

PROJECT: 475-25-DI Baldock Street, Royston

MAIN CONTRACTOR:

SUB CONTRACTOR: HGH Groundworks Ltd

Contact:

Sustainable Drainage Systems Limited
Clearwater House, Castlemills, Biddisham, BS26 2RE
Tel: 01934 751303 Fax: 01934 751304
info@sdslimited.com
www.sdslimited.com

Author: Simon Twigg

CONTENTS

1. Supporting Documentation
2. Site Organisation and Control
3. Site Safety
4. Permits to Work
5. PPE
6. Training
7. Method of Installation
 - a. Diagram for Information
 - b. Sequence of Works
 - c. Excavation and Preparation
 - d. GEOTextile
 - e. GEOMembrane
 - f. GEOLight Installation
 - g. Pipe work / Stone
 - h. Backfilling
 - i. Guidance Notes
8. Waste
9. COSHH
10. Hazards and Risk Assessments

Appendices

- | | |
|------------|---|
| Appendix 1 | Health & Safety Method Statement – Acknowledgement Record |
| Appendix 2 | COSHH Assessments |
| Appendix 3 | Additional COSHH and Handling Information |

1. Supporting Documentation

Sustainable Drainage Systems Ltd (“SDS”) are manufacturers and installers of the GEOlight stormwater systems.

This method statement should be read in conjunction with the following supporting documentation: -

- 100% approved design drawings for the project
- Risk Assessments
- COSHH Assessments

2. Site Organisation And Control

The installation is scheduled in line with site requirements

Site inductions will be held at 08:00

SDS will attend site with a minimum two man gang to install the attenuation tank as per the clients/engineers requirements. All installers have registered CSCS cards and these will be provided during the site induction process.

All of our operatives are fit for duty to work in accordance with this set of RAMS. We are currently not aware of any of our operatives with a medical condition which may require special attention, however, in the event that anyone working on site is found to have a medical condition, their needs will be dealt with accordingly.

Works carried out by SDS are under the control of the SDS lead installer, however, the lead installer will liaise with, and take instructions from Site Managers as appropriate. Overall control of operations on site is under the control of the Principal Contractor.

SDS operational contact for works on site is Simon Twigg on 07894 394068

Welfare facilities and material storage areas are to be provided by the principal contractor. If such facilities are not available, SDS should be notified prior to start on site. SDS will provide adequate storage facilities for their own tools and equipment.

3. Site Safety

SDS.OPS.001	Version 25	August 2024	Page 3 of 20
Uncontrolled when downloaded or printed			

All SDS operatives are to attend a site induction by the principal contractor prior to works commencing on site. All SDS operatives will be given a method statement briefing with the SDS lead installer prior to commencement of works.

Safety control measures, safe systems of work and personal protective equipment will be used in site activities as identified in the project specific risk assessments and principal contractors' site rules.

All reportable incidents will be recorded on site and forwarded to the SDS H&S department as well as the safety officer at the main site office. The main contractor will make all operatives aware of the site emergency procedures to include first aid facilities, fire emergency evacuation procedures and associated muster points during the site induction.

4. Permits to work

Any works that require a permit e.g. working in excavations, hot works etc. will not commence until the operatives have obtained a permit and permission to undertake the works from the site management team. Permits to work are issued in line with site specific processes and procedures as determined by site management.

5. PPE

SDS provides all operatives with personal protective clothing and equipment for general use and specific tasks. Operatives are expected to wear it at all times while on site in line with mandatory site requirements. Site specific requirements for PPE will be highlighted during the site induction. Minimum requirements are

- Hard Hat (EN 397)
- Hi visibility vest / clothing (as per site requirements) (EN 471:2003; 342:2004; 343:2003)
- Safety footwear – steel toe capped and mid sole protection (EN 20345)
- Work appropriate gloves (EN 388)
- Safety glasses (if a mandatory site requirement) (EN 166)
- Safety Wellington Boots in wet weather – steel toe capped and mid sole protection (EN 20345)

6. Training

Method Statement – Attenuation

All operatives are trained to general site standards regarding all safety issues as per this method statement.

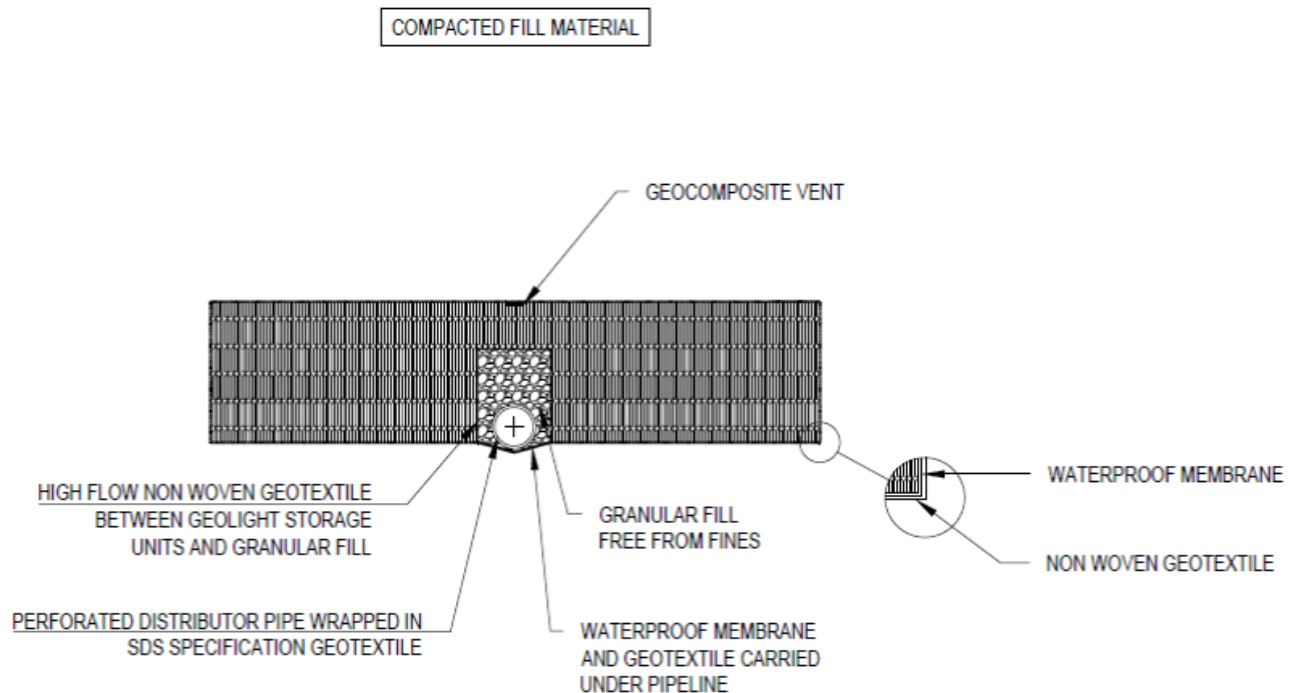
All operatives will have this method statement and the associated risk assessments explained to them and they will be required to acknowledge that they have received and understand them.

All operatives have attended internal training courses on thermal welding and have been internally trained for the installation process.

7. Method of Installation

a. Diagram of Attenuation for Information

Please refer to layout drawings for site specific tank specification



b. Sequence of Works

1. Blinding to be prepared by Client in excavation
2. Lay textile into area prepared for membrane
3. Lay membrane into area
4. Lift GEOLight units into the excavation by machine
5. GEOLight units lifted into place within excavation by hand
6. Line sides of pipe trench with GEOTextile to cover sides of GEOLight units
7. Install pipe work between units to specified drawing
8. GEOTextile the pipe
9. Pipe bedding placed into pipe trench over pipe work between blocks
10. Install remainder of GEOLight blocks over pipe work (if applicable)
11. Insert GEOvent as per drawing
12. Wrap blocks with membrane and weld
13. Lay textile over membrane
14. Backfill with single size self compacting stone or similar as agreed

c. Excavation and Preparation

Standard preparation involves excavation to invert level of tank. The ground must be prepared to a level of plus or minus 20mm (blind with 50mm of shingle) and remove all sharp objects and protrusions.

At least ½ metre of work space around the perimeter of the tank is required to allow for the membrane to be pulled up over the tank in the final welding stage.

All excavations are to be carried out by the client; this will include any temporary works. The excavation must be dug as per best practice and made safe prior to SDS installation, this will include an exclusion zone around the areas of works to protect the public/other trades in the form of Heras fencing or similar to be provided and maintained by the contractor.

Suitable and safe means of vehicular and personnel access and egress to the excavation is the responsibility of the main contractor/client.

De-watering of the excavation is also the responsibility of the Client.

d. GEOTextile

GEOTextile is laid over the excavated area (min 200mm lapped joints) ensuring enough material is prepared to completely encase the system with the minimum number of joints. This is achieved by two operatives rolling out the GEOTextile in the base of the excavation and cutting to size using a safety knife with a retractable hooked blade.

This material is installed on the vertical face of the GEOLight blocks along the area of the distribution pipe to prevent clogging of the lateral channels in the GEOLight blocks (see diagram on page 5). The GEOTextile is pinned and secured in place on the banks of the excavation (if accessible) to ensure a clean excavation area.

e. GEOMembrane

For attenuation tank installations, specially designed membranes are incorporated into the overall design to achieve the optimum solution. This type of impermeable membrane is installed between the GEOTextile and the GEOLight blocks.

The GEOMembrane is laid over the GEOTextile which is lining the excavation, prior to the GEOLight blocks being placed in position. The GEOMembrane is pulled up and over the sides of the GEOLight blocks in order to fully encase them.

Method Statement – Attenuation

By nature of the works, the installation crew need to gain access to the top of the tank to weld the top panel of membrane and seal the tank. To avoid / reduce the need for working at height there are a few options available and the most appropriate should be determined and agreed on site as necessary, for example: -

- Install the tank in increments of up to 750mm or 1m depending on block size and then backfill
- Provision (by others) of pedestrian fencing around the edge of the tank where welding is being completed and moved as welding progresses around the tank
- Provision (by others) of air bags around the edge of tank where welding is being completed and moved as welding progresses
- Allow excess attenuation blocks to be used as edge barriers, as per pedestrian fencing, where welding is being completed and moved as welding progresses around the tank

The membrane is initially pre-welded by an airtight twin edge weld off site at our production facility. To seal the tank, the top membrane is welded in place on site using a hot air type welder (110v).

f. GEOLight Installation

GEOLight blocks are supplied ready to install; a layout plan is provided for our installation team for this purpose.

The blocks will be lifted from the lorry, carried to the work area by mechanical means, i.e. telehandler or 360 with fork extension sleeves (minimum 1.8m) and distributed to the invert of the area of works. Vehicle offload and distribution is the responsibility of the client.

Access onto the rear of the delivery vehicle by any operative is not permitted at any time unless fall arrest measures have been taken and are in place and is then only allowed with permission from site management.

Once in the excavation, the blocks will then be moved by hand / slid into their final position by the installation team.

Method Statement – Attenuation

g. Pipe Work/Stone

The GEOlight attenuation tank uses a distribution pipe to fill the system which is connected to the upstream and downstream manholes (inspection chambers) situated at either end of the tank. The pipework is placed into the tank as the approved design drawings indicate and surrounded with approved material (15-25mm clean stone). All pipe positions within the system and levels must be confirmed by the clients engineer prior to the placement of the pipe bedding by the main contractor/client. This must be recorded on the SDS QA sign off sheet.

h. Backfilling

Once the tank is completed to the layout drawing, completely sealed and encased with the appropriate layer of GEOTextile, backfilling can begin at a safe distance behind installation. Backfilling using specified material (Type 1 or 6f5) is the responsibility of the main contractor/client.

SDS holds no responsibility for backfilling or excavation unless otherwise arranged in the prior contract.

i. Guidance Notes

Capacity for heavy tracked construction equipment to run over the completed tank requires a minimum thickness of 500mm compacted material. However, any plant work over the GEOlight tank must be agreed and confirmed in writing by SDS, prior to tracking over the area.

The following tools/plant are used by the SDS installation team:

- Leister hot air hand welder 110v – this does not have any HAV impact

All SDS electrical equipment is PAT tested on a regular basis and included on a testing register.

8. Waste

All pallets, strapping and associated packaging will be removed off site by SDS and recycled where possible to avoid any negative environmental impact

9. COSHH Assessments

The following COSHH assessments are deemed necessary for this project

- CH02 Diesel (SDS Van)

Should it become necessary to use other substances, which may be harmful, then the Project Manager is to be notified and an assessment will be carried out based upon data supplied by the manufacturer.

10. Hazards and Project Specific Risk Assessments

The installation team will be working within a barriered/defined area as per the risk assessments attached. Site specific hazards will be highlighted to the SDS installation team at induction and as the site notice board indicates.

The following Project Specific Risk Assessments are considered to be relevant to the operations concerned and should be attached to this method statement

- Working with Moving Plant & Working alongside other Contractors
- Environmental Incident
- Unloading/Loading of Materials
- Transporting & Deploying of Liner (GEOmembrane and GEOTextile)
- Cutting & Preparing Lining Materials
- Hot Air Welding of membrane
- Manual Handling and placing of modular storage units
- Excavations
- Foreign Object Debris (Airside Projects Only)

All risk assessments have been explained to the installation crew by the SDS lead installer prior to attending site.

Should the lead installer consider that any additional Project Specific Risk Assessments be required due to any change in the specific circumstances on site then he should contact the SDS Project Manager immediately, where an addendum to the method statement will be supplied as appropriate, reviewed and briefed prior to works commencing.

Risk Assessments

Probability:		Severity:		Risk Factor = Probability x Severity Low Risk = 1 to 6 Medium = 7 to 11 High = 12 +	The following guidelines should be applied to risk factors after control measures have been applied: Risk factor after control measures: 1 – 6 OK to proceed Risk factor after control measures: 7 – 11 Further control measures should be applied. Seek further guidance from the Health, Safety and Environment Department if unsure. Risk factor after control measures: 12+ Unacceptable - Do not proceed
5	Very Likely	5	Fatality		
4	Likely	4	Major Injury		
3	Probable	3	Medical Injury		
2	Possible	2	Minor Injury		
1	Very Unlikely	1	No Injury		

Relevant Legislation	Health and Safety at Work Etc. Act 1974	Provision and Use of Work Equipment Regulations 1998
<i>This list is not exhaustive</i>	Management of Health and Safety at Work Regulations 1999 (as amended)	Lifting Operations and Lifting Equipment Regulations 1998
	Construction (Health, Safety and Welfare) Regulations 1996	Personal Protective Equipment Regulations 1992
	Construction (Design and Management) Regulations 2015	Working at Height Regulations 2005

Hazard:	Risk:	Risk Factor Before Control:							Control Measure:	Risk Factor After Control:						
Working with moving plant & working alongside other contractors	Injury to operative	Probability	5						- All plant to display flashing beacons - All operatives to wear clean high visibility clothing - All machines to be under control of a banksman - Separate working areas where possible - Be aware daily of other contractors' activities - Brief all operatives accordingly - Practice due care and attention at all times - Induction and regular tool box talks for all site staff and operatives	Probability	5					
			4								4					
			3					15			3					
			2								2					
			1								1			3		
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					
Environmental Incident	Environmental Damage	Probability	5						- Implement any measures advised by main contractor/client - Take care when moving small plant due to site restrictions (generators) - Take care when repairing plant - Ensure small plant items are refuelled off site - Practice due care and attention at all times - Induction and regular tool box talks for all site staff and operatives	Probability	5					
			4								4					
			3				9				3					
			2								2		4			
			1								1					
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					

Hazard:	Risk:	Risk Factor Before Control:							Control Measure:	Risk Factor After Control:						
Unloading / Loading of Materials	Injury to Operatives Unbalanced forklift Equipment damage Materials damage	Probability	5						- Lifting to be directed by a trained banksman - Equipment to be in good condition and suitably rated and certified for the task - Never stand under loads or between a load and a hard place - Materials to be placed in the base of the excavation - Banksman to be trained to CPCS standard - Practice due care and attention at all times - Induction and regular tool box talks for all site staff and operatives	Probability	5					
			4				16				4					
			3								3					
			2								2					
			1								1				4	
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					
Transporting & Deploying Liner (GEOmembrane & GEOTextile)	Injury to Operatives Slips and Trips	Probability	5						- Ensure no persons are in area in front on downside of roll to be unrolled - Lining materials to be welded as deployment progresses and blocks to be positioned as soon as they are taken off the pallets - Do not handle or lay unrolled material in strong winds - Rolls in transit on site to be guided by a suitable person e.g. banksman - Do not shelter under liner in poor weather - Practice due care and attention at all times - Induction and regular tool box talks for all operatives	Probability	5					
			4				16				4					
			3								3					
			2								2					
			1								1				3	
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					
Cutting & preparing lining materials	Injury to operatives	Probability	5				15		- Use retractable hooked blades in safety knives - Maintain knives in good condition - Cut away from the body - Wear appropriate gloves - Practice due care and attention at all times - Induction and regular tool box talks for all operatives	Probability	5					
			4								4					
			3								3					
			2								2			4		
			1								1					
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					

Hazard:	Risk:	Risk Factor Before Control:						Control Measure:	Risk Factor After Control:							
Hot Air welding of membrane	Injury to operatives	Probability	5						- Only trained operative to use hot air welder - Appropriate strong gloves to be worn - Weld away from the body with the nozzle pointed at the liner - Welder to be used on 1m² section for no more than 10 minutes - Practice due care and attention at all times - Induction and regular tool box talks for all operatives	Probability	5					
			4													
			3			9										
			2													
			1													
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					
Manual Handling	Injury to operatives	Probability	5				20		- Items to be lifted should be done using mechanical means where possible - Never lift any object too heavy for one person (HSE guidelines; 25kg males, 15kg females) - Only lift what you are capable of lifting - Awkward shaped and heavy objects should be lifted by more than one person - Gloves should be worn when lifting items with sharp objects / protrusions - Do not carry objects that obstruct view - Check weight of object prior to attempting to lift - Check Block is Suitable for Installation I.E Structure and Size - Manual handling training to be given for all operatives - Regular tool box talks on manual handling - Practice due care and attention at all times	Probability	5					
			4													
			3													
			2									6				
			1													
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					
Excavations	Injury to operatives	Probability	5						- Only use competent & experienced operatives - Sides of excavation to be battered back, sheet piled or stepped - Obtain permit to work in excavation from site management if necessary - Erect barrier to excavation sides for protection - Use edge protection measures around edge of tank if required; as determined and agreed on site – see Section 7e - Install safe ladder access or provide ramp cut into excavation for safe personnel and/or vehicular access/egress - De-water excavation as required - Practice due care and attention at all times - Induction and regular tool box talks for all operatives	Probability	5					
			4													
			3					12								
			2									6				
			1													
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					

Sustainable Drainage Systems Ltd

Method Statement – Attenuation



Hazard:	Risk:	Risk Factor Before Control:						Control Measure:	Risk Factor After Control:							
Foreign Object Debris (Air Side Projects only)	Danger to aircraft Injury to operatives Injury to public	Probability	5						- Ensure all materials are secure and unable to become airborne especially if high winds are expected or experienced - Remove pallet straps and wrap from pallets only when materials are required - Ensure all rubbish is disposed of safely and securely in bins provided or in the rear of the SDS vehicle ensuring all bin lids/coverings and vehicle doors are closed securely at all times - Pick up any rubbish if seen whether belonging to SDS or not and dispose of properly - Practice due care and attention at all times - Induction and regular tool box talks for all operatives	Probability	5					
			4													
			3					15								
			2													
			1													
			0	1	2	3	4	5			0	1	2	3	4	5
			Severity								Severity					

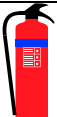
APPENDIX 1

HEALTH & SAFETY METHOD STATEMENT ACKNOWLEDGEMENT RECORD			
CONTRACT: SIGNATURE OF AUTHOR: SIMON TWIGG			
ACTIVITY : INSTALLATION OF GEOLIGHT ATTENUATION TANK			
<i>I confirm that I have had the above method statement and associated risk assessments / COSHH assessments explained to me fully and that I fully understand the works and tasks to be undertaken by me together with the safe methods of working required.</i>			
Name	Signature	Date	Employer if other than SDS

APPENDIX 2

COSHH ASSESSMENT – CH02								
Substance name:		Diesel						
Location of use:		Inside	Outside	Confined space	Well-ventilated area			
			✓		✓			
Form of substance:								
Dust	Fumes	Mist	Gases	Liquid	Vapours	Solid		
				✓				
Classification:								
								
Compressed Gases	Toxic	Harmful Irritant	Serious Health Hazard	Corrosive	Flammable	Oxidising	Explosive	Danger to Environment
					✓			✓
WEL (workplace exposure limit):				Not listed				
Routes of exposure:								
Skin	Cuts etc.	Eyes	Swallowing	Breathing				
✓		✓	✓	✓				
Work process:		Used for generators and forklifts						
Persons at risk:								
Employees	Contractors	Visitors	Public					
✓								
Possible ill-health effects:				May cause irritation to skin and eyes				
				May cause dizziness, headaches, nausea and loss of co-ordination				
Exposure details (how much/long/often)				Not specified timescale for use. Used intermittently				
Is health surveillance required?				Not required				

Method Statement – Attenuation

First aid measures:							
Ingestion:	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.						
Inhalation:	Move exposed person to fresh air. Get medical attention if symptoms occur						
Absorption by eyes:	Rinse eyes immediately with plenty of water for 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if systems occur.						
Absorption by skin:	In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention if systems occur.						
Control measures:	Ensure work area is well ventilated						
	Use gloves, goggles and overalls						
	Keep away from sources of ignition						
	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air)						
	No smoking permitted in close proximity						
Storage controls:	Keep in a cool, dry, well-ventilated area (outside ideally) away from incompatible materials heat, flames, sparks, and other ignition sources. Separate from oxidizing materials. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.						
Fire precautions:							
							
Dry powder	✓	Carbon dioxide		Foam	✓	Water	
Disposal:							
Special waste	Skip		Return to supplier		Other (please specify)		
			✓				
Personal protective equipment:							
Gloves	Goggles		Face mask		Other (please specify)		
✓	✓				Overalls		
Risk rating with controls:	High		Medium		Low		
Assessed by:	Terri Duff						
Date:	05/07/2024			Review date:	05/07/2025		

APPENDIX 3

COSHH and Handling Information			
1.	Composition/Information on ingredients	Hazardous ingredients:	None as finished goods or products.
		Type of materials:	Polyvinyl chloride (PVC)
2.	Hazards Identification	Nature of Hazard	There are no health risks from the products during normal use. The products may contain various pigment colours and stabilisers that may be toxic. These chemicals are, however, bound within the product material and not easily extracted.
3.	First-Aid Measures	Eye Contact Skin Contact Inhalation Ingestion	Plastic materials may cause physical irritation in the eyes. Wash out with large amounts of water. If irritation persists, seek medical advice. Not applicable. Not applicable. Not expected to have any toxic effects.
4.	Fire-Fighting Measures	Extinguishing Media: Fire & explosion Hazards: Material Characteristics: Protective Equipment:	On small fires use any hand-held extinguisher type. On large fires use water. Melting plastics may flow and spread in a large fire. Products of fire will be thick black toxic smoke. PVC products will burn in the presence of a flame but are classed as self-extinguishing. Wear self-contained breathing apparatus and protective clothing.

COSHH and Handling Information, continued...			
5.	Handling and Storage	Handling	There are no hazards associated with the finished products. Take care of heat build-up within materials during cutting etc. The pallets of GEOLight units should be placed on level ground and should not be stacked on site.
		Storage	The maximum weight of a pallet of GEOLight units as delivered to site is 930 kg, including packaging. Machines used to lift the pallet should be able to lift this weight safely Loose individual units should not be stored more than three units high. GEOLight units range from 23 kg to 55 kg in weight and can be easily handled using two people. GEOLight units will resist the effects of UV light for up to six months. However, prolonged storage in direct sunlight should be avoided. GEOLight units are very robust and resistant to damage during normal handling. However, they should be secured in areas away from moving plant and machinery to avoid damage.
6.	Exposure Controls / Personal Protection	Hand Protection	Wear impervious strong gloves to prevent cuts to the hands while handling, cutting etc.
		Skin Protection	Wear full length trousers and tops in line with weather conditions as compulsory; no shorts or bare chest at any time. Hi visibility clothing must be worn at all times and in line with site requirements

COSHH and Handling Information, continued...			
7	Site Hazards	Other Hazards for consideration	Working in excavations and trenches – GEOLight may be designed with a shallow invert for infiltration (soakaway) or attenuation (storage) system. This negates the need for deep excavations or trenches. Excavation near services e.g. gas, electricity. Contaminated soil areas. N.B. All risk assessments should be undertaken by the Contractor relating to fire, lifting the units by excavator / forklift, access to and working in excavations and trench support.
8	Stability and Reactivity	Decomposition Products: Stability:	Major thermal decomposition products are oxides of carbon. Relevant differences are (in addition): PVC may produce amounts of hydrogen Chloride. These materials are stable at temperatures up to normal operating limits (moulding parameters)
9	Ecological information	Biodegradability: Aquatic Toxicity:	Plastic products are not readily biodegradable but are not detrimental to terrestrial wildlife. Non-toxic marine life.
10	Disposal Considerations	Method	The preferred method is collection and re-cycling. Plastics can safely be placed with regular industrial or household wastes where re-cycling is not available.
11	Other Information		