

Multiknit Marketing Pty Ltd T/as

AUSTRALIA

90 Hall Street, Yamanto
Queensland, Australia, 4305

Ph: 61-7-3282 7640
Fax: 61-7-3282 7737
shanegr@thenettingcompany.com



ABN: 92070454330

USA

AUSTRALIAN MANUFACTURE OF A
MULTIPURPOSE
GEO-TEXTILE.

FOR THE USES OF
GEOTEXTILES SHADECLOTH

STRUCTUREFAB 650

- ALL AUSTRALIAN MADE COMPONENTS
- COMPOSITE MATERIAL, FOR FRAME SUPPORT STRUCTURE
- SHADECLOTH OF POLYPROPYLENE, WITH MULTIAXIAL YARN CONSTRUCTION
- GEOTEXTILES OF POLYPROPYLENE, INCORPORATING SS WIRE FOR REINFORCEMENT,
- SS WIRE STRONG ELECTRICAL DETECTION,
- WITH FOAM OR FILM MATERIAL LININGS FOR HIGH FILTRATION.
- SUITABLE FOR ALL TYPES OF CONSTRUCTION AND FOR USE IN ENGINEERED SHADE STRUCTURES



COMPOSITE FRAME WITH MULTIPURPOSE TEXTILE;

Composite fibre frame is a long lasting, minimal maintenance material.

No rot or rusting issues, never require painting, with a tenacity that allows engineering designs for use in continuous exposures to marine environments and high wind ratings.

The multipurpose geo-textile;

- A textile with multiaxial directional monofilament yarns, running in the weft / warp / diagonal directions,
- Industrial heavyweight structural textile at 650 grams per sq meter,
- With a 2mm cloth thickness,
- A textile engineer designed warp knitted loop interlocking pattern, with 4 threads per loop.
- All our monofilament yarns are Australian made, *in our factory in Ipswich*, from Australian made high strength polypropylene.
- Produced with the maximum amount of UV resistance additives for 15+ years of service life, and there are currently multiple existing structures in their 20th year of service and several projects now approaching the 25th year service period.
- Designed for the uses of highly tensioned long term exposures and higher working load requirements of;
 1. *Permanently installed, tensioned, fabric shade structures, in high wind speed areas*
 2. *Permanently installed, tensioned hail, ice, snow and wind protection structures.*

DESCRIPTION OF USE;

- This geotextile is made from polypropylene, with specific additives for increased performance.
- This textile has been designed to meet the specifications required by Government transport and main roads departments; for use in filtration / stabilisation / separation / reinforcements, of all types of ground conditions; tested to AS3706 items 1 to 13.

SPECIFICATIONS;

1. Weight;

- Can be modified to engineer's requested tenacity and light block rating, airflow porosity, and the standard 650gsm weight cloth is testing at 95 to 97% light block, depending on colour and airflow porosity.

2. Tear Resistant;

- The additional multiple warp and weft reinforcing yarns provide increased anti tear reinforcing and the yarns are inlaid into the knitted construction to provide the additional warp and weft tenacity, for resistance to extreme high loadings.

3. Breaking force;

- Using a 50 mm wide strip
- 650 gram weight of cloth
- Air temperature of 22C, humidity of 87%
- Tested at our factory, and also at the *CSIRO FACILITY*, with load applied resulting in elongation factors when compared to ASTM test procedures.
- Warp direction = 2363 N @ 94% elongation @ break at clamp connection point
- Weft direction = 3647N @ 90 % elongation @ break at clamp connection point
- Structurefab 650 shadecloth is testing at approximately 50% above the listed breaking force of any other shadecloth on the Australian market.
- This **multipurpose textile** is designed for the exposures to hail, ice, snow, soil, sun, water, wind, and to meet the loads for the international industrial use market.

4. UV protection;

- The Australian Cancer Council now recommends that fabric shade structures should use (*and most state governments are adopting the recommendation*),
- Heavy, thick and dark for providing the maximum absorption of UV rays
- This **Multipurpose textile** remains in a tightly warp knitted configuration, under tensioned exposure loads, and will not suffer the UV ray penetration, that may occur when a standard weight shade cloth experiences stretching after a high wind event.
- This **Multipurpose textile** is designed to meet the performance guides with the 2 mm thickness, which is nearly 50% above the thickness of standard type shade cloths.

5. Colours;

- Our standard cloth is produced in carbon black or grey.
- All optional colours are produced with the maximum % of hindred amine additives for maximum UV absorption and the use of a carbon black reinforcing thread provides increased tenacity.

6. Roll dimensions;

- 2 and 3 meter widths
- Cut to length or at 25 meter, 50 meter and 300 meter jumbo roll lengths

NB;

- This cloth has a patent pending status.
- ASTM compliance testing is being completed by the AWTA organization for tenacity / light block / UV ray absorption / UV degradation.
- 250,000 sq meters of this style of multi-axis knitted shade cloth, black in colour, has now been exposed to 23 years of continuous installed service at a facility in southern Queensland. (Copy of references from the facility are available)
- engineered multipurpose polymer geotextile mesh; QR650 manufactured in Australia for Australian geographical conditions.
- This product is a WARP KNITTED geotextile, and the textile fibres are manufactured in our factory, from polypropylene, and the fibres are knitted into an interlocking loop structure, with a warp and weft dimensionally stable geotextile.

REFERENCES; Copies can be supplied on request;

- **Senior structural engineer, Opus Consulting**, describes the advantage of QR650 thread construction; *A quadriaxial thread geometry will add to the effectiveness of spreading tensions in the plane of the fabric, tending to reflect isotropic in-plane behaviour. As seen from tests comparing bi and tri axial woven fabrics, a quadriaxial would give improvements in limiting stretch in the prime directions, higher burst load strength and better in-plane performance.*
- **Uniquet QLD**, geophysical department, has reviewed this style of textile meshing and stated it would be useful for filtration / separation / reinforcement / stabilisation.
- This quadriaxial geotextile is also useful for the following industrial purposes;
- *Protective textile situations for; sun - wind – hail tensioned structures / transportation load covers / water storage evaporation reduction.*
- *This geotextile has been used successfully in the BAC large scale commercial airport shade structures exposed to multiple 160klm wind exposures.*
- *This type of geo-textile has provided 20 +years of service to the Whyalla Feedlot for their 250,000 square metres of feedlot pen shade.*
- *This geotextile is a special type of warp knitted structure made with synthetic all monofilament round yarns and are amongst the toughest textiles.*
- *And often are referred to as directionally orientated textiles and the term is somewhat self-explanatory in that the load bearing looping yarns are aligned with the fabric's 4 load bearing directions, warp, weft and diagonally, to give extra stability and strength.*

MANUFACTURE;

- NETTCO is a custom *ENGINEERING TEXTILE* manufacturer, and can produce this textile in custom colours, and in random lengths, to suit the end use and the fabrication of panels.
- After the warp knitting process the textiles are heat stabilised, using a 10,000 watt IR system, to ensure the geotextile is stable.
- Stainless steel fine wire reinforcing is a further option available with the manufacture of this geotextile.

TECHNICAL;

- The quadriaxial mesh uses .40mm diameter round monofilament yarns, with UV stabilizers and anti-microbial additives, using a specific grade of polypropylene resin, made in Geelong, Australia,
- **STANDARD AND CUSTOM Colours** are available: **Black and Grey**, Brown, Blue, Green, all in the darker tones, for blending into all natural landscapes.

TESTING;

- Weight of QR650 = 650 grams per square meter. = **AS3706.1 Standard**
- CSIRO tests for; **AS4174-1994** = UV transmission block @95%
- CSIRO tests for; **AS2001.2.19-1998** = ball burst force 2690N **equivalent AS3706.4**
- CSIRO tests for; **AS 2001.2.3.1-01** = force and elongation with warp 2000N @ 61% and weft with 1900N @ 68% **equivalent AS3706. 2**
- CSIRO tests; **AS2001.2.10-1986** = tear resistance / wing rip = warp 379N and weft 369N **equivalent AS3706.3**
- GMD engineering has completed **biaxial tests**, to determine material elongation properties;

Governments use these tests;

MRTS63 / MRTS27 / Q103 A/B/C

- AS 3706.1 sample size with details and physical description and weight per sq metre
- AS3706.2 Grab strength wide sample.
- AS3706.3 tear strength
- AS3706.4 burst strength
- AS3706.5 puncture strength
- AS3706.7 hole sizes
- AS 3706.9 flow of air / water / light
- AS3706.11 UV degradation
- AS3706.12 chemical resistance
- AS3706.13 microbiology resistance

Test certificate can be issued every 12 months.