

bidim[®]

Quality Assurance & Control Manual



QUALITY - SUPPORT - EXPERTISE

 **GEOFABRICS[®]**

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Please read the important notice at the end of this brochure

OUR COMMITMENT TO YOU!

“Superior products and advice, backed by our professional service and industry experience.”

INTRODUCTION TO GEOFABRICS AUSTRALASIA

The use of geotextiles in construction projects around the world has grown substantially since their humble beginnings in the 1960's. Geotextiles are now commonly found in civil engineering construction projects worldwide.

A number of generic classes of geotextile are manufactured with the most popular being nonwoven, needle punched products. **bidim**® geotextiles were first produced in 1969 and continue to be a market leader in terms of technical performance and application range.

bidim® geotextiles were first introduced to Australia in 1977 when Geofabrics Australasia set up offices in Victoria, followed soon after by New South Wales and Queensland.

1987 marked the beginning of a new era in geotextiles in Australia, with the manufacture of the first rolls of **bidim**® geotextiles in Albury, New South Wales.

bidim® geotextiles have grown to become a component of most major construction projects carried out in Australia and Geofabrics Australasia and **bidim**® geotextiles are synonymous with;

Quality - Support - Expertise

**Australian made for
Australian conditions**



QUALITY POLICY

Geofabrics Australasia Pty Ltd is committed to the on-going development of our product range to meet the changing requirements of our customers.

Our commitment to continual improvement requires that:

- We clearly understand and respond to our customers' needs to ensure that our products are designed and manufactured for the function they must perform.
- We have in place product and quality improvement programs that are relevant to the needs of our organisation and our customers.
- Our employees clearly understand their responsibilities and authority to ensure the quality of our products.
- We maintain a manufacturing quality system which has been implemented at all levels of production at the Geofabrics® Albury site and conforms with the requirements of AS/NZS ISO 9001:2008.

Quality is part of the over-all effort we make to ensure we continue to meet our customers' expectations. By achieving these aims we continue to provide our customers with the quality and technical support they expect from us, contribute to the growth of our company and maintain our status as the market leader in our industry.

**Technical excellence,
understanding and
responding to
customers needs**



PRODUCTION CAPABILITIES

Geofabrics Australasia manufactures its **bidim**® geotextiles at a modern, well-equipped facility at Albury, NSW. The manufacturing site is ISO 9001:2008 Quality Certified. On site laboratory testing provides the manufacturing process with continuous monitoring to ensure consistent quality. This facility has produced millions of square metres of **bidim**® geotextiles for a diverse range of domestic and export markets.

PROFESSIONAL ASSOCIATIONS AND AWARDS

Geofabrics Australasia is a dedicated manufacturer with over 30 years of industry experience. The company and employee's are proud to be active members of the following organisations and associations:

- International Geosynthetic Society (IGS)
- Standards Australia
- Standards Australia CE20 Committee
- Technical Textile and Non Wovens Association (TTNA)
- Australia Industry Group (AIG)
- Department of Environment, Climate Change and Water, NSW
- Civil Contractors Federation
- Institute of Public Works Engineers Australia
- Engineers Australia

CERTIFICATION

“Certification is an ongoing process that encourages continuous improvement, and supports the achievement of goals and objectives”

QUALITY MANAGEMENT

COMMITMENT

Geofabrics® believes that the quality and consistency of geosynthetic products supplied into infrastructure and environmental projects is key to the long term performance of those projects as many of these products are an integral part of the base or foundation of the project.

Geofabrics® committed to a stringent manufacturing quality control system in 1993 and has maintained this commitment, to ensure the highest quality product is supplied to customers.

Geofabrics Australasia Pty Ltd is 3rd party certified to the AS/NZS ISO9001:2008 standard for the manufacture of geosynthetics. The certification body is SAI Global.

This commitment ensures that, when **bidim**® geotextiles are used on a construction project, the level of quality is maintained from the first to the last metre on each roll of geotextile. Permanent in-house quality controls and ongoing verification by an independent NATA certified institute ensure consistent, first class quality of **bidim**® geotextiles.

SPECIFICATIONS

Geofabrics® publishes data sheets for **bidim**® geotextiles which contain information and values in accordance with the AS3705 standard.

Data sheets are reviewed and amended from time to time to ensure that they are reflective of manufacturing variations and improvements which may arise.

ISO QUALITY CERTIFICATE



CERTIFICATE OF REGISTRATION

This is to certify that:

Geofabrics Australasia Pty. Ltd.

ABN 23 005 479 961

79 Boronia Street NORTH ALBURY NSW 2640 AUSTRALIA

operates a

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of

ISO 9001:2008

for the following scope

The registration covers the Quality Management System for the manufacture, distribution and design of non-woven and composite textiles, plastic pipes, fittings and plastic erosion control products for use in general industrial textile and geotechnical applications. Additionally, it covers the distribution of related geotechnical products.

Certificate No: QEC1773

Issued: 24 June 2011
Expires: 2 August 2014

Originally Certified: 23 February 1993
Current Certification: 22 June 2011

Alex Ezrakhovich
General Manager – Certification Services

Duncan Lilley
Global Head – Assurance Services



Registered by:
SAI Global Certification Services Pty Ltd (ACN 108 716 669) 286 Sussex Street Sydney NSW 2000 Australia with SAI Global Limited
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ISO CERTIFICATE

ISO standards serve to safeguard consumers and users of products and services in general – as well as making their lives simpler.

Standards make an enormous contribution to most aspects of our lives – although very often, that contribution is invisible. It is when there is an absence of standards that their importance is noticed. For example, as purchasers or users of products, we notice when they produce poor quality, do not fit, are incompatible with equipment we already have, are unreliable or dangerous. When products meet our expectations, we tend to take this for granted. We are usually unaware of the role played by standards in raising levels of quality, safety, reliability and efficiency.

THE ISO 9001:2008 STANDARD

The latest ISO 9001:2008 Standard has a distinct cultural change from the previous compliance-orientated 1994 standard. The new emphasis of the standard is on “management commitment” (leadership), “continual improvement” and “customer satisfaction”. This standard also offers a modern framework to develop and implement practical ways to help Geofabrics Australasia achieve quality outcomes. The “process approach” means less emphasis on manuals and paperwork, and more attention to product or service improvement, increased staff effectiveness and enhanced customer satisfaction.

Certification of the quality management system gives clients’ confidence that the system is working efficiently and meeting international standards of excellence. It also provides an independent verification that an effective quality system is in place.

Certification involves an independent evaluation of management activities, sales, production (or service) processes, and product or materials handling procedures. The assessment also covers methods for measuring quality and the identification of any deficiencies that are causing error or waste.

The combination of excellent process control, verification accuracy and the strength of the new ISO standard means Geofabrics Australasia can assure its clients of “Quality” in every aspect of its business.

INTRODUCTION

Quality control is an ongoing system to monitor and test materials and products from receipt and through the manufacturing process. The quality control programme is essential to the company's manufacturing and is followed closely by all employees involved.

QUALITY CONTROL LABORATORY CAPABILITY

Geofabrics Australasia has the capabilities to perform a range of tests on technical fabrics and geotechnical composites. Installed equipment includes:

- Instron 4302 Testing Machine
- Instron 3369 Testing Machine
- Lloyd LR 30K Testing Machine
- Hounsfield Testing Machine CRE
- Drop Cone Apparatus
- Electronic Balances
- Electronic Densimeter
- Thickness Micrometer
- Gallenkamp and Contherm Ovens
- Sieve Shaker
- Permeameter and Rotameter
- The company also performs routine product conformance testing in external laboratories to verify its own technical data sheets, adding to the confidence of the supply. The independent on-site laboratory of Geosynthetic Testing Services has maintained NATA accreditation since 1992 (Accreditation No. 3722) and all testing machines are calibrated regularly as per Geosynthetic Testing Services' NATA requirements.

QUALITY CONTROL CHECKS

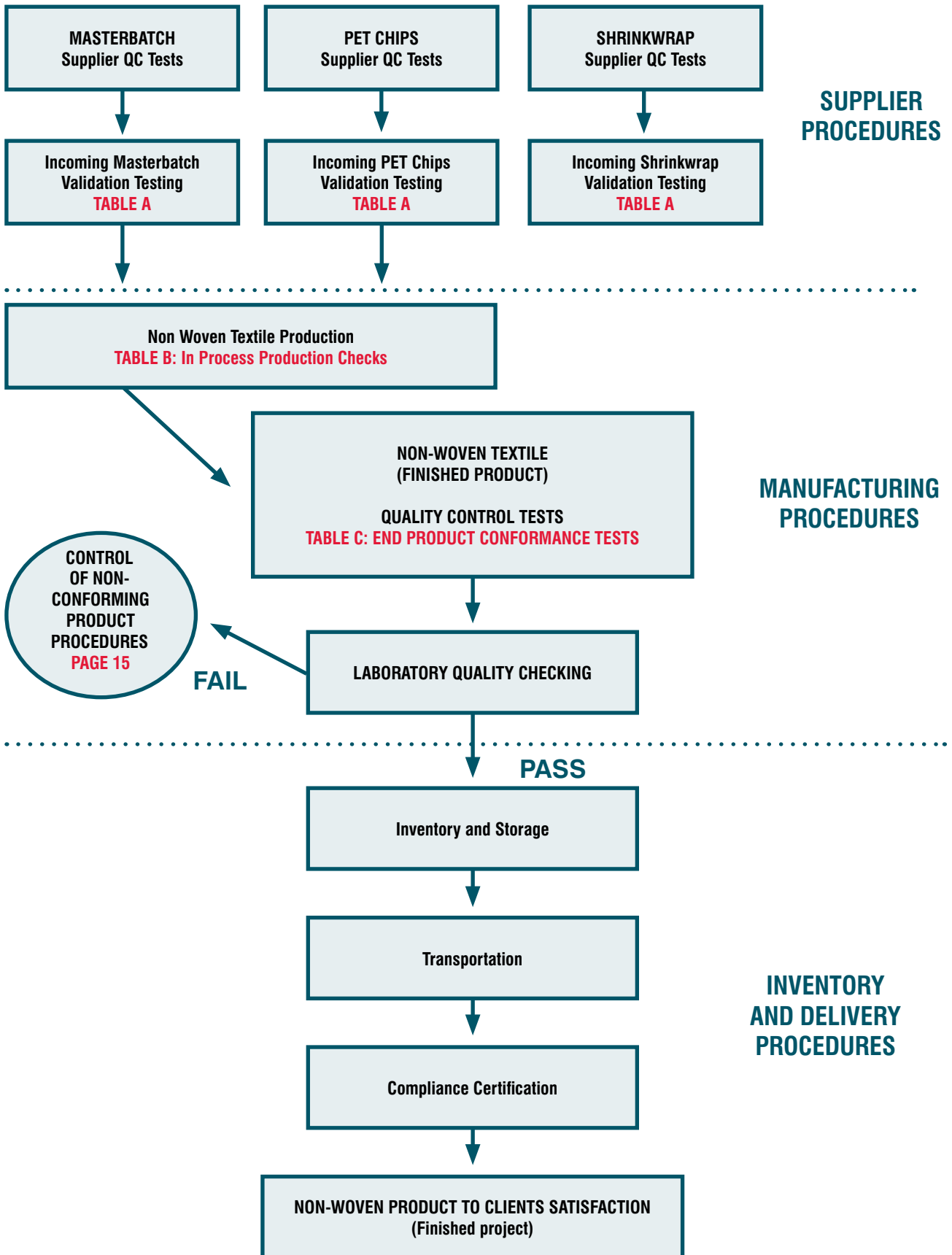
All product quality control data is assessed by trained laboratory technicians and the laboratory/quality manager before being recorded in the quality control database for that product. This database is linked to the associated production information. All production and laboratory input sheets are filed as back up information. The manufacturing production manager checks the information and has access to all quality data.

STAFF TRAINING AND CAPABILITY

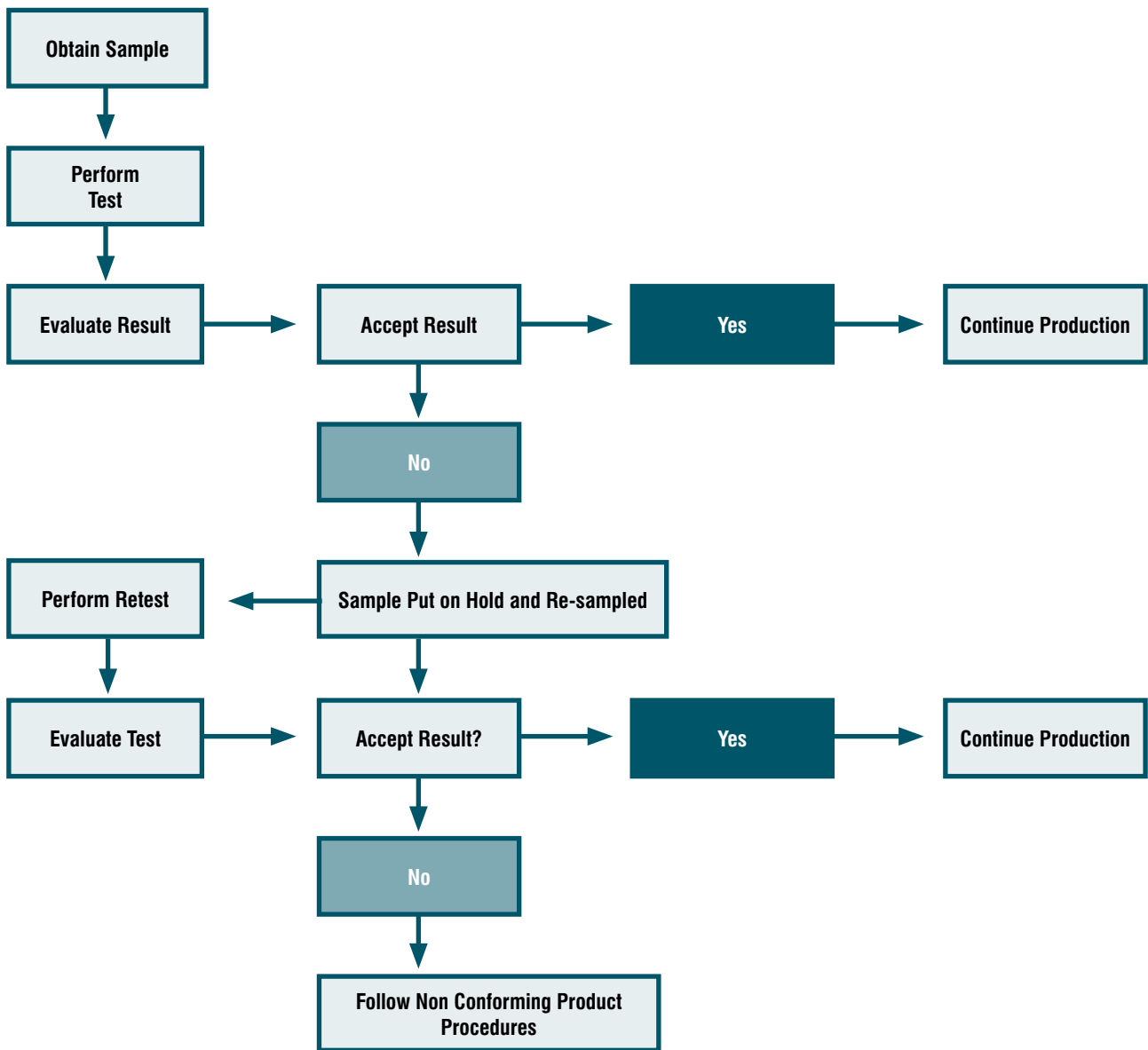
Production and laboratory staff are trained to act upon quality defects arising during production. Formal, comprehensive procedures for quarantine and product rejection are in place at Geofabrics Australasia as part of the ISO 9001 certification.

Geofabrics® has comprehensive work instructions in its quality documentation to guide testing staff in correct testing practices. Laboratory staff training is regularly reviewed and the laboratory is audited regularly for best practice testing.

THE NON-WOVEN PRODUCTION QUALITY TEST



QUALITY CONTROL TESTING DECISION PROCESS



NON WOVENS QUALITY CONTROL TEST SUMMARIES

RAW MATERIAL VERIFICATION TESTING

Test	Units of Measure	Test Standard Method Description	Standard Frequency of Testing	Compliance, Supplier &/ or Production Test
Polyester Melt Viscosity	-	ASTM D1238 (mod)	Once per delivery per grade	Supplier
Polyester Moisture Content	%	ASTM D1238 (mod)	Once per delivery per grade	Supplier
Masterbatch Chip Density	Chips per gram	In house	Once per delivery per grade	Supplier
Masterbatch Bulk Density	g/litre	In house	Once per delivery per grade	Supplier
Shrinkwrap Mass	g/m ²	AS 3706.1	Once per delivery per grade	Supplier
Shrinkwrap Thickness	mm	AS 3706.1	Once per delivery per grade	Supplier
Shrinkwrap Rod Puncture	N	ASTM D4833	Once per delivery per grade	Supplier

TABLE A

IN PROCESS PRODUCTION CHECKS

Test	Units of Measure	Test Standard Method Description	Standard Frequency of Testing	Compliance, Supplier &/ or Production Test
D Tex	Decitex	In house	As required	Production

TABLE B

END PRODUCT CONFORMANCE TESTING

Test	Units of Measure	Test Standard Method Description	Standard Frequency of Testing	Compliance, Supplier &/ or Production Test
Mass Per Unit Area	g/m ²	AS3706.1	Once per production run	Compliance
Thickness	mm	AS3706.1	Once per production run	Compliance
Wide Strip Tensile Test	kN/m	AS3706.2	Every 12 hours	Compliance
Trapezoidal Tear Test	N	AS3706.3	Every 12 hours	Compliance
CBR Burst Strength	N	AS3706.4	Every 12 hours	Compliance
Drop Cone (h50)	mm	AS3706.5	Every 12 hours	Compliance
G Rating		Austrroads	Every 12 hours	Compliance
Grab Tensile Test	N	AS2001.2.3 Method B-88	Every 12 hours	Compliance
Pore Size	μm	AS3706.7	Once every 3 months	Compliance
Flow Rate	l/m ² /sec	AS3706.9	Once every 3 months	Compliance

TABLE C

QUALITY ASSURANCE

Geofabrics Australasia manufactures and supplies **bidim**® geotextiles under a documented quality management plan certified as complying with ISO 9001:2008.

Geofabrics® confirms that in terms of this certified compliance, all test results meet or exceed the statistical characteristics and properties of **bidim**® geotextiles as currently published at time of manufacture.

Results obtained comply with sampling procedures in accordance with AS3706.1 and AS3705 requirements.

MANUFACTURING TESTING FREQUENCIES

Geofabrics Australasia manufactures **bidim**® geotextiles to the following frequencies:

Grade	Typical Roll Length (m)	Typical Roll Width (m)	Approx. Area (sqm) Between QC Tests	Approx. Area (sqm) Between Batch Tests
A14	250	6	23,000	69,000
A19	200	6	17,600	53,000
A24	175	6	22,000	66,000
A29	150	6	20,800	62,000
A34	150	6	18,000	54,000
A39	125	6	16,200	49,000
A44	100	6	14,000	42,000
A49	75	6	10,700	32,000
A64	75	6	10,000	30,000



Tear Strength Test



Liner Protection Test

Melbourne: (03) 8586 9111 **Adelaide:** (08) 8293 3613
Sydney: (02) 9821 3277 **Townsville:** (07) 4774 8222
Brisbane: (07) 3279 1588 **Newcastle:** (02) 4950 5845
Perth: (08) 9309 4388 **Hobart:** (03) 6273 0511



CERTIFICATE OF CONFORMANCE

bidim® A24

This is to certify that the supplied product has been manufactured, tested and released according to relevant Australian and International Standards, under a documented Quality Management System certified as complying with ISO9001:2008. We confirm that all test results meet or exceed the statistical characteristics and properties of this material.

PROPERTY	STANDARD	No. SPECIMENS	UNITS	QC RESULTS	PROJECT SPECIFICATION
Mass per unit area	AS3706.1	10	g/m ²		
Thickness	AS3706.1	10	mm		
Wide strip (MD/XD)	AS3706.2	5/D	kN/m		
Trap tear (MD/XD)	AS3706.3	10/D	N		
CBR burst	AS3706.4	10	N		
Drop cone (h ₅₀)	AS3706.5	10	mm		
G rating	Austrroads	-	-		
Grab tensile (MD/XD)	AS2001.2.3b	10/D	N		

Note: MD = Machine Direction; XD = Cross Machine Direction.

Roll Number Range: XXXX-XXXX
 Production Dates: XXXX
 Customer: XX
 Project: XXXX
 Despatching Branch: XXXX
 Sales Order: XXXX

Laboratory Manager

XX /YY /ZZZZ
Issue Date

www.geofabrics.com.au

Australian manufacturer of bidim® geotextiles & Megaflo® drainage products

■ ABN 23 005 479 961 ■ 79 Boronia Street, North Albury, NSW, 2641, Australia. ■ Telephone: 02 6025 8577 ■ Facsimile: 02 6025 8076

CONTROL OF NON CONFORMING PRODUCT PROCEDURE

OVERVIEW

bidim® geotextiles manufactured at Geofabrics Australasia's Albury Australia plant is controlled by a quality system that ensures it will not be delivered unless it meets all quality policy criteria.

The following is Geofabrics Australasia's system to control non-conforming product.

PROCEDURE

The manufacturing Quality Control system requires any product, once identified by production or laboratory staff as not meeting quality requirements, to be put 'on hold'.

This involves the product being placed to one side and a quarantine sticker applied to the roll.

Once QC testing is completed and production is accepted as conforming, the roll is released by removal of quarantine stickers and /or removal from the quarantine area. If the product is confirmed as non-conforming, the roll is retained 'on hold' and can be regraded or scrapped. Tests are performed either side of the non conforming roll to identify any more non-conforming rolls, until there is a conforming roll either side.

If the disposition of a roll 'on hold' is not known by the end of a production shift, details are recorded on the Rolls on Hold Register. When the non conforming products disposition is known, it is either regraded or left in the 'on hold' register and in storage, to be regraded at a later date.

Roll/s regraded are removed from 'on hold' and placed into stock as the new grade. Administration staff then move the record from the 'on hold' register to Roll Removed from Hold register.

The Quality Manager or the Production Manager has the authority to regrade a product provided it meets revised specifications. Prior to placement into stock, a stock conversion form is completed, roll identification tickets are amended and the product is then placed into stock.

The Managing Director or his nominated deputy has the authority, with respect to rolls 'on hold' and in consultation with the customer, to release product as non-conforming. A completed Product Release Authorisation form must be received from the customer prior to delivery of any goods.

No product item is kept 'on hold' for more than 24 hours without action being taken.

This procedure is an abridged but accurate version of the 'internal control of non-conformance' procedure at Geofabrics Australasia.

MATERIAL SAFETY DATA SHEETS

bidim® GEOTEXTILE'S STATEMENT OF HAZARDOUS NATURE

bidim® geotextiles are a polyester filament product needle punched into a continuous sheet fabric form.

The product is composed of continuous filament, non-woven, needle punched construction and contains less than 1% of additives (wax and carbon black) and is classified as a non hazardous product.

COMPANY DETAILS

Company:	Geofabrics Australasia Pty Ltd ABN: 23 005 479 961 Address: 83 – 93 Canterbury Road, Braeside, Victoria 3195 AUSTRALIA
Telephone Number:	03 8586 9100
Emergency Telephone Number:	03 8586 9100 B.H.
Facsimile Number:	03 8586 9186

IDENTIFICATION

Product Name:	bidim® Geotextile
Other Names:	bidim® A12, A14, A19, A24, A29, A34, A39, A44, A49, A64, PF1, PF2
Manufacturers Product Code:	None Allocated
UN Number:	None Allocated
Dangerous Goods Class and Subsidiary Risk:	None Allocated
Hazchem Code:	None Allocated
Poisons Schedule Number:	None Allocated
Use:	Road Base Stabilisation Sub Soil Drainage Filtration Road Surface Waterproofing Landfill Liner Cushioning Containment Pond Liner Damage Protection

This statement is an abridged but accurate version of the 'bidim® material safety data sheet' supplied by Geofabrics Australasia.

PHYSICAL DESCRIPTION / PROPERTIES

bidim® geotextiles are a nonwoven, needle punched, continuous filament, polyester geotextile made in Australia from virgin and recycled polyester polymer.

It is produced at Geofabrics Australasia's manufacturing plant in Albury, New South Wales, Australia to published specifications. It is supplied in a range of grades and packaged in a range of roll widths and lengths. Colour is generally grey, but other colours are produced.

PHYSICAL PROPERTIES

Appearance:	Odourless Grey Fibres
Boiling Point/Melting Point:	255-260 deg C°
Molecular Weight:	18000 – 25000
Specific Gravity:	1.38
Vapour Pressure:	Not Applicable
Volatile Component:	0% (% vol)
pH (1% Aqueous Solution)	Not Applicable
Solubility in Water	Nil

COMPOSITION

Polyethylene Terephthalate:	99.0%
TiO₂:	0.5%
Wax / Carbon Black	0.5%

PRODUCT EXPOSURE LIMITS

Maximum of one month exposure to UV light when removed from packaging.



UV Exposure Test Rack



Geotextile Exposed

HEALTH HAZARD INFORMATION

HEALTH EFFECTS

Acute:	Polyester is Chemically Inert
Swallowed:	Ingestion Unlikely - Product in Solid Form and Low Toxicity
Eyes:	Not Applicable
Skin:	Not Applicable
Inhaled:	Not Applicable
Chronic:	No Known Toxicological Hazard in Solid Form

FIRST AID

Swallowed:	No Hazard (solid form)
Eyes:	No Hazard (solid form)
Skin:	No Hazard (solid form)
Inhaled:	No Hazard (solid form)

PRECAUTIONS FOR USE

Exposure Standards:	Not Applicable
Engineering Controls:	Not Applicable
Personal Protection:	Not Applicable
Flammability:	Not Flammable Under Conditions of Use

STORAGE AND HANDLING

bidim® geotextiles do not require special storage conditions for periods of less than 6 months, as the product is wrapped in 160 μ m co-extruded high density polyethylene and linear low density polyethylene for toughness with secondary UV stabilisers for greater life under exposure to Australian conditions.

Manufactured from polyester polymers, **bidim®** geotextiles are resistant to short term UV exposure and will retain a high proportion of its strength characteristics.

Once the protective wrapping is removed the product should be installed or placed under cover. Extended UV exposure should be avoided with maximum recommended exposure for **bidim®** geotextiles being 30 days.

As geotextile can absorb water, rolls should be covered with a waterproof material or stored in a dry location. Rolls are difficult to handle when wet due to increased weight.

The maximum weight of a 6m wide roll of **bidim®** geotextiles is approximately 250kgs, thus deployment is recommended with a Geofabrics® dispensing frame. Larger and heavier rolls should be lifted and transported using an adapted fork lift, crane or plant equipment.

Care should be taken to prevent damage to the product and wrapping during transport, loading or offloading. Once on site, installation can be performed using plant equipment or site labour. Narrow width rolls (2m & 3m) are available to suit the site layout, access and conditions.

Care should be taken to identify and implement appropriate installation procedures where rolls are labelled with a 'Join' decal.



Storage of bidim® geotextiles



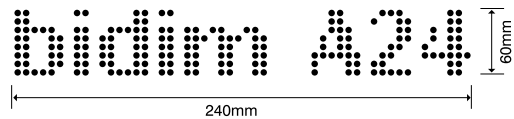
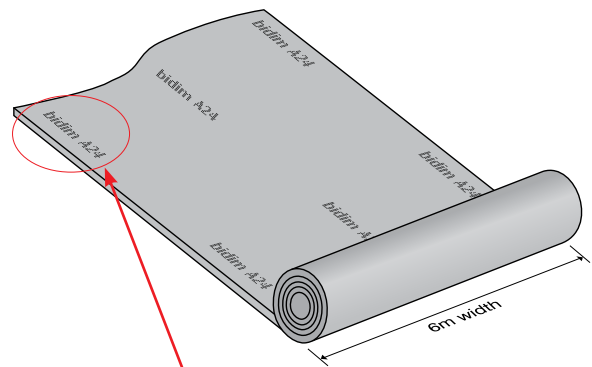
Handling of bidim® geotextiles

ROLL LABELLING AND PACKAGING

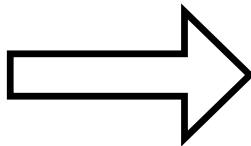


Label as per AS3705

Each roll is identified by a unique roll number which can be tracked for QA purposes



Roll Grade Indicator



Direction of Deployment



Wrapping Grade Indicator



Join Indicator



Needle Free Indicator

bidim® A grade geotextiles are identified in accordance with AS3705 standard. Rolls are identified by the above production identification label and decals are attached to the outside wrapping.

Decals are attached for basic A grade identification and direction for unrolling on site. Production identification labels are also attached to the inside core of each roll.

Join decal indicates a joint across the width of bidim® geotextiles roll and implies discontinuity of geotextile in the longitudinal direction. Roll codes denoted Needle Free and/or including additional alphabetical characters are supplied with no join.

GEOFABRICS® is a registered trade mark of Geofabrics Australasia Pty Ltd.

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BUNDABERG
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Fax: (07) 4155 9968

GOLD COAST
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