

Kontainer™ Geobags

300 / 500 / 750 / 1000 • Woven polypropylene dewatering and containment units

Select the fabric for the solids and drainage behaviour, then check structural capacity for the bag geometry, filling conditions and service environment.

300

STANDARD DEWATERING

90 / 120 kN/m MD / CD • O95 $\leq$ 425 μ m • 40 L/m²/s

A starting point for organic sludge and mineral slurries where an open fabric helps limit blinding. Use with or without conditioning only after filtration trials.

500

OPEN-WEAVE ORGANICS OPTION*

90 / 120 kN/m MD / CD* • 500 μ m* • 50 L/m²/s*

Intended for assessment with unflocculated organics. Other properties provisionally match the 300 Series. Confirm capture, filtrate quality and fabric test data.

750

HEAVY-DUTY OPTION

130 / 130 kN/m MD / CD • O90 300 μ m • >13 L/m²/s

Higher tensile and puncture resistance. Consider for suitable mineral slurries and engineered applications where the 300 Series does not meet structural demand.

1000

STRUCTURAL / COASTAL OPTION

200 / 200 kN/m MD / CD • seam 170 kN/m • O90 <450 μ m

For higher structural demand, exposed containment and coastal applications subject to site-specific design. Strength alone does not establish suitability or service life.

* **500 Series: provisional specification.** Opening and flow are nominal development targets. Other values are carried over from the 300 Series at Kontain's direction, pending verification; they are not independent 500 Series test results.

Custom manufacture. Circumference, length, port quantity, port position and connection details can be tailored to the project. The generic drawings support product selection and enquiry; order-specific details are confirmed before manufacture.

Technical performance

Black, high-tenacity woven polypropylene multifilament geotextile

Property	Test method	Unit	300	500*	750	1000
Ultimate tensile MD / CD	ISO 10319	kN/m	90 / 120	90 / 120*	130 / 130	200 / 200
Elongation at ultimate MD / CD	ISO 10319	%	<13 / <8	<13 / <8*	10 / 8	<15 / <8
Static puncture (CBR)	ISO 12236	kN	9	9*	>16	20
Declared tube seam strength ¹	ISO 10321	kN/m	>90	>90*	>90	170
Characteristic opening ²	See note 2	µm	O95 ≤425	500*	O90 300	O90 <450
Clean-water flow normal to plane ³	ISO 11058	L/m ² /s	40	50*	>13	>20
UV / weathering strength retained ⁴	See note 4	%	>90	>90*	>90	>90
Abrasion resistance retained ⁵	ASTM D4886	%	ND	ND	>90	ND
Oxidation resistance retained ⁵	ISO 13438	%	ND	ND	ND	>90

Data basis. Plain values are declared values, not automatically guaranteed minima or MARVs. Inequalities are retained only where present in the source data. ND = not declared. MD / CD = machine / cross-machine direction. Fabric orientation in the assembled unit requires confirmation.

1 | Seam strength. 300: circumferential seam result. 750: CD seam result. 1000: direction not stated in source. 500: provisional 300 Series target. These results do not establish every end seam, panel joint or port-attachment capacity; verify each production assembly and load direction.

2 | Opening size. The 300 source declares O95 with ISO 12956; that method normally reports O90. The source designation is retained pending confirmation. 750 and 1000 declare O90 to ISO 12956. The 500 µm target has no confirmed opening designation or test basis. Do not equate these values across methods or interpret them as a single particle cut-off.

3 | Flow. Clean-water index flow under laboratory conditions. Confirm test head and procedure. The 1000 value is converted from $>20 \times 10^{-3}$ m/s to >20 L/m²/s. These values do not predict slurry throughput, filter-cake flow or dewatering time.

4 | UV / weathering. 300: ASTM D4355, exposure duration not supplied. 500: provisional 300 target. 750: ISO 12224, 500 hours declared. 1000: ISO 12224, duration not supplied. Methods and exposures are not directly equivalent; no field exposure life is established.

5 | Additional durability indices. 750 abrasion and 1000 oxidation values are source declarations. Confirm exposure regime, cycles and retained property on the test report. Chemical and long-term durability require project-specific assessment.

500 Series* retains the 300 Series tensile, elongation, puncture, seam and UV values provisionally. No mass, thickness, service life or working fill-height rating is implied by any series number.

Choosing the geotextile

Balance solids capture, drainage, blinding and tensile demand

425 µm | fine organic sludge

In Kontain's experience, the 300 Series is often a better starting point than a 300 µm fabric for very fine, organic-rich solids where flocculation is uncertain. The more open weave can reduce rapid blinding. Verify capture and filtrate quality.

300 µm | suitable mineral slurries

Consider the 750 Series for low-colloid mineral solids, including suitable tailings, where trials support the smaller opening. Tailings can also be highly colloidal; material name alone is not a selection criterion.

500 µm | unflocculated organics

The new 500 Series is an option to trial for unflocculated organic sludge where drainage and resistance to blinding are priorities. Assess case by case; greater initial fines loss may require conditioning or filtrate treatment.

Stable multifilament weave

Kontain prefers an appropriately engineered multifilament weave for stable yarn positioning and pore geometry under tension. Yarn type alone does not prove this: openings can constrict or enlarge with loading. Verify the actual weave at representative strain where critical.

Why an opening larger than the solids can still work

Geobag filtration is a slurry-fabric system. Flocculated particles and the developing filter cake can retain particles smaller than the fabric opening. A smaller opening can blind quickly; a larger opening can increase initial solids loss. Neither drainage nor retention can be selected from opening size alone.

A practical selection trial

1. Sample representative solids, process water and expected variability.
2. Compare candidate fabrics using the proposed conditioning regime, including an unflocculated trial where relevant.
3. Measure initial and later filtrate quality, retained solids, drainage rate and blinding over repeated fill/dewater cycles.
4. Check the selected fabric, seams and ports against the intended tube loading.
5. Confirm filtrate collection, recirculation or treatment before discharge.

Evidence and judgement. The 425 / 500 µm organic-sludge guidance above is Kontain's practical selection position, not a universal pore-size rule. Yarn movement and changing permeability under tension are reported in published research; the response depends on the weave and loading direction.

Technical reading: Man et al. (2024), permeability of woven geotextiles under stretching; Aparicio Ardila et al. (2020), geotextile-tube dewatering assessment. These studies do not verify a universal 425 or 500 µm optimum.

Unit sizes and drawings

Nominal dimensions • Custom bags and port arrangements available

Circumference C (m)	Lay-flat width W _o (m)	Nominal length L (m)	Drawing count
4.4	2.20	5	1
15	7.50	20 to 70 in 5 m steps	11
25	12.50	20 to 70 in 5 m steps	11
30	15.00	20 to 70 in 5 m steps	11
35	17.50	20 to 70 in 5 m steps	11
36.6	18.30	20 to 70 in 5 m steps	11
40	20.00	20 to 70 in 5 m steps	11

67 individual drawings. Each drawing shows a nominal lay-flat envelope, dimensions, an indicative formed section, sleeve detail, the four fabric options and practical notes. Drawing IDs use K-GB-C[*circumference*]-L[*length*]; “p” denotes a decimal point.

The 4.4 m × 5 m unit

Standard arrangement shown: 300 Series, one nominal 200 mm clear-diameter fabric sleeve on the top centreline, 2.50 m from either end. Nominal lay-flat width is 2.20 m. Sleeve length, reinforcement, closure and dimensional tolerances are confirmed on the order drawing.

Standard fill-port schedule

By nominal length: below 25 m: 1 port; 25-40 m: 2 ports; 45-60 m: 3 ports; 65-75 m: 4 ports. Standard nominal 200 mm sleeves lie on the top centreline. Centre every port within a 5 m panel, 2.5 m from each bounding seam or end closure, as shown on the Rev F drawings; spacing may be unequal. Keep reinforcement clear of seams. Custom counts, diameters and other lengths require order-specific details. For heavy sediment, review additional ports to spread flow.

Read the dimensions correctly

C is nominal developed body circumference. $W_o = C / 2$ is nominal lay-flat body width, excluding seam and fabrication allowances. L is the nominal lay-flat body length between end closure lines. The formed footprint, usable length and filled height depend on end shape, strain, fill condition and the confirmed fabrication pattern. Do not scale the drawings.

Capacity and working limits

No working volume or fill height is assigned by this size schedule. Nominal envelope volume, cumulative pumped slurry and retained dry solids are different quantities. Establish capacity from the formed geometry, slurry mass balance, capture, density, filling limits and trial cycle times. The earlier example-volume table is replaced by this dimension schedule; it must not be used as a working-capacity rating for these units.

Design support: kontainsolutions.com/design-calculators. Custom circumference, length, ports and fabric specifications are available subject to manufacturing and project review.

Fabrication and operation

Confirm the assembled bag, the site and the filling method together

Seams and ports

Use qualified sewn seams and compatible durable sewing thread. Confirm panel orientation, seam class, stitch pattern and spacing, seam allowance, thread specification, seam efficiency, sleeve length, reinforcement and closure on the fabrication drawing. Production seam coupons must represent the relevant load direction and assembly; an index seam value is not a rated port strength.

Before manufacture and dispatch

Confirm series, nominal dimensions, tolerances, ports, design loading and acceptance criteria. Maintain fabric-roll traceability, panel and seam inspection, dimensional checks, production test records, repair records and unit identification. Supply the order-specific certificate of conformity and nominated test reports.

Platform and filtrate

Provide a smooth, stable and drained platform with suitable protection beneath the bag. Check bearing capacity, settlement, access and drainage. Collect filtrate and manage its quality before reuse or discharge. Provide containment or treatment suited to the solids and contaminants; the geobag alone is not a complete treatment barrier.

Filling and handling

Set project-specific maximum fill height and inlet pressure from geometry, slurry unit weight, fabric, seam and port capacity, creep/durability allowances and safety factors. Use staged filling and monitor the full unit. Restrain hoses independently. Maintain access and an exclusion zone; stop pumping if distress, movement or abnormal leakage occurs. Do not lift a filled bag using a sleeve or unverified lifting points.

Stacking, coastal and long-term service

Any stack requires checks of lower-bag and cake strength, consolidation, bearing, settlement, sliding, global stability, drainage and filling sequence. Coastal works also require wave, current, buoyancy, scour, abrasion and exposure assessment. Higher series numbers alone do not authorise stacking or permanent exposed service. Confirm chemical compatibility, temperature, UV and oxidation exposure for the intended life.

Use limitation. This TDS and the standard drawings support preliminary product selection. They do not establish a safe fill limit, construction design, installation method or warranty of performance. Kontain must confirm the supplied unit and order-specific requirements. Dewatering performance also depends on solids variability, conditioning, operation, platform and drainage.

KONTAIN PTY LTD | ABN 70 675 603 719
+61 405 812 770 | ben.lewis@kontainsolutions.com
kontainsolutions.com