HARMER®
BUILDING DRAINAGE

SML Below Ground Drainage

Cast Iron drainage pipes & fittings

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE No. 054191

CE

bsi. Cast Iron Pipes KITEMARK™

ALUMASC®
WATER MANAGEMENT SOLUTIONS

Alumasc Water Management Solutions

The Alumasc Group plc has over 500 employees, generating a turnover of around £92 million. The aim is to focus on high quality, environmentally responsible building products within the construction arena in order to deliver first class customer service, technical support, long-term solutions and lasting relationships.

About Alumasc

Alumasc is a UK based supplier of premium building products. The majority of the group's business is in the area of sustainable building products which enable customers to manage energy and water use in the built environment.

All Alumasc businesses have strong UK market positions within their own individual market niches and several are market leaders. Alumasc sustains this strong strategic positioning by offering customers quality products, service and trust. For certain brands, Alumasc is seeking to leverage UK successes in international markets, with particular focus in America, the Middle and Far East, and Europe.

Alumasc fosters an entrepreneurial, achievement orientated culture whereby businesses are encouraged to innovate and respond quickly to local market needs within a cohesive group strategic and management framework. Alumasc businesses also benefit from the group's financial strength.

ALUMASC™ WATER MANAGEMENT SOLUTIONS

Alumasc Water Management Solutions (AWMS) is the new name in the industry for proven water management. It's a new joined-up brand that harnesses the expertise of four trusted brands in water management:

SKYLINE® FASCIA SOFFIT COPINGS

ALUMASC RAINWATER™ GUTTERS AND DOWNPIPES

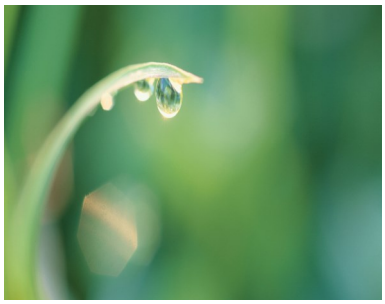
HARMER® BUILDING DRAINAGE

GATIC® CIVIL DRAINAGE

Alumasc has been promoting the efficient use, retention, recycling and disposal of water within the built environment for over 80 years. Now, it combines the knowledge and unique benefits of these four brands to provide one simple solution in water management.

Quality & Sustainability

In addition to complying with environmental legislation, Alumasc is committed to developing its own measures to limit the adverse effects of its activities on the environment. The this end, Alumasc operates an environmental policy that fully integrates all aspects of company activities.



Quality

ISO 9001: 2008 Quality Management

Alumasc operates a quality management system which is independently audited to ISO 9001: 2008 certificate number 02/1832. The ISO 9001 framework governs the management of many aspects of Alumasc support services, manufacturing and transport operations. Alumasc extends quality management to its network of improved installers for single source accountability and peace of mind.

ISO 14001: 2004 Environmental Management

Alumasc's manufacturing sites at St Helens, Merseyside and at Burton Latimer, Northamptonshire are audited to the ISO 14001: 2004 Environmental Management Standard. Alumasc is committed to achieving improvements across all of its operating sites, not only as a good neighbour to the surroundings of manufacturing plants, but in the responsible sourcing of raw materials and monitoring of the impact on the environment as a whole.

bsi. ISO 14001 Environmental Management
EMS 560793

Sustainability

Alumasc actively pursues sustainability in the full range of products it offers and, with its partners and its suppliers, is committed to putting consideration for the built and wider environment at the core of all aspects of current business and future development.

BREEAM Standards

BREEAM points, as a framework for analysis and scoring, allow easy comparison of the relative merits of different construction types and also comparisons between different construction product groups. The BREEAM points system promotes the use of materials with a proven sustainable message and allows designers to differentiate between products with true ecological credentials and those not achieving the benchmark.

Testing & Certification

BS EN 12056
Gravity Drainage systems inside buildings, Part 3 Roof drainage layout and calculation.

BS EN 1253-1: and BS EN 1253-2:
Gullies for buildings. Requirements.

BS EN 1706:
Aluminium and aluminium alloys - Castings – Chemical composition and mechanical properties.

BS EN 1559-1:
Founding - Technical conditions of delivery.

BS EN ISO 1716 and BS EN 13823 +A1
Reaction to Fire Tests for buildings

BS EN 877
European standard for cast iron pipes and fittings

British Board of Agrément Certificate No. 05/4191
For couplings, pipes and fittings. SML also complies with numerous other certified standards.

Kitemark Certification - KM 613802
Compliance in accordance with BS EN 877

CE Mark
European product conformity to harmonised standard BS EN 877 in accordance with Construction Products Regulation 2013.

BBA CERTIFICATE No.05/4191 CE bsi. KITEMARK

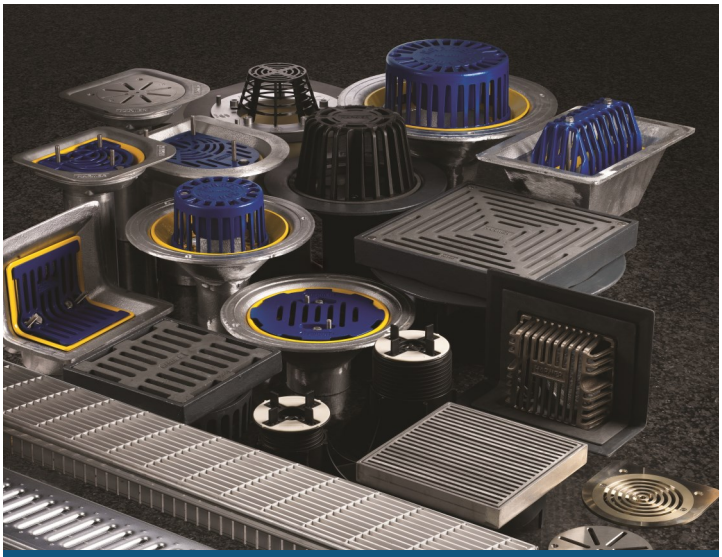
CIBSE PATRONS

THE SOCIETY OF PUBLIC HEALTH ENGINEERS INDUSTRIAL ASSOCIATE

Harmer Drainage Overview

Harmer Building Drainage manages water inside and outside the building. Its systems allow designers, contractors and clients to realise the design, performance and installation benefits of fully integrated drainage solutions.

The new Harmer SML Below Ground system combines seamlessly with the current Harmer SML above ground system and the newly launched Gatic Civil Drainage range of surface water drainage systems.



Roof Outlets
Aluminium, Cast Iron and Stainless Steel outlets suitable for all types of roof applications.

Floor and Shower Drains
Offer the most comprehensive choice in the UK market. Featuring cast iron, stainless steel, aluminium and ABS high performance drainage solutions.

SML Above Ground
Lightweight cast iron pipework with its vast range of fittings and accessories is an ideal soil and waste system.

SML Below Ground
Cast iron system used for drainage and connection to the public sewage system in accordance with SFA.

SML Below Ground - Overview

SML Below Ground Drainage

Harmer SML Below Ground Drainage Cast Iron Pipes and Fittings are manufactured and tested in accordance with the European Standard BS EN 877. Harmer SML Below Ground allows for direct connection from soil to drain to sewer.

Features & Benefits

- Harmer SML Below Ground Drainage Cast Iron Pipes and Fittings are manufactured and tested to the European Standard BS EN 877.
- Allows for direct connection from soil, to drain to sewer.
- Full system of pipes, fittings & access chambers
- Fully compatible with Harmer SML above ground building drainage
- CE Conformity in accordance with BS EN 877
- British Board of Agrement approved - cert no. 05/4191
- Kitemark Accreditation - KM 613802 (see page 18 for certificate)

- Cast Iron is 100% recyclable
- Harmer SML below ground is produced from 95% recycled material
- Robust, lightweight strong and durable
- Excellent load bearing strength
- Outside coating of SML below ground corresponds to BS EN 877 under BS EN ISO 13823.
- Planning and installation of SML below ground pipelines in accordance with technical regulations of:

- **BS EN 12056**:	Gravity Drainage systems inside buildings
- **BS EN 752**:	Drain & Sewer systems outside buildings
- **BS EN 1610:**	Construction and testing of drains and sewers
- **Approved Document H**	Drainage & Waste Disposal
- **Sewers for Adoption**	A Design & Construction Guide for Developer

SML Below Ground - Product Range

Pipes

SML below ground pipes are available in standard 3m socket-less lengths, in diameters from **100mm** to **400mm**, providing a high performance, lightweight, below ground cast iron soil & waste system.

Pipes are produced by a state of the art centrifugal casting process which produces consistent quality.

Couplings

SML below ground couplings are specially designed for joining lengths of SML below ground pipe work and for joints between pipes and fittings.

Couplings are available in stainless steel from **100mm** to **400mm** and in ductile iron from **100mm** to **200mm.**

All SML below ground couplings have been subject to rigorous testing and meet the requirements of BS EN 877.

Branches

A range of fittings designed to connect multiple below ground pipes. This is available in single and double branches as 45 degree and 88 degree in 100mm to 300mm diameter pipe sizes. A 68 degree double branch for 100mm is also available.

SML Below Ground - Product Range

Bends and Offsets

A wide range of bends to accommodate change in direction, meeting a wide variety of design requirements, including single bends, long & medium radius bends and rest bends.

Access Fittings

Designed to allow access for inspection and rodding - includes round and square access doors and access bends

Other Fittings

To complement the range there are also other fittings such as reducers from 100mm to 300mm, plain traps and blank ends from 100mm to 300mm.

Inspection Chambers & Bellmouth Gulley's

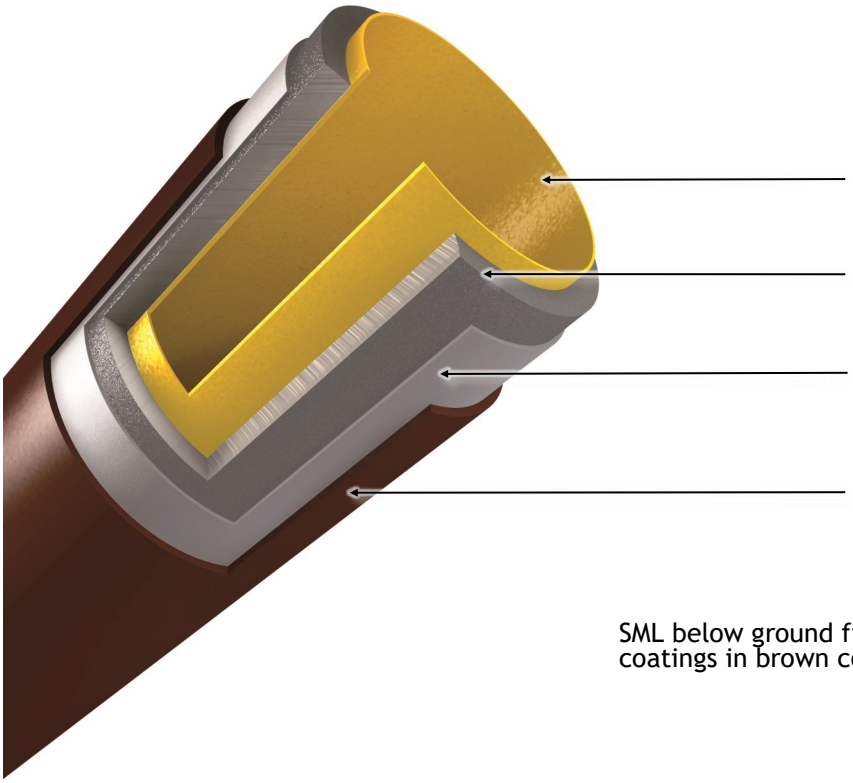
A range of inspection chambers from 100mm to 150mm with two 45 degree branch connections

Supplied with a removable cover allowing easy access for maintenance.

SML Below Ground - The System

SML Below Ground Coating

SML Below ground pipe systems meets all the requirements of BS EN 877 with CE declaration of conformity.



Epoxy coating with a minimum thickness of 120 µm with resistance that surpasses the requirements for EN 877.

Cast iron lamella graphite

Thermal spray zinc coating, surface density at least 130g/m^2

Outer Coating with two components in brown RAL 8011

SML below ground fittings receive a high quality epoxy powder coatings in brown colour (RAL 8011) inside and out.

SML Below Ground Planning & Installation

Planning and installation of SML Below Ground pipelines follow the technical regulations and stipulations of

- BS EN 12056: Gravity drainage systems inside buildings
- BS EN 752: Drain and sewer systems outside buildings
- BS EN 1610: Construction and testing of drains and sewers

CE Conformity

CE Mark: European Standard conformity to harmonised standard BS EN 877 in accordance with Construction Products Regulation 2013.

The manufactures are now required to apply the CE marking to their products as per BS EN 877 in order to confirm the products suitability for the free trade inside the EU. The application of the CE marking must be based on a Declaration of Performance issued by the manufacture (DoP) is based on the European Construction products regulation (CPR).

Specifying Cast Iron Below Ground

Why Specify Cast Iron in Below Ground Applications?

For centuries, cast iron has been a preferred material for building construction, because of its longevity in a wide range of applications. Advances in cast iron technology have ensured that todays products are fully attuned to modern construction needs.

Cast Iron is known throughout the construction industry as a low-risk material of choice for both specifiers and installers alike due to its 'fit-and-forget' properties. UV light degradation and the effect of mechanical damage are often key factors in material selection considered by specifiers and installers. Cast iron provides the key resistant benefits compared to other materials in below-ground pipe applications.

The risk-analysis factors speak for themselves, when comparing like-for-like products using other materials—see table below.

Hazard	Clay	Plastic	Cast Iron
Settlement	High Risk	Medium Risk	Low Risk
Sheer Pressure	High Risk	Low Risk	Low Risk
Rodding Damage	Medium Risk	High Risk	Low Risk

Cast Iron Soil & Waste pipe systems are renowned throughout the industry for their strength and reduction in risk of failure compared to other pipe materials; offer a greater resistance to natural ground movement and less likely to fail in unfavourable ground conditions.

Other drainage materials need additional pipe protection in areas where ground disturbance or extra loading is likely, for example a covering concrete slab or concrete surround. No additional protection is required in most circumstances for a Cast Iron system, saving time, labour and material in construction costs.

SML Below Ground - Product Range

Pipes 3 metre length

Description	Dia	Weight (Kg)	Code
	100mm	25.2	232055
	150mm	42.2	232057
	200mm	69.3	232058
	250mm	99.8	232095
	300mm	129.7	232097
	400mm	180.0	232100

Stainless Steel Duo Couplings

Description	Dia	Weight (Kg)	Code
	100mm	0.23	3140/100
	150mm	0.34	3140/150
	200mm	0.51	3140/200
	250mm	0.92	3140/250
	300mm	1.85	3140/300
High Performance	400mm		100307

Two Part Ductile Iron Coupling

Description	Dia	Weight (Kg)	Code
	100mm	1.1	235359
	150mm	1.9	235362
	200mm	3.5	235363

Ductile Iron Bracket

Description	Dia	Weight (Kg)	Code
	100mm	0.6	DB100BG
	150mm	0.9	DB150BG
	200mm	1.6	DB200BG

SML Below Ground - Product Range

Single Bend 15 degree

Description	Dia	Weight (Kg)	Code
	100mm	1.0	232059
	150mm	2.5	232065

Single Bend 30 degree

Description	Dia	Weight (Kg)	Code
	100mm	1.3	232060
	150mm	3.0	232066

Single Bend 45 degree

Description	Dia	Weight (Kg)	Code
	100mm	1.6	232061
	150mm	3.5	232067
	200mm	6.2	232070
	250mm	10.3	232103
	300mm	17.5	232104

Long and Medium Radius bends 88 degree

Description	Dia	Weight (Kg)	Code
	100mm	5.5	232105
	150mm	8.5	232106

Long Access Bend 88 degree

Description	Dia	Weight (Kg)	Code
	100mm	3.1	232109

SML Below Ground - Product Range

Rest Bend

Description	Dia	Weight (Kg)	Code
	100mm	5.7	232110
	150mm	8.9	232150

Single Branch 45 degree

Description	Dia	Weight (Kg)	Code
	100mm x 100mm	3.8	232077
	150mm x 100mm	6.5	232080
	150mm x 150mm	9.2	232082
	200mm x 100mm	9.8	232083
	200mm x 150mm	13.3	232085
	200mm x 200mm	17.2	232086
	250mm x 250mm	31.5	232111
	300mm x 300mm	50.1	232112

Single Branch 88 degree

Description	Dia	Weight (Kg)	Code
	100mm x 100mm	2.9	232113
	150mm x 100mm	5.5	232114
	150mm x 150mm	6.9	232115

Double Branch 45 degree

Description	Dia	Weight (Kg)	Code
	100mm x 100mm x 100mm	4.0	232117
	150mm x 100mm x 100mm	5.4	232118
	150mm x 150mm x 150mm	11.8	15015045D

SML Below Ground - Product Range

Double Branch 68 degree

Description	Dia	Weight (Kg)	Code
	100mm x 100mm x 100mm	5.9	232116

Double Branch 88 degree

Description	Dia	Weight (Kg)	Code
	100mm x 100mm x 100mm	3.2	232119

Single Branch Access 88 degree

Description	Dia	Weight (Kg)	Code
	100mm	3.0	232131

Access Pipe (Round & Rectangular door)

Description	Dia	Weight (Kg)	Code
Round	100mm	5.5	232134
Rectangular	100mm	7.3	232096
	150mm	14.5	232099
	200mm	22.0	232101
	250mm	36.5	232137
	300mm	51.0	232140

SML Below Ground - Product Range

Reducers

Description	Dia	Weight (Kg)	Code
	150mm x 100mm	2.2	232072
	200mm x 100mm	4.1	232074
	200mm x 150mm	4.3	232076
	250mm x 150mm	6.8	232120
	250mm x 200mm	7.0	232121
	300mm x 150mm	11.1	232122
	300mm x 200mm	11.4	232123
	300mm x 250mm	12.4	232124

Plain Trap

Description	Dia	Weight (Kg)	Code
	100mm	7.3	232125

Blank End

Description	Dia	Weight (Kg)	Code
	100mm	0.5	232091
	150mm	1.7	232093
	200mm	3.1	232094
	250mm	6.0	232126
	300mm	9.5	232127

Puddle Flange

Description	Dia	Weight (Kg)	Code
	100mm	4.0	PF100
	150mm	6.0	PF150

SML Below Ground - Product Range

Inspection Chambers

Description	Dia	Weight (Kg)	Code
Round 	100mm x 100mm x 45 Deg	15.9	GCSR/100100
	150mm x 100mm x 45 Deg	17.2	GCSR/150100
	150mm x 150mm x 45 Deg	19.4	GCSR/150150
Square 	100mm x 100mm x 100mm	287.13	SSC100100
	150mm x 100mm x 100mm	372.02	SSC150100
	150mm x 150mm x 150mm	472.07	SCC150150
Rectangular 	100mm x 100mm x 100mm	565.23	DRC100100
	150mm x 100mm x 100mm	755.53	DRC150100
	150mm x 150mm x 150mm	942.65	DRC150150

Bellmouth Gulley

Description	Dia	Weight (Kg)	Code
	100-150mm	2.9	BG150

Bellmouth Solid Plate & Grate

Description	Dia	Weight (Kg)	Code
 	200mm	2.0	BMSP200
	200mm	1.7	BMG200

Installation: Stainless Steel Coupling

Harmer Duo couplings are supplied factory assembled and ready to fit.

2. Ease-in one side (next to the continuity spur) then push down on the opposite side of the coupling to fully seat, ensuring that the central inner register is abutted against the spigot end.

3. Ease the next pipe or fitting into the coupling as step 2.

4. Evenly tighten the bolts to the required torque setting. The coupling should only be tightened once because it cannot be dismantled and re-used.

5. The Harmer Duomat fixing tool is recommended for securing Harmer Duo couplings. Bolts can be tightened simultaneously with precision.

Torque, wrench, ratchet handle and sockets

A complete range of high quality fixing tools is available from Alumasc
Note: Harmer Duo, Grip and Adaptor couplings require a 5mm allen key.

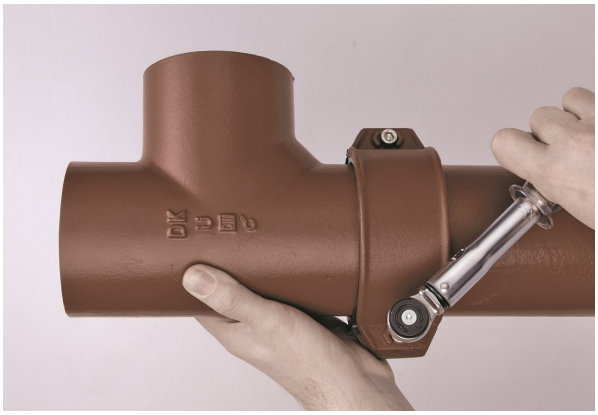
Installation: Ductile Iron Coupling

1. Slacken the bolts on the ductile Iron coupling, fully removing one bolt completely. Remove the EPDM rubber gasket.

2. Push the EPDM rubber gasket over the end of the pipe or fitting, ensuring that the central inner register is abutted against the spigot end.

3. Ease the next pipe or fitting into the EPDM rubber gasket making sure that the spigot end is against the central inner register.

4. Loosely fit the coupling around the gasket, ensuring that the rubber lip sits into the corresponding locator in the coupling.



5. Check the alignment of the assembly before tightening the bolts. Alternately tighten the bolts to ensure that the coupling is aligned evenly. Bolts should be tightened until a reasonable resistance is achieved—recommended torque setting 25 Nm.

6. All ductile iron couplings use an M8 bolt and require a 6mm allen key. The coupling incorporates an anti-turn feature which holds the bolt nut in place without the need for a secondary tool.

Kitemark Certificate

bsi.

By Royal Charter

Kitemark™ Certificate

This is to certify that:

Alumasc Exterior Building Products Ltd
T/A Alumasc Water Management Solutions
Burton Latimer
Kettering
NN15 5JP
United Kingdom

Holds Certificate Number: KM 613802

In respect of:

BS EN 877
Cast iron pipes and fittings, their joints and accessories,, for the evacuation of water from buildings.

This issues the right and licence to use the Kitemark in accordance with the Kitemark Terms and Conditions governing the use of the Kitemark, as may be updated from time to time by BSI Assurance UK Ltd (the "Conditions"). All defined terms in this Certificate shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s) detailed on this Certificate provided at or from the above address.

For and on behalf of BSI: Gary Fenton, Global Product Certification Director

First Issued: 19/12/2014 Latest Issue: 07/10/2015

...making excellence a habit.™

Notes

HARMER®
BUILDING DRAINAGE

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Cast Iron drainage pipes & fittings

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ALUMASC
WATER MANAGEMENT SOLUTIONS

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