



Technical Planning for
Geotextile Dewatering

Kontainer™ Geobags

Dewatering containers

Project-specific geotextile dewatering for mining, dredging, wastewater, sludge management and environmental remediation.



More Than a Bag Supplier



1 Technical leadership and project support led by Ben Lewis

2 Designed to reduce avoidable risk through better layout, flocculation control and operating discipline

3 Design + supply packages: survey-based layout, bag specification, filling plan, nominated bags and included materials



A Dewatering System - Not Just a Bag

Performance depends on how the feed is conditioned, filled, drained and controlled.



1 CONDITION THE FEED

- Characterise representative slurry samples and likely feed variability.
- Test polymer where required, then nominate a starting dose range.
- Define make-down strength, dilution, injection and mixing requirements.

2 FILL + FILTER

- Route treated slurry through nominated hoses, manifolds and ports.
- Fill progressively within nominated height and pressure limits.
- Retain treated solids while filtrate drains to the controlled collection path.

3 DRAIN + CONSOLIDATE

- Rest, top up and rotate between bags or zones.
- Monitor level, shape, seams, filtrate, drainage and platform response.
- Authorise the next fill cycle or stacked layer only after defined hold points.

The geobag, layout, geotextile, polymer system, plant and operator method must work as one process.

Where Geotextile Dewatering Fits

A flexible solids-handling option when the feed, footprint, drainage and operating controls are understood.



01 MINING + TAILINGS

Pond clean-outs, tailings or slimes dewatering, process-water solids and selected tailings storage facility (TSF) maintenance scopes.

02 WATER + WASTEWATER

Sludge lagoons, treatment residuals, filter-backwash solids and municipal or industrial treatment sludges.

03 DREDGING + SEDIMENT

Marinas, canals and waterways; remediation sediments; and beneficial-reuse projects where testing and approvals support the route.

04 INDUSTRIAL SOLIDS

Process sludges, settling ponds and wash-water solids, subject to representative testing and a defined liquor-management plan.

IMPORTANT SYSTEM BOUNDARY

A permeable dewatering bag is not liquid secondary containment. Where required, liners, filtrate collection, treatment and discharge controls are designed as separate system elements.

Feed Conditioning Before Filtration

Flocculant is added to the slurry; floc forms before the conditioned feed reaches the geotextile.

Why condition the feed?

- Promote floc formation and particle capture
- Reduce avoidable solids passage where testing supports it
- Support controlled drainage and filling

Control the sequence

1 TEST

Representative feed + polymer

3 INJECT + MIX

Flow-linked dose + mixing

2 PREPARE

Make-down, ageing + dilution

4 FILTER + ADJUST

Filtrate + bag response

Jar-test response

Illustrative sequence only - representative testing is required for each feed and polymer system.



1 REPRESENTATIVE FEED



2 FLOC FORMATION



3 BENCH-TEST RESPONSE

FLOCCULATION, NOT SETTLING

The bag is a filtration step. A jar or bench test informs polymer selection, but field performance must be checked through the actual fabric, flow and operating cycle.

STARTING RANGE, THEN CONTROL

The issued programme defines a starting dose and dilution basis, flow-linked dosing scenarios, monitoring points and limits for adjustment as feed conditions change.

FILTRATE IS PROJECT-SPECIFIC

Filtrate may still contain fine solids or dissolved constituents. Collection, testing, treatment and discharge or reuse requirements remain project-specific.

Common Failure Pathways + Controls We Specify

The objective is to replace improvised decisions with defined limits, checks and response actions.

RISK PATHWAY — **CONTROL BUILT INTO THE DESIGN + OPERATING BASIS**

1 Feed variability

Changing solids, density or chemistry can move the required dose and filtration response.

Define low/base/peak cases; sample and test; link dosing scenarios to measured flow and solids; set adjustment limits.

2 Hydraulics + filling

Unstable flow, unequal distribution or excessive wet height can load bags and seams unevenly.

Set flow and pressure ranges; balance manifolds and ports; rotate fills; use hold points and fill-drain-refill sequencing.

3 Platform + drainage

Inadequate footprint, drainage, access or unsupported stack assumptions can constrain safe operation.

Resolve the survey-based layout, setbacks and discharge routes; identify civil/geotechnical reviews and next-stage checks.

4 Clogging + maintenance

Fabric blinding, restricted hoses, ports or manifolds, and delayed intervention can reduce effective throughput.

Inspect, record and trend; define stop, divert, flush, clean and reset triggers; maintain safe access and contingencies.

A specification cannot remove feed or operating variability; it gives the operator a controlled starting point and a response plan.

Design + Supply Package

Survey-based layout, a defined operating method and materials matched to the plan.

ONE COORDINATED PACKAGE

Kontain develops the bag arrangement and operating specification from agreed project inputs, then supplies Kontainer™ Geobags and associated materials to that documented basis.



ENGINEERING THE OUTCOME

Layout development from the supplied survey and agreed project basis.

1 CONFIRM THE BASIS

Client-supplied survey, retained-volume and dry-solids targets, feed range, densities, duty, access and drainage constraints.

2 RESOLVE THE LAYOUT

Bag sizes, IDs, orientation, levels, quantities, stacked layers where appropriate, ports, hoses and manifolds.

3 SPECIFY THE METHOD

Select geotextile and fabrication; define placement, filling, flocculation, monitoring, cleaning, hold points and contingencies.

4 SUPPLY + SUPPORT

Matched bags and included materials, issued documents, plus optional commissioning and operator training.

COMMERCIAL MODEL Design and planning are bundled with an agreed supply package; scope, inputs, revisions and exclusions are recorded.

WHY IT MATTERS Formalising decisions before mobilisation gives the operator a defined starting point and response plan.

Cut/fill modelling and civil/geotechnical certification are excluded unless expressly included.

The package provides a design basis and response plan; it does not guarantee field performance.

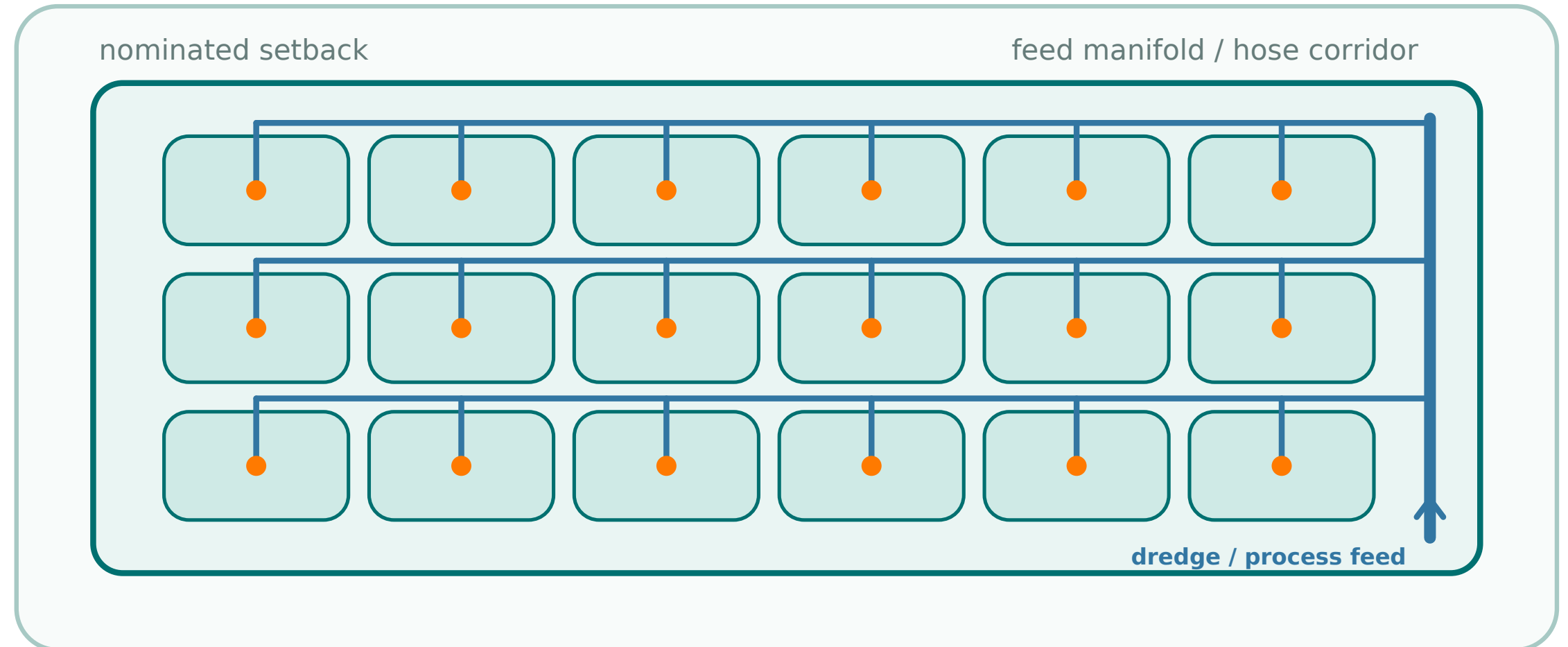
From Survey to Issued Layout

The client-supplied survey becomes a traceable bag arrangement, capacity schedule and field set-out basis.

Design inputs

- Current topographic survey or set-out grid supplied by the project team
- Usable platform envelope, setbacks, levels, access and drainage corridors
- Target retained cake volume and/or dry-solids mass
- Slurry density, solids range and expected variability
- Dredge or process flow, operating hours and utilisation
- Bag geometry, fill height, length constraints and plant limitations

Issued layout and quantities



Orange = top-centre fill ports; blue = indicative feed manifold and hose laterals. Illustrative arrangement only - project outputs are dimensioned and bag-specific.

General arrangement; bag IDs, lengths and orientation

Nominated levels, layers and setbacks; stack sections where applicable

Target versus installed capacity, bag count, tube-metres and low/base/peak cases

Port, manifold and hose positions; access and filling zones

Placement sequence, filling order, hold points and next-stage checks

STANDARD SCOPE BOUNDARY

Site survey and cut/fill or earthworks quantity modelling are excluded. Platform bearing, settlement and global stability, detailed civil earthworks and wider hydraulic or process design remain separate unless expressly included.

Material + Operating Specification

The layout is issued with starting settings, limits, monitoring and response logic needed to operate it.



SCENARIO-BASED DOSING LOGIC

$$Q \times \rho \times S = \text{dry-solids rate}$$

$$\text{dry-solids rate} \times \text{dose} = \text{active-polymer demand}$$

$$\text{polymer demand (kg/h)} \div \text{active concentration (kg/L)} = \text{dosing flow (L/h)}$$

Q = slurry flow | ρ = slurry density | S = solids mass fraction | dose = kg active polymer / dry t
If make-down is specified as % w/w, solution density is included in the conversion to L/h.

Geotextile + fabrication

- Retention and filtration criteria from testing and project requirements
- Strength, seam, puncture, UV/exposure and size class
- Bag dimensions, port and connection details
- Associated liner, cushion and drainage materials where included

Filling + stacking method

- Placement, balanced filling, port rotation and fill-drain-refill sequence
- Nominated wet-height and pressure limits, hold points and layer-release criteria
- Top-up, shutdown and contingency actions where readings or behaviour depart from plan

Monitor + adjust

- Flow and solids; polymer preparation
- Pressure, level and bag shape
- Filtrate, drainage and consolidation
- Dose and cycle settings within the response plan

Clogging + cleaning

- Inspect hoses, manifolds, ports and fabric drainage
- Use defined stop, divert, flush, clean and reset triggers
- Maintain safe access and record operating changes

Risk reduction, not a performance warranty

The package provides a documented starting point and response plan. It does not guarantee throughput, filtrate quality, final solids content or programme. Actual results depend on feed variability, testing representativeness, equipment, polymer preparation, weather, platform and drainage, maintenance and operator execution.

Platform Fit and Stack Optimisation

A traceable concept workflow from storage target and site envelope to a practical minimum-height arrangement.





Geobag stack layout

KONTAIN GEOBAG STACK DESIGNER

Example

TARGET STORED

Recommended concept layout

Prepared for	Example
Project location	QLD
Reference / revision	KGS-001 / Concept A
Date	20 Aug 2026

9

recommended layers

15.52 m

settled stack height

528,000 m³

planned stored cake

438,768 t

stored dry solids

Illustrative design-submission output from the Kontainer™ Geobag Stack Designer.

300 × 220 m

platform with a 5 m nominated edge setback

9 layers · 15.52 m

minimum-height concept in this generic example

528,000 m³

planned cake / 438,768 dry tonnes

289 bags · 16,625 lm

current optimiser result; 522 m³ unused capacity

- 1

Enter the design basis

Target storage, material densities, slurry solids, platform envelope, setbacks, bag geometry and operating duty.
- 2

Optimise the arrangement

The tool fills lower layers first, tapers upper layers and can stop on a partial final layer to control excess capacity.
- 3

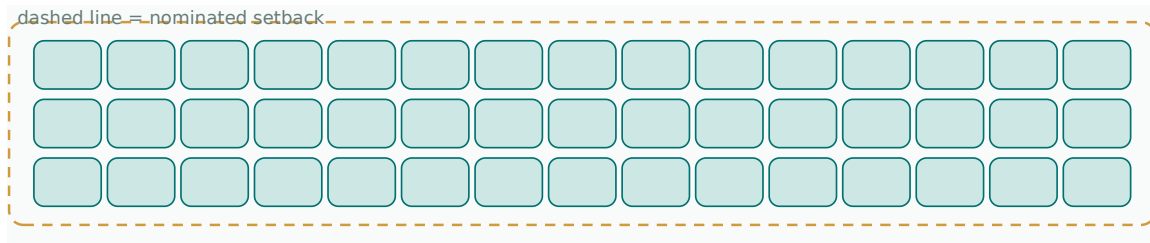
Issue an auditable concept

KPIs, footprint, bag schedule, drawings, pumping logic, installation demand, assumptions and next-stage checks.

Bag-by-Bag Plans and Tapered Sections

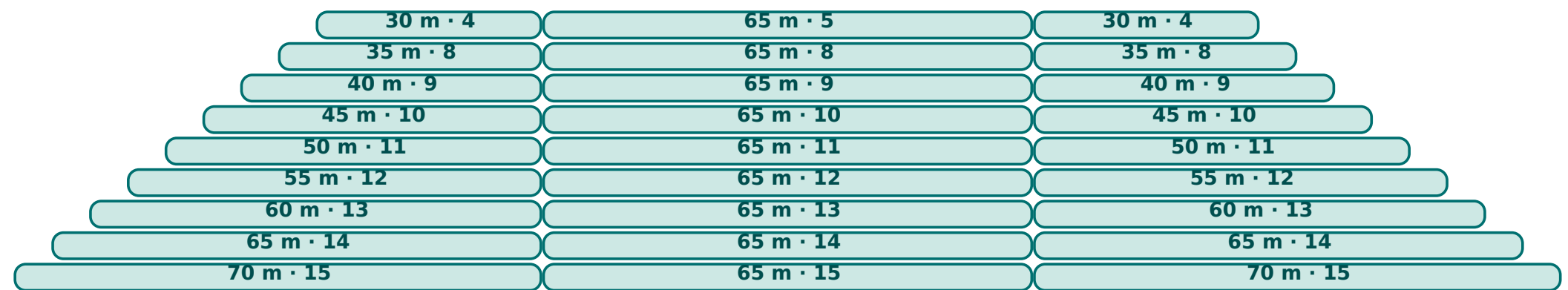
The base arrangement and both principal sections are resolved from the same layer schedule.

Base-layer plan



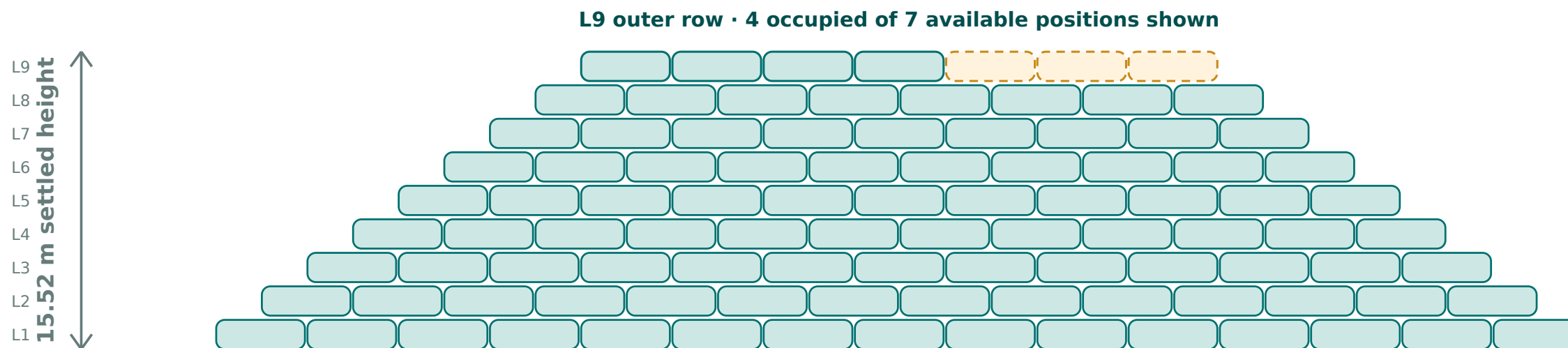
45 base bags arranged as three length segments by 15 bags across. Fill ports and temporary hosework omitted from stack-geometry views for clarity.

Section A-A · along bag lengths



Row-specific lengths, tapered layers and the partial final layer.

Section B-B · across bag widths



Dashed top position = available but unfilled in the illustrated partial-layer row.

What the drawings show

- Bag positions, lengths and orientation
- Setbacks and occupied footprint
- Layer taper and partial occupancy
- A common basis for quantities and field set-out

Quantities, Pumping and Installation Planning

Geometry is linked to mass balance and operating demand rather than treated as an isolated drawing exercise.



Layer-by-layer take-off

Layer	Bag lengths	Bags across	Bags	Tube m	Stored m³	Cumulative m³	Height
L1	70 / 65 / 70 m	15 / 15 / 15	45	3,075	97,757	97,757	1.72 m
L2	65 / 65 / 65 m	14 / 14 / 14	42	2,730	86,789	184,546	3.45 m
L3	60 / 65 / 60 m	13 / 13 / 13	39	2,405	76,457	261,003	5.18 m
L4	55 / 65 / 55 m	12 / 12 / 12	36	2,100	66,761	327,763	6.90 m
L5	50 / 65 / 50 m	11 / 11 / 11	33	1,815	57,700	385,464	8.63 m
L6	45 / 65 / 45 m	10 / 10 / 10	30	1,550	49,276	434,739	10.35 m
L7	40 / 65 / 40 m	9 / 9 / 9	27	1,305	41,487	476,226	12.08 m
L8	35 / 65 / 35 m	8 / 8 / 8	24	1,080	34,334	510,560	13.80 m
L9 · partial	30 / 65 / 30 m	4 / 5 / 4	13 / 21	565	17,440	528,000	15.52 m
TOTAL			289	16,625	528,000	528,000	15.52 m

Operational outputs

4.18M m³
equivalent slurry volume
at 10% solids

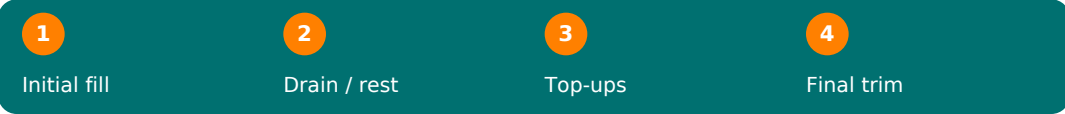
491.6 days
indicative duty days
10 h/day · 85% utilisation

33.8 lm/day
prepared-tube demand
at entered duty

3 / 4 people
required / available crew
entered planning basis

491.6 = 4,178.7 pumping h ÷ (10 h/day × 85% utilisation).

Excludes drain/rest, consolidation, access/weather/plant downtime and project delays.



Concept-stage output with an explicit engineering boundary

The Stack Designer supports feasibility, layout, quantities and operational planning. Project-specific review is still required for platform bearing capacity, global and local stability, differential settlement, drainage, filtration, access and construction sequencing. Tube capacity and filling assumptions must be confirmed against project testing and supplier filling curves.

lm = lineal metres of tube. Displayed values follow the current Stack Designer rounding convention; totals use the underlying calculation values.

Material Selection + Traceable Submission

The nominated geotextile is linked to the feed, bag geometry, fabrication, exposure and operating basis.

FEED + FILTRATION

- Particle-size distribution and variability
- Filtration and polymer test response
- Required retention and filtrate criteria
- Chemistry, temperature and compatibility

FABRIC + FABRICATION

- Strength, elongation and puncture basis
- Opening-size and hydraulic test method
- Seam type, strength and fabrication details
- Ports, dimensions and connection details

SITE + OPERATION

- Wet-height, pressure and filling sequence
- Stacking, support and drainage condition
- Handling, installation and exposure period
- Cleaning, access and replacement strategy

What the project submission records

- Nominated product, series or grade and bag dimensions
- Current technical data and the stated result basis
- Fabric, seam, port and accessory requirements
- Assumptions, departures, hold points and verification actions
- Installation, filling, monitoring and maintenance requirements

DATA DISCIPLINE

ISO 12956 characteristic opening size (O90) and ASTM D4751 apparent opening size (AOS) are separate methods. Strength and hydraulic values state whether they are minimum, typical or minimum average roll value (MARV). UV retention requires its exposure duration and test basis.

Current manufacturer evidence and project-specific testing take precedence over a generic series comparison.

WOVEN GEOTEXTILE DETAIL

Representative image. Product grade, fabrication and test basis are nominated to suit the project.



NEXT STEP

Let's Discuss Your Project

Share the project basis and we can frame the feasibility assessment, design-and-supply scope, inputs and exclusions.

Useful starting information

- Current survey or platform envelope
- Target retained volume and solids basis
- Slurry flow, density, solids range and duty

REQUEST A PROJECT REVIEW

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Design, supply and field support

A coordinated basis from project inputs to operation.

Scope, assumptions, responsibilities and exclusions are confirmed in the supply proposal.