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comar<sup>2</sup>

## Thermally Efficient Aluminium Window Walling

An elegant comprehensive system of proven profiles and components offering variety and design flexibility to the architect and specifier, with cost savings compared to conventional curtain walling and many other benefits.

### The Parkside Group Ltd

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complementing architecture

Design

Solution

Perform

Deliver

On-time

Sustainable





Comar Architectural Aluminium Systems is the largest British, privately owned aluminium systems company in Europe.

Comar designs, extrudes and distributes over 700 integrated profiles to a Nationwide approved fabricator network for use in aluminium ground floor treatment, window, door and curtain walling applications.

Comar has built its reputation on delivery. Over £3M of mill, standard white, polyester powder coating, silver and bronze anodised profiles are kept in stock.

This means that 99% of orders are fulfilled by our customers weekly delivery. Single and dual colour polyester powder coating can be delivered in 15 working days.

For architects and specifiers, a Nationwide team of specification consultants provide project-by-project advice on design, building regulations, u-value and wind loading calculations as well as NBS specifications, budget pricing and approved fabricators. This service to specifiers ensures that projects run smoothly from concept to installation.

Comar Architectural Aluminium Systems is an ISO 9002 Registered Firm. Comar is a member of the Council for Aluminium in Building, (C.A.B) and is a Technical Committee member.

Comar provides CPD seminars to architects and designers through the RIBA CPD network and offers CWCT training courses and seminars through its own Training Centre at Mitcham in Surrey. Membership with these Associations ensures that customers are kept up-to-date with the very latest in building technology and regulations.

**Comar - Designed for Performance, Backed by Delivery.**

# design

## Comar 2 Window Walling

Comar 2 Window Walling was developed in conjunction with Local Authorities to provide a cost effective alternative to low rise curtain walling. Comar 2 is a versatile system, which provides slim sight lines for use in entrances, stairwells and medium rise applications.

Profiles are designed for maximum strength to weight ratios and special high span mullions are available for the most demanding design briefs. This means that the same slim sightlines are maintained throughout the project.

Thermally broken, Comar 2 integrates with Comar 5 windows to provide top-swing, tilt and turn, pivot, side hung, top and bottom hung opening vents. For a full façade solution the comprehensive range of Comar 7 doors can be incorporated. Doors can be operated by overhead, concealed closers incorporating an anti-finger trap stile for protection. If automatic doors are required, Comar's unique door beams house the gearing to provide aesthetically pleasing finished entrances.

The versatility of Comar 2 includes 3 way glazing profiles, 90° and 135° corners and variable angle façades. Comar 2 incorporates a wide range of beads which means that panels and glass from 4mm to 75mm can be glazed, either internally or externally.



## Thermal Performance

Comar 2 offers exceptionally low U-values. Supporting this thermally broken suite is Comar's Technical Department who offer advice to architects, specifiers and fabricators on U-value calculations, wind loading and integration. This service is offered on a project-by-project basis.

## Genesis

To our Nationwide network of approved fabricators, Comar supplies Genesis estimating software. Genesis is a powerful estimating tool; it provides fast, accurate pricing from plans and tenders for the entire Comar product range.

Genesis includes the facility to provide section through details which can be exported to CAD so Comar approved fabricators can add detail to design drawings.

All approved fabricators are trained in Genesis, ensuring Comar approved fabricators provide accurate budget pricing and tender returns.

## Research and Development

Comar 2 has been continuously developed to ensure it can be used to complete the most demanding façade. New profiles are regularly introduced. If your project requires new extrusions, Comar's Technical Department will discuss individual projects and develop new profiles to achieve the design brief.



# solution

## Description

Comar 2 fully integrates into Comar 5 windows and Comar 7 Doors.

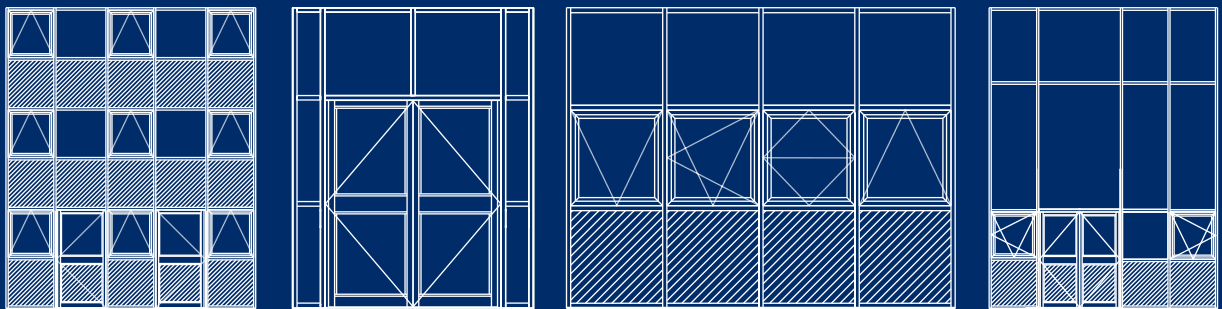
## Windows

Can be tilt & turn, side, bottom, top hung, reversible and pivot windows, in 45mm, 50mm and 60mm profile widths.

## Doors

Can be sliding folding, swing or rebated. Comar 7 door beams ensure discrete housing for most automatic door gears.

## Combinations





# perform

## Specification

Comar Architectural Aluminium Systems have a Nationwide team of architectural aluminium project consultants who specialise in providing architects and specifiers with project support, calculations and specifications.

The relevant NBS clauses are:

H11 Curtain Walling

L10 Windows/Rooflights/Screens

L20 Doors/Shutters/Hatches

## Nationwide Approved Fabricator Network

Once Comar 2 has been specified, a Nationwide network of approved fabricators ensures the successful completion of projects. Your Comar Project Consultant can provide fabricators who specialise in commercial, new, refurbishment or public building work.

## Calculation

Calculations, such as wind-loading and U-Values for projects, can be obtained from Comar's Technical Department.



## Standards

In absence of a British Standard for framing systems, Comar 2 conforms to industry recognised standards adopted by trade associations, i.e. The Council for Aluminium in Building. The system also conforms to many of the requirements for aluminium windows specification BS 4873.

## Weather Performance

In absence of a British Standard for framing systems, Comar 2 conforms to recognised industry standards adopted by trade associations such as The Curtain Walling & Cladding Technology (CWCT). On test, Comar 2 exceeded the CWCT's peak pressure test:

Resistance to wind load 2000Pa. Special.

600Pa. Watertightness

600Pa. Airtightness

## Finishes

Comar 2 finishes are available in all RAL, Syntha Pulvin, and BS colours. Aluminium profiles are finished to the following specifications: silver, bronze and black anodising to BS EN 12373-1 : 2001 or BS 3987. Liquid organic coating to BS 4842 : 1984. Polyester powder coating to BS 6496 : 1984.

# perform

## Hardware, Glazing & Gaskets

### Hardware

Comar 2, incorporating opening vents and doors, utilises a range of hardware such as handles, locks, panic exit devices and flush bolts. Generally, all glazing shall comply with the requirements of BS 6262: 1982, British Standard Code of practice for Glazing in Buildings.

### Glazing

All glazing, where possible, should be internal, utilising 15mm high beading to retain 4mm to 75mm thick units whilst providing the maximum possible security. External glazing can also be utilised with a 45°, 15mm high bead, where internal floor beams and partitions prohibit internal glazing.

Where specified, hermetically sealed double glazed units shall comply with the requirement of BS 5713 : 1979.

The specification of hermetically sealed double glazed units shall be as stated in the works section.

### Gaskets

Glazing materials are high performance pre-formed non-structural gaskets complying with the requirements of BS 4255, Part 2.

## Security

### Framework

Framework is internally beaded. External glazing can be used with a 45°, 15mm high bead.

### Windows

All opening vents can incorporate espagnolette locking with push button locking and night vent setting.

### Doors

External glazing beads are fixed to form rebates for security.

## Materials

Extruded aluminium profiles are of aluminium alloy 6063 T5, T6 to BS EN 755-1 : 1997. Thermal barrier is "poured-in-place" Polyurethane resin.

## System Limitations

Comar 2 is for low to medium rise applications and higher stairwells deflection limitations are calculated to BS 6399-2 "Loading in Building"



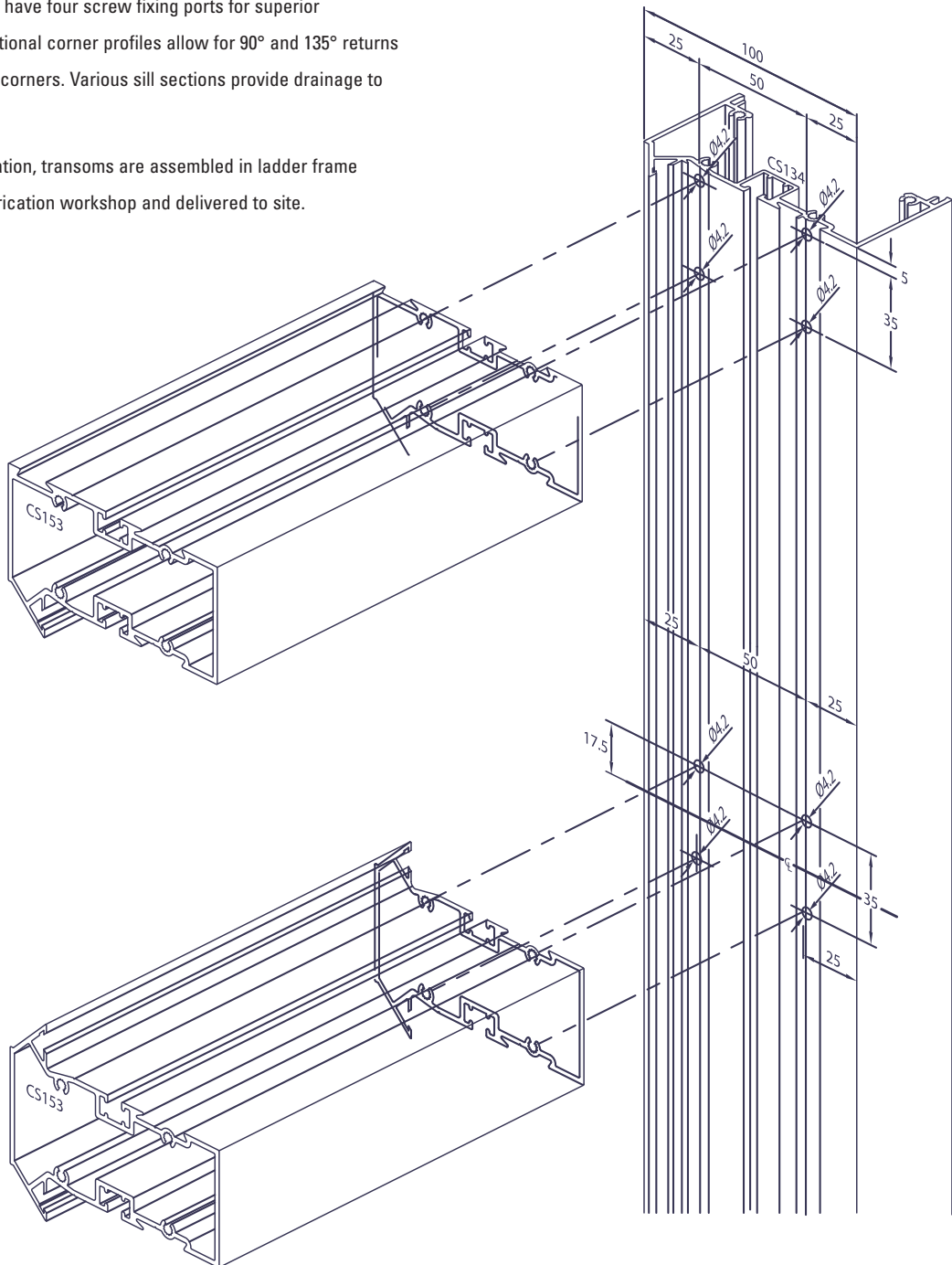
# on-time

## Construction

A two part channel and plate mullion clip together to form a 100mm x 45mm or 100mm x 30mm box section enabling modular sash construction.

All main extrusions have four screw fixing ports for superior joint strength. Additional corner profiles allow for 90° and 135° returns and variable angle corners. Various sill sections provide drainage to the exterior.

For fast site installation, transoms are assembled in ladder frame modules at the fabrication workshop and delivered to site.

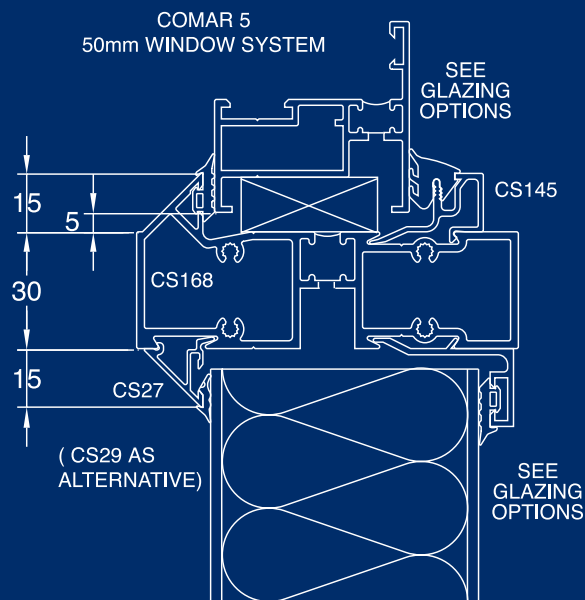




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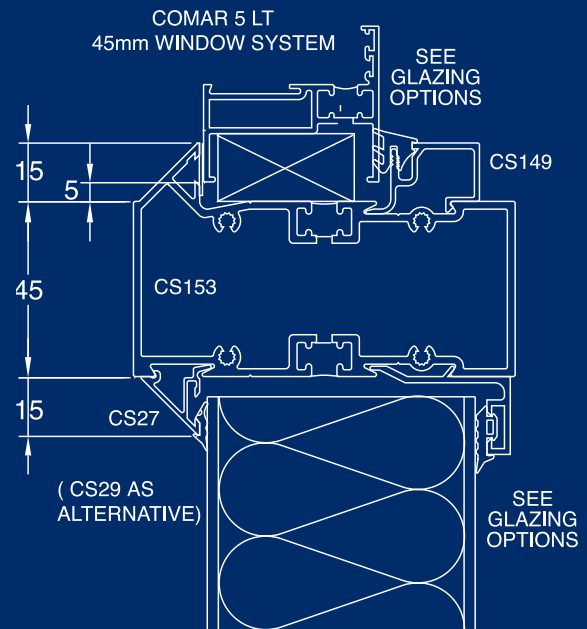
## Glazing Options

General Arrangement showing Comar 2 Glazed with Comar 5 50mm, 28mm glazing and 70mm panel.



**2X-02-01**

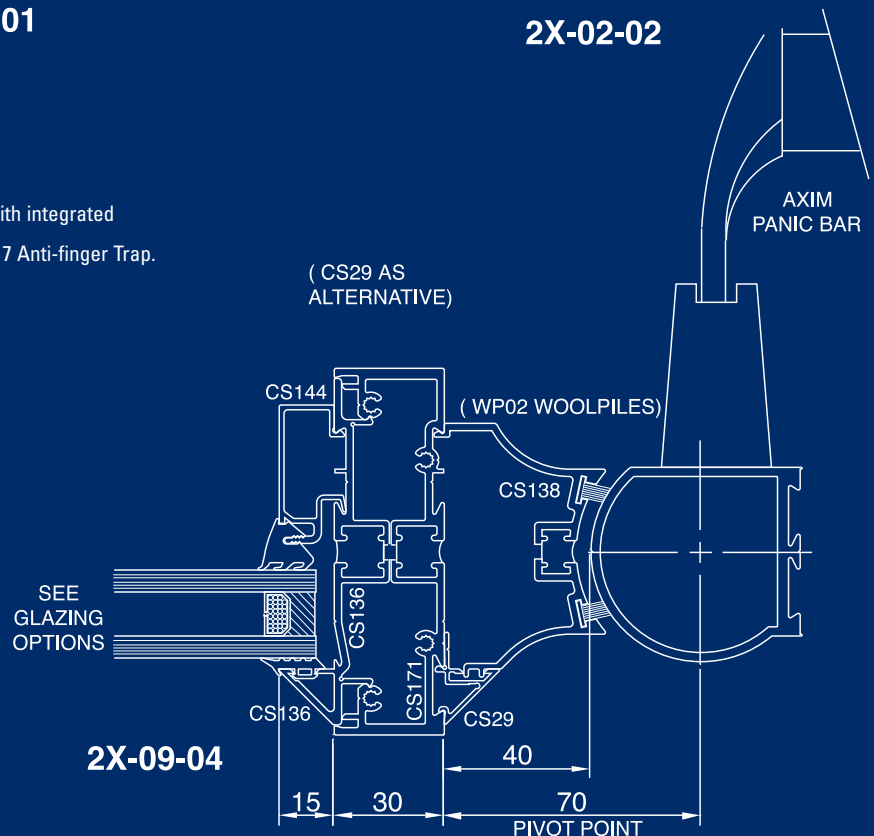
General Arrangement showing Comar 2 glazed with Comar 5 45mm, 28mm glazing and 70mm panel.



**2X-02-02**

## Anti-finger Trap

General Arrangement showing Comar 2 with integrated Comar 7 door, AXIM panic bar and Comar 7 Anti-finger Trap.

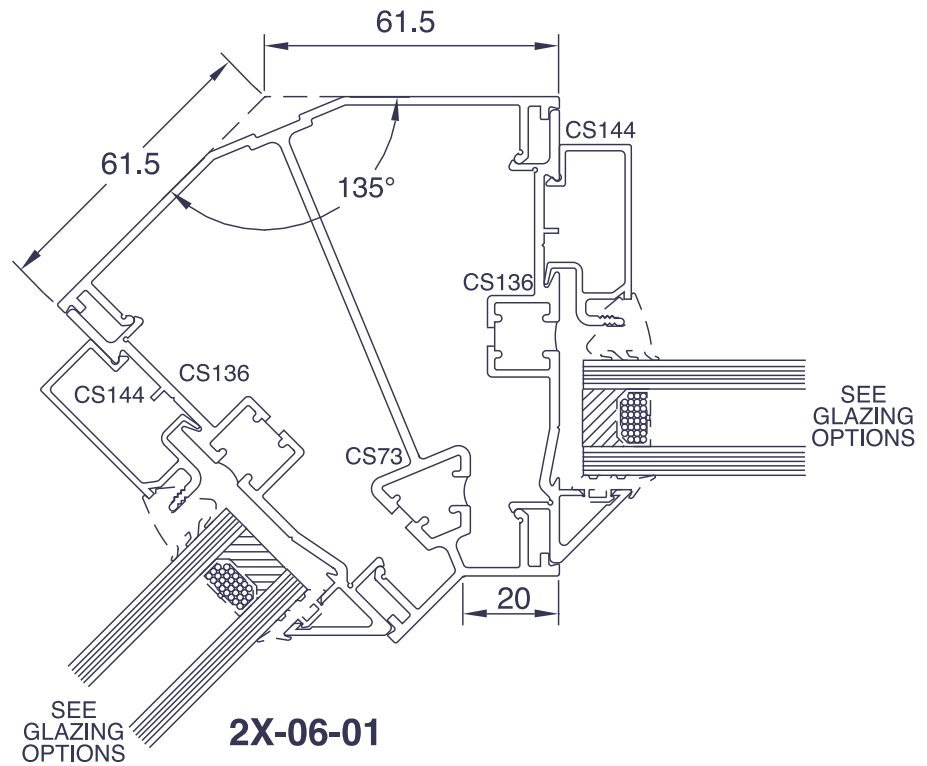


**2X-09-04**

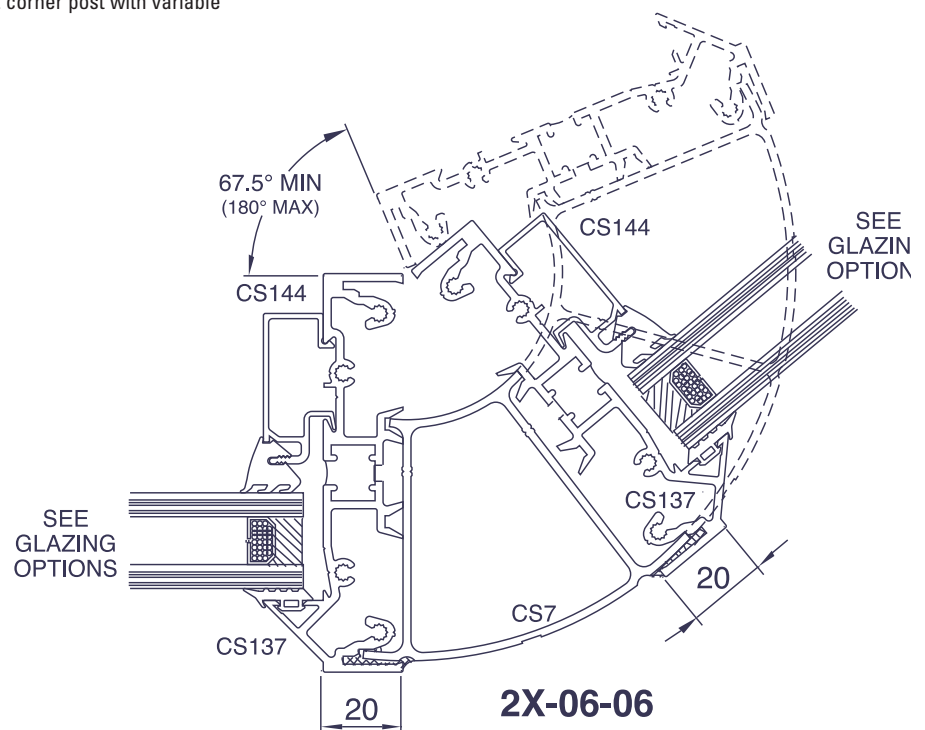
# on-time

## Comar 2 Corner options

General Arrangement showing Comar 2 corner post with 135° return.



General Arrangement showing Comar 2 corner post with variable angle returns 67.5° to 180°.



# sustainable

## Sustainability

Today's world calls for us all to be more conscious of our environment. In 1998 the world recognized this by signing the Kyoto Agreement. The Kyoto Agreement directly affected the construction industry by demanding that buildings become more thermally efficient. With these demands, longevity, thermal efficiency, sustainability and recyclability are now critical factors in construction.

### Why Aluminium...

Aluminium provides a unique solution for today's construction needs. Aluminium is light, strong, durable and flexible which provides tremendous potential for achieving even the most demanding design brief. Two-thirds of the energy required to extract aluminium is supplied by environmentally friendly, hydro-electric power. Couple this with the recyclability of aluminium and aluminium is the ideal choice for windows, doors and facades.

### Sustainability...

Sustainability concerns are alleviated by the knowledge that we have at least 300 years of known reserves of the raw material Bauxite and this does not allow for the fact that 70% of all aluminium used is recycled at the end of its product life.

The recycling process now produces high quality aluminium that is very cost effective and can be carried out on an indefinite number of occasions without impairing the quality in any way. It is a very durable material and has very low maintenance requirements, thus reducing the whole-life cost. It is long lasting and can withstand the ravages of the most extreme conditions. Aluminium is an excellent material to use in marine and coastal environments as the effect of sodium chloride is minimal.

With an ever increasing proportion of re-cycled material in use, aluminium can be accurately described as the ultimate sustainable material.

### Longevity...

Unlike some alternative building materials, aluminium offers an almost unlimited life expectancy. A notable example of this is the Statue of Eros in London's Piccadilly Circus, which has only just been cleaned and renovated and The Empire State Building, the latter



being the first building to use anodised aluminium. Aluminium does not age like other organic materials and needs no protection from ultra-violet light. Aluminium can be polyester powder coated or anodised to a variety of colours, which enhances the material's natural durability. Comar's powder coaters guarantee their finishes for 25 years and anodisers for 30 years.

### Recycling Check List

*"The recyclability of aluminium – one of its unique properties along with strength, durability and corrosion resistance – has led to its increased use in construction over recent years. Used aluminium is valuable and is easily and endlessly recycled without quality loss. The material is very rarely 'lost' entirely because of this."*

### Important issues to note are:

- The quality of aluminium is not impaired by endlessly recycling.
- Re-smelting aluminium saves up to 95% of the energy needed to produce the primary product.
- It is the most cost-effective material to recycle.
- The overall market for used aluminium is steadily growing, so the more aluminium there is in a product, the more chance it has of being re-cycled.
- The recycling rate of used aluminium products in building is over 80% (over 95% in transportation and 30% in packaging).
- 30% of the 1.9 million tonnes of aluminium used in Europe in 1997 came from recycling

Source: Council for Aluminium Building.

## Standards

BS-EN ISO 9001 :	Comar is an ISO 9001 registered firm, certificate number: A0852
BS-EN 755:	Aluminium alloy extrusion
BS-EN 485:	Aluminium alloy sheet
BS-EN515:	Aluminium and aluminium alloys – Wrought products temper designations
BS 4255 Part- 1 :	Gaskets
BS-EN573-3:	Aluminium and aluminium alloys – Chemical composition – Wrought products – part 3
BS-EN755-2:	Aluminium and aluminium alloys – Extruded profiles – part 2: Mechanical properties.
BS-EN755-9:	Aluminium and aluminium alloys – Extruded profiles – part 9: Profile tolerances.
BS-EN12020-1 :	Aluminium and aluminium alloys – Extruded precision profiles – part1: inspection and delivery
BS-EN12020-2:	Aluminium and aluminium alloys – Extruded precision profiles – part 2: tolerances on dimension and form.
BS 4873:	Specification for aluminium alloy windows.
BS 6375 Part 1 :	Classification for weather tightness.
BS 5713:	Hermetically sealed flat double glazed units
BS 6262:	Code of practice for glazing of buildings
BS 6496:	Specification for powder organic coatings to aluminium alloys for external architectural purposes
BS 1615:	Method of specifying anodic oxidation coatings on aluminium and its alloy
BS 3987:	Specification for anodic oxide coatings for external architectural purposes
BS 6399 Part 2:	Code of practice for wind loads

## Technical Back-Up

An experienced Sales Team covers the UK while the Technical Department offers an unsurpassed design and installation advice service to designers, specifiers and fabricators; Simply call: +44(0) 20 8685 9685

## For More Information

To find out more about this or any other Comar Architectural Aluminium System, or to obtain your personal copies of the COMAR TECHNICAL MANUALS call: +44(0) 20 8685 9685 or fax on: +44(0) 20 8646 5096

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