V3 July 23

HARMER®

BUILDING DRAINAGE

HARMER SML ABOVE AND BELOW GROUND SOIL & WASTE DRAINAGE SYSTEM
TECHNICAL SUBMITTAL

bsi. Cast Iron Pipes KITEMARK™

CE

ALUMASC® WATER MANAGEMENT SOLUTIONS

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Contents

The full spectrum of assessment procedures and quality control standards have been employed by Alumasc to monitor the manufacture and performance of its cast iron products and systems, ensuring a responsible engagement with customers and the environment.

Harmer SML Product Testing and Certification

Standard	Description
BS EN 877	European standard for cast iron pipes and fittings
BSI	British Standards Institute Kitemark KM613802
CE Mark	European conformity
BS EN 12056	Gravity drainage systems inside buildings Part 3 roof drainage layout and calculation
EN 752	Drain and sewer systems outside buildings
EN 1610	Construction and testing of drains and sewers
BS EN 1253-1 BS EN 1253-2	Gullies for buildings. Requirements
BS EN 1561	Founding - Grey cast irons
BS 13501-1	Reaction to Fire
BS EN ISO 1182	Non combustability
BS EN ISO 1716	Heat combustion (Calorific Value)
BS EN 13823 + A1	Single Burning Item (SBI)
DIN 19522 ISO 6594	Cast iron drainage pipes and fittings without socket
BS EN 681 ISO 4633	Elastomeric seals
BS EN 14366	Laboratory measurement for noise from waste water installations
BS EN ISO 14001	Environmental Management
BS EN ISO 9001	Quality Management
IZEG	Measures the quality of Cast iron drianage products
GEG	A quality seal awarded to product that meet stringent quality regulations
TUV	A quality seal awarded to product that meet stringent quality regulations

Alumasc Environmental Policy

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. To this end, Alumasc operates an environmental policy across all sites that fully integrates all aspects of company activities.

The Alumasc environmental policy sets the standards for site emissions, noise levels, vibrations, and also systematically assesses the introduction of new processes and procedures.

Environmental Protection

BS EN ISO 14001, *Manufacturing to Environmental Standards.*

Grey cast iron is 100% recyclable. Pipe cuttings can also be included in recycling because the internal coating is free from benzopyrene and other environmentally dangerous materials.

Trade Bodies

Harmer Drainage is a patron member of the Chartered Institution of Building Services Engineers (CIBSE) and the Society of Public Health Engineers (SoPHE).

BRE Green Guide to Specification

The Green Guide to Specification provides easy-to-use guidance on making the best environmental choices when selecting construction materials and components. Materials and components are assessed in terms of their environmental impacts, within comparable specifications, across their entire life cycles. This accessible and reliable information has been put together to assist those involved in the design, construction and management of buildings to reduce the environmental impacts of their properties.

BREEAM

High quality, long lasting products reduce the significant environmental and monetary cost of replacement during service life. Alumasc goods are able to contribute fully to achieving BREEAM credits for responsible sourcing of materials and as part of an overall water management scheme.

The Harmer SML Solution for Above & Below Ground

The Harmer SML system, with its comprehensive range of fittings and accessories, offers an innovative, whole-building solution for soil, waste and rainwater drainage installations.

The system is fully compatible with other market-leading Harmer and Wade drainage products, including roof, floor, shower and channel drains.

This hospital building shows just some of the SML components available, including other compatible Harmer drainage systems.

A

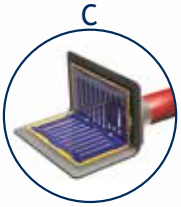
Modulock Raised Deck Supports
(See Harmer Roof Drainage Brochure)

B

Aluminium Balcony Outlet
(See Harmer Roof Drainage Brochure)

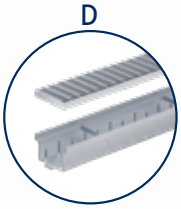
Modulock Non Combustible Pedestal Supports
(See Harmer Roof Drainage Brochure)

C



Aluminium Two-way Outlet
(See Harmer Roof Drainage Brochure)

D



Modulock Channel Drain
(See Harmer Roof Drainage Brochure)

F

Alumasc Rainwater & Skyline Fascias & Soffits
Standard and Bespoke
(See Skyline Architectural Fabrications Brochure)

E

SML Manifold Connection

G

Aluminium Roof Outlet
(See Harmer Roof Drainage Brochure)

H

SML Couplings

R

SML Single Branch 88°

Q

SML Reducer

P

Stainless Steel Floor Channel
(See Harmer & Wade Floor & Shower Drainage Brochure)

O

Grease Converter
(See Wade Grease Converters Brochure)

N

Aluminium/ABS Shower Drain
(See Harmer Floor & Shower Drainage Brochure)

M

SML High Pressure Coupling

L

SML Single Bend 88°

J

SML Below Ground Inspection Chambers

K

Cast Iron Floor Outlet & Grate
(See Harmer & Wade Floor & Shower Drainage Brochures)

The Harmer SML System

The Harmer SML lightweight cast iron pipework system is dry-jointed and has a proven track record. With its comprehensive range of fittings and accessories, Harmer SML is the ideal soil and waste system for above and below-ground drainage, including rainwater installations, and is fully compatible with other Harmer drainage products.

All-Round Flexibility

The Harmer SML system consists of coated, socketless cast iron pipes and fittings simply joined with either ductile iron or stainless steel rubber-lined couplings. The range also includes bracketry for restraining the pipework vertically and supporting it horizontally, along with a choice of special connectors for linking with other materials.

Harmer SML provides value for money throughout the building life cycle, incorporating high performance materials, ease of installation and ease of access for maintenance.

Consequently, the Harmer SML system continues to be successfully used in market sectors ranging from hospitals, healthcare premises, commercial premises, offices, schools, industrial projects to civil engineering works and high rise housing.

All-Round Standards

Harmer SML fully conforms to BS EN 877, the European standard for cast iron pipes and fittings along with conformity with the CE mark.

A correctly installed Harmer SML system will meet the performance standards set by BS EN 12056, the code of practice for gravity drainage systems that covers sanitary pipework and roof drainage inside buildings. The Harmer SML system also meets the performance standards for drain and sewer systems outside buildings as set by BS EN 752.

Consequently, the SML drainage pipe system is eminently suitable for all drainage applications required within buildings in the UK. SML is also officially approved for use in numerous other countries including Australia, the Czech Republic, Denmark, Finland, Germany, Hungary, Norway, Russia, Singapore, Sweden, Switzerland and the Ukraine.

Key Features of Harmer SML

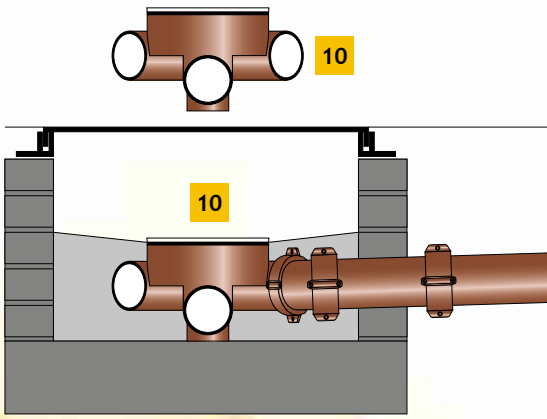
- A proven, Agrément certified system which meets the European standard BS EN 877.
- Excellent acoustic performance — tested in accordance with BS EN 14366.
- Non-combustible.
- High tensile strength.
- Excellent compressive strength.
- Choice of ductile iron or stainless steel couplings.
- Secure socket-less fixing between pipe and fitting.
- The internal epoxy coating applied to above and below-ground pipes enables drainage systems to perform under extremely demanding chemical conditions.
- External anti-corrosive coatings are also applied to above and below-ground pipes and fittings.
- Low maintenance.
- 100% recyclable.
- Quick to assemble.

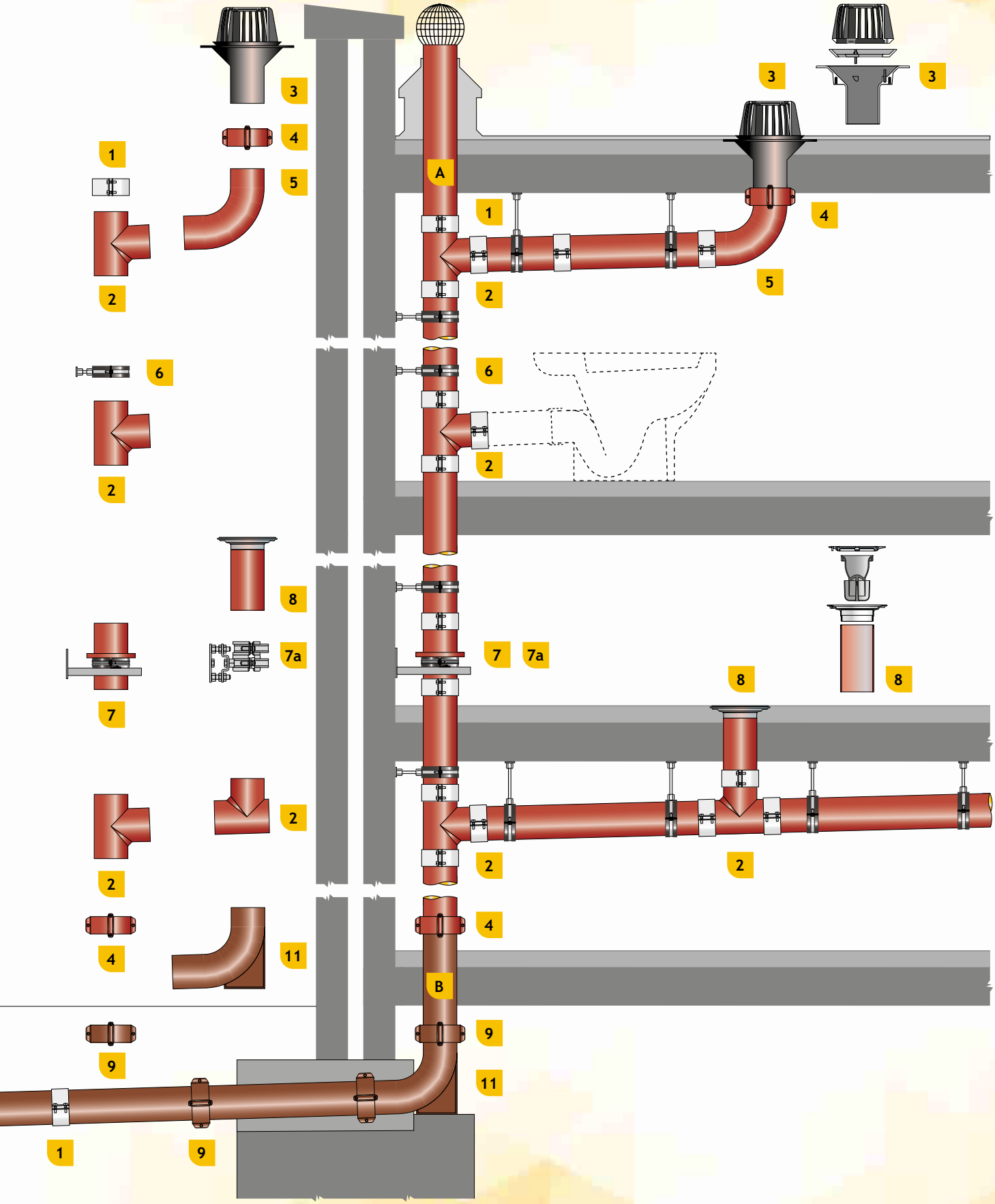
Component Key

The examples shown of pipe fittings, brackets, couplings and supports are a very small selection of the wide range of components available in the Harmer SML drainage system.

Some compatible components from other Harmer drainage systems are also shown.

- **A** Above Ground Pipework
- **B** Below Ground Pipework
- **1** Duo Stainless Steel Coupling
- **2** Single Branch 88° 100mm connection
- **3** Harmer & Wade Aluminium Roof Outlets
- **4** Ductile Iron Coupling - Above Ground
- **5** Long Radius Bend 88°
- **6** Optimal Bracket with Wall Plate
- **7** Stack Pipe Support Bracket with Downpipe Support
- **7a** Stand Pipe Support Bracket as alternative to Stack Pipe Support
- **8** Cast Iron Pipe Adaptor with Floor Outlet comprising Trap, Stainless Steel Grate and Bezel
- **9** Ductile Iron Coupling - Below Ground
- **10** Round, Square and Rectangular Inspection Chamber options
- **11** Rest Bend

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7a
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Integrated Drainage Solutions

The Harmer SML system is fully compatible with Alumasc's ranges of Aluminium & Cast Iron Roof Outlets, Aluminium & Cast Iron Floor Drains, Aluminium and ABS Shower Drains, and Modulock Linear Channel Drains – enabling flexible design solutions to be found for all soil, waste and rainwater drainage configurations. Harmer SML is also supported by Alumasc's wide-ranging technical expertise and resources.

The Compatible Ranges

Harmer AV Aluminium Roof Outlets are high performance advanced flow vertical spigot and threaded outlets with circular flanges, suitable for all regular flat roofing applications with continuous membranes. AV Retro-Gully outlets are also available for refurbishment work. Grates incorporate a special patented baffle, which prevents water swirl and air entrapment, for optimum flow performance even in extreme rainfall conditions. Non-standard pipe and rainwater outlet configurations can be made on a bespoke basis to suit complicated designs.

Harmer Detail Aluminium Roof Outlets are used to cover all the awkward detailing situations that occur in building design and refurbishment. The range includes spigot and threaded outlets with 45° or 90° take-off, balcony outlets, gully outlets, car park outlets, and two-way outlets where the roof surface abuts a wall or parapet. Bespoke manufacture is also available.

Harmer and Wade Cast Iron Roof Outlets provide a practical solution to many building drainage applications. Available in medium sump and large sump bodies, two-way outlets, and an extensive range of load bearing grates and accessories.

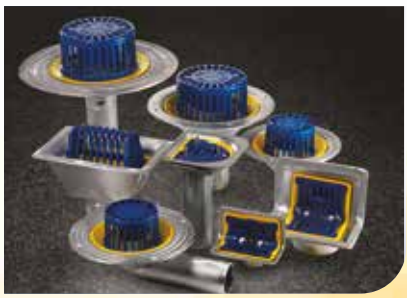
Harmer and Wade Floor Drains offer the widest choice of materials, styles and capacities on the market. The full range extends across three principal material types: cast iron, aluminium and stainless steel. Drains are supplied trapped but trap can be removed manually. They are available with an extensive range of grates (including round, square, slot and linear configurations) available in stainless steel, nickel bronze or ductile iron. The stainless steel offer comprises both standard and compact units, and a range of standard and custom channels, designed with either slots or grates. All Harmer floor drains can be configured and designed to suit all types of floor construction and finish.

Harmer Shower Drains high-performance, antimicrobial aluminium, ABS, and stainless steel shower channels and outlets, for concrete or timber floors in both new build and refurbishment projects. A wide choice of attractive caps and grates is available to complement and enhance any shower or wet room design.

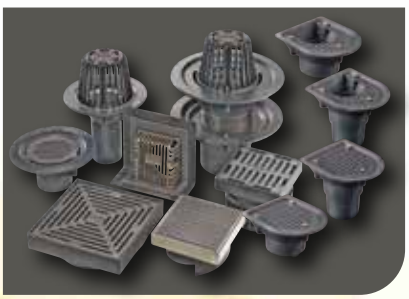
Harmer Modulock Linear Roof Channel Drains are designed to provide the ideal level access drainage solution where rainwater run-off and percolation are required to be intercepted at the perimeter of a building, or across thresholds and points of access into buildings, and then ducted away to drainage outlets. These advanced, linear, steel drainage ranges are designed for use within a raised deck structure. Combining threshold drainage with the level access requirements of the Building Regulations, these linear channel drains are particularly suited for use in combination with Harmer Modulock Raised Deck Supports.

Harmer and Wade Cast Iron Floor Drains

Harmer and Wade Stainless Steel Floor Drains



Harmer Aluminum Roof Outlets



Harmer and Wade Cast Iron Roof Outlets

The Harmer SML socketless lightweight cast iron soil and waste system meets the Standard of BS EN 877. The SML system combines modern, state-of-the-art drainage technology with the unique characteristics and benefits of cast iron as a preferred material for drainage installations.

Fire Safe

Non-combustible, therefore does not require costly fire protection collars.

Harmer SML has the highest product reaction to fire classification as A1 for BS EN 13501-1

Robust

Lightweight, strong and durable.

High tensile strength and excellent compressive strength.

Totally secure socketless fixing between pipe and fittings.

Fit for Purpose

High resistance to positive and negative pressure – axial restraint up to 10 bar possible, therefore no need to change material in sensitive areas.

No expansion joints, deflection bends or other special expansion control techniques are required for the dimensionally stable pipes due to the low coefficient of thermal expansion of cast iron.

Quiet

Excellent acoustic performance, Harmer SML has been tested in accordance with BS EN 14366: 2004 – the latest test for acoustic performance of building materials.

Typically, no special sound insulation measures required.

Easy and Quick to Install

Assembled by means of twin screw couplings.

Easily connects to other materials via push-fit couplings.

No special installation equipment required.

No specialist experience required.

Low Maintenance

Epoxy coatings ensure pipes and fittings need minimal maintenance over the lifetime of a drainage installation.

Inherent resistance to external accidental damage and vandalism.

Value for Money

Less fixing necessary, as fewer brackets are required because of greater pipe spanning capability.

Cast iron has a proven track record for its longevity over the lifetime of a building.

Sustainable

Long life cycle (60+ years)

100% recyclable material, therefore all waste can be returned to the furnace to make new cast iron products.

Stainless Steel Coupling

Ductile Iron Coupling

Benefits of Cast Iron

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 today's products are fully attuned to modern construction needs.

High Strength and 21st Century Technology

The crystalline structure of cast iron gives the material high strength and robustness. Once installed, cast iron components resist impact damage and are therefore well suited to installation in potentially exposed areas, such as car parks, schools, shopping centres, and busy public buildings such as hospitals, indeed in any situation where heavy wear and impact can be expected.

Cast iron's high carbon content (2%-4%) makes it a very suitable material for casting pipes and other cylindrical components by pouring molten iron into permanent moulds, which are spun at high speed. The liquid is forced into the side of the mould lining, producing a casting that has a uniform wall thickness. As a result of this centrifugal force, the iron becomes denser and stronger than gravity cast iron, making it particularly well suited to drainage applications because pipes can be made in longer lengths.

Durability

Centrifugal casting process

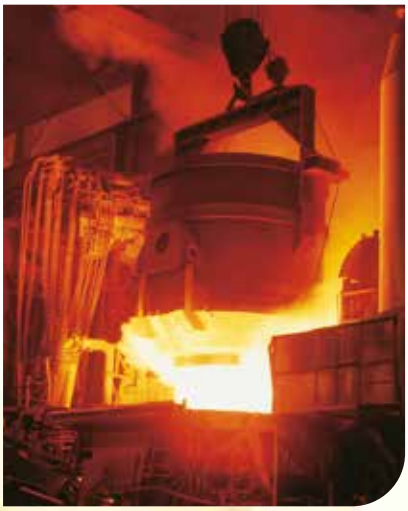
Cast iron is not susceptible to changes in its material structure or composition over time and will therefore remain serviceable over longer periods when compared with other materials.

As a material, cast iron is extremely stable and therefore durable, and is not susceptible to environmental, chemical or mechanical stresses. Historically, cast iron has been shown to offer long and reliable service because of its stable mechanical properties over time.

Cast iron is not susceptible to deterioration under variable thermal conditions because its mechanical strength remains stable and unaffected by temperature change. As a material for drainage installations, cast iron offers significant benefits over plastics-based material in event of fire.

The two-part epoxy coating of the internal surface of Harmer SML pipe and the anti-corrosive primer external coating ensure that the Harmer SML system will require minimal maintenance during its installed lifetime. Cast iron is the ideal material for inaccessible or difficult-to-reach areas and therefore particularly suited to below-ground drainage installations.

Temperature Extremes and Linear Expansion



Cast iron's low coefficient of thermal expansion (0.0105 mm/m/K) means that components made from it can be subjected to extreme temperatures without distortion, thereby requiring no costly expansion joint provision to take up differential movement. This is particularly beneficial where cast iron components are used in conjunction with concrete structures (concrete has an almost identically low coefficient of thermal expansion).

Cast iron has a very low level of thermal expansion in comparison with plastic drainage. Cast iron pipework is not liable to creep at operating temperatures.

Mechanical Stability

Cast iron does not deform under mechanical strain. Its stiffness and stability are unaffected by temperature and are around eight times greater than that of plastic pipework. The tensile strength of cast iron is similarly superior to that of plastics.

The demand for building land has increased the need to utilise reclaimed ground or sites in areas where there may be ground movement. Cast iron is the ideal material for below ground drainage installation because it offers greater resistance to chemical attack, degradation and ground movement.

In addition to strength, durability, mechanical stability and superior fire resistant qualities, cast iron offers yet more benefits in terms of performance and environmental sustainability.

Acoustic Performance

The crystalline nature of cast iron gives the material a very high damping capacity thereby significantly reducing noise transmission through cast components installed within building structures.

Additional sound protection will not normally be required in Harmer SML drainage installations as regards water flow within the pipework. In above-ground installations, the Harmer SML system of support and bracketry keeps pipework away from direct contact with surfaces, which reduces likelihood of sound transmission through the building structure.

For more detailed information refer to the 'Technical Data' section.

Fire Performance

In drainage installations, safety in case of fire is the primary health and safety concern, both in terms of material properties and reaction in fire, and fire resistance to prevent collapse.

Cast iron is non-combustible and therefore does not propagate fire nor emit toxic gases, unlike plastics-based systems. Consequently, installed cast iron components do not require costly fire protection measures.

For more detailed information refer to the 'Technical Data' section.

No Thermal Ageing

The Harmer SML system offers long and reliable service because cast iron is a stable material over time. Cast iron is not susceptible to thermal ageing.

Economy and Functionality

Modern lightweight cast iron provides an economical and functional material solution for soil and waste drainage. Fewer fixings and support brackets are required for lengths of cast iron pipe, in comparison with pipework of other materials, which contributes to the cost competitiveness of cast iron. There is no requirement for expansion joints, deflection bends, or any other expansion control measures.

Environmental Considerations

Cast iron has a long useful life cycle – far longer than plastics, which degrade over time – and therefore represents a sustainable use of a building material. It is environmentally friendly with no negative impacts on the environment and is 100% recyclable.

Cast iron does not emit any volatile organic compounds (VOCs), which are extremely hazardous and pose dangers to health, including eye, nose and throat irritation, frequent headaches, nausea, and can also damage the liver, kidneys and central nervous system.

Recycling cast iron benefits the environment because all scrap iron can be returned to the furnace, rather than going to landfill. New cast iron products can be created utilising recycled scrap. The resultant products are of high quality because when cast iron is recycled there is no diminution in its inherent characteristics and functional performance. This is in marked contrast to products made from recycled plastic because, when plastic is recycled, its quality decreases markedly. Cast iron, unlike plastic, is both environmentally friendly and maintains its beneficial characteristics when recycled.

SML Product Range Overview

All pipes and fittings for Harmer SML above and below-ground soil and waste drainage are fully compatible and comply with BS EN 877*. They are durable, low-maintenance, recyclable, and quick and easy to install. Manufacture is under strict factory-controlled conditions to meet the highest performance standards.

* Cast iron pipes and fittings, their joints and accessories for the evacuation of water from buildings. Requirements, test methods and quality assurance.

Pipes, Couplings and Brackets

The pipes, in standard 3m lengths and in a choice of diameters from 50mm to 400mm, are connected to each other and to a wide range of bends and branches with stainless steel or ductile iron couplings for any proposed drainage system. Above and below-ground pipes are differentiated by colour.

Maintaining the stability of above-ground pipework is vital, and to this end Alumasc has developed a range of bracketry that supports both vertically and horizontally. The range includes vertical, horizontal hanging and stack support brackets, and fitted with sound-deadening rubber linings.

Harmer SML above-ground pipe has a two-part epoxy coating on the inside and anti-corrosion primer on the external surface. Harmer SML pipe for below-ground applications has the same material specification as above-ground pipework, but with a higher external coating specification to cope with aggressive ground conditions.

Bends, Branches and Pipe Access Components

The large choice of bends and branches available enables any configuration of above and below-ground pipe layouts to be achieved with ease.

The range includes single bends, short and long tail double bends, long radius bends, rest bends, offsets, single and double branches, swept entry branches, corner branches and combination branches.

The range also includes access pipes and fittings designed for easy inspection and rodding.

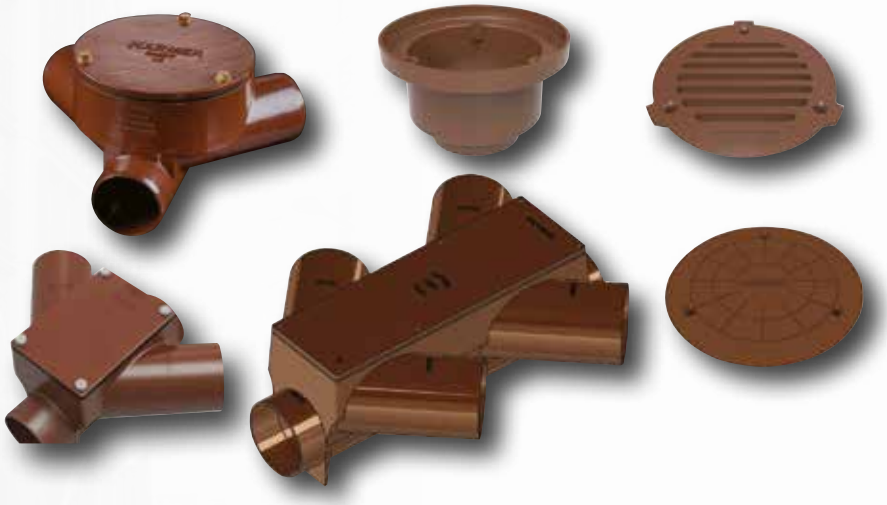
Fittings such as branches, bends and offsets are coated internally and externally to the same specification as Harmer SML pipe.

Boss Pipes, Reducers, End Caps, Pipe Supports, Bearing Rings and Connectors

A complementary range of miscellaneous fittings is available for increasing the configuration possibilities of a drainage system.

Wall Flanged Pipe, Traps, Adaptors and Puddle Flange

A complementary range of traps and adaptors in a variety of diameters is available for increasing the flexibility of use of a drainage system.



Inspection Chambers, Gully, Plate and Grate

A range of inspection chambers to connect 100mm and 150mm diameter pipes with 45° branch connections. Supplied with removable covers allowing easy access for maintenance.

Fixing Tools

A complete range of high quality fixing tools is available from Alumasc.

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

Technical data, pipes & pipe fittings

Quality Standard

Harmer SML meets the requirements of BS EN 877 and is manufactured under ISO 9001: Quality Management System (Certificate No.12 100 21864).

Cast Iron Material

Harmer SML drainage pipe systems are manufactured from grey cast iron according to EN 1561 to a minimum material grade of EN-GJL-150 (EN-JL1020). Cast Iron material has an A1 fire classification

Protective Coatings

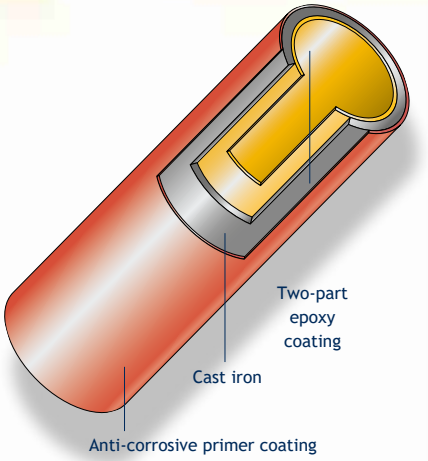
Soil and drainage pipe systems have to perform under extremely demanding conditions with domestic effluents containing aggressive cleaning agents and chemicals.
The high-quality coating of Harmer SML goes beyond the requirements of BS EN 877. (See chemical resistance table below.)

Harmer SML drainage pipes are externally protected with anti-corrosive primer coating and with a two-part epoxy coating which offers high resistance against chemical and mechanical damage.

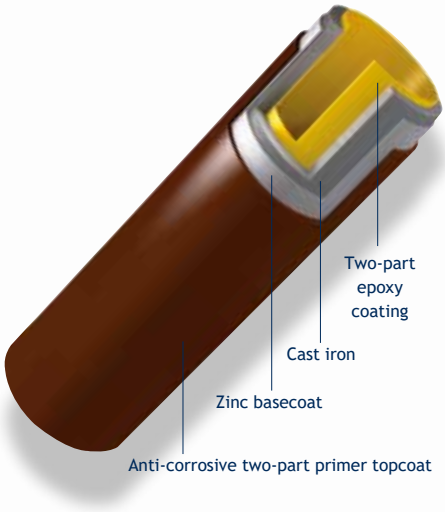
Coatings for Pipe and Fittings

Product		Coating Type		Average Thickness (µm)
		Above Ground	Below Ground	
Pipe	external	red primer coating	two-part brown & zinc base coating	70
	internal	two-part ochre epoxy	two-part ochre epoxy	70
Fittings	external	two-part red epoxy	two-part brown epoxy	70
	internal	two-part red epoxy	two-part brown epoxy	70

Above-Ground Pipe Coatings



Below-Ground Pipe Coatings



Specification

Harmer SML above-ground pipe as RAL 3009 oxide red external coating with fully cross-linked epoxy ochre internal coating. SML fittings dip applied as RAL 3009 oxide red internally and externally. Harmer SML below-ground as RAL 8011 nut brown external coating with fully cross-linked epoxy ochre internal coating. Additional thermal spray zinc coating to a minimum 130g/m^2 applied prior to top coat. SML below-ground fittings dip-applied as RAL 8011 nut brown internally and externally.

Other Applicable Standards

- BS EN 12056: Gravity Drainage Systems Inside Buildings.
- BS EN 752: Drainage and Sewer Systems Outside Buildings.
- BS EN 1610: Construction and testing of drains and sewers.

Below-Ground Risk Factors

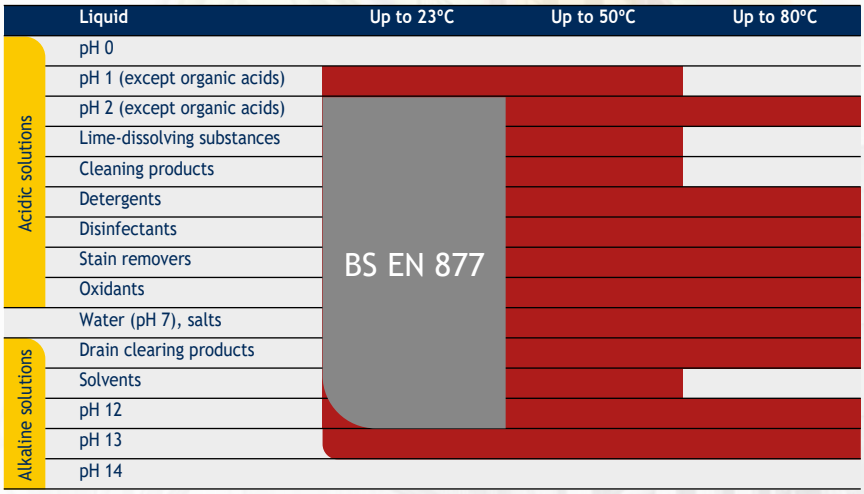
UV light degradation and the effect of mechanical damage are key factors in material selection. Cast iron provides key resistance benefits compared to other materials in below-ground pipe applications.

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

Cast Iron Soil & Waste pipe systems 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. No additional protection is required in most circumstances for a Cast Iron system.

Chemical Resistance of Interior Coatings of SML Pipes



Conditions where interior coatings meet chemical resistance requirements of BS EN 877

Conditions where interior coatings exceed chemical resistance requirements of BS EN 877

This table applies to applications with intermittent use.

Weights

BS EN 877 stipulates: "The nominal masses of finished products (pipes, fittings and accessories) shall be given in the manufacturers' catalogues. When measured in accordance with Table 5.3 of the standard, the lower deviation shall not exceed 15% of the nominal mass".

Lengths

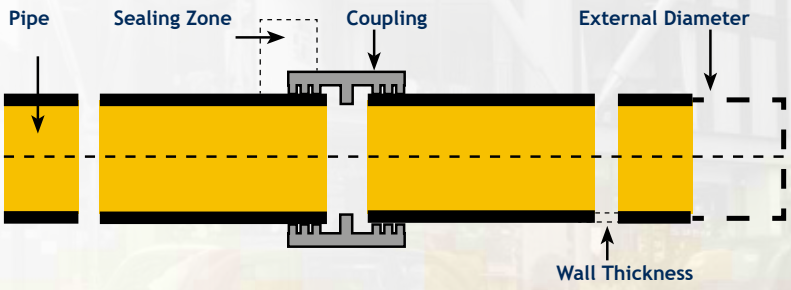
in accordance with clause 4.2.9 of BS EN 877, lengths of fittings shall be within a tolerance of +5mm. Lengths of pipes all be within tolerance of +20mm when measured in accordance with clause 5.2.7 of the standard.

Sealing Zone

Ovality of pipes and the sealing zone of fittings shall remain within the tolerance of the external diameter

Pipe Weights and Dimensional Tolerances

Nominal Pipe Dia (mm)	External Dia Min	External Dia Max	Wall Thickness Min	Sealing Zone Min	Pipe Weight (kg/m) Empty	Pipe Weight (kg/m) Filled
50	57	60	3.0	30	4.3	6.4
70	77	80	3.0	35	5.9	9.9
100	109	112	3.0	40	8.4	17.7
125	133	137	3.5	45	11.8	24.5
150	158	162	3.5	50	14.1	32.3
200	208	212	4.0	60	23.1	54.6
250	271.5	276.5	4.5	70	33.3	87.7
300	323.5	328.5	5.0	80	43.2	120.8
400	426	431	5.0	80	60.0	196.2



Flow Capacities of Soil Waste Systems

Maximum flow capacities (litres per second) of SML pipes, flowing at various gradients, with pipes flowing full (ks value = 0.6).

Pipe Dia (mm)	1:40 (l/s)	1:60 (l/s)	1:80 (l/s)	1:100 (l/s)
50	1.46	1.19	1.03	0.92
70	4.29	3.50	3.03	2.71
100	9.24	7.55	6.54	5.50
125	16.8	13.7	11.9	10.6
150	27.3	22.3	19.3	17.2
200	58.7	47.9	41.5	37.1
250	106.0	86.9	75.2	67.3
300	173.0	141.0	122.0	109.0
400	416.7	339.9	294.1	262.82

System design may limit soil and waste flow rates below these values. Higher flow rates will be possible for rainwater pipeworks.

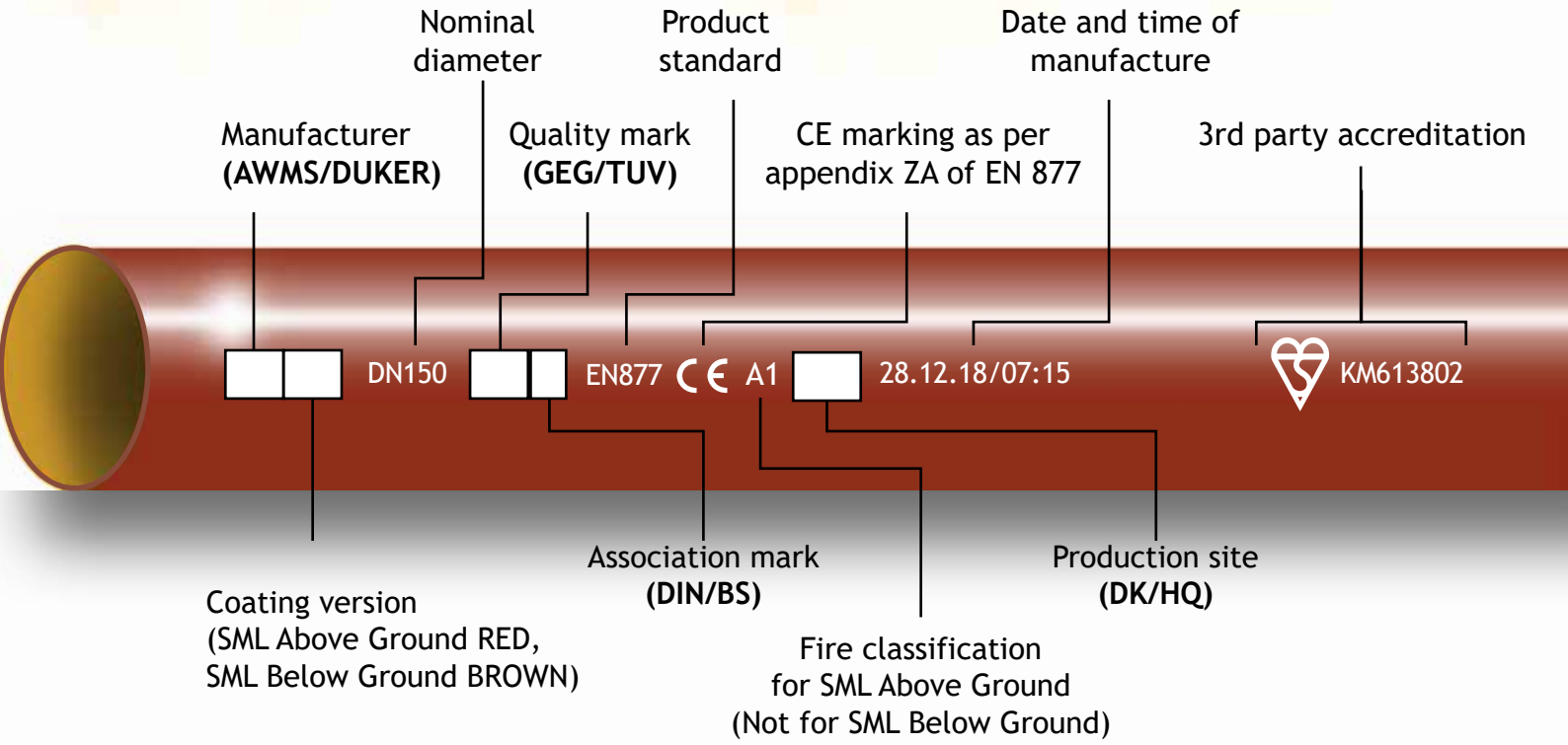
For vertical flow capacities refer to BS EN 12056: 2000, Parts 2 & 3

CE

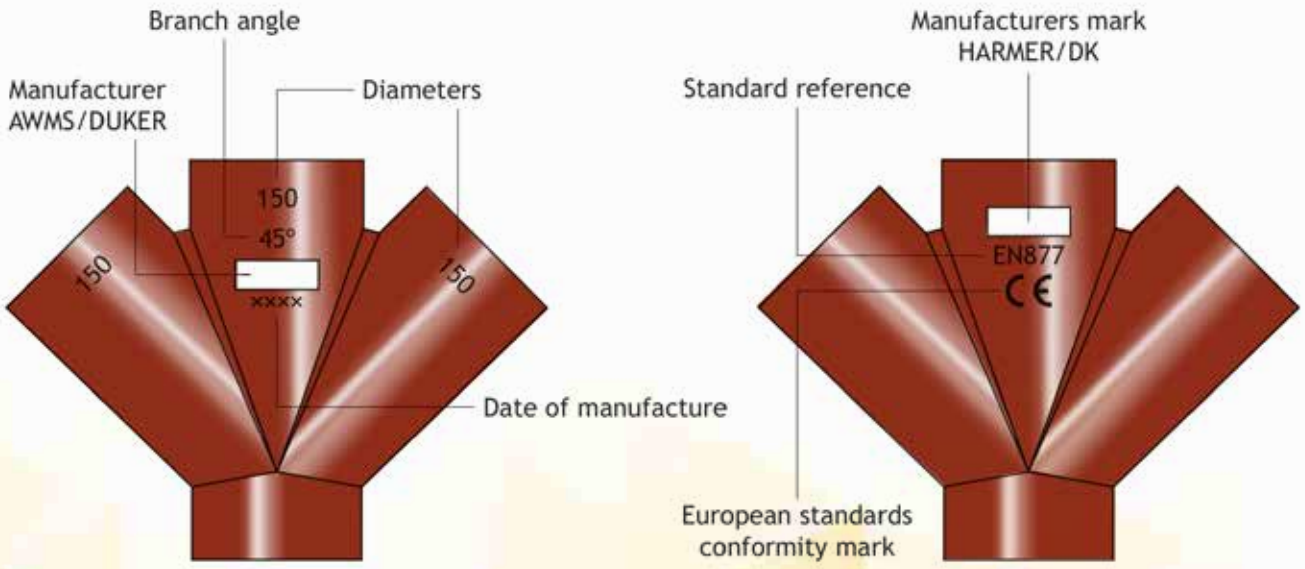
Pipe Markings

Product Identification

SML pipes and fittings are labelled during manufacture in accordance with the standard BS EN 877 and can be claerly identified as indicated below



Fitting marks (both sides)



Duomat Fixing Tool

The Harmer Duomat Fixing Tool from Alumasc is recommended for securing Harmer Duo Couplings which form part of the Harmer SML lightweight cast iron soil and waste sytem. Suitable for for all power tools, the Duomat Fixing Tool enables bolts to be tightened simultaneously with precision.

Key Features

- The Duomat tool significantly reduces the installation time of all two-screw couplings by up to 50%
- Both screws are tightened simultaneously with two independent safety clutches ensuring the correct torque, irrespective of the pipe tolerances
- Adjustable for all couplings from DN40 to DN300

Calibration Control

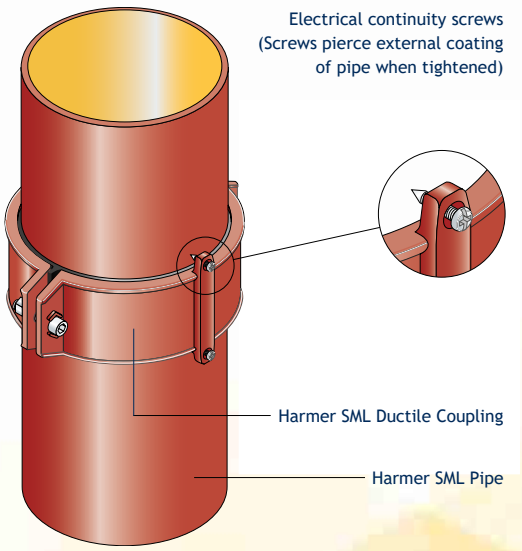
All new Harmer Duomat tools are pre-set to the correct installation torque, but we recommend a sensible periodic calibration control with a hand torque wrench during each project installation

Electrical Continuity

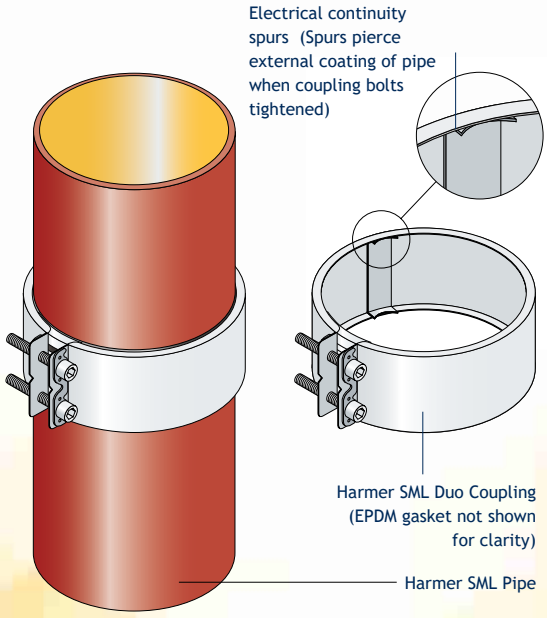
The Harmer Ductile, Duo and Grip couplings will satisfy the electrical continuity requirements of the IEE regulations provided that the SML pipework is bonded to an electrical earth and these couplings are assembled, installed and tightened to the correct torque in accordance with our recommendations.

The procedure for testing electrical continuity should be in accordance with the requirements of BS EN 877 as follows:
'If provision is made for electrical continuity, the electrical resistance of the coupling shall not exceed 0.3 ohms, when tested in accordance with the following procedure: Apply a steadily increasing voltage not exceeding 50V ac, 50Hz, across the junction until a steady current of 25±1A flows through the coupling. Allow the current to flow for 30 seconds, maintaining it as necessary by adjusting the voltage. Calculate the resistance of the coupling by dividing the observed voltage by the current.'

The installation should be regularly checked for damage, or when modifications are proposed, to ensure that electrical continuity is maintained.



Harmer Ductile Coupling installation



Harmer Duo Coupling installation

Inherent Fire Performance

Introduction

In drainage installations, safety in case of fire is the primary health and safety concern, both in terms of material properties and reaction in fire, and fire resistance to prevent collapse. The modern, lightweight cast iron of the Harmer SML system offers marked benefits over plastics-based drainage materials and is CE marked.

Superior Performance and Safety in Event of Fire

Harmer SML cast iron pipework is non-combustible and fire safe – cast iron is the ideal material to promote fire safety. In drainage applications, particularly above ground, resistance to fire is the most essential safety requirement – both with regard to reducing risk of damage to the building structure during a fire, and contributing to safety in routes of escape.

The Harmer SML soil and waste system has been extensively tested for the Reaction to Fire under BS 13501-1. This incorporates BS EN 1716 “Heat Combustion”, BS EN 13823 “Single Burning Item” and BS EN1182 “Non-combustibility” achieving the following results:

The Harmer SML soil and waste system has been extensively tested for the Reaction to Fire under BS 13501-1. This incorporates BS EN 1716 “Heat Combustion”, BS EN 13823 “Single Burning Item” and BS EN1182 “Non-combustibility” achieving the following results:

1. Cast Iron material classification A1

Non-Combustible - Reduced Risk of Flashovers

Because cast iron pipework is non-combustible it does not contribute to deadly flashovers, which can engulf a space with flame in seconds. Flashover is a phenomenon of near-spontaneous ignition, occurring when organic materials are heated and undergo thermal decomposition. This causes a release of flammable gases that lead to simultaneous ignition of combustible materials in any enclosed space. Flashover is a dangerous phenomenon, much feared by fire fighters, who are specially trained to deal with and mitigate the danger from shooting flames during flashovers.

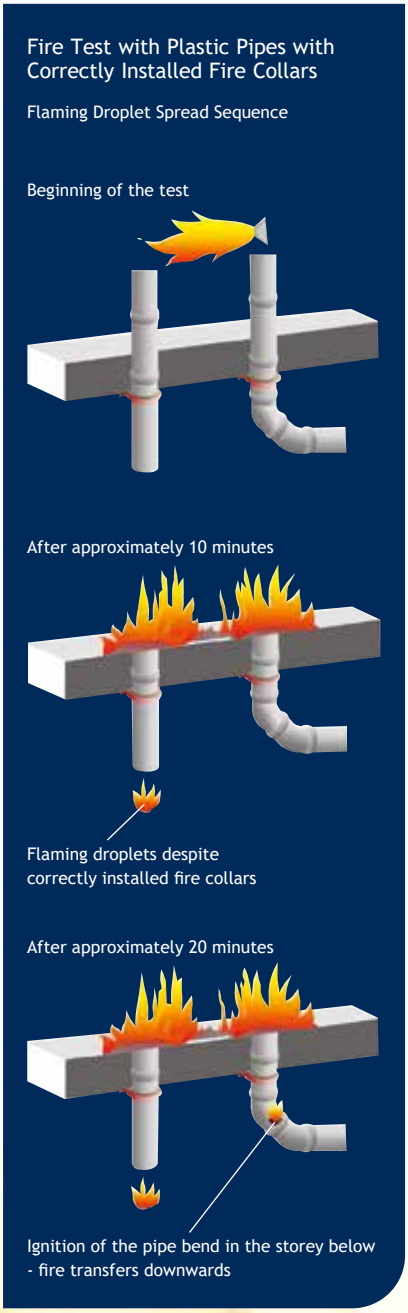
Flashover effect

No Flaming Droplets

In fire, plastic pipework can melt and ignite to form flaming droplets, which can fall from burning material to initiate new fires away from the original point of ignition. Flaming droplets can pass through and spread fire downwards to different parts of a building via plastic pipework, even where fire collars are correctly installed (see diagram below). There is no such risk of fire spread to lower stories when Harmer SML cast iron pipework is installed, and the functionality of a drainage system is maintained throughout a fire if it is cast iron.

Fire Test with Plastic Pipes with Correctly Installed Fire Collars

Flaming Droplet Spread Sequence



Minimal Smoke Generation

Being non-combustible, cast iron does not burn or generate smoke in the usual sense. Any smoke generated by heat effects on the inner coating of SML pipework is contained within the drainage system and evacuated to the exterior through roof vents.

Minimal Length Expansion

Cast iron has a low coefficient of linear expansion, far lower than that of plastics-based pipework, and any expansion of Harmer SML pipework through heat will be accommodated by the system couplings. With plastics-based pipework, special expansion compensators are required.

Resistance to Fire of Pipe Penetrations

When installed in a building, all water, sewage, heating, gas, ventilation or electric lines will have to penetrate ceilings and walls with a fire resistance requirement. However, penetrations through ceilings and walls are only allowed if the fire resistance of the ceiling or wall is not impaired. Therefore, pipe penetrations must have at least the same fire resistance duration as the ceiling or wall.

Pipe penetrations will be classified for: Integrity (E) Insulation (I)

Testing of the Resistance to Fire of Pipe Penetrations

Throughout Europe, tests for fire resistance of pipe penetrations are based on the test standard EN 1366-3.

Pipes are installed in a furnace, with penetrations through the ceiling and/or the wall of the furnace. With gas or fuel burners, the furnace is heated to a temperature of approximately 1000ºC. The standard requires a certain temperature curve and pressure to be maintained.

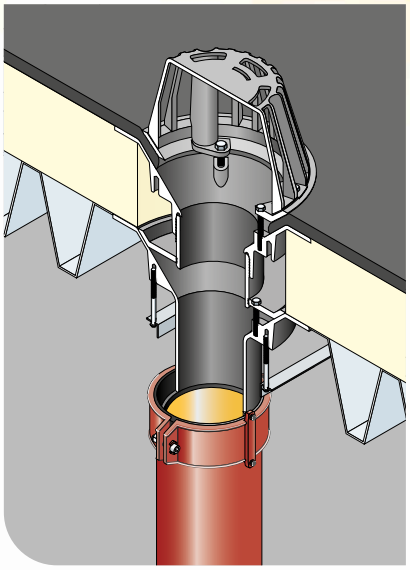
The test will monitor:

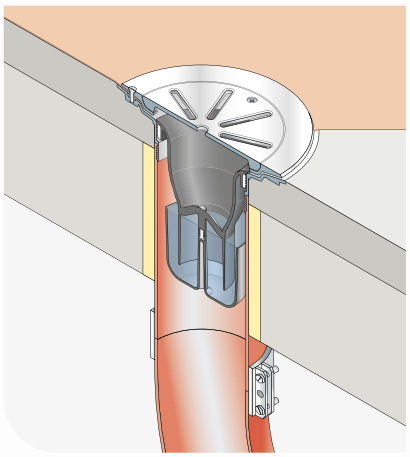
Integrity (E)
by observation. Flames and smoke may not exit through the pipe penetration.

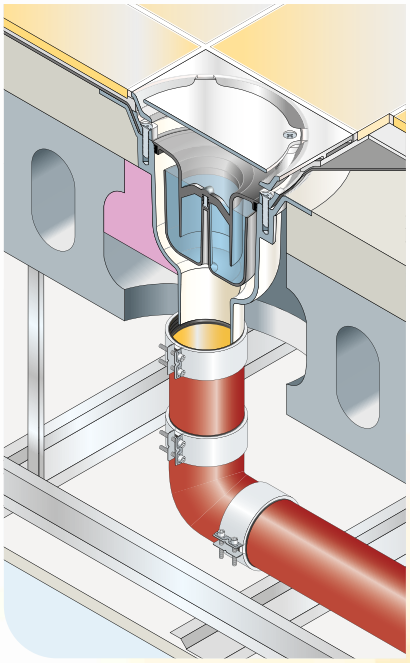
Insulation (I)
by temperature sensors in defined places on the ceiling and the pipe outside the furnace.

The temperature outside may rise by no more than 180ºC peak value and no more than 140ºC average value.

Some typical fire-proof constructions







Maintenance Checklist

Part of the installation	Measure	Details	Interval
Pipelines and Connections	Inspection	Visual inspection of all accessible pipelines for their aspect, tightness, fixing and outside corrosion	Once a year
Inspection openings	Inspection	Visual inspection for tightness, fixing and accessibility. If the inspection pipe is opened, watch out for correct position and cleanliness of the sealing surfaces and sufficient torque when tightening the covers in order to reestablish water and odour tightness	Once a year
Drains	Inspection, maintenance if necessary	Checking for free water entry and run-off, also of possible side entries, and tightness. Cleaning of dirt traps and of openings in the covers	Once every 6 months, shorter intervals if necessary
Roof Drains, also Emergency Drains	Inspection, maintenance if necessary	Checking for free water entry and run-off, also of emergency drains. Cleaning of dirt traps and of openings in the covers. If applicable function control of a heating. In case of siphonic drainage watch out for the correct position of the functional inserts in the drain. Replace missing or defective parts	Once every 6 months, especially in autumn
Ventilation Openings (on the roof)	Inspection, Maintenance	Inspection for free opening, control of the connection within the roof, cleaning if required	Once a year
Ventilation Valves	Inspection, Maintenance	Checking for good order, accessibility and air supply. No disassembly of the valve, exchange in case of malfunction	Once a year
Odour Traps	Inspection, Maintenance If necessary	Control of the water level in the odour trap, if necessary filling up with water. Cleaning of waste water odour traps.	Upon requirement, in particular on drains that are not often used
	Maintenance	Cleaning of rain water odour traps	Upon requirement, min. once a year

Introduction

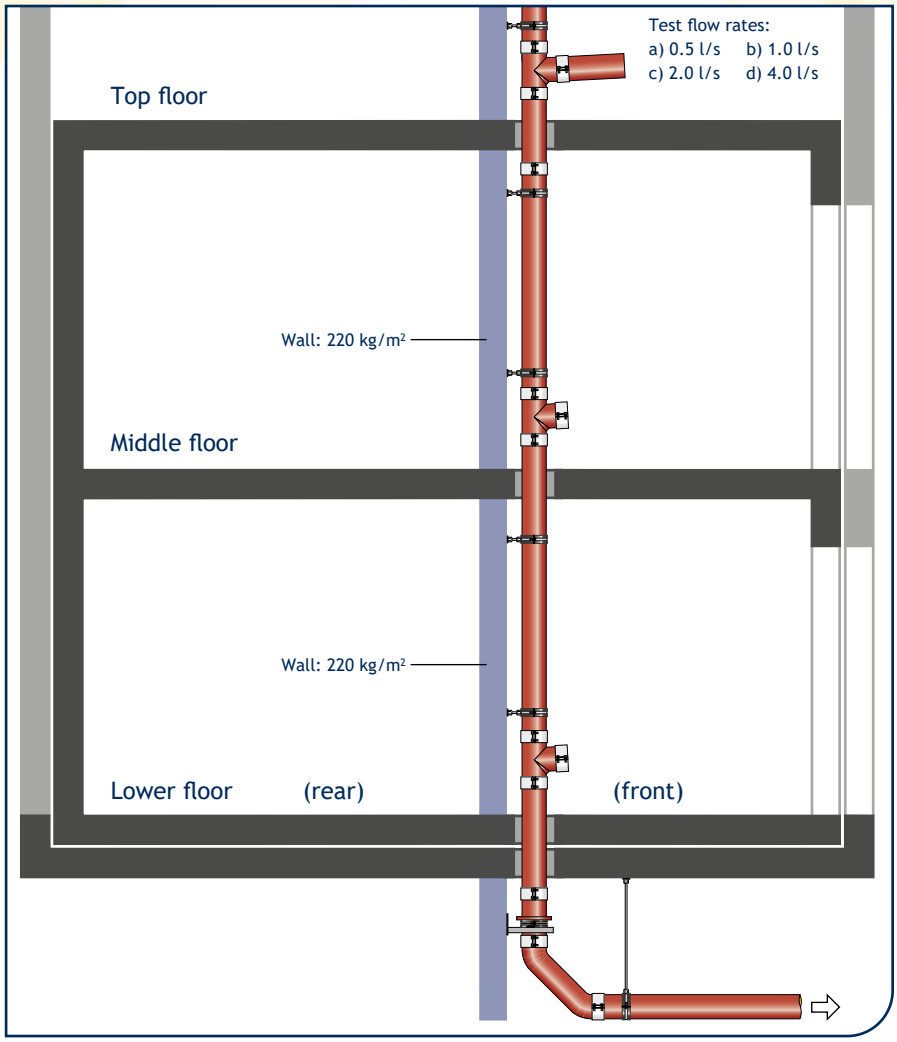
The discharge of soil, waste and rainwater through a pipe generates structure-borne and airborne sound between habitable spaces and usually occurs because the pipe is filled with a mixture of air and water. The resultant noise will then be transmitted to lightweight ceilings, cupboards and similar constructions.

Cast iron pipe systems however, because of the high mass per unit area of their pipe walls as well as the joint design characteristics, provide considerable noise reduction benefits when discharging soil, waste and rainwater within buildings.

Testing and Certification

BS EN 14366: 2005-02: *Laboratory measurement of noise from waste water installations* sets out a common test method by which structure-borne and airborne noise emitted by installed discharge systems is measured. Harmer SML has been independently tested to this new standard as certified by the Fraunhofer Institute of Building Physics – test report P-BA 164/2008e and P-BA 165/2008e. See table below.

BS 8233: *Code of Practice for Sound Insulation and Noise Reduction for Buildings*, provides guidelines for indoor ambient noise levels for various room uses. The general requirement for residential/habitable rooms is 30-35 dB; the lowest design range is 20-25 dB for recording studios. The Harmer SML system is able to meet these low levels of acoustic performance.



Fraunhofer Test Assembly

The Fraunhofer Institute of Building Physics test facility is constructed to a 220 kg/m² wall density. One of the most important parameters in the context of structure-bourne sound is wall density, as changes can greatly affect the installation sound level. For example, a wall density reduced to 140 kg/m² gives an increase in laboratory acoustic measurement of 4 dB at 4 l/s. It should be noted that test data conducted in a controlled laboratory cannot be transferred to other building conditions without restrictions.

Test Data

Pipe and Bracket Type (see drawing)	Airbourne Sound Pressure Level $L_{a,A}$[dB(A)] (see note a)				Structure-bourne Sound Characteristic Level $L_{SC,A}$[dB(A)] (see note b)				Number of Brackets Used	Wall Density (kg/m²)
Flow rate	0.5 l/s	1.0 l/s	2.0 l/s	4.0 l/s	0.5 l/s	1.0 l/s	2.0 l/s	4.0 l/s	–	–
1. Harmer SML with Optimal rubber-lined brackets	–	–	45	48	–	–	22	27	2	220
2. Harmer SML with Optimal rubber-lined brackets and spacers	39	43	45	48	9	14	19	24	2	220
3. Harmer SML with Optimal rubber-lined brackets with acoustic dampener (dB Fix) and Wall Plate	38	43	44	48	5	9	10	11	2	220

(a) Lower floor: front (b) Lower floor: rear

At 2.0 l/s - this corresponds more or less to a toilet flush. Using with optimum fixing technology is below 10 dB(A), that is, quieter than falling snow!

SML Pipe Gradient and Filling Capacities

Filling Level 50%

SML	DN 70		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250		DN 300	
	d_i=71		d_i=75		d_i=103		d_i=127		d_i=152		d_i=200		d_i=263		d_i=314	
J	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
cm/m	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s
0,5	0,8	0,4	0,9	0,4	2,1	0,5	3,7	0,6	6,0	0,7	12,5	0,8	25,8	1,0	41,3	1,1
0,6	0,9	0,4	1,0	0,4	2,3	0,6	4,1	0,6	6,6	0,7	13,7	0,9	28,3	1,0	45,3	1,2
0,7	0,9	0,5	1,1	0,5	2,5	0,6	4,4	0,7	7,1	0,8	14,8	0,9	30,6	1,1	48,9	1,3
0,8	1,0	0,5	1,1	0,5	2,7	0,6	4,7	0,7	7,6	0,8	15,8	1,0	32,7	1,2	52,3	1,4
0,9	1,1	0,5	1,2	0,6	2,9	0,7	5,0	0,8	8,1	0,9	16,8	1,1	34,7	1,3	55,5	1,4
1,0	1,1	0,6	1,3	0,6	3,0	0,7	5,3	0,8	8,5	0,9	17,7	1,1	36,6	1,3	58,5	1,5
1,1	1,2	0,6	1,4	0,6	3,2	0,8	5,5	0,9	8,9	1,0	18,6	1,2	38,4	1,4	61,4	1,6
1,2	1,2	0,6	1,4	0,6	3,3	0,8	5,8	0,9	9,4	1,0	19,4	1,2	40,1	1,5	64,2	1,7
1,3	1,3	0,6	1,5	0,7	3,4	0,8	6,0	1,0	9,7	1,1	20,2	1,3	41,8	1,5	66,8	1,7
1,4	1,3	0,7	1,5	0,7	3,6	0,9	6,3	1,0	10,1	1,1	21,0	1,3	43,4	1,6	69,3	1,8
1,5	1,4	0,7	1,6	0,7	3,7	0,9	6,5	1,0	10,5	1,2	21,7	1,4	44,9	1,7	71,8	1,9
1,6	1,4	0,7	1,6	0,7	3,8	0,9	6,7	1,1	10,8	1,2	22,4	1,4	46,4	1,7	74,1	1,9
1,7	1,5	0,7	1,7	0,8	3,9	0,9	6,9	1,1	11,1	1,2	23,1	1,5	47,8	1,8	76,4	2,0
1,8	1,5	0,8	1,7	0,8	4,1	1,0	7,1	1,1	11,5	1,3	23,8	1,5	49,2	1,8	78,7	2,0
1,9	1,5	0,8	1,8	0,8	4,2	1,0	7,3	1,2	11,8	1,3	24,5	1,6	50,6	1,9	80,8	2,1
2,0	1,6	0,8	1,8	0,8	4,3	1,0	7,5	1,2	12,1	1,3	25,1	1,6	51,9	1,9	82,9	2,1
2,5	1,8	0,9	2,0	0,9	4,8	1,2	8,4	1,3	13,5	1,5	28,1	1,8	58,0	2,1	92,8	2,4
3,0	1,9	1,0	2,2	1,0	5,3	1,3	9,2	1,5	14,8	1,6	30,8	2,0	63,6	2,3	101,7	2,6

Filling Level 70%

SML	DN 70		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250		DN 300	
	d_i=71		d_i=75		d_i=103		d_i=127		d_i=152		d_i=200		d_i=263		d_i=314	
J	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
cm/m	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s
0,5	1,3	0,4	1,5	0,5	3,6	0,6	6,2	0,7	10,1	0,7	20,8	0,9	43,1	1,1	68,9	1,2
0,6	1,4	0,5	1,7	0,5	3,9	0,6	6,8	0,7	11,0	0,8	22,9	1,0	47,2	1,2	75,5	1,3
0,7	1,6	0,5	1,8	0,5	4,2	0,7	7,4	0,8	11,9	0,9	24,7	1,1	51,1	1,3	81,6	1,4
0,8	1,7	0,6	1,9	0,6	4,5	0,7	7,9	0,8	12,7	0,9	26,4	1,1	54,6	1,3	87,3	1,5
0,9	1,8	0,6	2,1	0,6	4,8	0,8	8,4	0,9	13,5	1,0	28,1	1,2	58,0	1,4	92,6	1,6
1,0	1,9	0,6	2,2	0,7	5,1	0,8	8,8	0,9	14,3	1,1	29,6	1,3	61,1	1,5	97,6	1,7
1,1	2,0	0,7	2,3	0,7	5,3	0,9	9,3	1,0	15,0	1,1	31,0	1,3	64,1	1,6	102,4	1,8
1,2	2,0	0,7	2,4	0,7	5,5	0,9	9,7	1,0	15,6	1,2	32,4	1,4	67,0	1,6	107,0	1,8
1,3	2,1	0,7	2,5	0,7	5,8	0,9	10,1	1,1	16,3	1,2	33,8	1,4	69,7	1,7	111,4	1,9
1,4	2,2	0,7	2,6	0,8	6,0	1,0	10,5	1,1	16,9	1,2	35,0	1,5	72,4	1,8	115,6	2,0
1,5	2,3	0,8	2,7	0,8	6,2	1,0	10,9	1,1	17,5	1,3	36,3	1,5	74,9	1,8	119,7	2,1
1,6	2,4	0,8	2,7	0,8	6,4	1,0	11,2	1,2	18,1	1,3	37,5	1,6	77,4	1,9	123,7	2,1
1,7	2,4	0,8	2,8	0,9	6,6	1,1	11,6	1,2	18,6	1,4	38,6	1,6	79,8	2,0	127,5	2,2
1,8	2,5	0,8	2,9	0,9	6,8	1,1	11,9	1,3	19,2	1,4	39,8	1,7	82,1	2,0	131,2	2,3
1,9	2,6	0,9	3,0	0,9	7,0	1,1	12,2	1,3	19,7	1,5	40,9	1,7	84,4	2,1	134,8	2,3
2,0	2,7	0,9	3,1	0,9	7,2	1,2	12,5	1,3	20,2	1,5	41,9	1,8	86,6	2,1	138,3	2,4
2,5	3,0	1,0	3,4	1,0	8,0	1,3	14,0	1,5	22,6	1,7	46,9	2,0	96,9	2,4	154,7	2,7
3,0	3,3	1,1	3,8	1,1	8,8	1,4	15,4	1,6	24,8	1,8	51,4	2,2	106,1	2,6	169,6	2,9

Filling Level 100%

SML	DN 70		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250		DN 300	
	d_i=51		d_i=75		d_i=103		d_i=127		d_i=152		d_i=200		d_i=263		d_i=314	
J	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
cm/m	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s	l/s	m/s
0,5	1,6	0,4	1,8	0,4	4,2	0,5	7,4	0,6	12,0	0,7	24,9	0,8	51,6	1,0	82,6	1,1
0,6	1,7	0,4	2,0	0,4	4,7	0,6	8,2	0,6	13,2	0,7	27,4	0,9	56,6	1,0	90,5	1,2
0,7	1,9	0,5	2,1	0,5	5,0	0,6	8,8	0,7	14,2	0,8	29,6	0,9	61,2	1,1	97,8	1,3
0,8	2,0	0,5	2,3	0,5	5,4	0,6	9,4	0,7	15,2	0,8	31,6	1,0	65,4	1,2	104,6	1,4
0,9	2,1	0,5	2,4	0,6	5,7	0,7	10,0	0,8	16,2	0,9	33,6	1,1	69,4	1,3	111,0	1,4
1,0	2,2	0,6	2,6	0,6	6,0	0,7	10,6	0,8	17,1	0,9	35,4	1,1	73,2	1,3	117,1	1,5
1,1	2,3	0,6	2,7	0,6	6,3	0,8	11,1	0,9	17,9	1,0	37,1	1,2	76,8	1,4	122,8	1,6
1,2	2,4	0,6	2,8	0,6	6,6	0,8	11,6	0,9	18,7	1,0	38,8	1,2	80,3	1,5	128,3	1,7
1,3	2,5	0,6	2,9	0,7	6,9	0,8	12,1	1,0	19,5	1,1	40,4	1,3	83,6	1,5	133,6	1,7
1,4	2,6	0,7	3,1	0,7	7,2	0,9	12,5	1,0	20,2	1,1	41,9	1,3	86,7	1,6	138,7	1,8
1,5	2,7	0,7	3,2	0,7	7,4	0,9	13,0	1,0	20,9	1,2	43,4	1,4	89,8	1,7	143,6	1,9
1,6	2,8	0,7	3,3	0,7	7,7	0,9	13,4	1,1	21,6	1,2	44,9	1,4	92,8	1,7	148,3	1,9
1,7	2,9	0,7	3,4	0,8	7,9	0,9	13,8	1,1	22,3	1,2	46,3	1,5	95,6	1,8	152,9	2,0
1,8	3,0	0,8	3,5	0,8	8,1	1,0	14,2	1,1	22,9	1,3	47,6	1,5	98,4	1,8	157,3	2,0
1,9	3,1	0,8	3,6	0,8	8,3	1,0	14,6	1,2	23,6	1,3	48,9	1,6	101,1	1,9	161,7	2,1
2,0	3,2	0,8	3,7	0,8	8,6	1,0	15,0	1,2	24,2	1,3	50,2	1,6	103,8	1,9	165,9	2,1
2,5	3,5	0,9	4,1	0,9	9,6	1,2	16,8	1,3	27,1	1,5	56,2	1,8	116,1	2,1	185,6	2,4
3,0	3,9	1,0	4,5	1,0	10,5	1,3	18,4	1,5	29,7	1,6	61,6	2,0	127,2	2,3	203,3	2,6

CfA
Centre for Assessment

Certificate of Registration

Alumasc Building Products Limited t/a Alumasc Water Management Solutions

Station Road
Burton Latimer
Northamptonshire
NN15 5JP

BS EN ISO 9001:2015

Centre for Assessment Ltd confirms that this organisation has been audited and the requirements for registration have been met for the following scope:

Design, manufacture and supply of rainwater and drainage systems

Certificate Number: 18/0213

Date of Initial Certification: 30th April 2003

Date of Expiry: 30th April 2024

Date of Issue: 21st April 2021

Revision: 0

Signed: Bullimore

On behalf of Centre for Assessment Ltd

UKAS MANAGEMENT SYSTEMS 0120

This certificate remains the property of the Centre for Assessment and may be withdrawn without notice and is valid based on the above named organisation ensuring continued commitment to compliance against the harmonised standards as defined and or associated.

Centre for Assessment Limited, Lee House, 90 Great Bridgewater Street, Manchester, M1 5JW
Web: www.centreforassessment.co.uk Tel: 0161 237 4080
Rev 1

bsi.

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

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

Holds Certificate Number: EMS 556085

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

Design, manufacture and supply of rainwater and drainage systems.

For and on behalf of BSI:

Matt Page, Managing Director Assurance - UK & Ireland

Original Registration Date: 2010-10-20
Latest Revision Date: 2022-10-04

Effective Date: 2022-10-21
Expiry Date: 2025-10-20

Page: 1 of 1

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This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated online.
Printed copies can be validated at www.bsigroup.com/ClientDirectory

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

bsi.

Kitemark™ Certificate

This is to certify that:

Alumasc Building Products Ltd
T/A Alumasc Water Management Solutions
Station Road
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:

Frank Lee, Product Certification Technical and Compliance Director

First Issued: 2014-12-19
Latest Issue: 2021-12-15

Effective Date: 2021-12-15
Expiry Date: 2024-10-03

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Declaration of Performance

No. SML/AG 0004

1.	Unique identification code of the product type	SML AG drainage pipe system consisting of pipes and fittings made of Cast Iron
2.	Batch number	Item no., nominal width, angle and manufacturing date – see each product
3.	Intended use	Drainage of waste water or rainwater from buildings
4.	Name and address	Alumasc Water Management Solutions Station Road Burton Latimer Northamptonshire NN15 5JP www.alumascwms.co.uk
5.	Where applicable - Authorised representative	Not Applicable
6.	System of assessment	System 3
7.	Details	The notified body Exova performed the initial type testing of the reaction to fire as per EN877:1999+A1:2006 annex ZA and issued a report for the classification.
8.	Product with a European Technical Assessment	Not Applicable
9.	Declared performance	

Essential characteristics	Performance	Harmonised technical specification
Reaction to fire		
Cast Iron	A1	EN 877:1999+A1:2006
System	A1	EN 877:1999+A1:2006
Internal pressure strength	Pass	EN 877:1999+A1:2006
Dimension tolerances		
External diameter	Pass	EN 877:1999+A1:2006
Wall thickness	Pass	EN 877:1999+A1:2006
Ovality	Pass	EN 877:1999+A1:2006
Impact resistance	Pass	EN 877:1999+A1:2006
Tightness		
Water tightness	Pass	EN 877:1999+A1:2006
Air lightness	Pass	EN 877:1999+A1:2006
Durability aspects		
External coatings - Pipes - Fittings	Pass Acrylic Epoxy	EN 877:1999+A1:2006
Internal coatings - Pipes & Fittings	Pass Epoxy	EN 877:1999+A1:2006

10.	Conclusion	The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Mike Meegan, Senior Design Engineer 18/10/2022

ALUMASC WATER MANAGEMENT SOLUTIONS

SKYLINE, RAINWATER, HARMER
Station Road, Burton Latimer, Kettering, Northamptonshire, NN15 5JP
tel: 01744 648 400 • fax: 01744 648 401
email: info@alumascwms.co.uk • web: www.alumascwms.co.uk

GATIC
Poulton Close, Dover, CT17 0UF
tel: 01304 203 545 • fax: 01304 215 001
email: info@gatic.com • web: www.gatic.com

Registered Office: Burton Latimer, Kettering, Northamptonshire, NN15 5JP. Registration No. 2992960. VAT Reg No. GB 395 9417 96. A member of The Alumasc Group plc

Declaration of Performance

No. SML/BG 0005

3

1.	Unique identification code of the product type	SML BG drainage pipe system consisting of pipes and fittings made of Cast Iron
2.	Batch number	Item no., nominal width, angle and manufacturing date – see each product
3.	Intended use	Drainage of waste from sites in below ground installations
4.	Name and address	Alumasc Water Management Solutions Station Road Burton Latimer Northamptonshire NN15 5JP www.alumascwms.co.uk
5.	Where applicable - Authorised representative	Not Applicable
6.	System of assessment	System 4
7.	Details	The notified body Exova performed the initial type testing of the reaction to fire as per EN877:1999+A1:2006 annex ZA and issued a report for the classification.
8.	Product with a European Technical Assessment	Not Applicable
9.	Declared performance	

Essential characteristics	Performance	Harmonised technical specification
Reaction to fire		
Cast Iron	A1	EN 877:1999+A1:2006
System	NPD*	EN 877:1999+A1:2006
Internal pressure strength	Pass	EN 877:1999+A1:2006
Dimension tolerances		
External diameter	Pass	EN 877:1999+A1:2006
Wall thickness	Pass	EN 877:1999+A1:2006
Ovality	Pass	EN 877:1999+A1:2006
Impact resistance	Pass	EN 877:1999+A1:2006
Tightness		
Water tightness	Pass	EN 877:1999+A1:2006
Air lightness	Pass	EN 877:1999+A1:2006
Durability aspects		
External coatings - Pipes - Fittings	Pass Zinc,PU Epoxy	EN 877:1999+A1:2006
Internal coatings - Pipes & Fittings	Pass Epoxy	EN 877:1999+A1:2006

*No performance determined

10.	Conclusion	The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Mike Meegan, Senior Design Engineer 18/10/2022

ALUMASC WATER MANAGEMENT SOLUTIONS

SKYLINE, RAINWATER, HARMER
Station Road, Burton Latimer, Kettering, Northamptonshire, NN15 5JP
tel: 01744 648 400 • fax: 01744 648 401
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GATIC
Poulton Close, Dover, CT17 0UF
tel: 01304 203 545 • fax: 01304 215 001
email: info@gatic.com • web: www.gatic.com

Declaration of Performance

No. SML 0006

1.	Unique identification code of the product type	Couplings for drainage pipe systems made of Cast Iron
2.	Batch number	Item no., nominal width, angle and manufacturing date – see each product
3.	Intended use	Drainage of wastewater or rainwater from buildings
4.	Name and address	Alumasc Water Management Solutions Station Road Burton Latimer Northamptonshire NN15 5JP www.alumascwms.co.uk
5.	Where applicable - Authorised representative	Not Applicable
6.	System of assessment	System 3
7.	Details	The notified body Exova performed the initial type testing of the reaction to fire as per EN877:1999+A1:2006 annex ZA and issued a report for the classification.
8.	Product with a European Technical Assessment	Not Applicable
9.	Declared performance	

Essential characteristics	Performance	Harmonised technical specification
Reaction to fire		
Cast Iron & Stainless Steel	A1	EN 877:1999+A1:2006
System	A1	EN 877:1999+A1:2006
Internal pressure strength	Pass	EN 877:1999+A1:2006
Dimension tolerances		
External diameter	Pass	EN 877:1999+A1:2006
Wall thickness	Pass	EN 877:1999+A1:2006
Ovality	Pass	EN 877:1999+A1:2006
Impact resistance	Pass	EN 877:1999+A1:2006
Tightness		
Water tightness	Pass	EN 877:1999+A1:2006
Air lightness	Pass	EN 877:1999+A1:2006
Durability aspects		
External coatings cast iron Internal coatings cast iron	Pass	EN 877:1999+A1:2006

10. Conclusion

The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Mike Meegan, Senior Design Engineer 18/10/2022

ALUMASC WATER MANAGEMENT SOLUTIONS

SKYLINE, RAINWATER, HARMER
Station Road, Burton Latimer, Kettering, Northamptonshire, NN15 5JP
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email: info@alumascwms.co.uk • web: www.alumascwms.co.uk

GATIC
Poulton Close, Dover, CT17 0UF
tel: 01304 203 545 • fax: 01304 215 001
email: info@gatic.com • web: www.gatic.com

Registered Office: Burton Latimer, Kettering, Northamptonshire, NN15 5JP. Registration No. 2992960. VAT Reg No. GB 395 9417 96. A member of The Alumasc Group plc

CERTIFICATE

Düker

ISO 9001:2015

DEKRA Certification GmbH hereby certifies that the organization

Düker GmbH

Scope of certification:

Development, manufacture, supply and service of cast iron drainage pipe systems, supply and service of ductile iron shut-off valves and pressure pipe fittings, castings made to specification

Certified location:

Würzburger Straße 10-16, 97753 Karlstadt, Germany
(further locations see annex)

has established and maintains a quality management system according to the above mentioned standard. The conformity was adduced with audit report no. A19061001.

Certificate registration no.:	30819545/1	Certificate valid from:	2021-04-11
Validity of previous certificate:	2021-04-10	Certificate valid to:	2024-04-10

Language translation

IAF

DAkkS Deutsche Akkreditierungsstelle D-ZM-16029-01-01

Dr. Gerhard Nagel
DEKRA Certification GmbH, Stuttgart, 2021-04-06

CERTIFICATE

Düker

ISO 45001:2018

DEKRA Certification GmbH hereby certifies that the organization

Düker GmbH

Scope of certification:

Development, manufacture, supply and service of cast iron drainage pipe systems, supply and service of ductile iron shut-off valves and pressure pipe fittings, castings made to specification

Certified location:

Würzburger Straße 10-16, 97753 Karlstadt, Germany
(further locations see annex)

is a member of the certified body that establishes and maintains an occupational health and safety management system in accordance with the above mentioned standard. This was verified by audit report no.. A19061001.

Certificate registration no.:	270819023/1	Certificate valid from:	2021-04-11
Validity of previous certificate :	2021-04-10	Certificate valid to:	2024-04-10

Language translation

Dr. Gerhard Nagel
DEKRA Certification GmbH, Stuttgart, 2021-04-06

DEKRA Certification GmbH * Handwerkstraße 15 * D-70565 Stuttgart * www.dekra.de/audits

page 1 of 2

CERTIFICATE

ISO 50001:2018

DEKRA Certification GmbH hereby certifies that the organization

Düker GmbH

Scope of certification:

Development, manufacture, supply and service of cast iron drainage pipe systems, supply and service of ductile iron shut-off valves and pressure pipe fittings, castings made to specification

Certified location:

Würzburger Straße 10-16, 97753 Karlstadt, Germany
(further locations see annex)

has established and maintains an energy management system according to the above mentioned standard. The conformity was adduced with audit report no. A19061001.

Certificate registration no.:	180819029/1	Certificate valid from:	2021-04-11
Validity of previous certificate:	2021-04-10	Certificate valid to:	2024-04-10

Language translation

Dr. Gerhard Nagel
DEKRA Certification GmbH, Stuttgart, 2021-04-06

DEKRA Certification GmbH * Handwerkstraße 15 * D-70565 Stuttgart * www.dekra.de/audits

page 1 of 2

CERTIFICATE

ISO 14001:2015

DEKRA Certification GmbH hereby certifies that the organization

Düker GmbH

Scope of certification:

Development, manufacture, supply and service of cast iron drainage pipe systems, supply and service of ductile iron shut-off valves and pressure pipe fittings, castings made to specification

Certified location:

Würzburger Straße 10-16, 97753 Karlstadt, Germany
(further locations see annex)

has established and maintains an environmental management system according to the above mentioned standard. The conformity was adduced with audit report no. A19061001.

Certificate registration no.:	170819087/1	Certificate valid from:	2021-04-11
Validity of previous certificate:	2021-04-10	Certificate valid to:	2024-04-10

Language translation

Dr. Gerhard Nagel
DEKRA Certification GmbH, Stuttgart, 2021-04-06

DEKRA Certification GmbH * Handwerkstraße 15 * D-70565 Stuttgart * www.dekra.de/audits

page 1 of 2

DÜKER

Declaration of Performance

No. SML 004

1. Unique identification code of the product type: SML drainage pipe system consisting of pipes and fittings made of cast iron

2. Batch number: Item no., nominal width, angle and manufacturing date see each product

3. Intended use: Drainage of waste water or rain water from buildings

4. Name and contact address:
Düker SML
Düker GmbH
D-97753 Karlstadt
www.dueker.de

5. Where applicable, authorised representative: not applicable

6. System of assessment: System 3

7. Details: The approved body Materialprüfungsamt Nordrhein-Westfalen 0432 performed the initial type testing of the reaction to fire as per BS EN 877:2010-01 annex ZA and issued a certificate for the classification.

8. Product with a UK Technical Assessment: not applicable

9. Declared performance:

Essential characteristics	Performance	Designated technical specification
Reaction to fire		
Cast iron	A1	BS EN 877:2010-01
System	A1	BS EN 877:2010-01
Internal pressure strength	pass	BS EN 877:2010-01
Dimension tolerances		
External diameter	pass	BS EN 877:2010-01
Wall thickness	pass	BS EN 877:2010-01
Ovality	pass	BS EN 877:2010-01
Impact resistance	pass	BS EN 877:2010-01
Tightness		
Water tightness	pass	BS EN 877:2010-01
Air tightness	pass	BS EN 877:2010-01
Durability aspects		
External coatings Pipes Fittings	Pass acrylic Epoxy	BS EN 877:2010-01
Internal coatings Pipes Fittings	pass Epoxy Epoxy	BS EN 877:2010-01

10. Conclusion: The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Stefan Flentge, Head of Innovation

and

Simon Salg, Quality Management

Names and functions

ppa. S. Flentge
i.A. Salg S.

Karlstadt, 20.09.2022
Place and date of issue

Signatures

FDAV - EI
Datum: 23.08.2022

IDÜKER GmbH
Würzburger Str. 10-16
D-97753 Karlstadt / Main
T +49 9353 791 0
info@dueker.de

MANAGING DIRECTOR
Oliver Kreixner

Amtsgericht Würzburg HRB 13344
VAT-No: DE 132 979 543
Tax number:231/115/20283

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DÜKER

Declaration of Performance

No. TML 005

1. Unique identification code of the product type — TML drainage pipe system consisting of pipes and fittings made of cast iron
2. Batch number — Item no., nominal width, angle and manufacturing date see each product
3. Intended use — Drainage of water from sites in underground installations
4. Name and contact address — Düker TML
Düker GmbH
D-97753 Karlstadt
www.dueker.de
5. Where applicable, authorised representative — not applicable
6. System of assessment — System 4
7. Details — The manufacturer performs a factory production control.
8. Product with a UK Technical Assessment — not applicable
9. Declared performance

Essential characteristics	Performance	Harmonised technical specification
Reaction to fire		
Cast iron	A1	BS EN 877:2010-01
System	NPD*	BS EN 877:2010-01
Internal pressure strength	pass	BS EN 877:2010-01
Dimension tolerances		
External diameter	pass	BS EN 877:2010-01
Wall thickness	pass	BS EN 877:2010-01
Ovality	pass	BS EN 877:2010-01
Impact resistance	pass	BS EN 877:2010-01
Tightness		
Water tightness	pass	BS EN 877:2010-01
Air tightness	pass	BS EN 877:2010-01
Durability aspects		
External coatings Pipes Fittings	Pass Zinc, PU Epoxy	BS EN 877:2010-01
Internal coatings Pipes Fittings	pass Epoxy Epoxy	BS EN 877:2010-01

* No performance determined

10. Conclusion — The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Stefan Flentge, Head of Innovation

and

Simon Salg, Quality Management

Names and functions

ppa. S. Flentge

i. A. Salg S.

Karlstadt, 20.09.2022
Place and date of issue

Signatures

IDÜKER GmbH
Würzburger Str. 10-16
D-97753 Karlstadt / Main
T +49 9353 791 0
info@dueker.de

MANAGING DIRECTOR
Oliver Kraxner

Amtsgericht Würzburg HRB 13344
VAT-No: DE 132 979 543
Tax number:231/115/20283

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Project Gallery

The Harmer SML lightweight above and below-ground cast iron soil and waste system is ideal for specification across a wide spectrum of building types, including retail, commercial, civil, transport, sport, health and welfare. The Harmer SML system is fully compatible with other Harmer & Wade drainage ranges – including roof, floor and shower drains, and linear channel drains – for a fully integrated total building drainage solution.


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Chelsea Creek


Royal London & St Barts Hospital


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