

Designated by Government
to issue
European Technical
Approvals

GUTTERLINE

Revêtement d'étanchéité de gouttières
Abdichtung für Regenrinne

Product



- THIS CERTIFICATE RELATES TO GUTTERLINE, A THERMOPLASTIC (RUBBERISED PLYGENE) MEMBRANE SYSTEM FOR RELINING EXISTING GUTTERS.

- The system forms a continuous waterproof barrier over existing gutters made of concrete, asbestos-cement, aluminium, cast iron, steel and wood.

Regulations

- 1 The Building Regulations 1991 (as amended) (England and Wales)**
 In the opinion of the British Board of Agrément, the use of the Gutterline system is not subject to these Regulations.
- 2 The Building Standards (Scotland) Regulations 1990 (as amended)**
 In the opinion of the British Board of Agrément, the use of the Gutterline system is not subject to these Regulations.
- 3 The Building Regulations (Northern Ireland) 1994 (as amended)**
 In the opinion of the British Board of Agrément, the use of the Gutterline system is not subject to these Regulations.

4 Construction (Design and Management) Regulations 1994
 Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.
 See section: 7 Delivery and site handling (7.1 and 7.2).

Technical Specification

5 Description

5.1 Gutterline is a flexible waterproof membrane pre-formed to fit into existing gutters. The installation is completed using standard outlets and stop-end plates, or pre-formed outlet details hot-air welded to the main membrane in situ.

5.2 The Gutterline membrane is formed from thermoplastic polyolefin (Rubberised Plygene) 1.5 mm thick.

5.3 Accessories used with the main Gutterline membrane are:

Standard outlets — PVC-U, used to form waterproof terminations of the liner at downpipes.

Moulded outlet components — moulded components incorporating an outlet, which are hot-air welded to the liner in situ.

Stop-end plates — 4.5 mm thick high-density polyethylene blank sheet, cut from a template and used to secure the ends of the liner.

Custom-made corners and outlets — made from thermoplastic polyolefin with a lower softening point compared to the liner, and subsequently hot-air welded to the liner in situ.

Plastisol coated galvanized steel profiles — to secure the front edge of the liner to the existing gutter.

Boundary Sealing Kit — strips of fabric-reinforced rubberised bitumen and plastisol coated steel, used to form a termination of the liner where the liner does not extend to the whole length of the existing gutter (eg at the boundary of a terraced property) or at the open end of a gutter.

High penetration primer — for use on porous gutter substrates to enhance the adhesion of the Boundary Sealing Kit.

Joint Sealing Kit — similar to the Boundary Sealing Kit, used to join the membrane where the preferred hot-air welding method is not available.

Plygene-covered metal hold-down straps — designed to provide resistance to wind uplift and installed at intervals across the width of the gutter.

Gutterbond polyurethane sealant — for gap-filling detailing.

Proprietary hole cutters — for use at downpipe outlets.

Weldstrap — for fabrication and repairs using hot-air welding.

6 Manufacture

6.1 The Certificate holder designs the Gutterline system for each proposed installation using the following dimensions and site details provided by the client:

total length of gutter

gutter inside width and profile detail

number and diameter of downpipe outlets
number of termination points
number and dimensions of internal and external corners
number and diameter of vent pipes
sketch plan of the entire gutter.

6.2 The Certificate holder produces a prototype Gutterline section, pre-creased to the client's specification. If the client accepts the prototype, the membrane is produced to this design.

6.3 Gutterline membrane is produced by an extrusion process to a thickness of 1.5 mm. The membrane is cut to length and creased longitudinally to fit the client's specification.

6.4 Moulds for corner details are constructed in-house and used as templates for producing vacuum-formed units made from thermoplastic polymer.

6.5 The membrane is checked during production for thickness and crease depth.

7 Delivery and site handling

7.1 Each customer order is assembled and packaged individually using boxes, polythene wrapping and strap banding.

7.2 High penetration primer is classified as 'Harmful and Flammable', and Gutterbond sealant is classified as 'Irritant' under the Chemicals (Hazard Information and Packaging for Supply) Regulations 1994. Contractors have obligations under the Control of Substances Hazardous to Health Regulations 1994 to make an assessment covering their procedures for using the products.

Design Data

8 General

The Gutterline system is suitable for use as a waterproof lining membrane in existing concrete, asbestos-cement, aluminium, cast iron, steel and wood gutters.

9 Weathertightness

9.1 The Gutterline system will form an adequately watertight barrier in existing gutters.

9.2 The lining membrane is flexible and, provided that it is mechanically anchored adequately as described in this Certificate, will accommodate movements in the structure caused by changes in temperature.

10 Performance of joints

10.1 Wherever possible joints should be formed by hot-air welding. Pre-formed corner units are hot-air welded directly to Gutterline. Joints formed between two Gutterline membranes should be made using an overbanding strip of Weldstrap.

10.2 Where hot-air welding is impossible, joints should be formed using a Joint Sealing Kit. This kit uses bitumen strips as the sealing medium and the joint is mechanically secured to the gutter using screw fixings.

10.3 The mechanical securing of the joint to the gutter is necessary to adequately resist the thermal expansion and contraction of the liner (see also Figures 2 and 3).

11 Resistance to mechanical damage

The product is robust and has good resistance to any damage likely to be caused by site handling. However, contact with sharp objects may result in puncture damage to the membrane. Such areas should be repaired using hot-air overbanding by Weldstrap.

12 Maintenance

12.1 Routine inspections of the gutter and fixings, and periodic cleaning, should be continued after the Gutterline installation. The use of sharp objects which may abrade or puncture the liner should be avoided.

12.2 If repairs to the liner are necessary, these can be achieved by the hot-air welding of patches of Weldstrap membrane.

13 Durability

Accelerated weathering tests confirm that satisfactory retention of physical properties is achieved. Available evidence indicates that the system should have a life of at least 15 years.

Installation

14 General

14.1 Installation is to be carried out by competent roofing contractors, in accordance with the information contained in this Certificate and with the manufacturer's instructions. Where custom-made moulded details are to be installed, fitters must have knowledge of hot-air welding. Training in this technique is available at the manufacturer's premises and an instruction video tape is available.

14.2 If installation is being carried out in hot weather, care must be taken not to pull the liner tight during fixing as this places undue stress on the liner and fixings during cold weather.

14.3 Care should be exercised when drilling into concrete gutters. To minimise any damage or spalling to the concrete a percussion drill should be used in preference to a hammer-action drill. When fixing the metal edge trim care should be taken not to drill too close to the edge of the concrete and to ensure that the angle of drilling is correct to minimise the risk of subsequent breakout of the concrete when the fixing is screwed home.

14.4 The Gutterbond sealant is for use only as a gap filler but does not bond strongly with the liner material and should not be used as an adhesive in place of the appropriate mechanical fixing.

14.5 Wooden gutters should be checked for structural stability. In particular, friable areas or areas suffering from rot should be made good before the installation of the Gutterline system.

15 Preparation

Before fitting Gutterline, the gutter must be cleaned and sharp protuberances removed. The outlets must be smooth and round.

16 Procedure

16.1 The outer thimbles are fixed into the downpipe outlets and the inner thimbles check-fitted, to ensure that there is an 8 mm wide split present to accommodate the thickness of the liner.

16.2 Areas of the gutter which will have Boundary Sealing or Joint Sealing kits fitted are checked to ensure that they are smooth across the width of the gutter. If necessary, irregularities should be ground out before the area is primed with a generous coat of high penetration bitumen primer and allowed to dry.

16.3 A sarking angle and apron are fixed in place if required.

16.4 The liner is rolled out along the whole length of the gutter (allowing at least 300 mm spare at each end to form the termination) and the side edges are positioned under the cladding (or roof tiles). Alternatively the liner may be folded back on itself under the cladding and mechanically secured in place. At the front edges of gutters the liner is fixed in place using the supplied plastic coated steel edging strip. Edges running against vertical surfaces, such as boundary walls, are mechanically fixed and made waterproof with flashing.

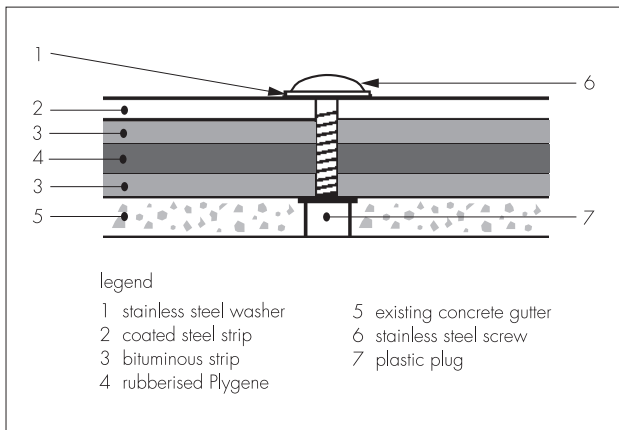
16.5 When the liner has been fitted along the full length of the gutter, the ends are secured. A template is made of the gutter end and used to cut out an angled stop from the blank supplied. The end of the liner is warmed, folded and pressed into shape by clamping the template to the existing gutter end. When cool the top edge is trimmed and the blank replaced by the angled stop which is bolted through and secured to the gutter end.

16.6 Outlets are created by locating the existing outlet and centrally cutting a reduced diameter hole in the liner using the hole cutter supplied. The area around the hole is warmed and the inner thimble firmly inserted, trapping the liner between the inner and outer thimbles and creating a waterproof seal at the downpipe.

16.7 Terminations at boundaries should be made using Boundary Sealing kits. The liner is sandwiched between layers of rubberised bitumen

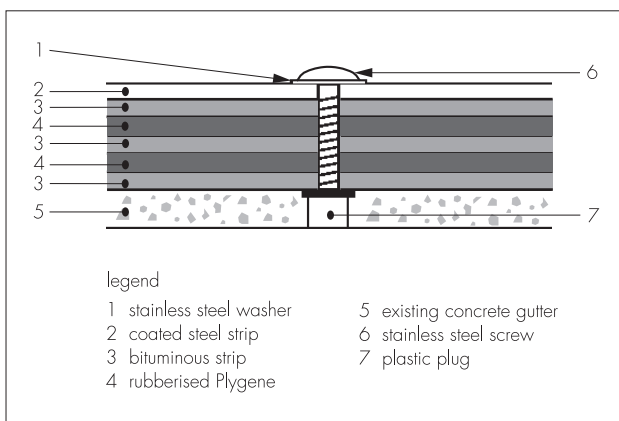
finishing with a coated steel strip (with pre-punched holes). Holes are drilled through the metal strip into the gutter. For concrete gutters, holes are drilled using a 6.5 mm diameter bit to a depth of 35 mm. Using the plastic plugs, screws and washers supplied, the screws are tightened while warming the entire assembly with hot air. The heat softens the bitumen, allowing it to be compressed by the action of driving home the screws (see Figure 1). The technique is the same for gutters made from other materials but the fixings used will vary.

Figure 1 Cross-section of installed Boundary Sealing Kit



16.8 Joint Sealing kits using the same technique of sandwiching the liner between bitumen strips are used to make liner-to-liner joints where hot-air welding is not possible (see Figure 2). These joints must be secured to the existing gutter to resist the expansion and contraction forces acting on the liner as the temperature changes.

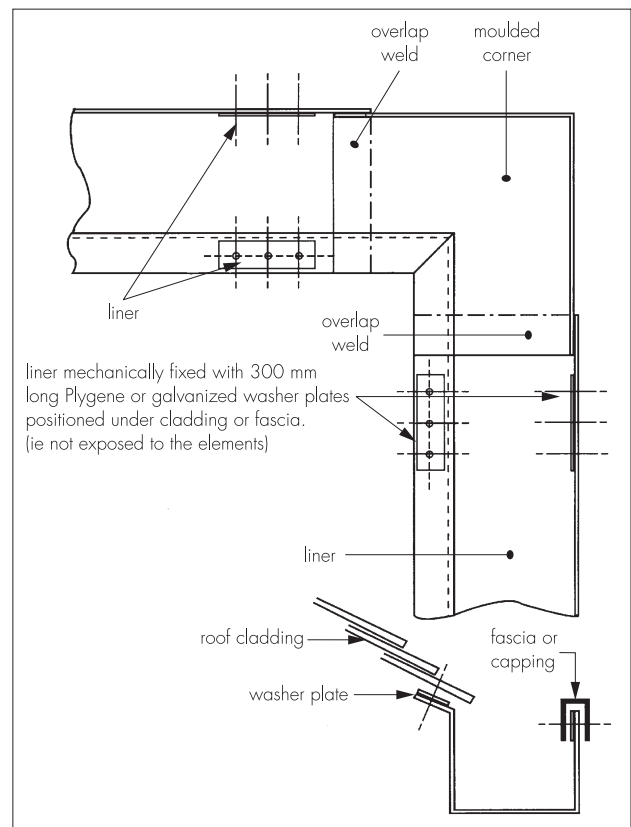
Figure 2 Cross-section of installed Joint Sealing Kit



16.9 To protect welds from stress caused by thermal expansion and contraction, the liner must be mechanically fixed to the gutter at these points, above the likely level of water flowing in the gutter (see Figure 3).

16.10 Prior to installing moulded components incorporating outlets, the liner must be mechanically fixed to the gutter at the outlet site. Fixing holes made in the liner are rendered watertight when the component is subsequently hot-air welded to the liner.

Figure 3 Moulded corner details



16.11 Gutters with a sole width of 300 mm or more require the installation of hold down straps. These are fixed, without the need to penetrate the liner, across the width of the gutter at 1 m to 3 m centres depending on the size of the gutter and prevailing conditions. Further details are available from the manufacturer.

Technical Investigations

The following is a summary of the technical investigations carried out on the Gutterline system.

17 Tests

Tests were carried out to determine:

- dimensional stability
- tensile strength and elongation
- low temperature flexibility
- tear strength
- nail tear resistance
- hardness
- integrity of joints
- resistance to heat
- resistance to artificial weathering.

18 Other investigations

18.1 The manufacturing processes were examined, including methods of quality control. Details were obtained of the quality and composition of the materials used.

18.2 A visit to a site in progress was carried out to assess the practicability of installation of the system.

18.3 Visits were carried out to established sites to assess the performance of the system in use.

Conditions of Certification

19 Conditions

19.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (d) is copyright of the BBA.

19.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

19.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

- (b) continue to be checked by the BBA or its agents; and

- (c) are reviewed by the BBA as and when it considers appropriate.

19.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of any patent or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

19.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, Gutterline is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 00/3718 is accordingly awarded to H D Sharman Limited.

On behalf of the British Board of Agrément

Date of issue: 15th May 2000

Chief Executive

