilia, DF, Brazil, Tel.: 55-61-273 7313, Fax: 55-61-273 4644 and email: palmeira@unb.br

Forthcoming Short Courses on Geosynthetics

The next two short courses on geosynthetics under the auspices of the Brazilian Chapter will be held in the cities of Porto Alegre (April 1999) and Rio de Janeiro (during the III Brazilian Symposium on Geosynthetics, October 1999). Information on these courses can be obtained from Mr. Eduardo Azambuja, Azambuja Engenharia e Geotecnia Ltda., Tel./Fax: (051) 2215966 or 2112657 or 2865623, email: azambujaeng@vanet.com.br or from Dr. Mauricio Ehrlich, Coppe/UFRJ, C.P. 68506, 21945-970 Rio de Janeiro, RJ, Brazil, email: me@GEOTEC.COPPE.UFRJ.BR, respectively.

III Brazilian Symposium on Geosynthetics - Geossintéticos'99 and 1st South American Symposium on Geosynthetics

These meetings will be held in Rio de Janeiro, 27-29 October 1999. Additional information can be obtained from Dr. Mauricio Ehrlich (President of the Organizing Committee), Coppe/UFRJ, C.P. 68506, 21945-970 Rio de Janeiro, RJ, Brazil, email: me@GEOTEC.COPPE.UFRJ.BR

*reported by Dr. Ennio M. Palmeira, President
Brazilian Chapter of IGS*

Call for IGS Awards Nominations for the Period 1996-1999

(deadline for nominations 1 October 1999 – deadline for submissions 1 December 1999)

Purpose

IGS Awards will be granted in 2000 to individuals or groups of individuals who have made an outstanding contribution to the development and use of geotextiles, geomembranes, related products or associated technologies through their scientific and technological achievements. Awards will be made for the recognition of achievements completed and/or the validity of which has been demonstrated during a four-year period preceding the year of the award (i.e. 1996 through 1999 inclusive).

Types of awards

There are two awards:

- The Young IGS Member Award for IGS members who are less than 36 years of age on 31 December 1999.
- The IGS Award (regardless of age).

A maximum of five IGS Awards will be granted. Each award will consist of a specially commissioned medal and a diploma.

The winning entries will also be featured at the IGS booth at any conference held under the auspices of the IGS and will be publicized in the IGS News, in special press re-

leases, on the IGS World Wide Web home page, and in other publications.

Candidates

At least one member of an award entry must be a member of the IGS. Each entry is restricted to a maximum of four persons. All members of the IGS are eligible with the exception of the President of the IGS and the members of the Awards Committee.

In the case of a group submission to the Young IGS Member Award, all members of the group must satisfy the age requirement. Any individual or group that is a candidate for the Young IGS Member Award is automatically considered for both award categories (unless requested otherwise by the candidate). However, a candidate may only receive one award for the 1996-1999 period.

Nominations

Nominations of candidates should be typed in English on plain paper (not letterhead) and submitted to the IGS Secretariat at the address on the back page of this issue.

The nomination must include:

- a clear statement of the contribution of the candidate that is to be considered (e.g. if a product, provide a clear

standard upward from its current characterization as the least reproducible of the mechanical property standards. ASTM plans to publish the meeting proceedings as Special Technical Publication (STP) 1379. Papers from the conference are being reviewed now. STP 1379 will include a paper from Dr.

J. Greenwood, ERA, UK, on "Good Laboratory Practice in Creep Testing" which was prepared for this meeting, but was not presented.

reported by Mr. Peter Stevenson, Secretary, IGS

Call for Candidates for the IGS Council Term 2000-2004 Deadline for Applications: 31 January 2000

The by-laws of the IGS prescribe that up to half of the Council be elected every two years. An election, by postal ballot, will therefore be held in May 2000 in order to elect members to the IGS Council for a four-year term, starting in July 2000.

The eight members of the IGS Council whose term of office expires in June 2000 are:

- Prof. T. Akagi (Japan)
- Dr. B.R. Christopher (USA)
- Dr. H-S Chung (Korea)
- Mr. C. Lawson (Malaysia)
- Dr. J. Lafleur (Canada)
- Mr. J. Paul (UK)
- Mr. A.M. Scuero (Italy)
- Dr. C.V.J. Varma (India)

Under the IGS by-laws, Prof. R.J. Bathurst and Mr. D.A. Cazzuffi are automatically members of Council in their capacity as President and Vice-President, respectively. They do not stand for re-election in 2000. The IGS by-laws stipulate that a Council Member may serve two consecutive terms. Hence, Dr. Chung, Dr. Lafleur, Mr. Paul, Mr. Scuero and Dr. Varma are eligible for re-election.

There are **eight** Council members to be elected. Under the by-laws of the IGS, only IGS members are eligible for these positions. **Candidates must be able to travel to and attend the IGS Council meetings, which are held once a year.** Meetings of the IGS Council are generally held in con-

junction with international and regional conferences. The next IGS Council meeting following the election of new Council members will be held in conjunction with The Second European Conference on Geosynthetics (EuroGeo 2) in Bologna, Italy 15 - 18 October 2000. At least three additional meetings will be held for those members whose terms expire in 2004. Typically these meetings are held in Asia, Europe and North America.

Signed letters of application together with a biographical note (not exceeding 12 lines) should reach the Secretariat of the IGS **not later than 31 January 2000**. Candidates must strictly adhere to the 12 line limit to ensure equal presentation space for all candidates. In their letter to the IGS Secretary, candidates must clearly identify their country of residence. Biographical notes which do not exceed 12 lines will be published in the March 2000 issue of IGS News, on the IGS World Wide Web home page and in the postal ballot package sent to each IGS member.

The IGS encourages any IGS member who is able to attend **all** IGS Council meetings to consider standing for one of the Council positions. It is important that all geographical regions are represented on the Council and that its members reflect the scope of the geosynthetics discipline.

Should you need further information, please contact the Secretary of the IGS, Mr. P. Stevenson, or the President of the IGS, Prof. R.J. Bathurst (addresses on p11).

*reported by R.J. Bathurst
President of the IGS*

Meeting of CEN TC288/WG9 - Reinforced Soil

CEN Technical Committee 288 Working Group 9, dealing with the European Norm for the execution of reinforced soil, met in Milan on 17 - 18 September 1998 under the con-venorship of Dr. Terry Ingold. The work, which covers both soil nailing and reinforced fill, addresses walls, abutments, steep slopes and embankments on soft ground.

The working group has multi-national representation consisting of one expert on soil nailing and one on reinforced fill from each eligible country. As the first year of work draws to a close, WG9 has completed the first working draft of the standard which will be considered by the national Mirror Groups of each of the participating countries. Further drafting will be carried out by WG9 with a view to complet-

ing the final draft of the preEuropean Norm (prEN) by December 1999. Early in 2000 the prEN passes to the main technical committee, TC288, and will subsequently be circulated for public comment. After any necessary amendments, the prEN will be sent for ballot for acceptance as a full European Norm (EN).

European Norms, and CEN Standards, will be binding on all members of the European Community and will influence standards around the globe.

*reported by Mr. Peter Stevenson, Secretary, IGS
Member CEN TC288/WG9*

Geotextiles and Geomembranes

Contents of Recent Issues

Volume 16 (5) 1998

Durability assessment of geogrid-reinforced asphalt concrete, T. Komatsu, H. Kituta, Y. Tuji, E. Muramatsu (JAPAN)

Backanalyses of geosynthetic reinforced embankments on soft soils, E.M. Palmeira, J.H.F. Pereira, A.R.L. Da Silva (BRAZIL)

Puncture resistance of pre-strained geotextiles and its relation to axial, tensile strain failure, T.K. Ghosh (USA)

Use of geotextiles as filters in decanting wells of ash ponds, E.S.B. Reddy, K.R. Sastri (INDIA)

Volume 16 (4) 1998

Bearing capacity analysis of reinforced foundations on cohesive soil, J. Otani, H. Ochiai, K. Yamamoto (JAPAN)

Geomembrane - sand interface frictional properties as determined by inclined board and shear box tests, M. Izgin, Y. Wasti (TURKEY)

Qualitative criteria for anti-pumping geocomposites, I. Alobaidi (UK)

Field versus laboratory filtration performance of a nonwoven geotextile with flyash, M.A. Gabr, M.H. Akram, A.M. Zayed (USA)

Volume 16 (3) 1998

Retaining wall with reinforced backfill - a case study, K.G. Garg (INDIA)

Foundation on geogrid-reinforced sand - effect of transient loading, B.M. Das, A. Maji, E.C. Shin (KOREA)

Sand-geotextile interface shear strength by torsional ring shear tests, S.A. Tan,

S.H. Chew, W.K. Wong (SINGAPORE)

Investigation of the local strains in a geosynthetic composite, C.-C. Huang (TAIWAN)

Volume 16 (2) 1998

Geotextile friction mobilization during field pullout test, R.M. Bakeer, A.H. Abdel-Rahman, P.J. Napolitano (USA)

A critical assessment of the research conducted at the hydraulics and erosion control systems applied to hillslopes, R. A. Sutherland (USA)

Pullout and shear tests on geogrid reinforced lightweight aggregate, R.M. Bakeer, S.M. Sayed, P. Cates, R. Subramanian (USA)

Geosynthetics International – an Official Journal of the IGS

Geosynthetics International has established itself as a premier peer-reviewed journal on geosynthetics. The journal publishes technical papers, technical notes, discussions, and book reviews on all topics relating to geosynthetic materials (including natural fiber products), research, behavior, performance analysis, testing, design, construction methods, case histories and field experience.

The Editor of *Geosynthetics International* (Dr. T.S. Ingold), Co-Editor (Prof. R.J. Bathurst), and Chairman of the Editorial Board (Dr. J.P. Giroud) have more than 30 years of combined experience with the publication of technical journals. They are assisted by a first-rate editorial board composed of international experts that are appointed to four year terms and who represent a broad range of geosynthetics expertise. Rapid publication of papers provides subscribers with current papers covering geosynthetics research, design, construction methods and important case studies. Only papers peer-reviewed by experts are published. The journal has published over 750 pages of technical papers, technical notes, and discussions in each volume of the last two years. Special issues devoted to specific, state-of-the-art topics have included "Design of Geomembrane Applications" and "Liquid Migration Control Using Geosynthetic Liner Systems". A third special issue titled "Geosynthetics in Earthquake Engineering" was published in April 1998.

Geosynthetics International is dedicated to the mission of the IGS which is to promote the scientific and engineering development of geotextiles, geomembranes, related products,

and associated technologies. *Geosynthetics International* offers a reduced subscription rate to individual IGS members. Individual IGS members can subscribe for US \$135 per 6 issues. *Geosynthetics International* is offered to university and college libraries at US\$145 per 6 issues. The standard rate of US\$236 applies to all others.

Papers should be work not published in full elsewhere and should be sent to any of the following:

Editor, Dr. T.S. Ingold
Mulberry Lodge, St Peters Close
St. Albans, AL1 3ES, United Kingdom
Tel.: 44-1727-842433 Fax: 44-1727-845266

Co-Editor, Professor R. J. Bathurst (see p11)

Chairman of the Editorial Board
Dr. J.P. Giroud, GeoSyntec Consultants
621 N.W. 53rd Street, Suite 650
Boca Raton, FL 33487, USA
Tel.: 1 (561) 995-0900 Fax: 1 (561) 995-0925

For subscriptions, contact:

Ms. Kim Bauer, *Geosynthetics International*
1801 County Road B West
Roseville, MN 55113, USA
Tel.: 1 (612) 222-2508 Fax: 1 (612) 631-9334

CORPORATE PROFILES

Corporate Members of the IGS are encouraged to publish a Corporate Profile in the IGS News. Up to three such profiles can be presented in each edition of the IGS News. The criteria for the preparation and submission of Corporate Profiles are available from the Secretary, the Editor, the IGS website or in IGS News, v4, no. 2, p7. There is no charge for having a corporate profile published; it is a benefit of corporate membership.

JUTA a.s., Dvůr Králové, Czech Republic

JUTA, whose history dates back to 1885 is situated in the Czech Republic in the heart of Europe, bordering Germany, Austria, Poland and Slovakia. At the beginning of the 1990s, JUTA altered its outdated production process by changing the production inputs from traditional textile fibers (jute, flax and hemp) to polypropylene and polyethylene granulates. Today JUTA is the leading Czech manufacturer of a wide range of polypropylene (PP) and polyethylene (PE) products: HDPE (LDPE, PP) geomembranes, woven and non-woven geotextiles, fabrics, background covers, and other products. The company's headquarters are located in Dvůr Králové, Eastern Bohemia. The company has 11 factories placed in the region.

JUTA's competitive advantages are a strong and capable management, flexibility, customer service and geographic location. The company's key marketing objectives are to defend its large market share in the Czech Republic and to maintain and increase its exports to Western Europe and America. In addition, JUTA is also looking eastward, both for new markets as well as investment opportunities into production. Export activities also indirectly influence the firm's position in the domestic market, as JUTA utilizes its foreign experience in developing and marketing products that have not yet reached the Czech Republic. Manufacturing of the product "JUNIFOL" (HDPE) geomembrane was started at the end of 1996 after installation of a brand-new production line. Today, JUTA does a worldwide business, with production, customers, and references in many countries.

JUTA manufactures geomembranes up to 5.1m wide, with thicknesses ranging from 0.75 to 2.5mm in the ISO 9002 quality process. The geomembranes are made exclusively with high quality polyethylene resin by an extrusion process. JUTA uses a quality control system based on the regulations of Institute BAM, Berlin (Germany). The quality is evaluated by an internal laboratory. After evaluation, each geomembrane roll is labeled, logged, and given a certificate of testing. Besides manufacturing geomembranes, JUTA is beginning to install geomembranes to better meet its cus-

tomers' requirements. JUTA's experience and knowledge from previous installations have led to innovations and developments useful to many clients.

JUTA has been manufacturing nonwoven textiles since 1965. In the 1980s, JUTA began producing artificial fibers for the manufacture of nonwoven textile products. In 1997, the company carried out extensive modernization. One result of the changes in technology was a new nonwoven product NETEX S°, with a width of 5.0m. NETEX S° is, from a technical point of view, fully comparable with similar nonwoven textiles produced in Europe. NETEX S° is manufactured by needlepunching technology in the ISO 9002 quality control system.

Manufacturing of woven ground covers was started in 1996 with the production of black woven ground covers developed from long-lasting polypropylene tapes and constructed mostly for the agricultural and horticultural market. The ground cover comes in several patterns: entirely black, woven with lengthwise colored tapes or also with a checked pattern, depending on the customers needs. Ground covers PPH 90, PPH 100 and PPH 130 can be provided in widths up to 5.2m with ISO 9002 quality process registration. JUTA will soon be designing a range of woven geosynthetic products for civil engineering applications, in order to meet the demands of the market. JUTA's long-term goal is to offer its customers a complete range of geosynthetic products to cover all their needs.

For further information, contact:

Mr. Jiri Hlavaty, General Manager

JUTA a.s.

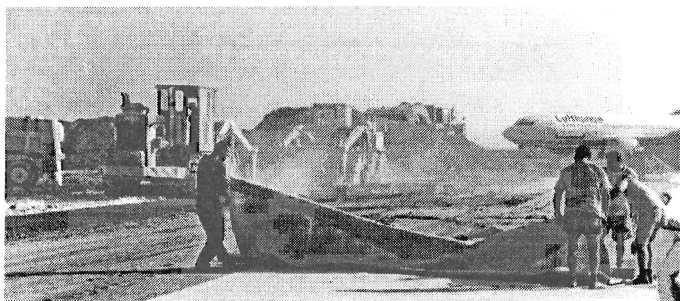
Dukelska 417

54401 Dvůr Králové n.L., Czech Republic

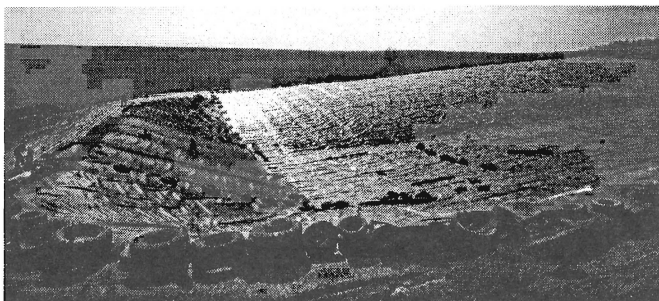
Tel.: 42 0 437 820 500 Fax: 42 0 437 820 259

email: JUTA@JUTA.CZ

JUTA has been a Corporate Member of the IGS since 1998.



Deploying a geotextile.



A lined landfill facility.

The IGS Council

Elected in 1996: T. Akagi (Japan); B.R. Christopher (USA); H-S. Chung (Korea); C. Lawson (Malaysia); J. Lafleur (Canada); J. Paul (United Kingdom); A.M. Scuero (Italy); C.V.J. Varma (India). Elected in 1998: S.P. Corbet (United Kingdom); J. Collin (USA); J.-P. Gourc (France); Ph. Delmas (France); G. Heerten (Germany); P. Rimoldi (Italy); F. Tatsuoka (Japan); P.E. Stevenson (USA). Co-opted in 1998: W. Voskamp (The Netherlands); E. Palmeira (Brazil). The IGS Council includes the five IGS Officers serving for the period 1998-2002.

Officers of the IGS

President: Prof. Richard J. Bathurst
Department of Civil Engineering
Royal Military College of Canada
P.O. Box 17000, STN Forces
Kingston, Ontario K7K 7B4, Canada
Tel.: 1 (613) 541 6000 ext. 6479
Fax: 1 (613) 545 8336
email: bathurst-r@rmc.ca

Vice President:
Ing. Daniele A. Cazzuffi
ENEL Ricerca Polo Idraulico e
Strutturale
Via G. Pozzobonelli 6

20162 Milano, Italy
Tel.: 39 02 7224 3545
Fax: 39 02 7224 3550
email: cazzuffi@cris.enel.it

Immediate Past President:
Prof. Colin J.F.P. Jones
Department of Civil Engineering
The University of Newcastle upon
Tyne
Newcastle upon Tyne
United Kingdom NE1 7RU
Tel.: (091) 222 7117
Fax: (091) 222 6613

email: c.j.f.p.jones@newcastle.ac.uk

Treasurer: Mr. Wim Voskamp
Maasoord 27 3448 BM Woerden
The Netherlands
Fax: (31) 348 430961
email: Voskamp@wxs.nl

Secretary: Mr. Peter E. Stevenson
226 Sitton Rd.
Easley, SC 29642-8393, USA
Tel.: 1 (864) 855 0504
Fax: 1 (864) 859 1698
email: igspete@aol.com

Corporate Members of the IGS

Agru Kunststofftechnik GmbH - Austria (1996)
Amoco Fabrics and Fibers Co. - USA (1987)
Armater Prodireg - France (1998)
Asahi Chemical Industry Co., Ltd. - Japan (1984)
Atlantech Corporation - USA (1989)
Belton Industries Inc. - USA (1989)
Bidim Geosynthetics S.A. - France (1984)
Bidim Nonwovens Ltd. BBA Group - Brazil (1994)
Bonar Technical Fabrics N.V. - Belgium (1985)
Cetco - USA (1992)
Colas Group, The - France (1996)
Colbond Geosynthetics - Netherlands (1986)
Creative Polymer Industries Pte Ltd. - Singapore (1997)
Dae Han Industrial Material Co., Ltd. - Korea (1994)
Du Pont De Nemours Int. (Luxembourg) S.A. - Luxembourg (1984)
E & S Engineering Co., Ltd. - Korea (1997)
Engtex AB - Sweden (1995)
Fibertex A/S - Denmark (1984)
Field Lining Services - Panama (1998)
Fiti Testing and Research Institute - Korea (1997)
Fritz Landolt Ag - Switzerland (1985)
Geofabrics Ltd. - UK (1995)
Geofelt GmbH - Austria (1996)
Geotechnics Holland B.V. - Netherlands (1991)
Geotechnics Korea Ltd. - Korea (1998)
Geotop Corporation - Japan (1994)

GSE Lining Technology, Inc. - USA (1988)
Hong Leong Plastics Pte Ltd. - Singapore (1994)
Huesker Synthetic GmbH & Co. - Germany (1987)
Industrial Fabrics Association International (IFAI) - USA (1985)
Integrated Geotechnology Institute Limited - Japan (1998)
Japan Spunbond - Unitaka - Japan (1984)
Juta a.s. - Czech Republic (1998)
Kajima Technical Research Institute - Japan (1985)
Kumagai Gumi Co., Ltd. - Japan (1987)
Kuraray Co., Ltd. - Japan (1989)
Lys Fabrics S.A. - Belgium (1998)
Maccaferri do Brasil Ltda. - Brazil (1998)
Maeda Corporation - Japan (1988)
Maeda Kosen Co., Ltd. - Japan (1992)
Marco Green Enterprise Co. Ltd. - Taiwan (1998)
Mecaroute S.A. - France (1996)
Mitsubishi Kagaku Sanshi Corporation - Japan (1992)
Mitsui Petrochemical Industrial Products Ltd. - Japan (1992)
National Seal Company - USA (1992)
Naue Fasertechnik GmbH & Co. KG - Germany (1987)
Nippon Zeon Co., Ltd. - Japan (1992)
Nittoc Construction Co., Ltd. - Japan (1994)
Obayashi Corporation - Japan (1988)
Officine Maccaferri S.P.A. - Italy (1997)
Okasan Livic Co., Ltd. - Japan (1984)

Pavco S.A. - Colombia (1991)
Polyfelt Ges.m.b.H - Austria (1984)
Poly-Flex, Inc. - USA (1996)
Presto Products Company - Geosystems Division - USA (1996)
Reliance Industries, Ltd. - India (1998)
Sewon Geosyntech Co., Ltd. - Korea (1997)
Shimizu Corporation - Japan (1990)
Solmax International, Inc. - Canada (1997)
Steel Dragon Enterprise Co., Ltd. - Taiwan (1996)
SVG Schweizerischer Verband der Geotextilfachleute - Switzerland (1984)
SVUG - Czech Republic (1993)
Synthetic Industries Inc. - USA (1991)
Taiyo Kogyo Co., Ltd. (Ocean) - Japan (1996)
Taiyo Kogyo Corporation (Sun) - Japan (1991)
Tanaka Co., Ltd. - Japan (1993)
TC Mirafi - USA (1998)
Tele Textiles AS - Norway (1995)
Ten Cate Nicolon B.V. - Netherlands (1984)
Tenax SpA - Italy (1991)
Tenox Corporation - Japan (1998)
Tensar International - UK (1989)
Terram Ltd. - UK (1988)
Thai Nam Plastic Public Co., Ltd. - Thailand (1994)
The Association of RRR Construction System - Japan (1998)
The Reinforced Earth Co. - USA (1989)
Tokyu Construction Co., Ltd. - Japan (1984)
note: date is earliest year of continuous membership