



Our ref: F-AA-30918-4
Enquiries: Natalia Ramswell (9222 2000)

Mr Gareth Wallis
COERCO
23 Harris Rd
Malaga WA 6090



Dear Mr Wallis

APPROVAL FOR THE COERCO FLATBED LEACH DRAINS SYSTEM IN WESTERN AUSTRALIA

I write in regard to your application to the Department of Health seeking approval for the Coerco Flatbed Leach Drains System.

I am pleased to advise that this product is approved for use in Western Australia under the brand: **Coerco Flatbed Leach Drains System**

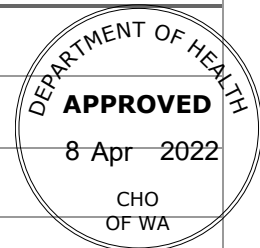
Approval is granted in accordance with the drawings and documents listed below:

- Drawings: **Coerco drawing title 20220114CFB01**
- Documents: **Coerco Flatbed Leach Drains Product & Installation Guide**

This approval is subject to the following conditions:

- 1) Coerco Flatbed Leach Drains is permitted to be installed in the following soil types following specific requirements:

Soil type	Three 30mm layers (90mm depth)
1. Sand and gravels	Min 100mm of clean sand underneath
2. Sandy loams	Min 100mm of clean sand underneath
3. Loams	Min 100mm of clean sand underneath
4. Clay loams	Min 100mm of clean sand underneath
5. Light clays	Min 600mm of clean sand underneath
6. Medium to heavy clay	Not permitted but can be considered with min 600mm of clean sand underneath



- 2) All Coerco Flatbed Leach Drains shall be assembled and installed in accordance with the installation instructions specified by Coerco Pty Ltd.

- 3) No alteration to the design or specifications of the Coerco Flatbed Leach Drains as detailed in this approval shall occur without prior approval of the Chief Health Officer (CHO).
- 4) This approval is valid for 5 years from the date of approval and may be varied or withdrawn at the discretion of the CHO.
- 5) The Coerco Flatbed Leach Drains has an infiltrative area of 2.3m² per metre length.
- 6) The bottom of Coerco Flatbed Leach Drains shall be at least the following distances above the highest groundwater level, considering long-term variability and perched water tables:
 - Public Drinking Water Source Areas - 2 metres; and
 - All other areas –
 - a) loams and clay soils - 0.6 metres
 - b) gravels – 1 metre
 - c) sands - 1.5 metres.
- 7) The Coerco Flatbed Leach Drains shall be sized and installed in accordance to *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974* and Table L7, AS/NZS 1547 – On-site domestic wastewater management.
- 8) The Coerco Flatbed Leach Drains shall be supplied, constructed and installed in accordance with this approval.
- 9) The Coerco Flatbed Leach Drains must be installed in a manner that ensures even distribution throughout the entire length of the flatbed by laser levelling.
- 10) The Coerco Flatbed Leach Drains is not approved to be trafficable and must be located at least 1.2m from an area that is subject to vehicular traffic.
- 11) The minimum setback distance between the Coerco Flatbed Leach Drains is 1.8m.
- 12) The minimum topsoil cover for the Coerco Flatbed Leach Drains is 100mm.
- 13) The maximum topsoil cover for the Coerco Flatbed Leach Drains is 300mm.
- 14) For each installation, an application to install an apparatus shall be submitted as required under the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*. Each application for installation shall be made to the Local Government and include full plans and specifications, a completed application form, and receipts of all fees as prescribed.




15) When a pump dosing system is used, Coerco Pty Ltd shall determine the pump rate for the system taking into account the volume of each pump event and the length of the Coerco Flatbed Leach Drains.

16) Each Coerco Flatbed Leach Drains owner shall be provided with the following documents:

- The site plan detailing the location and dimensions of the Coerco Flatbed Leach Drains on the lot.
- The date of installation.
- Warranty certification for the system and the installation.

Should you have any questions regarding this approval, please contact the Environmental Health Directorate of the Health Department WA on (08) 9222 2000.

Yours sincerely



Richard Theobald
**Delegate of
CHIEF HEALTH OFFICER**

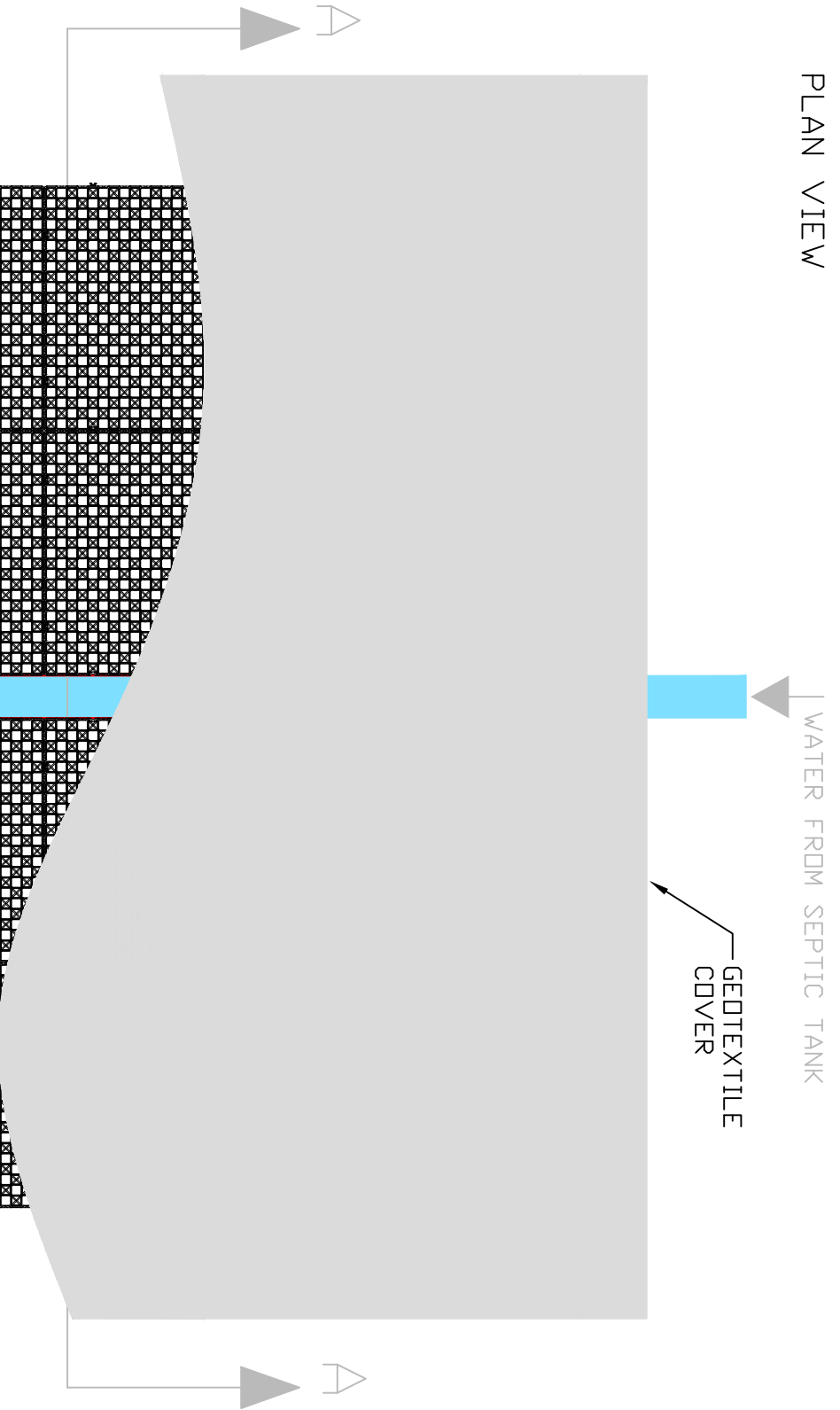
8 April 2022

W:\Public Health\EHD\Water Unit\WASTEWATER MANAGEMENT\WASTE\Product Approvals\PreApproval Documents\Infiltration Bed Matrix\Coerco\Typing\F-AA-30918-4 Coerco Flatbed Approval letter 2022.doc

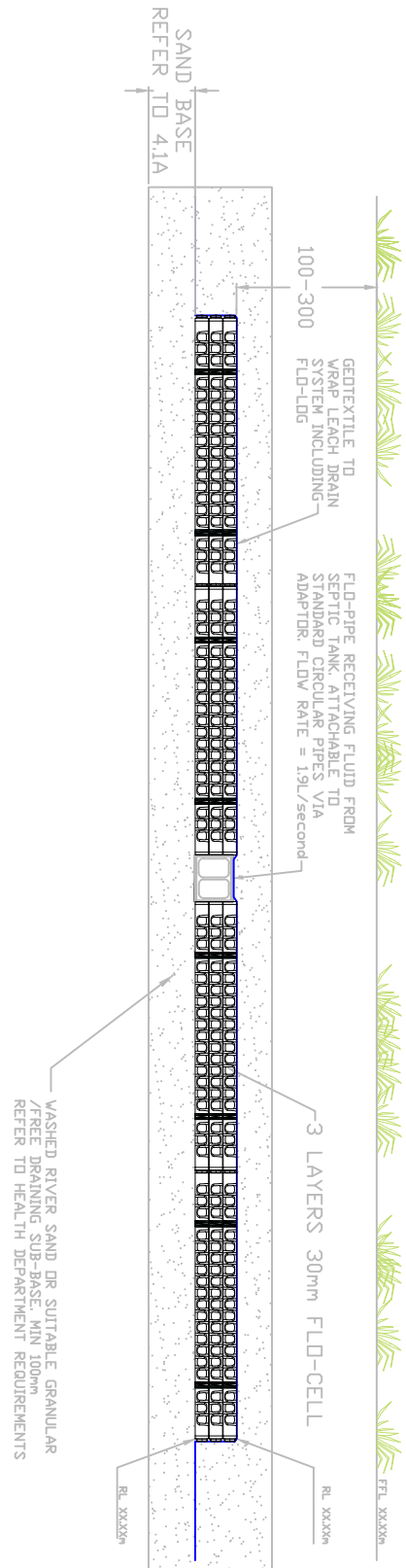


COERCOD FLATBED LEACH DRAINS

PLAN VIEW



SECTION A



NOTE: COERCOD FLATBED LEACH DRAINS PROVIDE AN INFILTRATIVE AREA OF 2.3M²/LM WITH A 2.4M TOTAL WIDTH AND COME IN 0.575M INCREMENTS OF LENGTH.

GENERAL NOTES

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 PLEASE REFER TO MANUFACTURERS INSTALLATION GUIDELINES.

PROJECT NAME:
COERCO FLATBED LEACH DRAINS

DRAWING TITLE:
20220114CFB01

DRAWN BY: B.U. CHECKED BY: - APPROVED BY: - DATE: -

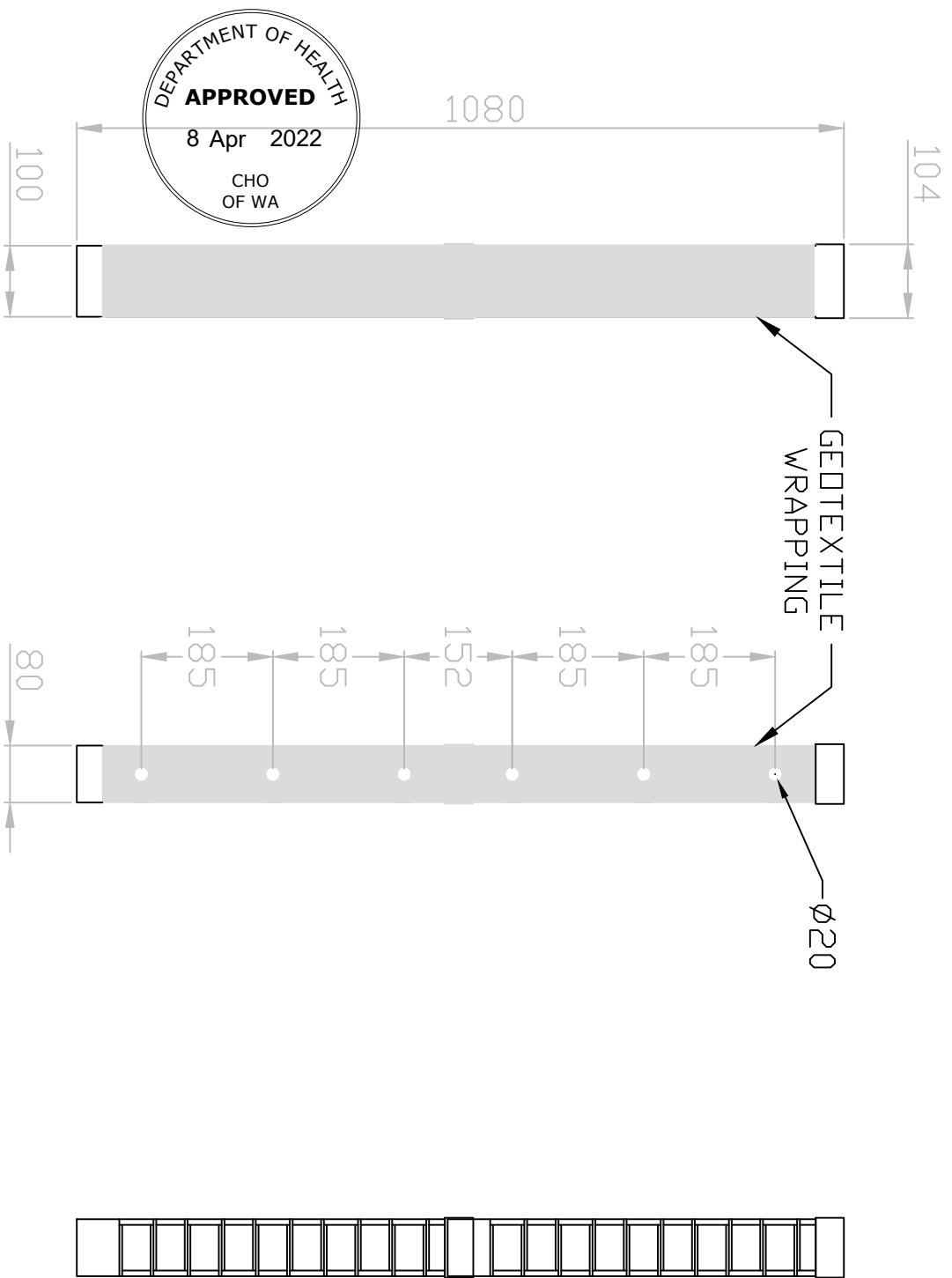
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23 HARRIS RD, MALAGA WA 6090
CONTACT NO: 1800 960 410
E-MAIL: info@coerco.com.au

PROJECT NO: - SCALE: - SHEET SIZE: A3
 DRAWING NO: - SHEET NO: 0 OF 0
 REVISION: -
 UNIT: -

FLO-PIPE

FLO-PIPE SUPPLIED WITH GEOTEXTILE FITTED INCLUDING PENETRATIONS AS SHOWN

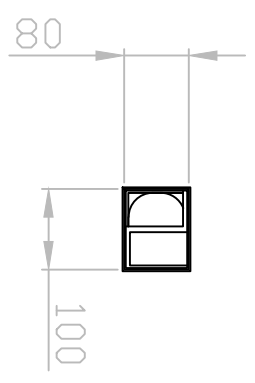


PLAN VIEW WITH GEOTEXTILE WRAPPING

SIDE VIEW WITH GEOTEXTILE WRAPPING & HOLES

SIDE VIEW PLASTIC CORE ONLY

FRONT VIEW



NOTES: ULTIMATE STRENGTH: 15T/M².
 FLOW RATE @1% GRADIENT: 1.9L/SEC.
 APPROX. MATERIAL LIFESPAN: 100 YEARS WITHOUT UV EXPOSURE
 DIMENSIONS ARE STANDARD VALUES, HOLE LOCATIONS MAY VARY ±5MM

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PROJECT NAME:
 FLO-PIPE 100x80x1080MM

DRAWING TITLE:
 20220118FP01

DRAWN BY: B.U. CHECKED BY: - APPROVED BY: - DATE: -

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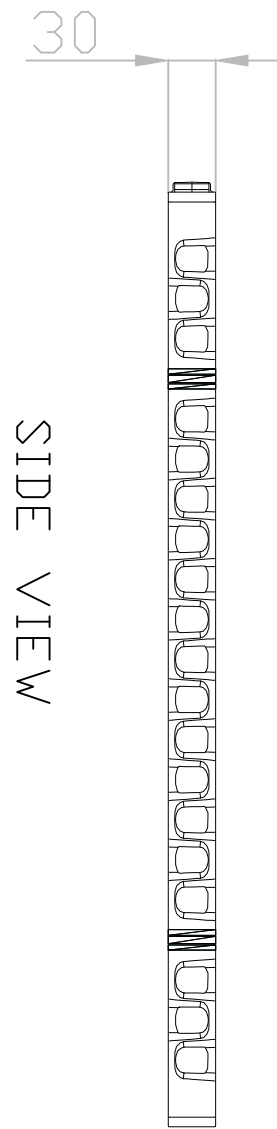
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DRAWING NO: - SHEET NO: 0 OF 0

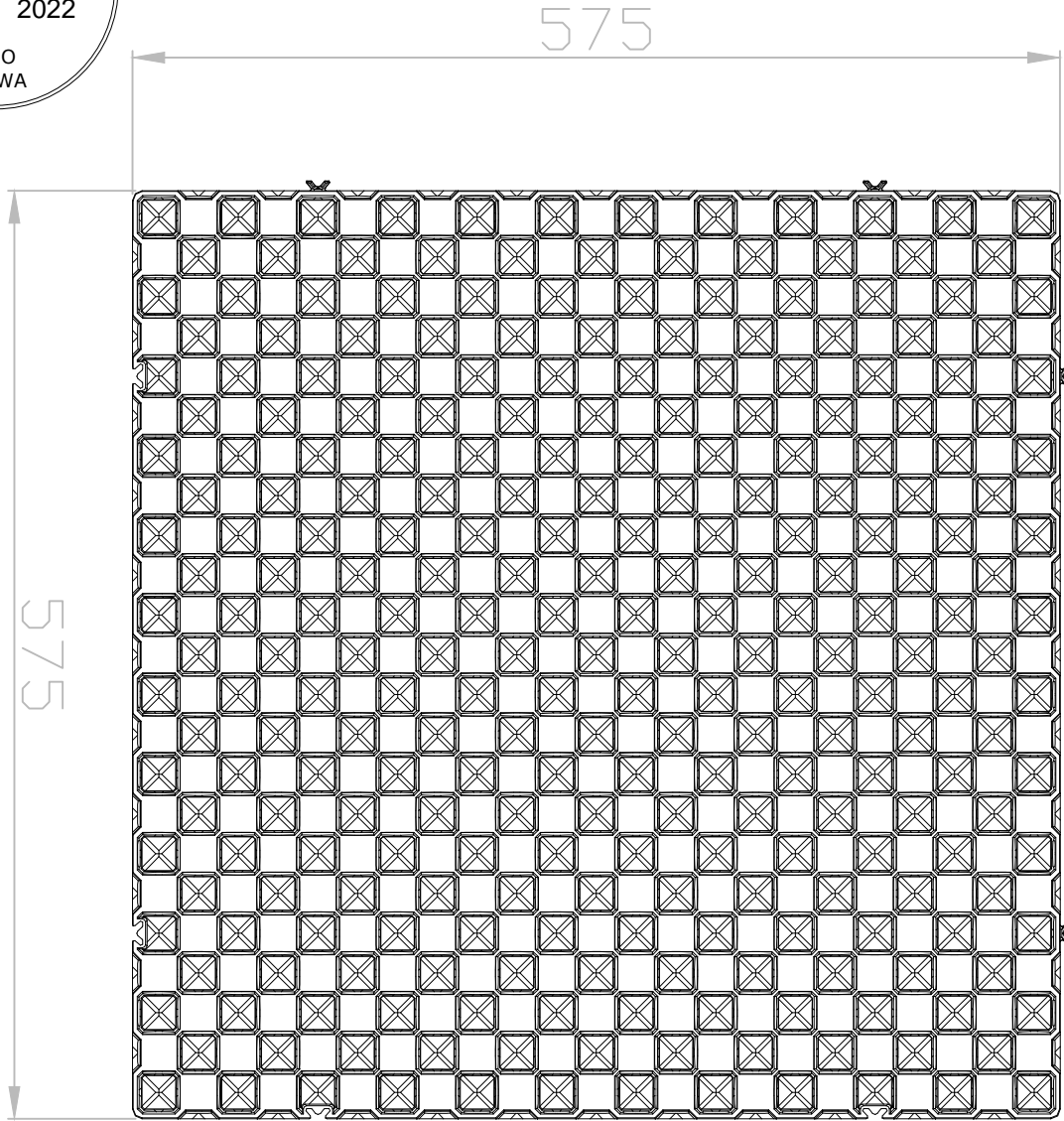
REVISION: -

UNIT: -

NOTES: ULTIMATE STRENGTH: 50T/M².
 FLOW RATE @1% GRADIENT: 1.41L/SEC/M.
 APPROX. MATERIAL LIFESPAN: 100 YEARS WITHOUT
 UV EXPOSURE



PLAN VIEW



FLOD-CELL 30MM

A	INITIAL DRAWING	B.U.	17/01/22
REV:	DESCRIPTION:	BY:	DATE:

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PROJECT NAME:
 COERCO 30MM DRAINAGE CELL

DRAWING TITLE:
 20220117DC01

DRAWN BY: B.U. CHECKED BY: - APPROVED BY: - DATE: -

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mining & civil



Flat Bed Leach Drains

Product & Installation
Guide

WA



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1. Conforming Standards

Design Area Sizing: AS/NZS1547:2012 L4

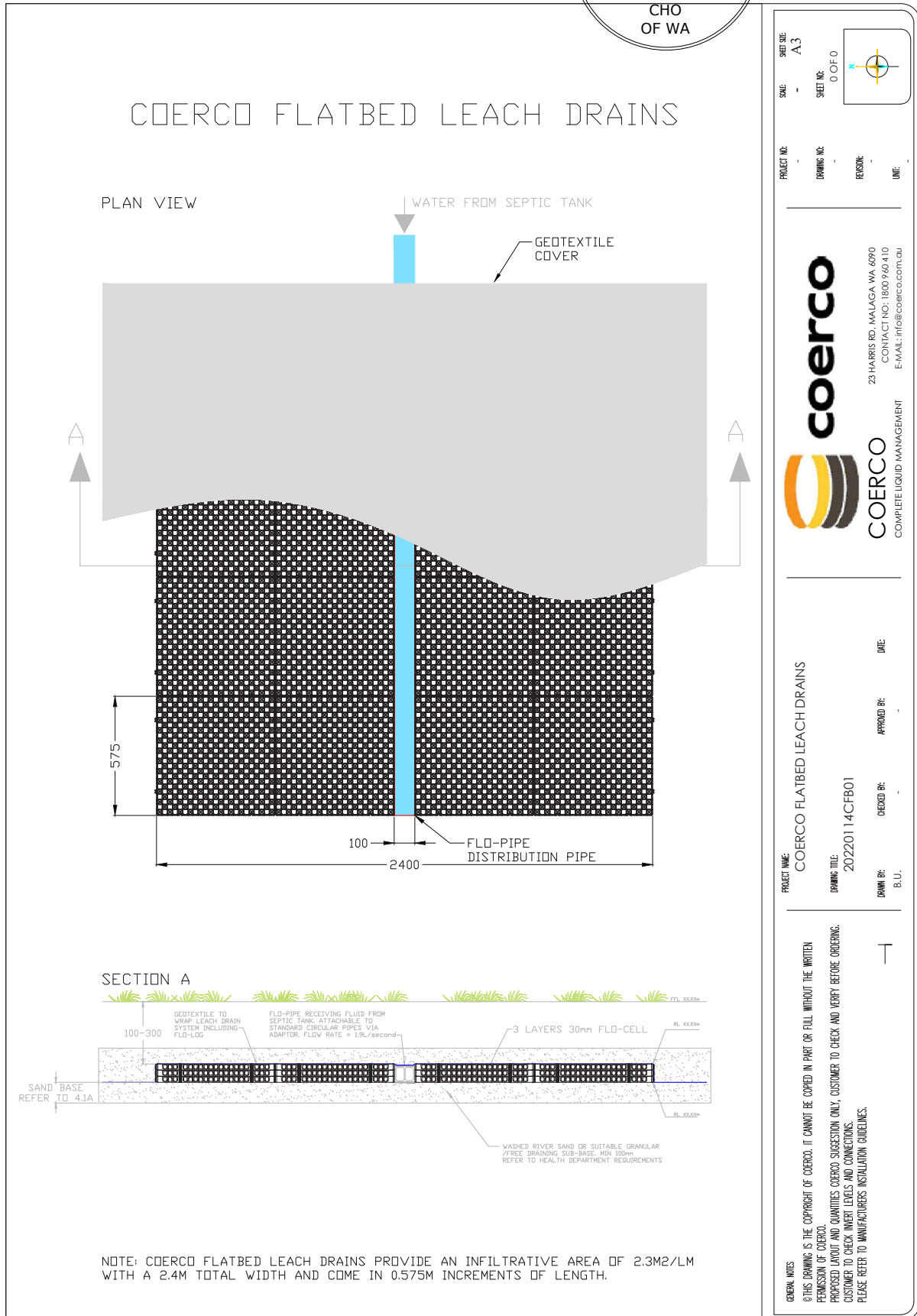
Effluent Loading: AS/NZS1547:2012 L6

Distribution Line: AS/NZS1547:2012 L6.1.2



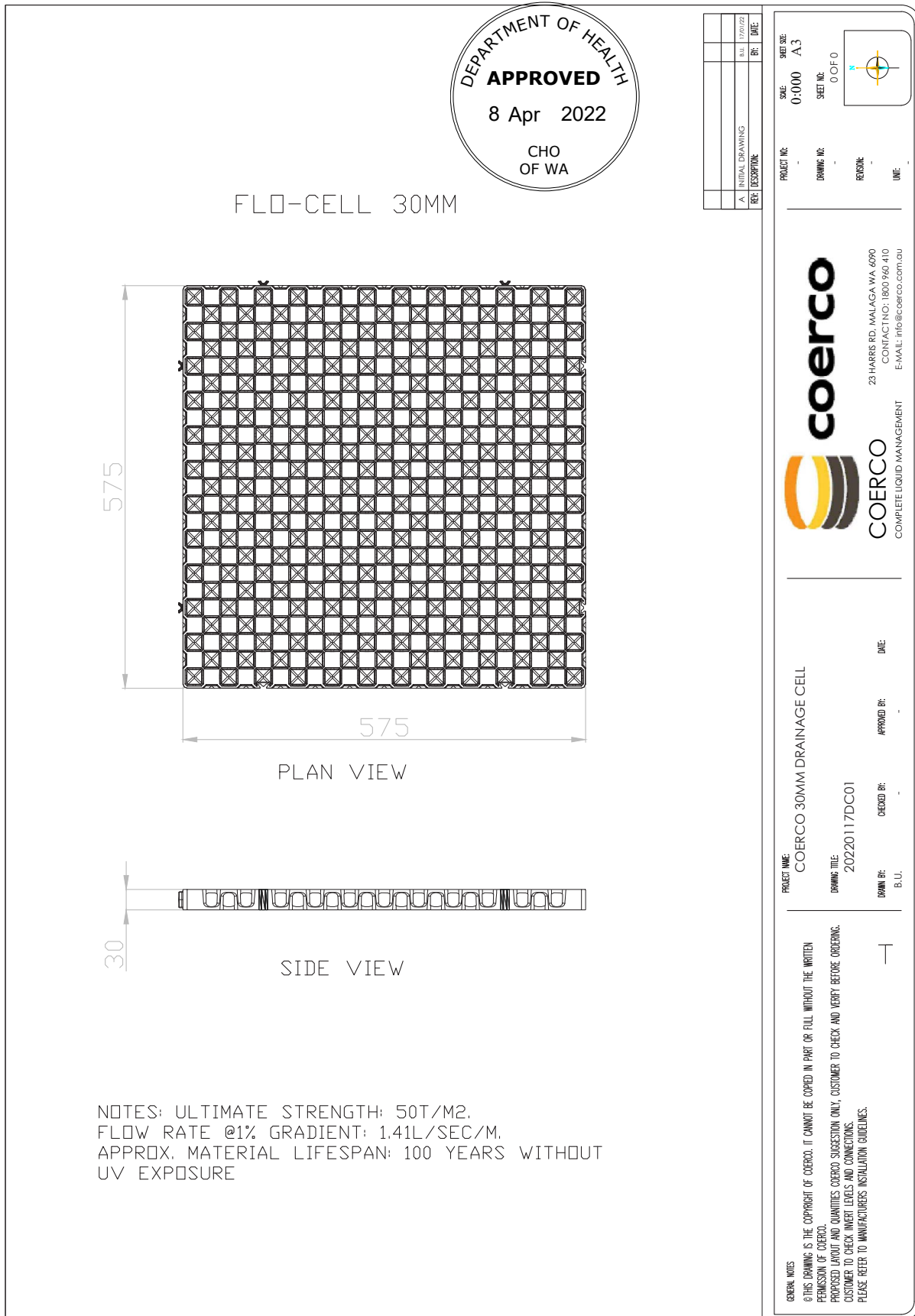
2. Drawings

2.1. COERCO Flatbed Leach Drain Setup



2. Drawings

2.2. Flo-Cell Drainage Cell 30mm



2. Drawings

2.3. Flo-Pipe Drainage Pipe

FLO-PIPE

FLO-PIPE SUPPLIED WITH GEOTEXTILE FITTED INCLUDING PENETRATIONS AS SHOWN

PLAN VIEW WITH GEOTEXTILE WRAPPING

SIDE VIEW WITH GEOTEXTILE WRAPPING & HOLES

SIDE VIEW PLASTIC CORE ONLY

FRONT VIEW

NOTES: ULTIMATE STRENGTH: 15T/M².
 FLOW RATE @1% GRADIENT: 1.9L/SEC.
 APPROX. MATERIAL LIFESPAN: 100 YEARS WITHOUT UV EXPOSURE
 DIMENSIONS ARE STANDARD VALUES, HOLE LOCATIONS MAY VARY ±5MM

PROJECT NO:	DRAWING NO:	REVISION:	DATE:

DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:

PROJECT NAME:	FLO-PIPE 100x80x1080MM
DRAWING TITLE:	20220118FP01

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 CONTACT NO: 1800 960 410
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3. Datasheets

3.1. Flo-Cell 30mm



PRODUCT SPECIFICATION

FLO-CELL® NEO 30MM



Part Number	80033
Part Size	(H) 30mm (W) 575mm (L) 575mm (H) 1.18" (W) 22.64" (L) 22.64"
Part Weight	650 grams
Weight Per Square Metre	1.95 kg
Ultimate Strength (RECYCLED PP)	50 tonnes/SQM (100 PSI)
Ultimate Strength (VIRGIN PP)	80 tonnes/SQM (114 PSI)
Flow Rate	1.41 Litres/Sec/m @ 1% gradient
Pieces Per Square Metre	3
Volume Void	90%
Surface Void	70%
Material	85% Recycled Polypropylene 15% Propriety Selected Materials
Colour	Black
Chemical & Biological Resistance	Unaffected by molds, algae, soil-bourne chemicals, bacteria and bitumen.
Service Temperature	-10° C - 70° C (14 F° - 158 F°)
Approximate Material Lifespan	100 years + with no ultra violet exposure

*Ultimate strength till failure (not yield)

Note: Atlantis® product specifications are updated on a regular basis. Please contact Atlantis® technical department for the latest data sheet available



ATLANTIS CORPORATION AUSTRALIA PTY LTD
 Phone: (02) 9417 8344
 Fax: (02) 9417 8311
 Email: info@atlantiscorp.com.au
 Web: www.atlantiscorp.com.au

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3. Datasheets

3.2. Flo-Pipe



Technical Product Specification Flo-Pipe

Date: 14/03/2016

Atlantis Corporation reserves the right to change its products specifications at any time. It is the responsibility of the specifier and purchaser to ensure that the product specifications used for design and procurement proposes are current and consistent with the products used in each instance.

Product Type: Integrally Formed Strip Filter Pipe
Polymer: 85% Recycled Polypropylene, 15% Proprietary Selected Materials
Recommended Applications: Trench Drainage, Sub-soil Drainage,
Wall & Foundation Drainage, Sub-surface Drainage,
Podium Landscape, Sports Fields

Product Properties

Unconfined Compressive Strength
Compressive Strength

Maximum 15 tonnes/m² (21.34 psi)

Dimension-Void

Width

100mm (4 in)

Length

560mm (22.05 in) *Customizable

Height

80mm (3.15 in)

Void Ratio

> 80-90 %

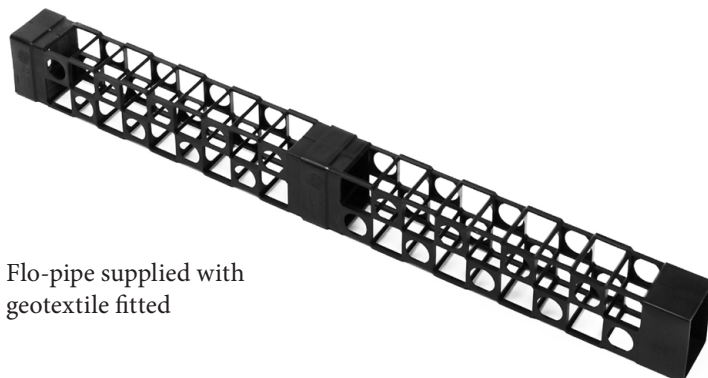
Hydraulic Properties

Manning Value 'n'

0.085 (0.076 – 0.089)

Permeability

12 m/s (7-26 m/s)



Flo-pipe supplied with geotextile fitted



Easy Connection to Standard Stormwater Fittings

3/19-21 Gibbes Street, Chatswood NSW 2067 Australia
Phone: (+61) 2 9417 8344 Fax: (+61) 2 9417 8311 Email: info@atlantiscorp.com.au www.atlantiscorp.com.au

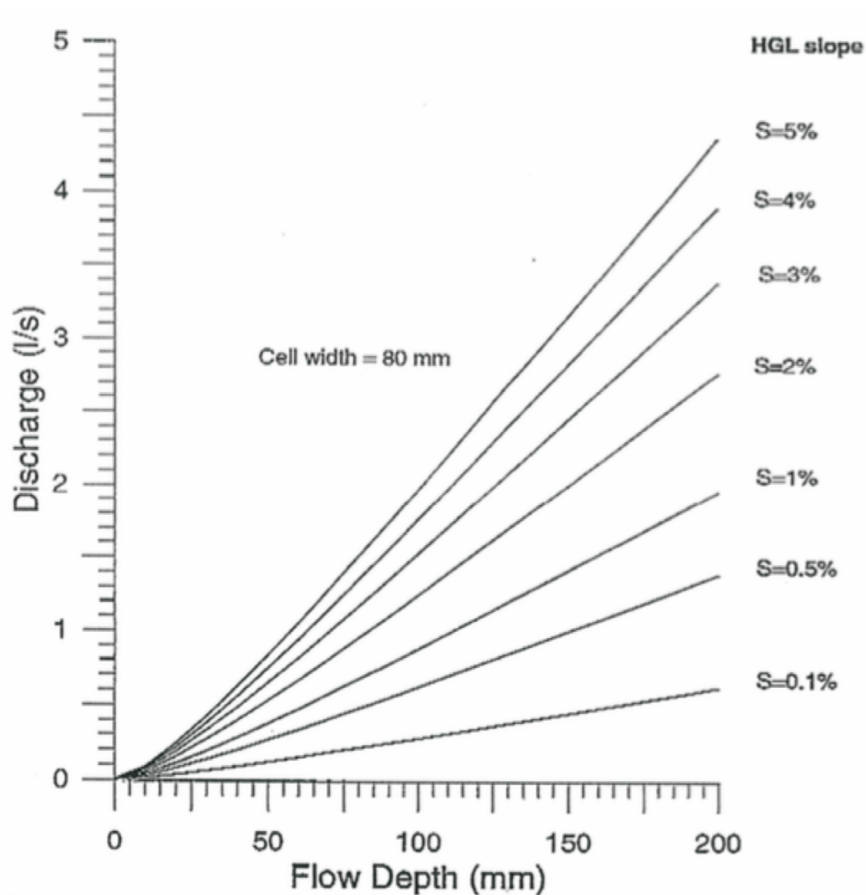
3. Datasheets

3.2. Flo-Pipe



Water Flow

	H.G = 0.1% (0.1V:100H)	H.G = 0.5% (0.5V:100H)	H.G = 1% (1V:100H)
Flow Depth (mm)	200	200	200
Flow Rate (l/min)	36	80	114
Flow Depth (in)	7.9	7.9	7.9
Flow Rate (gal/min)	9.5	21.1	30.1



Flow rates were tested and evaluated by the Water Research Laboratory, UNSW, on the basis of Manning's 'n' = 0.085.

Note:
Standard and conservative values, they may vary. Sizes slightly vary, ± 4mm

3/19-21 Gibbes Street, Chatswood NSW 2067 Australia
 Phone: (+61) 2 9417 8344 Fax: (+61) 2 9417 8311 Email: info@atlantiscorp.com.au www.atlantiscorp.com.au

4. Installation Guideline



4.1. Excavation

Ensure that the level bed is prepared to max. ± 20 mm tolerance with clean sand layer underneath, layer height per below chart.

Soil Type	Sand Base Thickness
1. Sand and gravels	Min 100mm of clean sand underneath
2. Sandy loams	Min 100mm of clean sand underneath
3. Loams	Min 100mm of clean sand underneath
4. Clay loams	Min 100mm of clean sand underneath
5. Light clays	Min 600mm of clean sand underneath
6. Medium to heavy clay	Not permitted but can be considered with 600mm of clean sand underneath

Table 4.1A: Sand Base Thickness

4.2. Installation

4.2.1. Flo-Pipe Distribution Pipe

After preparing the bed as explained in 4.1, Lay distribution pipes centered in the trench, with the pipe orientation 80mm high and 100mm wide. Join pipes ensuring they finish at max. 1000mm from the end of the leach drain. NB: Seal end of pipe by using a plug or with other measures.

4.2.2. Base Layer – Flo-Cell

Lay the drainage cells by clipping or abutting to form a 1150mm wide continuous blanket on either side of the distribution pipe.

NB: LPED lines can be used as distribution lines when dose-loading effluent into beds.

4.2.3. Second and Top Layer – Flo-Cell

Lay the drainage cells by clipping or abutting to form a second and third layer on top of the base layer. Flip cells diagonally where required to match blanked surfaces and maximize flow continuity.

4.2.4. Geotextile

Cover the top and sides of the setup with infiltration grade geotextile supplied (140gsm recommended).

4.2.5. Backfill

The excavated material can be used to carefully backfill.



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Coerco Pty Ltd
ABN 54 145 356 565

Dalwallinu Office
9 Huggett Drive
Dalwallinu
Western Australia, 6609

PO BOX 319 Dalwallinu
Western Australia 6609

Malaga Office
23 Harris Road
Malaga
Western Australia, 6090

Freecall 1800 646 277
Phone 08 9661 0610
Fax 08 9661 1515
info@coerco.com.au
www.coerco.com.au

