0.01 PROPERTIES AND PERFORMANCE

Hunter Rainwater Systems

0.01 Properties and Performance

PROPERTIES AND PERFORMANCE

STRUCTURAL AND MECHANICAL PROPERTIES

Hunter Plastics gutters and downpipes are highly resistant to impact breakage and easily support ladder weights.

THERMAL

The coefficient of linear thermal expansion of PVCu is 5 x 10^{-5} mm/m/ °C and all Hunter Rainwater systems have been designed to take this into account.
It is important that resultant movement be provided for during installation.

COMPATIBILITY

The Surefit system will connect to most 112mm nominal half round PVCu gutter systems without the need for any special adaptor. Please refer to the Compatibility Chart.

Hunter PVCu downpipes will connect to most other manufacturer's 68mm circular and 65mm square rainwater pipes and are suitable for connection to most types of drain.

COLOUR FASTNESS

Hunter's Rainwater System is fully tested to BS EN 607, BS EN 12200 artificially ageing the product to method A of ISO/DIS 4892-2 and measuring the colour fastness to EN 20105-402. This does not guarantee that the surface colour of the gutter system will not change over a period. This is a measure of the degree of change according to the standard.

MATERIAL PROPERTIES

Material properties determine the correct selection of a system. The main materials used are PVCu, modified PVCu and polypropylene. Polyethylene (HDPE) is used in the manufacture of snap caps to retain the ring seals. Unplasticised polyvinyl chloride, PVCu, is a very versatile material: many processing methods can be used, it can be coloured, is lightweight, and has good chemical resistance, fire performance and weatherability. PVCu can be modified to increase its resistance to higher temperature discharges. Polypropylene has excellent chemical resistance and can tolerate high temperatures.

SERVICE TEMPERATURE

PVCu has a softening point In excess of 70°C, and PVCu soil stacks can cope with short intermittent discharges with temperatures up to 90°C

The higher softening point of polypropylene, above 140°C, means it can cope with high temperature discharges, such as boiling water, and it is the most appropriate material for the manufacture of traps.

TIMBER PRESERVATIVES

Before any component is fixed to a timber surface treated with wood preservative, the preservative must be dried thoroughly. The solvent content of wet preservatives can attack and embrittle plastic materials. Allow at least 48 hours for drying.

CHEMICAL RESISTANCE

Polluted industrial atmospheres may not affect Hunters' Rainwater Systems.
PVC and polypropylene are rot and vermin proof and resistant to most commonly occurring chemicals, so will not be affected by domestic effluents. Notable exceptions however are solvents, including those incorporated in most timber preservatives. Hunter PVCu Rainwater systems are self-coloured and corrosion resistant, the material therefore does not require painting. However, if painting is required, a paint specific for use with PVC should be used.

Standard gloss paint may be used if;

- The PVC surface has weathered for some time which will naturally occur
- The gloss surface of gutter is sanded down
- Wood fascias treated with timber preservative must be allowed to dry before fixing Hunter PVCu eaves gutters.
- It is essential that fascia boards treated with creosote are left for at least 48 hours to dry before fixing commences

FIRE PERFORMANCE

PVC in almost all forms has superior fire performance to most plastic materials: this makes it a suitable choice for indoor applications. In comparison Polypropylene has poor fire performance. Interior applications of plastic pipes may require protection in compliance with Building Regulations.

BS EN 607 Requirements
Wall Thickness

Gutter

BS EN 607	Min	2.2
Hunter		2.2

Downpipe

	Min	Max
BS EN 12200	1.8	2.3
Hunter	1.80mm	2.05mm

Moulded Fittings

BS EN 607	Min	2.20
Hunter		2.25

Materials
PVCu including no re-worked material

Colour Fastness - Rainwater and Soil products
All products are artificially aged in accordance with Method A. ISO/DIS 4892-2 and tested in accordance with EN 20105-402 for colour fastness

Vicat Softening Temperature

BS EN 607/12200	Min 75°C	
Hunter	White average	82.8°C
	Grey average	84.8°C
	Brown average	82.5°C
	Black average	83.1°C

Heat Reversion of Gutters

BS EN 607	Max 3.0%
Hunter	Avge 2.0% (max 2.8%)

Heat Reversion of Downpipes

BS EN 12200	Max 3.0%
Hunter	Avge 2.0% (max 2.5%)

Impact Resistant Test

BS EN 12200	Max 10% Failure
Hunter	No Failures

Dead Weight Test of Gutter Brackets
Heavy Duty 76kg
Standard Duty 50kg
Below 80mm opening - no testing
BS EN 1462 Max 5mm deflection after test
Hunter Max 3mm achieved on tests

Leak Test

BS EN 607	No leaks
Hunter	No leaks

Further Properties

Specific Gravity	1.35-1.45
Co-efficient of Linear Expansion	7x10-5/ml°C
Water Absorption	Negligible
Oxygen Index	42%

Chemical Resistance
The material is virtually unaffected by solutions of inorganic acids, alkalis and salt and is resistant to many organic chemicals. It may be softened by some organic materials such as Ketones and aromatic compounds. It will not corrode.

Fire Resistance
Materials used in Hunter Rainwater Systems are self extinguishing

0.01 Features, Description & Performance

Rainwater Systems

The Hunter range of plastic rainwater systems offers the specifier products which are the result of over 30 years of innovative design and research. They reflect the major advances in rainwater system technology pioneered by the Company in its production of high quality PVCu products for the building industry.

Technical services

A team of qualified design engineers are available for free consultation on any aspect of plumbing and drainage installations. Specific questions or requirements concerning Hunter products can be met by contacting Hunter Plastics Limited at the address below or by Fax to Hunter Technical Design Services on (020) 8854 7446.

Availability

Hunter rainwater systems are available throughout the UK from reputable builders' merchants and other points of sale.
A list of stockists is available on request.

References

Technical publications are available upon request to the Commercial Department.
Phone: (020) 8855 9851.

Export

Hunter offers a complete estimating, packing and shipping service to facilitate export orders with local assistance in many countries.

Special applications

Hunter rainwater systems are ideal for many specialist industrial, domestic and conservatory applications.
For further details, call Hunter Technical Design Services on (020) 855 9851 or
Fax on (020) 8854 7446.

Special fabrications

Hunter has the expertise and the facilities to design and fabricate non-standard components to meet the needs of special technical or architectural design requirements. Modifications to standard products are available for all the Hunter systems.
Delivery times and price will depend on the complexity of the design and the quantity required.

Standards

All Hunter products are manufactured using a quality management system approved by BSI and conforming to BS EN ISO 9001: 2000. Kitemarked product conforms to applicable BS EN standard.

PATENT NUMBERS
Gutter seal (as used in the 112mm Surefit components) -
GB Pat. No. 2281323
Mini clip gutter system - GB Pat. No. 2282160

Associate Member

EN 1462

Certificate No. FM 11001

Investor in People

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