METAL GUTTER MANUFACTURERS ASSOCIATION

AN INTRODUCTION TO ALUMINIUM GUTTER SYSTEMS

Over the last 50 years aluminium has established itself as a principal material for the manufacture of metal gutter systems in the domestic, municipal and commercial sectors and, together with the added advantage of compatibility with architectural grade electrostatically applied powder paint finishes, enables manufacture of both bespoke and proprietary systems to offer unrivalled low maintenance, durable and environmentally friendly products.

Heritage cast aluminium rainwater system, Mersey Street East Belfast.
Image courtesy of Alumasc Exterior Building Products

Because of the requirement to harmonise British and European aluminium gutter standards, British standards became obsolete in favour of European standards. However, the new standard did not represent UK styles of aluminium gutters systems and the Metal Gutter Manufacturers Association (MGMA) worked with BSI to draft and launch BS 8530:2010 - the first new national standard to represent Traditional-Style Half Round, Beaded Half Round, Victorian Ogee and Moulded Ogee aluminium rainwater systems. MGMA continues to liaise with BSI in the drafting of further national standards to represent the remaining types of UK aluminium gutter products.

Traditional moulded ogee.
Image courtesy of Marley Alutec

Aluminium gutters can be manufactured from pressed formed sheet, extruding profiles, sand casting (for special applications) and sheet roll forming. With such a range of manufacturing processes available, it is important to select the appropriate type and quality of product required. Some systems utilise a mixture of manufacturing process to make up a product range. For example, small components such as gutter outlets, corners fascia brackets and pipe sockets can be made as an aluminium casting and long components, such as pipes and gutters, can be made from extruded aluminium.

To ensure that the correct gutter system is specified for a particular application, a number of factors should be taken into account. Most importantly, the quality of alloy should be of a high grade (refer to BS 8530:2010). If painted, the most popular paint system used is Polyester Powder Coating (known as PPC). This is an electrostatically applied architectural grade polyester powder coating to BS 6496.

The coating process should be carried out in accordance with BS EN 12206-1:2004 as this application process will ensure appropriate paint thickness, exemplary uniform colour retention and coating adhesion which is guaranteed by most architectural paint manufacturers for a period of at least 25 years and, depending on the geographical location of the installation, should last considerably longer. Inferior non-architectural grade paints and application methods will result in early colour fading, chalking and delamination.

Hand painting with conventional liquid paints directly to bare aluminium surfaces is not recommended, is time-consuming and therefore expensive and will not give the durability and colour fastness of architectural grade powder coating. However, if this is the chosen option then the aluminium surfaces must be thoroughly degreased, aluminium etch primer applied, then a further two coats of preferably a two part polyurethane paint applied.

All components must be individually painted prior to assembly (not after installation) and sufficient time allowed between coats to ensure the paint is fully cured prior to adding

further coats. Installing components when the paint is not fully cured may result in a chemical reaction with the jointing sealant causing joint failure.

Over-painting PPC is an option if required in the future. The PPC surface will need to be rubbed down with a non-metallic fine abrasive such as a wire wool or wet and dry sheet then cleaned down with a mild solvent cleaner, prior to applying two coats of, preferably, a two part polyurethane paint. However, it must be appreciated that this will not provide the colour fastness or durability of an architectural grade PPC coating.

Aluminium is a versatile material to work with and most manufacturers offer to fabricate bespoke components or even complete systems. Amongst the most commonly requested items are bespoke hoppers; these are individually designed hoppers which can be either fabricated from sheet aluminium with a variety of decorative cast motifs and embellishments added to enhance the appearance, or can be individually cast, if required.

Fascia/soffit system with secret gutter.
Image courtesy of ARP Limited

All MGMA members place great emphasis on ensuring that all manufacturing processes are environmentally responsible. This extends to packaging as well as raw material handling and process controls.

Aluminium is 100 per cent infinitely recyclable, without losing any of its characteristics. The majority of aluminium smelting plants worldwide are now hydro electro powered, reducing $S0_2$ and CO_2 emissions. Thirty per cent of aluminium used today is from recycled material, which only requires five per cent of the energy used in production of the primary aluminium. In addition, the polyester powder coating process also now recycles all the overspray PPC powder and there are no harmful emissions from the application of powder paint.

Finally, do ensure that products are ordered from a reputable manufacturer whose products conform to available British Standards and, where standards are not yet available, ensure that they have independent test data to prove their products are fit for purpose. MGMA members are a model benchmark to provide such quality and service. More information is available at www.mgma.co.uk.

This article has been prepared for MGMA by Tony Wereszczynski, chairman of MGMA and technical director of Marley Alutec. This article first appeared in RCI magazine, March 2013

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