Drainage Verification Report

Middlefields Depot Site, Phase 5 - Staff Parking, South Tyneside

Prepared for:
South Tyneside Council

Date:
14th January 2026

Prepared by:
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Project/File:
333700558



Stantec Limited

Document control sheet

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Client	South Tyneside Council	
Project name	Middlefields Depot Site, Phase 5, Staff Parking	
Title	Drainage Verification Report	
Doc ref	333700558-STN-XX-XX-RP-C-9000	
Project number	333700558	
Status	S2	
Date	14th January 2026	

Document production record

Issue number	P01	Name
Prepared by		Kieran Smith
Checked by		Martin Pearse
Approved by		Martin Pearse

Document revision record

Issue number	Status	Date	Revision details
P01	S2	14.01.2026	INITIAL ISSUE

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Table of Contents

Document control sheet ..... **i**
1. Introduction **2**
2. Site Surface Water Drainage **2**
3. Management and Ownership **4**

Appendices

Appendix A As Built Drawings

Appendix B Product Maintenance Documents

1 Introduction

1.01 This report is commissioned by South Tyneside Council to provide verification of the drainage system serving the newly constructed Phase 5, Staff Parking Area at Middlefields Depot Site to discharge planning condition 7. The proposed site plan is provided in **Appendix A.**

1.02 The site is located off Heddon Way, South Shields and is centred on grid reference 435607E, 564775N. The development comprises of a new car parking area and the associated drainage to serve the hardstanding extent, details of which are provided in **Appendix A**.

2 Site Surface Water Drainage

The drainage layout presented within **Appendix A** shows surface water from impermeable areas of the development are collected via a combination of gullies and channel drainage.

Off-site Discharge

2.01 The surface water drainage system is discharged at a restricted rate of 2.8 l/s at manhole S5 and ultimately discharges into the existing manhole ref CCTV SWMH35 to the north of the site.

Interceptor Unit – SPEL STORMCEPTOR

2.02 The development contains 1 SPEL STORMCEPTOR; this captures and retains sediments, oil and waste from surface water runoff. The SPEL STORMCEPTOR is located within the new car parking area to the north of the site. All surface water run-off from the car parking area will pass through the STORMCEPTOR prior to entering the attenuation crates and Hydro-Brake.

2.03 The SPEL STORMCEPTOR details are provided in **Appendix A**. Photographs of the SPEL STORMCEPTOR during construction are provided in **Figure 1.**



Figure 1: SPEL STORMCEPTOR during construction

Attenuation Crates – STORMBLOC OPTIMUM

2.04 Excess flows generated from the hardstanding areas will be attenuated using on-site attenuation in the form of STORMBLOC OPTIMUM attenuation crates. The installed attenuation provides 171m^3 of surface water storage for storm events up to and including the 100 year + 45% climate change event.

2.05 Details of the attenuation crates have been provided on drawing *30529-HYD-01-XX-DR-C-1009 – Drainage Details – C02*, provided in **Appendix A**.

Photographs of the attenuation crates during construction are provided in **Figure 2.**



Figure 2: Attenuation crates during construction

Flow Control - Hydro-Brake

2.06 The surface water discharge from the site will be restricted via a Hydro-Brake Flow Control unit located in manhole ref S05. The installed Hydro-Brake unit reference is CTL-SHE-0081-2800-0900-2800. The flows are restricted to 2.8 l/s.

2.07 Details of the Hydro-Brake unit have been provided on drawing *30529-HYD-01-XX-DR-C-1000 – Staff Parking Proposed Drainage Layout – C03*, provided in **Appendix A**.
Photographs of the Hydro-Brake manhole during construction are provided in **Figure 3.**



Figure 2: Hydro-Brake Manhole during construction

3 Management and Ownership

Drainage Network

3.01 Drainage serving the development as shown within **Appendix A**, are to remain private and will be South Tyneside Councils responsibly to maintain, via their dedicated maintenance team.

Interceptor Unit – SPEL STORMCEPTOR

3.02 The responsibility for this maintenance will be placed with South Tyneside Council. It will require routine maintenance in accordance with the manufacturers guidance to ensure continuing operation to design performance standards.

3.03 The SPEL STORMCEPTOR will be maintained in accordance with the maintenance plan specified by the manufacturer which is provided in **Appendix B**.

Attenuation Crates – STORMBLOC OPTIMUM

3.04 The responsibility for this maintenance will be placed with South Tyneside Council. The attenuation crates will require regular maintenance to ensure continuing operation to design performance standards and avoid the build-up of any sediment or fines.

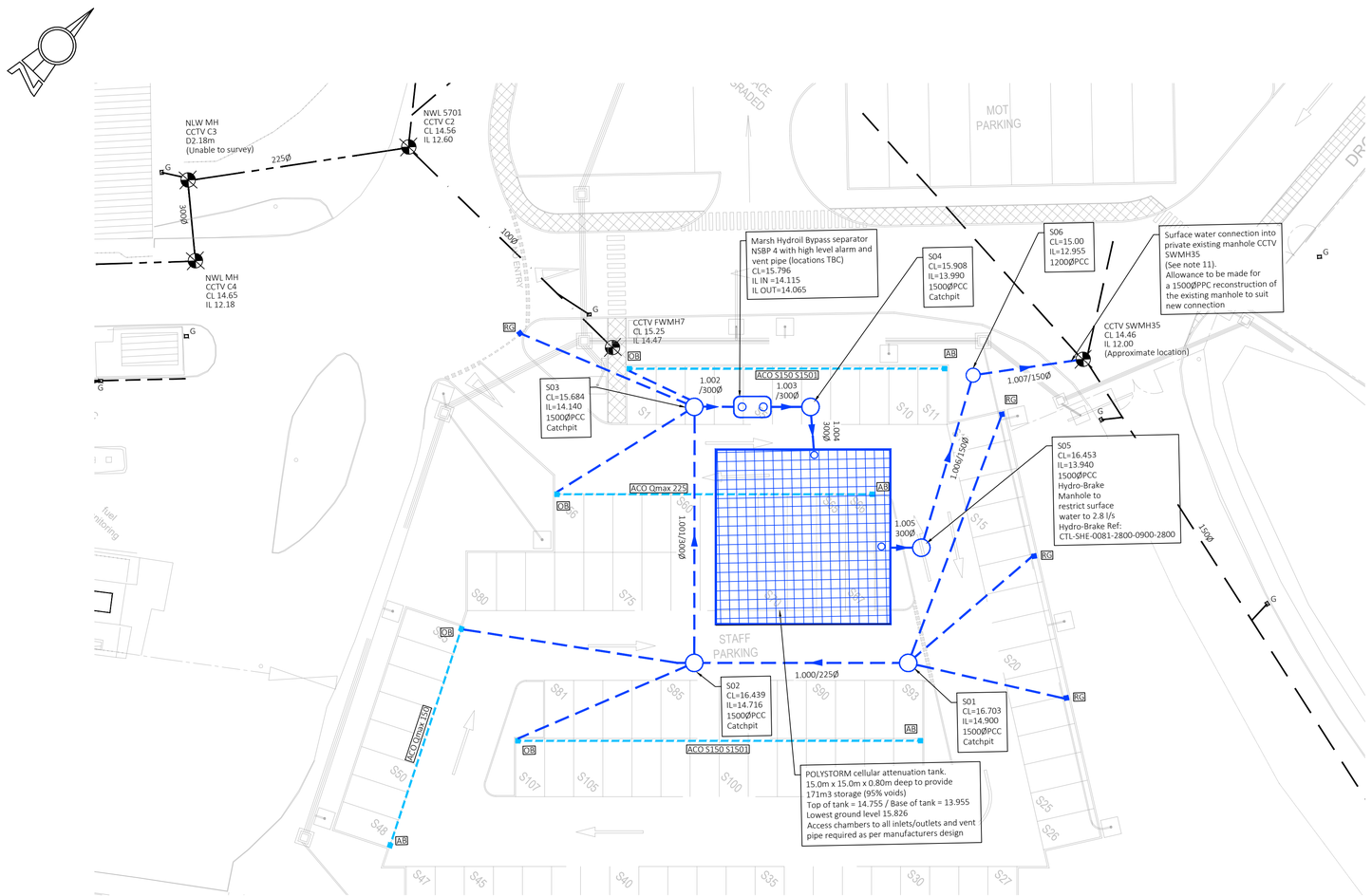
3.05 The STORMBLOC OPTIMUM attenuation crates will be maintained in accordance with the maintenance plan which is provided in **Appendix B**.

Flow Control – Hydro-Brake

3.06 The responsibility for this maintenance will be placed with South Tyneside Council. The Hydro-Brake flow control unit will require regular maintenance to ensure continuing operation to design performance standards.

3.07 The Hydro-Brake will be maintained in accordance with the maintenance plan which is provided in **Appendix B**.

APPENDIX A



Node	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Diameter (mm)	Sump (m)	Node Type	Manhole Type	Connections		Link	Invert Level (m)	Diameter (mm)
S01	435611.190	564771.540	16.703	2.313	1500	0.500	Manhole	Catchpit	Road Gully	1		14.975	150
								2	Road Gully	2		14.975	150
										0	1.000	14.900	225
S02	435597.489	564759.272	16.439	2.223	1500	0.500	Manhole	Catchpit		1	1.000	14.791	225
								2	Channel Drain	2		14.866	150
									Road Gully	3		14.866	150
										0	1.001	14.716	300
S03	435582.808	564775.663	15.684	2.044	1500	0.500	Manhole	Catchpit		1	1.001	14.140	300
								2	Channel Drain	2		14.290	150
									Road Gully	3		14.290	150
									Channel Drain	4		14.215	225
										0	1.002	14.140	300
Separator	435586.532	564778.996	15.796	N/A	N/A		Separator	N/A		1	1.002	14.115	300
										0	1.003	14.065	300
S04	435590.254	564782.330	15.908	2.418	1500	0.500	Manhole	Catchpit		1	1.003	13.990	300
								2					
										0	1.004	13.990	300
S05	435605.425	564779.666	16.453	1.963	1500	0.450	Manhole	Hydro-Brake		1	1.005	13.940	300
										0	1.006	13.940	150
S06	435598.845	564793.686	15.000	2.045	1200		Manhole	2		1	1.006	12.955	150
										0	1.007	12.955	150
SWMH35	435604.975	564801.009	14.460	2.460	1500		Manhole	2		1	1.007	12.000	150

PROPOSED REFUSE PARKING SURFACE WATER MANHOLE SCHEDULE

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES

GENERAL NOTES

1. This drawing is to be read in conjunction with all relevant Hydrock, architect and M&E consultants drawings and project specifications.
2. The exact position, level, size and use of existing sewers to be confirmed on site. Any discrepancies to be reported to the engineer prior to commencement of works.
3. See drawing 30529-HYD-01-XX-DR-C-0001 & 0002 for details on the existing drainage layout.
3. See drawing 30529-HYD-01-XX-DR-C-0003 for details on the existing drainage abandonment plan.

LEGEND

- Existing Private Sewer
- Proposed Private Surface Water Sewer
- OB/AB — Proposed Private Channel Drainage As specified or similar approved Outlet boxes(OB) and access boxes(AB) (150Ø outlet pipe unless noted wise)
- RG — Proposed Private Road Gully (150Ø outlet pipe unless noted wise)
- Proposed Private Separator SPEL STORMCEPTOR ESR or similar approved

DRAINAGE NOTES

1. This drawing is to be read in conjunction with all relevant Hydrock, architect and M&E consultants drawings and project specifications.
2. The exact position, level, size and use of existing sewers to be confirmed on site. Any discrepancies to be reported to the engineer prior to commencement of works.
3. All work is to be carried out in accordance with the current British Standards, Codes of Practice and Building Regulations.
4. Cover levels shown are approximate only, subject to the architect's external works and landscaping scheme.
5. The number and location of all RWG's is shown indicative only, all to be confirmed by architect / M&E contractor prior to commencement of works.
6. The number and location of all SVP's is shown indicative only, all to be confirmed by architect / M&E contractor. To ensure co-ordination between the internal and below ground drainage, a suitable 'pop up' drawing will be required from the architect / M&E contractor, all prior to commencement of drainage works.
7. Grease trap requirements, associated fittings and installation, whether buried or above ground, to M&E contractor's design / detail. M&E contractor to confirm grease trap proposals prior to commencement of drainage works.
8. all RWG'S and SVP's to be fitted with roddable access plates. all drains to have roddable access.
9. All foul connections to be vented to atmosphere. all pop-up's located at the head of drains to be vented above ground. above ground drainage details to be confirmed by the M&E contractor.
10. All new drainage to be constructed adjacent new and proposed tree planting to be protected against root activity using 'rootcontrol' root barrier material by Green-tech. All in accordance with the manufacturer's recommendations.
11. The contractor is obliged to apply for a Section 106 connection to the water authority when connecting directly or indirectly to the public sewerage network. Complete applications should be made a minimum of three weeks prior to the planned outfall construction date.
12. The construction of any private drainage works within the public highway shall require the contractor to obtain a Section 50 license from the local authority prior to commencement of works.
13. The design of any temporary works required shall be the responsibility of the contractor.
14. All excavations in areas of high water tables and granular materials with high sand/silt contents shall be wrapped with a suitable geotechnical filter membrane to prevent migration of sands/silts. full height clay stanks across trenches and/or at manhole locations at 25m intervals to restrict water movement along the excavation shall be provided.

Rev.	Revision Notes	Date	Drawn By	Checked | Approved
C04	AS DESIGNED	15/01/26	KS	MP | MP
C03	S02, S03 AND Separator location and levels amended. Tank location updated. S03a removed	04/09/25	AW	MP | MP
C02	Updated attenuation tank to avoid existing fibre ducts. Manhole schedule added	13/08/25	AW	MP | MP
C01	Updated to suit revised site layout and raised levels	21/07/25	JF	AW | AW

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CLIENT
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PROJECT
MIDDLEFIELDS DEPOT
JARROW

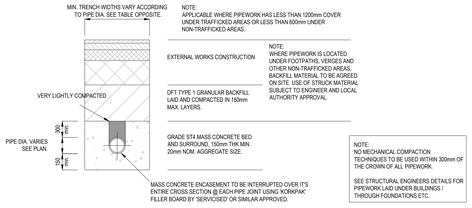
TITLE
MIDDLEFIELDS DEPOT SITE
STAFF PARKING
PROPOSED DRAINAGE LAYOUT

HYDROCK PROJECT NO.	SCALE @ A1
C-30529	1:250

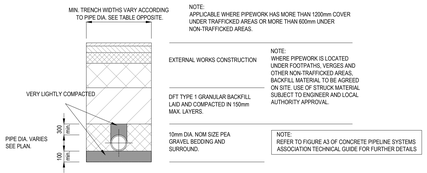
STATUS DESCRIPTION	STATUS
AS DESIGNED	A5

DRAWING NO.	REVISION
30529-HYD-01-XX-DR-C-4007	C04

Filename: \\13337005580\Drawings\Civil\30529-HYD-01-XX-DR-C-1000 - Middlefields Depot Site Staff Parking Proposed Drainage Layout.dwg

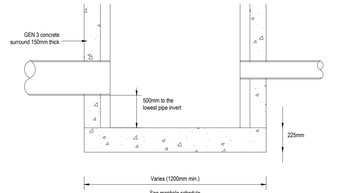


PIPE BEDDING DETAIL TYPE Z

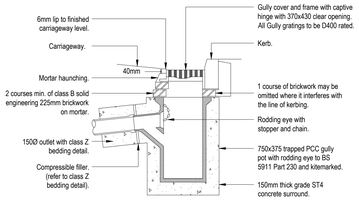


PIPE BEDDING DETAIL TYPE S

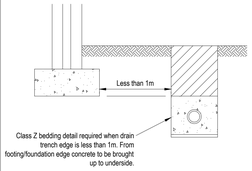
TRENCH WIDTHS	
PIPE DIA. (mm)	MIN. TRENCH WIDTH (mm)
100	550
150	600
225	700
300	750
375	1050
450	1150
525	1200
600	1350
675	1450
750	1500
825	1600
900	1900
975	2000
1050	2300
1200	2300
Over 1200	Pipe Dia. + 1000



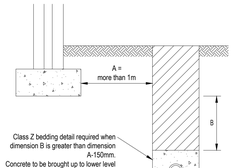
TYPICAL CATCHPIT BASE DETAIL



ROAD GULLY DETAIL

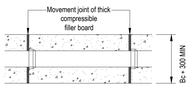


DRAIN TRENCH EDGE LESS THAN 1m. FROM FOOTING/FOUNDATION EDGE

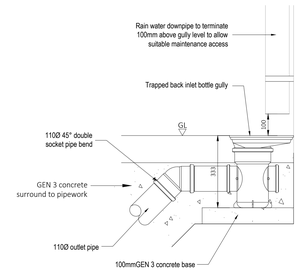


DRAIN TRENCH EDGE MORE THAN 1m. FROM FOOTING/FOUNDATION EDGE

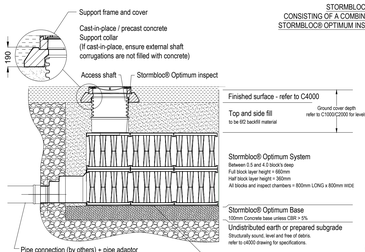
BEDDING DETAIL IN VICINITY OF FOOTINGS/FOUNDATIONS
NOTE:- THIS IS A TYPICAL DETAIL TO BE CROSS REFERENCED WITH STRUCTURAL DRAWINGS



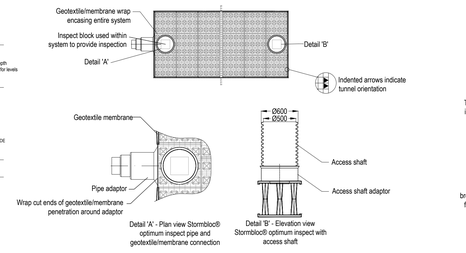
JOINTS FOR CONCRETE ENCASED PIPES



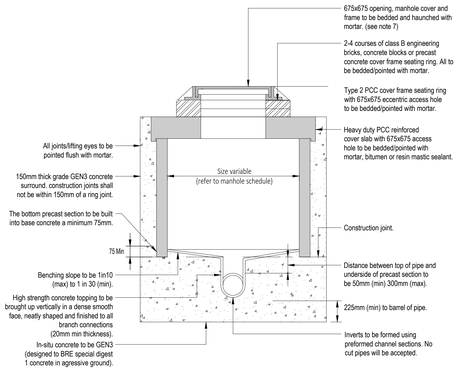
TYPICAL EXTERNAL RWP



STORMBLOC® OPTIMUM INFILTRATION / STORAGE SYSTEM
CONSISTING OF A COMBINATION OF STORMBLOC® OPTIMUM STORAGE MODULES AND STORMBLOC® OPTIMUM INSPECT MODULES FOR CONNECTIONS AND INSPECTION POINTS



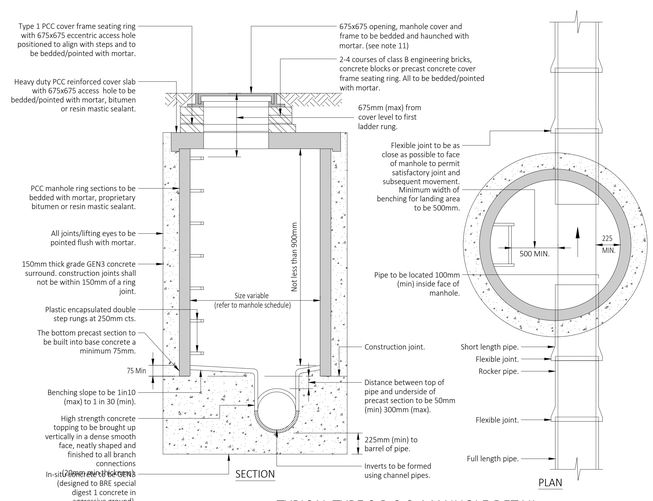
TYPICAL ATTENUATION TANK DETAILS USING STORMBLOC® OPTIMUM



TYPICAL TYPE 1 P.C.C. MANHOLE DETAIL
DEPTH TO SOFFIT OF PIPE 1m TO 1.5m
(non-man entry)

TYPICAL HYDROBRAKE MANHOLE DETAIL

TYPICAL VERTICAL BACKDROP MANHOLE DETAIL
(note: construction details as standard PCC manhole)



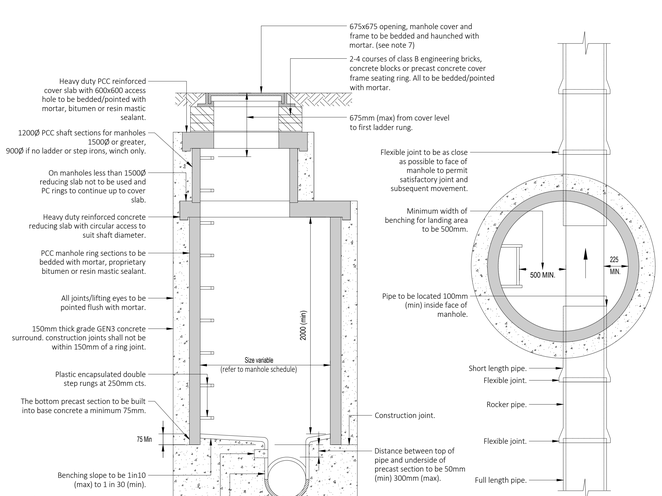
TYPICAL TYPE 2 P.C.C. MANHOLE DETAIL
DEPTH TO SOFFIT OF PIPE 1500mm TO 3000mm

DIA. OF LARGEST PIPE IN M.H.	CHAMBER SECTION INT.DIA. (mm)
LESS THAN 375mm	1200
375 TO 700	1500
750 TO 900	1800
GRATER THAN 900	AS SPECIFIED

TABLE APPLICABLE TO P.C.C. MANHOLE TYPES
(chamber sizes are minimum required)

NOMINAL SIZE	EFFECTIVE LENGTH (mm)
150 TO 600	600
OVER 600 TO 750	1000
OVER 750	1250

SHORT AND ROCKER PIPE LENGTHS TABLE
APPLICABLE TO ALL MANHOLE TYPES



TYPICAL TYPE 3 P.C.C. MANHOLE DETAIL
DEPTH TO SOFFIT OF PIPE 3000mm TO 6000mm

DIA. OF LARGEST PIPE IN M.H.	CHAMBER SECTION INT.DIA. (mm)
LESS THAN 375mm	1200
375 TO 700	1500
750 TO 900	1800
GRATER THAN 900	AS SPECIFIED

TABLE APPLICABLE TO P.C.C. MANHOLE TYPES
(chamber sizes are minimum required)

NOMINAL SIZE	EFFECTIVE LENGTH (mm)
150 TO 600	600
OVER 600 TO 750	1000
OVER 750	1250

SHORT AND ROCKER PIPE LENGTHS TABLE
APPLICABLE TO ALL MANHOLE TYPES

NOTES

1. ALL DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT WATER SERVICES ASSOCIATION "SEWERS FOR ADOPTION" AND ADOPTING WATER AUTHORITY/SEWERAGE AGENCY REQUIREMENTS AND SPECIFICATIONS.
2. ALL PRIVATE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH BUILDING REGULATIONS 2002 EDITION.
3. CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES PRIOR TO COMMENCEMENT ON SITE.
4. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
5. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
6. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DEWATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
7. PIPES UP TO AND INCLUDING 300mmØ TO BE UNPLASTICISED PVC- PIPES 375mmØ AND GREATER TO BE CONCRETE CLASS H.
8. ALL PIPEWORK TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE.
9. INSITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND CEMENT TO BS 4027, UNLESS AGREED OTHERWISE WITH THE ADOPTING AUTHORITY.
10. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. CONCRETE PIPES TO BE CLASS H UNLESS NOTED OTHERWISE.
11. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124, HAVE MINIMUM 675 x 675 CLEAR OPENINGS WITH 150 DEEP FRAMES UNLESS OTHERWISE SPECIFIED. MANHOLE COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN WITHOUT CUSHION INSERTS AND BE KITEMARKED. LOAD CLASS D400 IN VEHICULAR TRAFFICKED AREAS AND LOAD CLASS B125 IN FOOTWAYS AND PEDESTRIAN AREAS.
12. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 FOR ROADS REGULARLY CARRYING FAST MOVING HEAVY VEHICLES. CLASS C250 TO BE USED IN LESSER TRAFFICKED AREAS eg. ESTATE ROADS, CUL-DE-SACS, RESIDENTIAL CAR PARKING AREAS ETC.
13. CLASS Z BEDDING DETAIL SHALL BE PROVIDED WHERE COVER TO THE PIPE BARREL IS LESS THAN 1.2M IN VEHICULAR TRAFFICKED AREAS AND 0.9M ELSEWHERE. TO ALL ROAD GULLY CONNECTIONS AND WITHIN AREAS OF DEEP ROOTING VEGETATION.
14. WHERE CLASS Z TRENCH BEDDING DETAIL IS USED, THE CONCRETE BED AND SURROUND SHALL BE DISCONTINUED AT EACH PIPE JOINT OVER THE FULL CROSS SECTION BY MEANS OF A SHAPED COMPRESSIBLE FILLER.
15. SELECTED BACKFILL MATERIAL SHALL CONSIST OF UNIFORM MATERIAL FREE FROM STONES LARGER THAN 40mm, CLAY LUMPS LARGER THAN 75mm, TREE ROOTS, ORGANIC MATTER AND FROZEN SOIL. SELECTED BACKFILL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 225mm, EACH LAYER COMPACTED TO FORM A STABLE TRENCH BACKFILL.
16. GENERAL BACKFILL MATERIAL TO BE FREE FROM STONES LARGER THAN 40mm. GENERAL BACKFILL MATERIAL IS TO BE PLACED IN LAYERS NOT EXCEEDING 150mm THICKNESS AND EACH LAYER COMPACTED BY HAND. NO MECHANICAL COMPACTION OF FILL MATERIAL SHALL BE PERMITTED WITHIN 300mm ABOVE THE CROWN/BARREL OF THE PIPE.
17. BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR, IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS OF "THE STREET WORKS REGULATIONS 1992" AND RELEVANT PROVISIONS OF H.A.U.C. "SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
18. BACKFILL TO DRAINAGE TRENCHES IN HARD PAVED AREAS SHALL BE G.S.B. TYPE 1.
19. ALL RW DOWNCOMERS TO DISCHARGE TO TRAPPED GULLIES
20. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
21. ALL GULLY LEADS TO BE 150mm DIAMETER.
22. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
23. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
24. ANY EXISTING DRAINAGE WHICH BECOMES UNDER TRAFFICKED AREAS IN THE NEW SCHEME SHOULD BE SUBJECT TO THE FOLLOWING REMEDIAL/REVISIONS. WHERE DEPTH OF COVER IS LESS THAN 1200MM, THE EXISTING PIPEWORK SHALL BE EXPOSED & SURROUNDED WITH 150MM CONCRETE AS CLASS "Z" BEDDING. WHERE THE EXISTING MANHOLE COVER & FRAME IS NOT AS MANHOLE DETAIL A OR B, OR TO BS497 GRADE A, OR EN124 CLASS D, THEN IT SHOULD BE CHANGED FOR SUCH.
25. THE CONTRACTOR MUST ENSURE THAT ANY OF THE EXISTING DRAINAGE WHICH IS LIVE IS KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.
26. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
27. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES

REVISIONS

Rev.	Revision Notes	Date	Drawn By	Checked | Approved
C03	AS DESIGNED	15/01/26	KS	MP | MP
C02	Typical external RWP detail added	06/03/25	AW	MP | MP
C01	Construction Issue	07/03/25	AW	AW | AW
T01	Tender Issue	19/07/24	SNK	AW | AW

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CLIENT
SOUTH TYNESIDE COUNCIL

PROJECT
MIDDLEFIELDS DEPOT
JARROW

TITLE
MIDDLEFEILDS DEPOT SITE
DRAINAGE DETAILS

HYDROCK PROJECT NO.	SCALE @ A0
C-30529	N.T.S.
STATUS DESCRIPTION: AS DESIGNED	STATUS: A5
DRAWING NO.: 30529-HYD-01-XX-DR-C-1009	REVISION: C03

Filename: ...\01\33705\05\0\Drawings\Civil\3D\29-01\05-01-XX-DR-C-1009 - Middlefields Depot Site Drainage Details.dwg

Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	0.900	2.800
Flush-Flo™	0.267	2.779
Kick-Flo®	0.563	2.262
Mean Flow		2.435

This Hydro-Brake® Optimum includes:

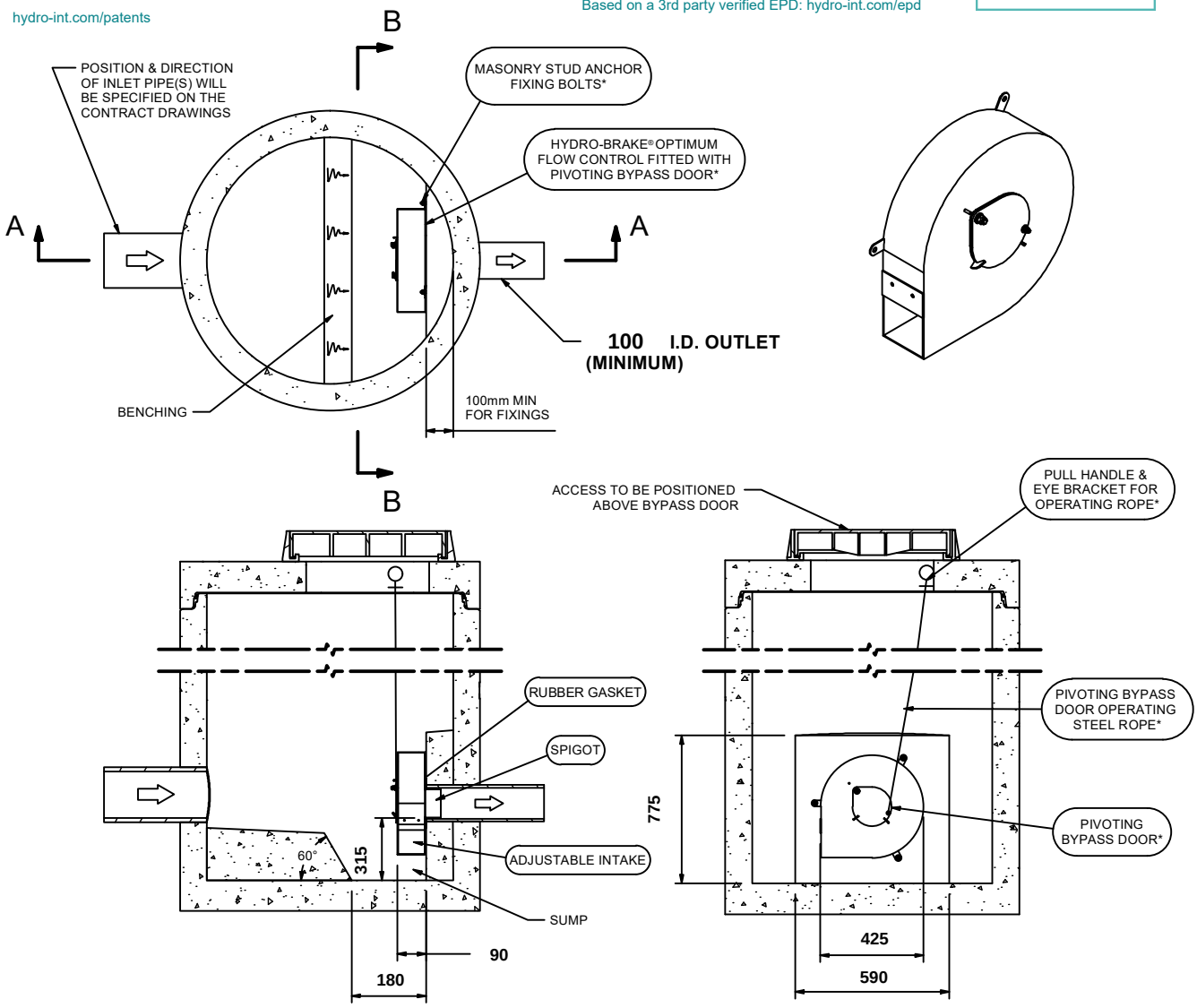
- •All in 3 mm Grade 304L stainless steel
- • Integral pivoting by-pass door allowing clear line of sight through to outlet, c/w operating rope
- • Media blasted for corrosion resistance
- • Variable flow rate post installation via adjustable inlet (if necessary)
- • Indicative Weight: 10 kg
- • Product Carbon Footprint: 42.48 kgCO2e

Based on a 3rd party verified EPD: hydro-int.com/epd

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 08/4596

wrc approved PT/503/0422 Valid: 01/04/2022 - 31/03/2027

hydro-int.com/patents



SECTION A-A

SECTION B-B

IMPORTANT: ⬭ LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED
HYDRO-BRAKE® IS A REGISTERED TRADEMARK FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE

The head/flow characteristics of this SHE-0081-2800-0900-2800 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.
The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

Hydro International A CRH COMPANY

DATE	15/01/2026 09:05
SITE	Phase 5 - Staff Parking
DESIGNER	Kieran Smith
REF	S05

SHE-0081-2800-0900-2800

Hydro-Brake® Optimum

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Kieran.Smith2@stantec.com

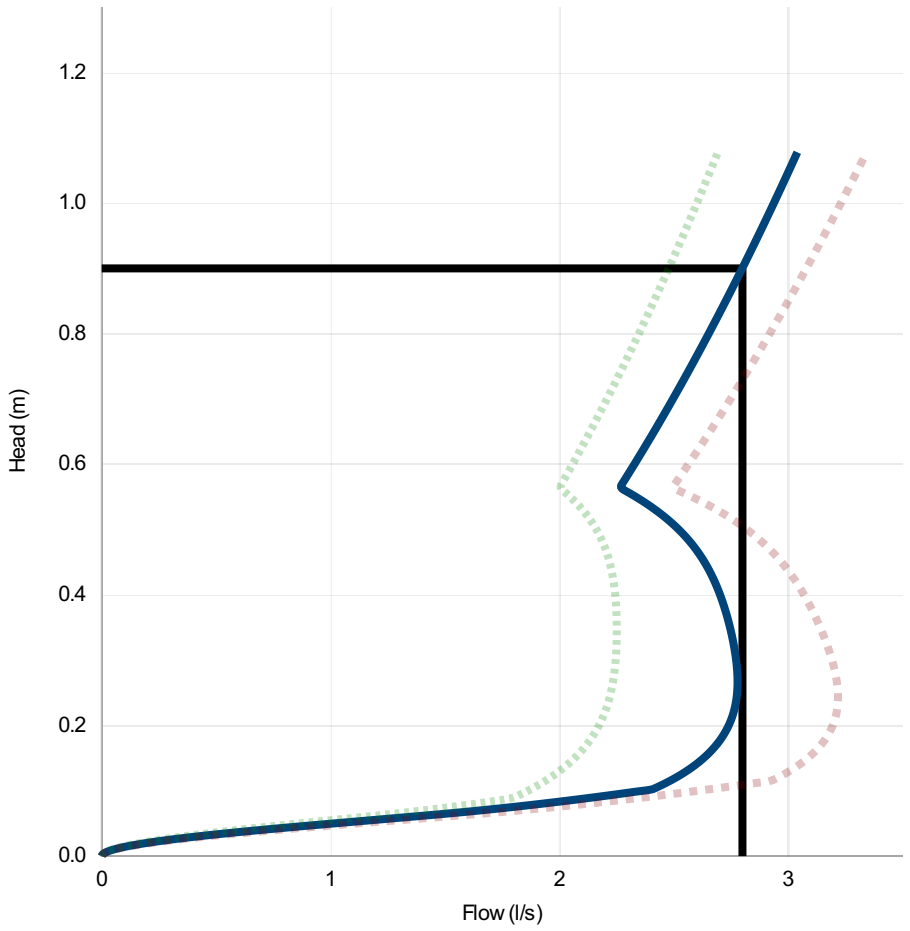
Technical Specification

	Original Setting		Minimum Setting		Maximum Setting	
Control Point	**Head (m)**	**Flow (l/s)**	**Head (m)**	**Flow (l/s)**	**Head (m)**	**Flow (l/s)**
Primary Design	0.900	2.800	0.900	2.478	0.900	3.079
Flush-Flo™	0.267	2.779	0.346	2.251	0.244	3.218
Kick-Flo®	0.563	2.262	0.563	1.999	0.563	2.492
Mean Flow		2.435		2.060		2.740

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE No 08/4596

wrc approved™
PT/503/0422
Valid: 01/04/2022 - 31/03/2027

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Head (m)	Flow (l/s)
0.000	0.000
0.031	0.440
0.062	1.412
0.093	2.217
0.124	2.528
0.155	2.646
0.186	2.718
0.217	2.759
0.248	2.776
0.279	2.778
0.310	2.768
0.341	2.751
0.372	2.728
0.403	2.699
0.434	2.659
0.466	2.606
0.497	2.532
0.528	2.430
0.559	2.293
0.590	2.309
0.621	2.364
0.652	2.416
0.683	2.468
0.714	2.518
0.745	2.568
0.776	2.616
0.807	2.663
0.838	2.709
0.869	2.754
0.900	2.799

DESIGN ADVICE

The head/flow characteristics of this SHE-0081-2800-0900-2800 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

! **The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.**

Hydro International
A CRH COMPANY

DATE	15/01/2026 09:05
Site	Phase 5 - Staff Parking
DESIGNER	Kieran Smith
Ref	S05

SHE-0081-2800-0900-2800

Hydro-Brake® Optimum

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APPENDIX B

Hydro International Warranty, Maintenance and COSHH Statement

This statement covers Hydro International Hydro-Brake® Optimum, Hydro-Brake®, Hydro-Brake® Basic-S Vortex Flow Control units (hereafter referred to as “Flow Control”).

Defects Liability Period Warranty

The standard Hydro International warranty covers products for one year from date of purchase and will only be considered for those defects or faults reported directly to Hydro International in writing. Warranties will not be considered for defects or faults caused by accident, acts of vandalism or unauthorised repair/rectification. Please Contact Hydro International for more details.

Maintenance

Normally, little maintenance is required as there are no moving parts within the Flow Control. Experience has shown that if blockages occur they do so at the intake, and the cause on such occasions has been due to a lack of attention to engineering detail such as approach velocities being too low, inadequate benching, or the use of units below the minimum recommended size. The Flow Control (where applicable) is fitted with a pivoting bypass door, which allows the manhole chamber to be drained down should blockage occur. The smaller conical units, below the minimum recommended size, are also suppled with rodding facilities or vortex suppressor pipes as standard.

Following installation of the Flow Control it is vitally important that any extraneous material i.e. building materials are removed from the unit and the chamber. After the system is made live, and assuming that the chamber design is satisfactory, it is recommended that each unit be inspected monthly for three months and thereafter at six monthly intervals with hose down if required. If problems are experienced, please do not hesitate to contact the company so that an investigation may be made.

All Flow Control units are typically manufactured from grade 304 Stainless Steel, and if required they can also be manufactured in grade 316 Stainless Steel. Both materials have an estimated life span in excess of the design life of drainage systems.

COSHH

Flow Control units are manufactured from high density polyethylene which is not regarded as hazardous to health and exhibits no chemical hazard when used under normal circumstances for the stated applications.

Manual Handling

The handling of Flow Control units should be in accordance with the current legislation and regulations:

- The Health and Safety at Work Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Manual Handling Operations Regulations 1992. All published and printed by the Health and Safety Executive.

Hydro International (UK) Ltd, Unit 2 Rivermead Court, Kenn Business Park, Windmill Road, Kenn, Clevedon, BS21 6TF
Tel: +44 (0)1275 878371 Fax: +44 (0)1275 874979 Web: hydro-int.com

Turning Water Around…®

Registered in England No. 1474012, Registered office: as above

4.6 Geotextile and membrane protection

Depending upon the application, the entire system should be wrapped with either a suitable geotextile (for infiltration) or an impermeable membrane (for storage / attenuation). There is a great degree of variation in the physical properties of available geotextiles and membranes, which should be selected according to specific site conditions.

For installations where there is a risk of contaminants within the surrounding ground or where the groundwater level is above the base of the system advice on suitable membrane with welded joints should be sought from a specialist supplier (please contact Hydro International directly if you require a list of independent membrane specialists who have previous experience of Stormbloc® MX/SX/HX installations).

5. Maintenance instructions

The channels within each Stormbloc® MX/SX/HX module allows almost the entire volume of the construct to be inspected via CCTV camera and flushed through.

A catchpit chamber immediately upstream of the system is recommended as this will reduce the amount of silt entering the installation. For larger installations it may also be advantageous to add further catchpits to the system design or an advanced vortex silt trap such as the **Downstream Defender® Select** by Hydro International. The collection sump(s) should not be allowed to overfill as this will lead to silt carry-over into the Stormbloc® MX/SX/HX modules.

As all schemes are different, the frequency at which the catchpit(s) should be emptied will need to be determined on site. For small soakaways and individual infiltration tanks it will generally only be necessary to ensure that the catchpits / silt traps are free from debris such as leaves or sediment. It is recommended that any system be inspected no less frequently than at monthly intervals for the first 3 months and thereafter at 6 monthly intervals. In addition, it is suggested that the installation is inspected immediately following the first storm event, whenever this should occur post installation.

Individual maintenance schedules should be drawn up using the information obtained from the initial inspections. It should also be noted that more regular inspections may be required should the catchpit(s) fill more frequently and/or if the initial inspections reveal that maintenance / cleaning will be required more regularly than at six month intervals.

Flushing of the system can be achieved using a jetting system with a 120 bar pressure. The jet nozzle should be introduced to the system via the access chamber / manhole and the block channel. The silt should be flushed to the access chamber or catchpit manhole and removed from there.



Figure 8 - Jetting nozzle flushing the system

The Stormbloc® Optimum range



Stormbloc® LT



Stormbloc® MX



Stormbloc® SX



Stormbloc® HX

EN17152-1

EPD Environmental Product Declaration

	Stormbloc® LT (light)		Stormbloc® MX (medium)		Stormbloc® SX (strong)	Stormbloc® HX (very strong)
Application suitability	Lighter loaded areas, (cars ≤ 3 t*)		For car parks, bus lanes, pedestrian zones with delivery traffic, access roads to residential complexes and clinics.		Heavily loaded and high-traffic areas such as residential and service roads and access roads in industrial are commercial car parks (cars and lorries), lorry loading bays, warehouse yards.	Very heavily loaded areas such as residential and service roads, and access roads in industrial and commercial car parks (cars and lorries), lorry loading bays
Maximum installation depth	3 m		3 m		4 m	6 m
Block type	**Half block**		**Full block**		**Full block**	**Full block**
Vertical ultimate compressive strength	320 kN/m²		350 kN/m²		420 kN/m²	630 kN/m²
Horizontal ultimate compressive strength	100 kN/m²		135 kN/m²		165 kN/m²	235 kN/m²
Cover depth	**Landscaped area, no traffic**	**Light traffic loading ≤ 3 t***	**Light traffic loading ≤ 3 t**	**Heavy traffic loading ≤ 30**	**Roads & HGV loading yards with traffic loading ≤ 60 t**	**Roads & HGV loading yards with traffic loading ≤ 60 t****
	≥ 0.5 m	≥ 0.8 m	≥ 0.6 m	≥ 0.8 m	≥ 0.8 m	≥ 0.8 m
Material	Polypropylene (up to 100% recycled material)		Up to 100% recycled polypropylene		Virgin and recycled polypropylene	Virgin polypropylene

*Occasional vehicle loading up to 9t, for heavier loadings please contact Hydro International: stormwater@hydro-int.com
**For shallower cover depths under heavy loading please contact Hydro International
Table 5 - Stormbloc® LT, MX, SX and HX technical information.

EPD data is available for this product. Please contact Hydro International for details

Stormbloc® is a registered trade mark of CRH Group Services Limited

Tel: +44 (0)1275 337937 stormwater@hydro-int.com

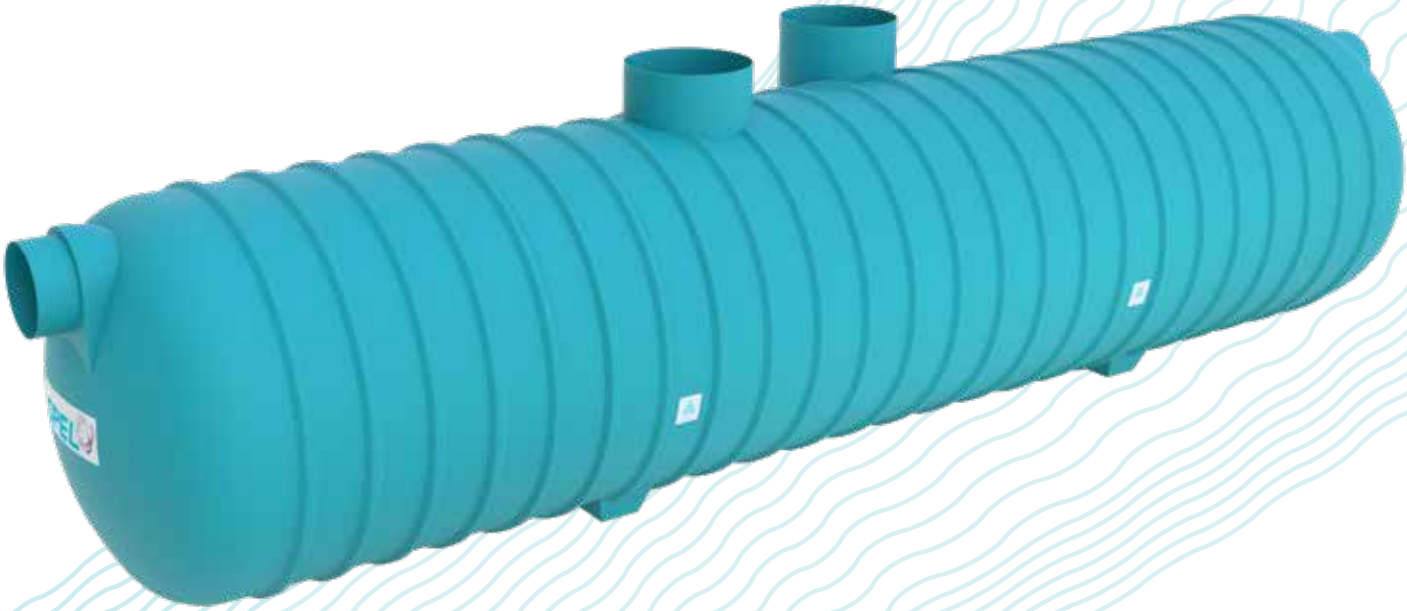
Hydro International
Unit 2, Rivermead Court, Kenn Business Park
Windmill Road, Kenn, Clevedon, BS21 6FT

hydro-int.com

SPEL

Quality solutions protecting our global environment

*The **safest answer** for **pollution control** and our **environment***



SPEL Stormceptor

ESR (Enhanced Silt Retention)

SuDS Compliant ESR Range

spelproducts.co.uk

SPEL Stormceptor ESR Range
By-Pass System

The **total** treatment solution for SuDS

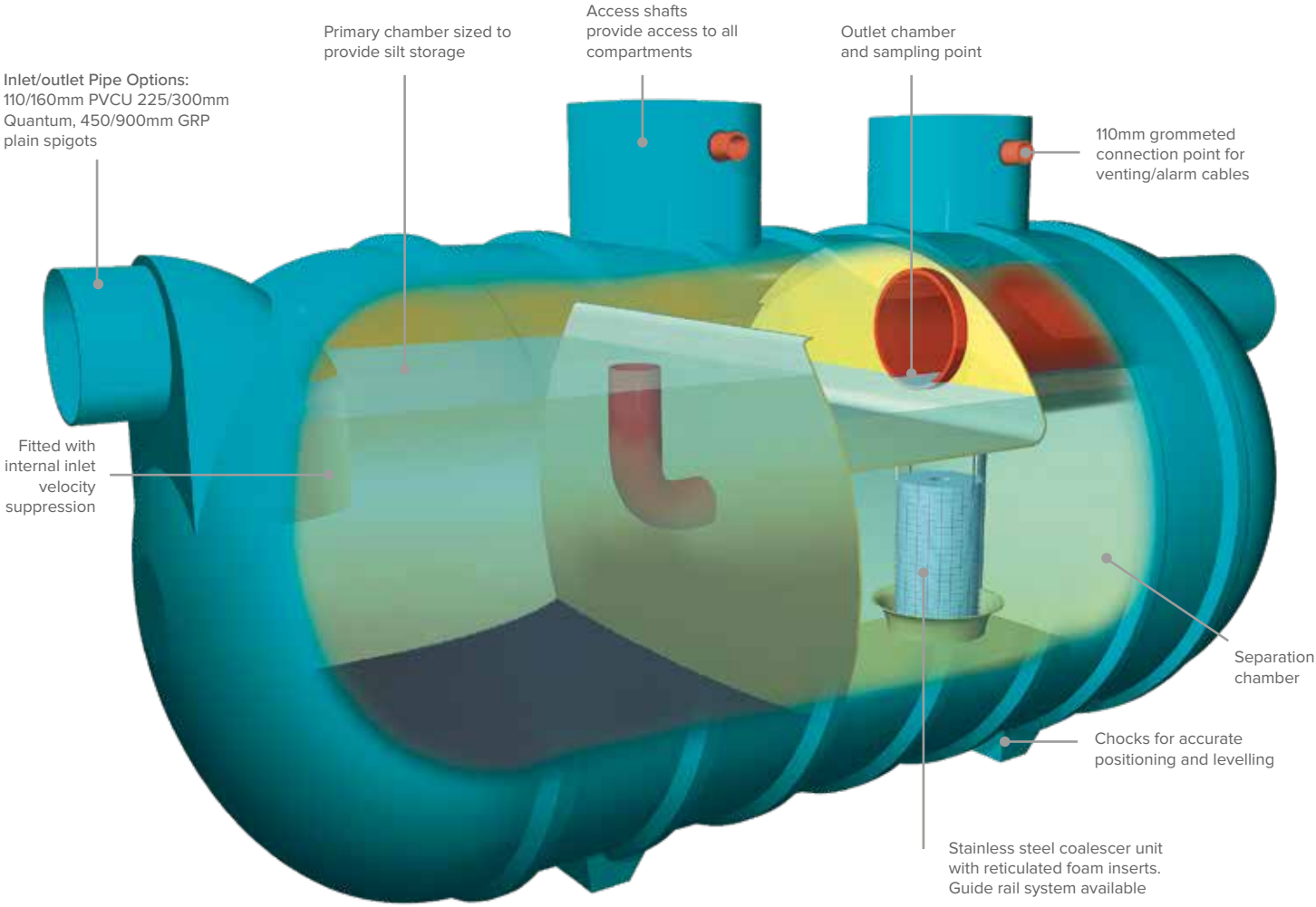
The new SPEL ESR System is fully certified to meet the CIRIA SuDS Mitigation Index. It has been tested by WRc (for TSS and Metals) to the British Water Code of Practice for Manufactured Treatment Devices. This unit is also compliant to the British and European Standard BS EN 858.

SPEL's ESR range is a total treatment system removing Hydrocarbons, Total Suspended Solids (TSS) and Metals (particulate). It's a highly efficient, single unit, water quality SuDS component.

SPEL ESR Stormceptor Certified Mitigation Index

TSS	0.8
Metals	0.6
Hydrocarbons	0.9*

**H R Wallingford test results to BS EN 858*



SPEL Stormceptor ESR Range
By-Pass System



Surface Water Treatment Device Performance Declaration

Testing carried out according to British Water Code of Practice

Product Details	Description
Manufacturer	SPEL Products
Treatment Device Name/Model	Stormceptor Type 210 C1/SC
General description	Class 1 By-pass Separator with Silt Capacity
Envisaged application	Treatment of Surface Water Run-off
Pollutant(s) captured	Suspended Solids

Test	Value	Unit
Treatment device capacity	3200	litres
Sediment Storage capacity	1000	litres
Treatment Flow rate	10	l/s
Connected Area	1,333	m²
Pollution retention flow rate	10	l/s

Parameter	Value	Unit
Maximum capacity flow rate	100	l/s
Device head loss (at treatment flowrate)	0.15	m
Device head loss (at maximum capacity treatment flowrate)	-	m
TSS capture and retention efficiency (Milisil W4 test sediment)	**82**	**%**
Zinc capture efficiency (if tested)	Not tested for dissolved metals	%
Zinc retention efficiency (if tested)	Not tested for dissolved metals	%
Copper capture efficiency (if tested)	Not tested for dissolved metals	%
Copper retention efficiency (if tested)	Not tested for dissolved metals	%
Dissolved Metals reduction	0.0	%
Particulate metals reduction*	61.5*	%
Total Metals reduction*	61.5*	%
Total Metals Mitigation Index	0.615*	-

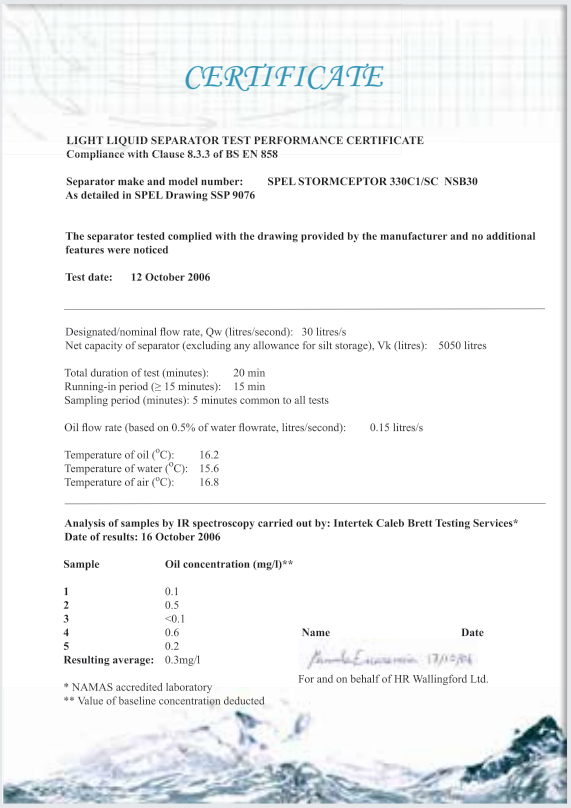
* Extrapolated value in accordance with British Water How to Guide: Applying the CIRIA The SuDS Manual (C753) Simple Index Approach to Proprietary / Manufactured Stormwater Treatment Devices. Version 7, Section 4.3, (2021- under pre-publication review).

Research and Development

Research and development is at the heart of what we do at SPEL, our passion as Zero Pollution Ambassadors is to be at the cutting edge of clean surface water technology.

Months of rigorous testing has resulted in the new SPEL Stormceptor ESR Range.

Certificates of compliance from WRc and HR Wallingford for the SPEL Stormceptor ESR Range



CERTIFICATE

LIGHT LIQUID SEPARATOR TEST PERFORMANCE CERTIFICATE
Compliance with Clause 8.3.3 of BS EN 858

Separator make and model number: SPEL STORMCEPTOR 330C1/SC NSB30
As detailed in SPEL Drawing SSP 9076

The separator tested complied with the drawing provided by the manufacturer and no additional features were noticed

Test date: 12 October 2006

Designated/nominal flow rate, Qw (litres/second): 30 litres/s
Net capacity of separator (excluding any allowance for silt storage), Vk (litres): 5050 litres

Total duration of test (minutes): 20 min
Running-in period (≥ 15 minutes): 15 min
Sampling period (minutes): 5 minutes common to all tests

Oil flow rate (based on 0.5% of water flowrate, litres/second): 0.15 litres/s

Temperature of oil (°C): 16.2
Temperature of water (°C): 15.6
Temperature of air (°C): 16.8

Analysis of samples by IR spectroscopy carried out by: Intertek Caleb Brett Testing Services*
Date of results: 16 October 2006

Sample	Oil concentration (mg/l)**
1	0.1
2	0.5
3	<0.1
4	0.6
5	0.2
Resulting average:	0.3mg/l

Name Date

For and on behalf of HR Wallingford Ltd.

* NAMAS accredited laboratory
** Value of baseline concentration deducted



SPEL's Head of Technical Development alongside the WRc testing officer.

Protecting our Environment for Over 45 Years

The SuDS Manual is leading good practise in drainage design, SPEL are endorsing this with the release of the new SPEL Stormceptor ESR range.

Total Suspended Solids (TSS)	Metals	Hydrocarbons
0.8	0.6	0.9*

**H R Wallingford test results to BS EN 858*

Added to these class-leading Mitigation Indices, the ESR range benefits from:

- British/European Standard BS EN 858-1 2002 certification.
- The SPEL 25 year shell Warranty.
- 50 year+ life expectancy.
- ISO9001 quality assurance.
- ISO14001 committed to environmental improvement

26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads and trunk roads/motorways[1]	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways[1]	High	0.8[2]	0.8[2]	0.9[2]

26.3 Indicative SuDS mitigation indices for discharges to surface waters

	Mitigation Indices		
Type of SuDS component	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4[2]	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond[4]	0.7[3]	0.7	0.5
Wetland	0.8[3]	0.8	0.8
Proprietary treatment systems[5,6]	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

Tables from The SuDS Manual (C753), p568-569
For reference notes, please see the full manual: https://www.ciria.org/Memberships/The_SuDs_Manual_C753_Chapters.aspx

SPEL Stormceptor ESR Range By-Pass System

ESR Specification Chart

Model	Series	Treated Flow Rate - l/s	Maximum Flow	Catchment area (m^2)*	Oil storage (litres)	Silt capacity (litres)	Overall length* (mm) L	Overall diameter (mm)	Inlet Invert (mm) A	Base to Inlet (mm) B	Base to outlet (mm) C	Max in/ out pipe diameter** (mm)	Number of access shafts (dia. mm) 600	750	900	1200
210C1/ESR	200	10	100	1,333	150	1,000	2,920	1,225	560	1,350	1,300	300	-	1	-	-
212C1/ESR	200	12	120	1,600	180	1200	3,570	1,225	560	1,350	1,300	300	-	1	-	-
215C1/ESR	200	15	150	2,000	225	1,500	4,237	1,225	560	1,350	1,300	300	-	1	-	-
320C1/ESR	300	20	200	2,665	300	2,000	3,200	1,875	700	1,450	1,350	450	2	-	-	-
325C1/ESR	300	25	250	3,333	375	2,500	3,540	1,875	700	1,450	1,350	450	2	-	-	-
330C1/ESR	300	30	300	4,000	450	3,000	4,420	1,875	700	1,450	1,350	450	-	1	1	-
340C1/ESR	300	40	400	5,333	600	4,000	5,760	1,875	740	1,410	1,310	450	1	1	-	-
345C1/ESR	300	45	450	6,000	675	4,500	6,570	1,875	740	1,410	1,310	450	1	1	-	-
350/C1/ESR	300	50	500	6,665	750	5,000	7,060	1,875	740	1,410	1,310	450	1	1	-	-
460C1/ESR	400	60	600	8,000	900	6,000	4,400	2,700	950	2,100	2,000	600	1	-	1	-
470C1/ESR	400	70	700	9,333	1,050	7,000	5,250	2,700	950	2,100	2,000	600	1	-	1	-
480C1/ESR	400	80	800	10,665	1,200	8,000	6,170	2,700	950	2,100	2,000	600	1	-	1	-
4100C1/ESR	400	100	1000	13,333	1,500	10,000	7,400	2,700	1,100	1,950	1,850	750	1	-	1	-
4125C1/ESR	400	125	1250	16,665	1,875	12,500	9,050	2,700	1,100	1,950	1,850	750	1	-	1	-
4150C1/ESR	400	150	1500	20,000	2,250	15,000	9,950	2,700	1,100	1,950	1,850	750	-	-	2	-
4160C1/ESR	400	160	1600	21,333	2,400	16,000	11,830	2,700	1,250	1,800	1,700	750	1	1	1	-
5180C1/ESR	500	180	1800	24,000	2,700	18,000	7,470	3,650	1,185	2,690	2,550	900				
5200C1/ESR	500	200	2000	26,665	3,000	20,000	8,530	3,650	1,185	2,690	2,355	1,200				
5250C1/ESR	500	250	2500	33,333	3,750	25,000	10,040	3,650	1,185	2,690	2,355	1,200				
6300C1/ESR	600	300	3000	40,000	4,500	30,000	10,310	4,150	1,325	2,850	2,675	1,200				
6350C1/ESR	600	350	3500	46,665	5,250	35,000	11,470	4,150	1,325	2,850	2,675	1,200				
6400C1/ESR	600	400	4000	53,333	6,000	40,000	12,690	4,150	1,325	2,850	2,675	1,200				
6500C1/ESR	600	500	5000	66,665	7,500	50,000	15,870	4,150	1,325	2,850	2,675	1,200				
6600C1/ESR	600	600	6000	80,000	9,000	60,000	18,260	4,150	1,325	2,850	2,675	1,200				
6700C1/ESR	600	700	7000	93,333	10,500	70,000	22,250	4,150	2,850	2,850	2,675	1,200				

Access shafts dependent on orientation of pipework (see page 7 for orientation options).

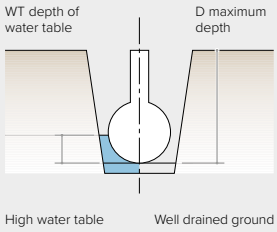
**These catchment areas are based on the SuDS Manual requirement for By-Pass devices to treat the 1 in 1 year storm event (27mm).*
***This dimension is for A-C inlet/outlet options, larger pipe sizes are available for D-I inlet/outlet options.*

Tank Shell Specifications

The 'standard' specification is normally adequate for most installations but Heavy, Extra Heavy and Special specifications are available depending upon the burial depth and water table level, in winter. The concern is when the system is emptied completely and remains empty for a period of time.

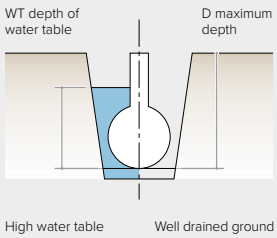
Standard tanks

Series	WT (m)	D (m)
200	1.0	4.0
300	0.9	4.0
400	1.3	5.0
500	1.9	5.7
600	2.4	6.2



Heavy tanks

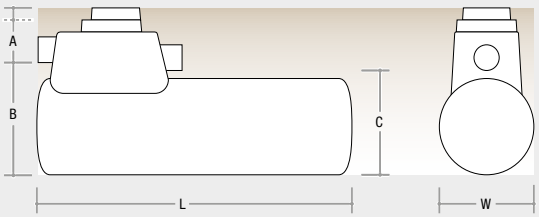
Series	WT (m)	D (m)
200	2.0	6.0
300	2.8	5.6
400	3.5	6.0
500	4.5	7.25
600	4.7	7.3



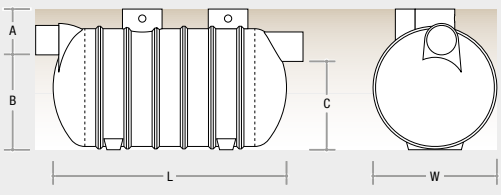
Based on installation in concrete with concrete surround. For pea gravel surround, see SPEL Data Manual p13.5

200 Series ESR – Inside diameter 1200mm, outside diameter 1225mm.
300 series ESR – Inside diameter 1800mm, outside diameter 1875mm.
400 series ESR – Inside diameter 2600mm, outside diameter 2700mm.
500 series ESR – Inside diameter 3500mm, outside diameter 3650mm.
600 series ESR – Inside diameter 4000mm, outside diameter 4150mm.

200 series



300/400/500 & 600 series



Commissioning, Installation & Maintenance

Installation

SPEL Separators can be installed with a concrete or pea gravel surround, dependent upon ground conditions and water table level. Detailed installation instructions are provided with each unit, see Installation TSII or SPEL Data Manual Section 13.

Site access and conditions

It is the responsibility of the contractor to ensure suitable access to good hard ground that is safe and suitable for off-loading.

Off-loading/handling

The contractor is responsible for off-loading. The tank must be handled with care to prevent accidental damage from impact or contact with sharp objects.

Tanks should be lifted using slings, not chains or wire ropes. Do not drag tanks along the ground for any distance and avoid jarring or bumps. Do not lift with water in the tank.

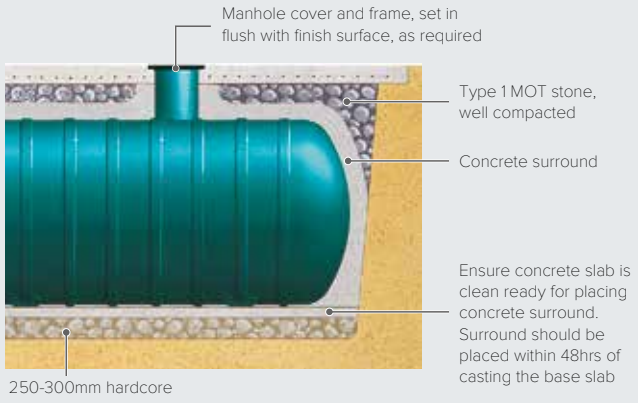
Health and safety

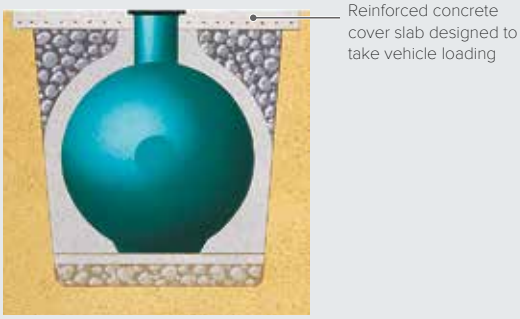
Installation should be carried out by a competent contractor in accordance with Health & Safety at Work legislation and good building practice.

A warning notice should be visible at the top of each access shaft – 'danger, harmful fumes' and 'respirators must be worn in this tank'. Before entering persons must be qualified in accordance with 'confined space' requirements.

Installation – Concrete

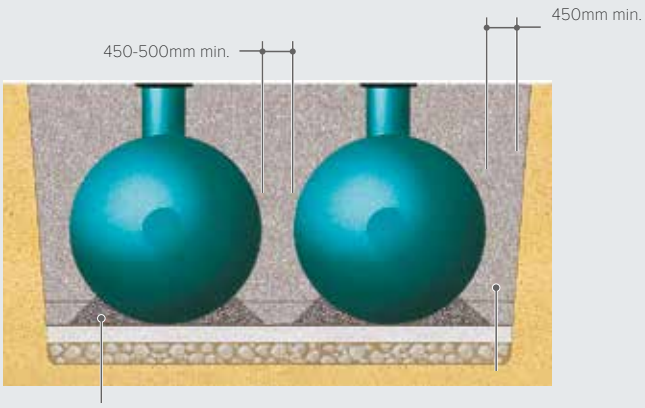
Installation of SPEL Separator tank with chocks and a load bearing cover slab.





Installation – Pea gravel

Installation of SPEL Separator tank where ground over installation is not required to be vehicle load bearing.



Tanks surrounded with pea gravel or similar

Where it is economical to do so, SPEL Separator tanks can be surrounded in pea gravel or with similar free flowing clean rounded aggregate. Details of the installation procedure, approved backfill materials and the need for mechanical anchoring in specific circumstances are contained in the SPEL Data Manual and SPEL Separator Installation Instructions.

Maintenance Requirements

We recommend the SPEL Separator is checked at 3, 6 or 12 monthly intervals to determine the depth of silt in the primary chamber.

The SPEL automatic alarm/monitoring system will automatically warn you when the SPEL Separator requires emptying of light liquids. See ref. 3.10 – 3.19. However, silt will accumulate and require removing at intervals depending on the site conditions.

SPELGuard contracts available.
For more information contact us:
info@spelproducts.co.uk | 01743 445 200



SPELGuard Commissioning & Maintenace

Optional extras

SPEL coalescer unit guide rail systems

To facilitate easy insertion of coalescer units, the SPEL guide rail system manufactured in stainless steel can be incorporated into SPEL Puraceptors and class 1 Stormceptors.

Brackets fixed to the top and bottom of the coalescer unit simply engage the stainless steel guide rail fixed to the top of the stub access shaft. The coalescer unit is then lowered in the normal way, being guided at the correct angle into the conical base.

Lifting chains are available for the larger coalescer units and where extension shafts are fitted.

Extension guide rails can be incorporated into SPEL extension shafts to suit.

SPEL coalescer unit lifting, locating and locking system

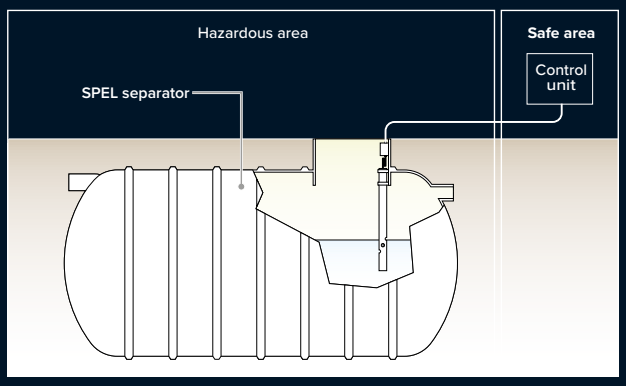
The SPEL lifting, locating and locking system is manufactured in stainless steel and replaces the standard coalescer unit handle.

The locating/locking handle ensures the coalescer unit is seated and locked in its correct position after maintenance.



Above left:
Lifting, locating and locking system with guide rail system.

Above right:
The SPEL coalescer unit with lifting chain.



SPEL offer a range of alarms, f*or full details refer to the SPEL Data Manual Section 3*. Kiosks with beacons and provision for BMS and remote information via browser user interface.

SPEL Model Alarm-DY14400
Oil alarm only – not BMS compatible

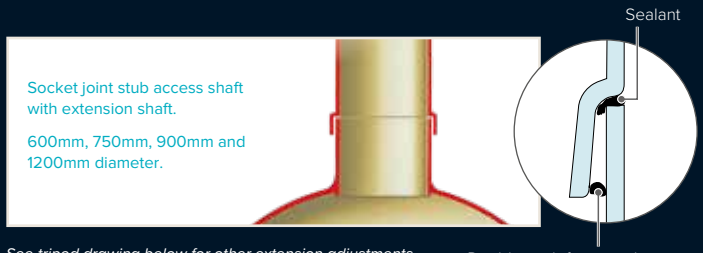
SPEL Model IdOil-20
Oil, silt and/or high level alarm with volt free terminal for beacon and BMS capability

SPEL Model IdOil-30
For oil, silt and/or high level as required. This alarm provides a range of options for BMS and remote information to on or off-site monitoring facilities.

SPEL Model IdOil Solar Oil Separator Alarm
for remote off-grid areas.

SPEL extension access shafts

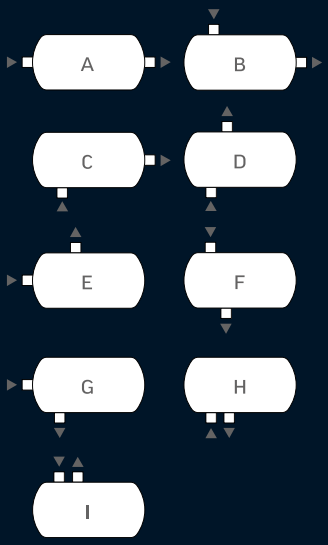
Extension access shafts are available for deep invert applications.



See tripod drawing below for other extension adjustments

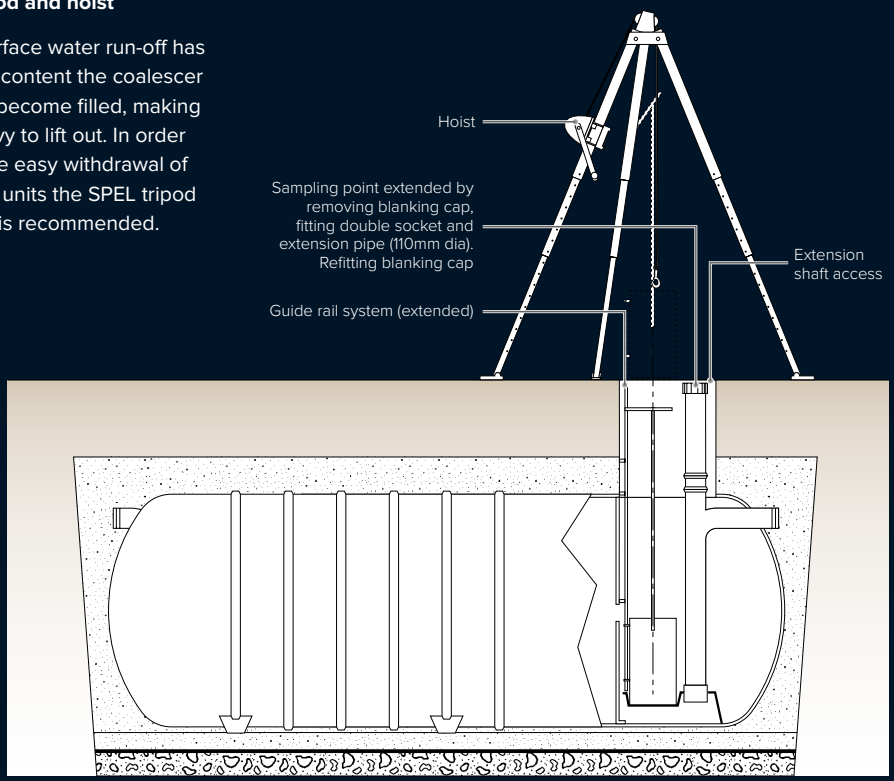
SPEL ESR Range – Inlet/outlet orientation

Dependent upon model and diameter of connections, these nine different orientations are available. However on the larger models it is important to check with our technical department.



SPEL tripod and hoist

Where surface water run-off has a high silt content the coalescer units can become filled, making them heavy to lift out. In order to facilitate easy withdrawal of coalescer units the SPEL tripod and hoist is recommended.



Stantec

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

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