

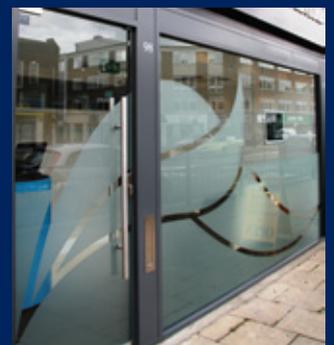
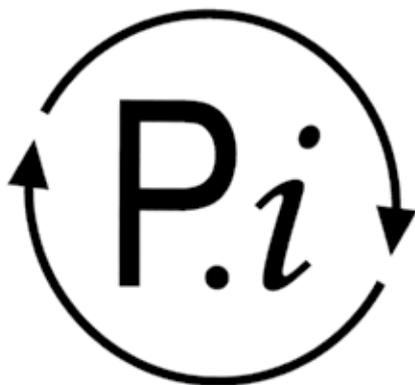
Uniclass	EPIC
L411:P43	D11:X421
CI/SfB	
(31.5)	Xh4



# comar7P.i

## High Performance Aluminium Doors

The High Performance Comar 7P.i Range: Exceeding the latest Security & Building Regulatory Requirements in: Swing, Sliding, Pivot, Rebated, Tilt/Slide and Folding/Sliding Doors



complementing architecture

Design

Solution

Perform

Deliver

On-time

Sustainable



# comar

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 £6M 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 9001 registered company. Comar is a member of the Council for Aluminium in Building, (C.A.B) and is a Technical Committee member as well as the CWCT (Centre for Window & Cladding Technology). 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



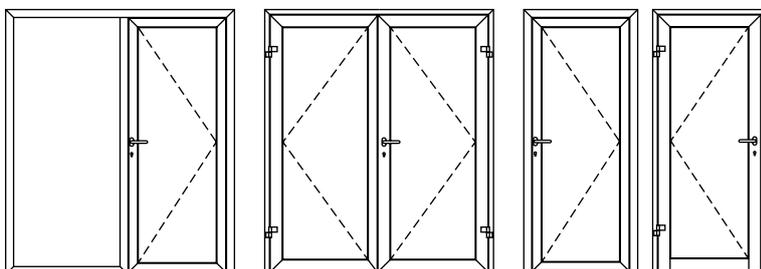
## Comar 7P.i Door System

Comar Architectural Aluminium Systems are pleased to launch its next generation of commercial and residential door-sets. This comprehensive range includes a solution for all door applications. From aluminium doors for high traffic areas to residential homes, the Comar 7P.i door range offers a solution. Comar 7P.i doors utilise the trade-marked P.i thermal break technology ensuring the lowest U-values available. All doors have achieved the relevant security tests, compliant with Secured by Design standards: PAS 24:2016 and LPS 1175. Comar Architectural Aluminium Systems also holds enhanced security and systems supplier Kitemarks for its Comar 7P.i range.

We are also pleased to confirm that Comar 7P.i range has a Secured by Design Licence creating additional reassurance. With regard to weather performance the Comar 7P.i range has achieved no leakage on air and water at 600Pa, 2400Pa wind resistance. The doors are faced drained with a wide variety of drained thresholds either rebated for additional weather performance or low-rise to comply with the Equality Act and Lifetime Homes. For safety anti-finger trap stiles are available in both Comar 7P.i CD and Comar 9P.i AFT.

To ensure a complete solution, the Comar 7P.i door range has been designed to incorporate hardware from its sister division Axim Architectural Hardware. The Axim range includes market leading concealed transom closers, panic exit hardware, electric strikes, dead latches, flush bolts, locks and handles.

By selecting the Comar 7P.i range of doors you can be rest assured that the opening solution is at your finger tips, ensuring that an entrance of distinction is delivered time after time.



## Genesis

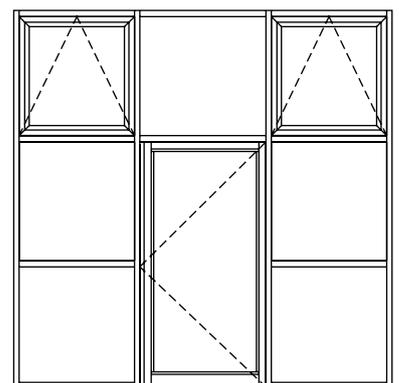
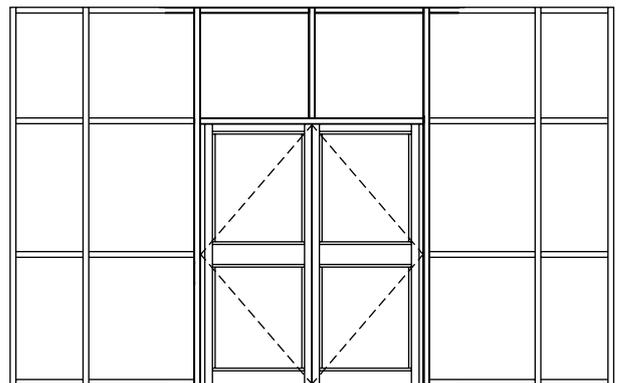
To our nationwide network of approved fabricators, Comar supplies Genesis Estimating Software. Genesis is a powerful estimating tool; it provides fast, accurate pricing from plans and tenders for the entire Comar product range.

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 7P.i 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

## Comar 7P.i ECO

### Description

Comar 7P.i ECO is an eco-nomical and eco-friendly rebated door system, thermally broken, offering low U-values and value engineered, integrated solutions with Comar 5P.i ECO windows.

### Types

Comar 7P.i ECO are rebated open in and open out, single or double doorsets with a range of drained thresholds for compliance with Lifetime Homes and other access regulations. High security option that has passed the requirements of PAS 23 and Pas 24.

## Comar 7P.i CD

### Description

Comar 7P.i CD is a robust thermally broken commercial swing door system, offering concealed transom closers and an aesthetically pleasing rounded anti-finger trap stile. The high security option has passed the European Harmonised Standard to 1627-1630 Level 3 and PAS 24: 2016. A variety of low rise thresholds offer compliance with Lifetime Homes and other access regulations.

### Types

Comar 7P.i CD is a double action swing door which can be single or double, hung from concealed transom closers offering 180 degree operation with or without back-check.

## Comar 7P.i FSD

### Description

Comar 7P.i FSD is a thermally broken folding sliding door system, with adjustable jambs and leaves to allow continual smooth operation. To suit the application, the gear has both bottom and top rolling operation. The bottom gear is housed in the floor and therefore offers compliance with Lifetime Homes and only access regulations.

### Types

From 2-8 doors folding/sliding in one direction with a slave door option for day use, open in stacking doors are advisable when the doors must operate within the building plane; open out stacking doors can be used so the doors do not interfere with interior furnishings.

## Comar 7P.i HSD

### Description

Comar 7P.i HSD horizontal sliding door system is a thermally broken patio door system, with an extensive range of thermally broken profiles to allow for up to 6 sliding leaves with a 2 or 3 track sliding operation.

### Types

The sliding leaves can be two or three leaves, sliding in either direction, with a 5-point multi-point lock for extra security. A ramped, drained threshold caters for the requirements of Lifetime Homes and the Equality Act.

## Comar 9P.i Rebated

High performance Comar 9P.i Rebated doors offer exceptionally low U-values, security and weather performance. To comply with the latest regulations Comar 9P.i has options for low-rise thresholds.

### Types

Comar 7P.i ECO are rebated open in and open out, single or double door-sets with a range of drained thresholds for compliance with Lifetime Homes and other access regulations. The high security option that has passed the requirements of PAS 23 and Pas 24.

# perform

## Specification

Comar Architectural Aluminium Systems have a nationwide team of architectural advisors who specialise in providing architects and specifiers with project support, calculations and NBS specifications.

The relevant NBS clauses are:

- H11 Curtain Walling.
- L10 Windows/Rooflights/Screens.
- L20 Doors/Shutters/Hatches.

## Nationwide Approved Fabricator Network

Once Comar 7P.i has been specified, a nationwide network of approved fabricators ensures the successful completion of projects. Your Comar architectural advisor can provide fabricators who specialise in commercial, new, refurbishment or public building work.

## Calculation

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

## Finishes

Comar 7P.i finishes are available in all RAL, Syntha-Pulvin and BS colours. Aluminium profiles are finished to the following specifications: silver, bronze and black anodising AA 25 to BS EN 150 7599 : 2010 or BS 3987. Liquid organic coating to BS 4842 : 1984. Polyester powder coating to BS 6496 : 1984.

## Weather Performance

On test, the Comar 7P.i Door Range exceeded the requirements of BS 6375 Part 1:

Air tightness	600Pa
Water tightness	600Pa
Special Resistance to Wind Load	2400Pa

## Comar 7P.i Doors Thermal Performance

Door Type	Configuration	Number of Doors	Size	Comar 7P.i U-value 1.0 Centre Pane	Comar 7P.i U-value 0.5 Centre Pane
Comar 7P.i ECO	Rebated	Single	1000mm x 2100mm	1.77	1.43
		Double	2000mm x 2100mm	1.76	1.41
Comar 7P.i CD	Swing	Single	1000mm x 2100mm	1.75	1.43
		Double	2000mm x 2100mm	1.69	1.46
Comar 7P.i FSD	Sliding/Folding	3 leaves @ 1M Wide	3000mm x 2100mm	1.35	0.97
Comar 9P.i Door	Rebated	Single	1000mm x 2100mm	1.67	1.31
			2000mm x 2100mm	1.65	1.28



comar7P.i

# perform

## Hardware, Glazing & Gaskets

Comar 7Pi utilises a range of hardware such as handles, locks, electric strikes, deadlatches, panic exit devices and flush bolts available from the Axim range of architectural hardware.

Comar 7Pi doors can be fabricated to incorporate all major manufacturers automatic door gearing and panic exit devices.

### Glazing

Generally, all glazing shall comply with the requirements of BS 6262: 1982, British Standard Code of Practice for Glazing in Buildings.

External glazing beads are mechanically fixed to rebates for security. Glass is set dry against glazing tape or EPDM gasket and retained by a variety of clip-in beads which permit glazing thicknesses from 4mm to 40mm.

### Gaskets

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

## Security

Security concerns are alleviated with the knowledge that the Comar 7Pi Door range holds the very latest PAS 24:2016 security standards (which supersedes PAS 24: 2016 and BS7950) and has a Secured by Design Licence.

## Materials

Extruded aluminium profiles are of aluminium alloy 6063 T5, T6 to BS EN 755. Comar 7Pi has a thermal barrier 22mm polyamide strip. Double-sided brush seals are polypropylene brush seals woven backed for inside and outside weather protection. Wool-piles meet the severe weather rating requirements of the British Standard Institute and also comply with the Architectural Aluminium Association of the U.S.A. (AAMA 701.2:1974). Gaskets are extruded from E.P.D.M. rubber.



## System Limitations

Width Maximum	1200mm*
Height Maximum	2400mm*

*\*The above limitations are dependent on the project application. Larger or smaller sizes may be achieved, please contact Comar's Technical Department for project-by-project advice.*



# deliver



## Construction

### Comar 7P.i CD Commercial Swing Doors

Rails are square cut and the design of stiles makes an almost invisible joint. Stiles incorporate twin woolpile grooves to bypass the lock. A secure profile concealed under the door houses twin brush seals, providing double weathering and draught proofing around the perimeter of the door. Low ramp drained or thermally broken thresholds are available. The doors are hung from Axim Concealed Transom Closers.

### Comar 7P.i ECO, FSD & HSD

Profiles are cut at 45 degrees, mitred jointed using stainless steel chevrons, alignment cleats and spring loaded mechanical cleats. All mitre joints incorporate aluminium adhesive for added strength. Gaskets are EPDM; the door edge incorporates a groove for external gasket protection and within the door a centre seal gasket ensures a double barrier for weather proofing. Doors are hung on standard or security hinges.

## Comar 7P.i Enhanced Security

All doors have a standard and security option to cater for the differing levels of security on projects. On security options, the cylinders are both anti-bump and anti-snap and security handles are fitted. Security hinges and steel back plates are fitted to ensure the strength of the door is increased on known points of attack. Dependent on the door type, security test certificated are held for PAS 24: 2016, BS EN 1627 Level 3 and LPS 1175 Level 2.

## Comar 7P.i Anti-Finger Trap Options

In applications where safety concerns are paramount such as schools, Comar 7P.i has specially designed profiles and gaskets to create anti-finger trap stiles. There are two options: Comar 7P.i CD swing doors for high traffic areas, and for where weathering or lower U-values are required the Comar 9P.i AFT.

## Thresholds

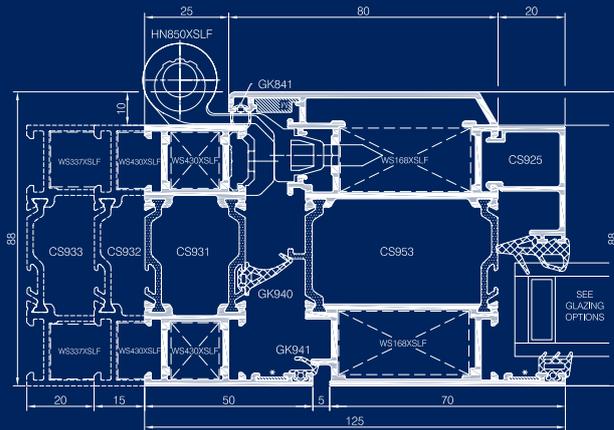
For different levels of performance to suit the application e.g. high weather performance; to meet the requirements of Lifetime Homes or the Equality Act, Comar 7P.i offers the following options:

Non-Drained Threshold	Single or double ramp low-rise threshold
Drained Threshold	Single or double ramp low-rise threshold
Rebated Threshold	Drained Threshold

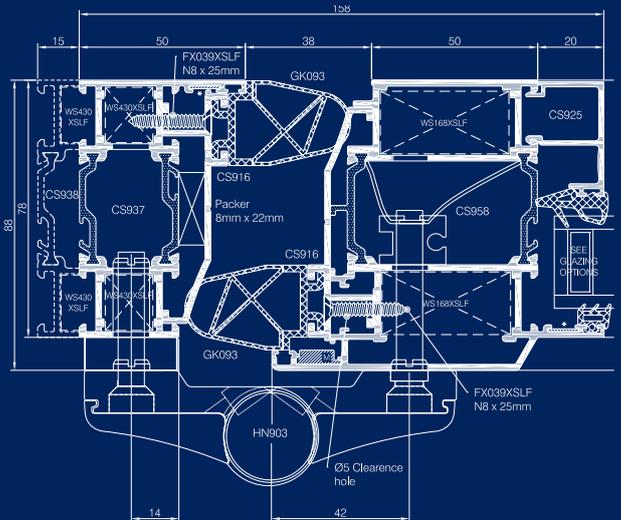


# on-time

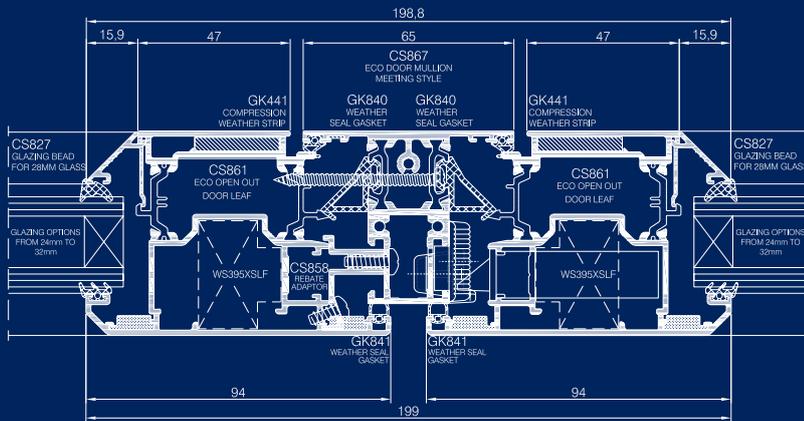
Comar 9P.i Mitred Door, Open-in



Comar 9P.i Mitred Anti-Finger Trap Door

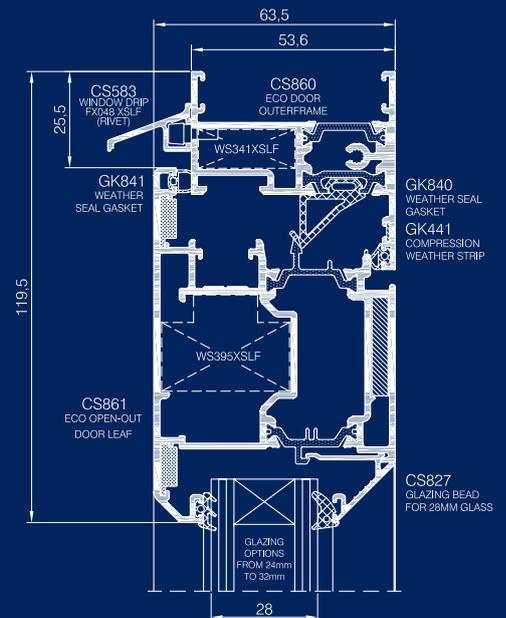


Comar 7P.i ECO Double Doors, Open-out



General arrangement showing Comar 7P.i ECO double doors open out meeting style

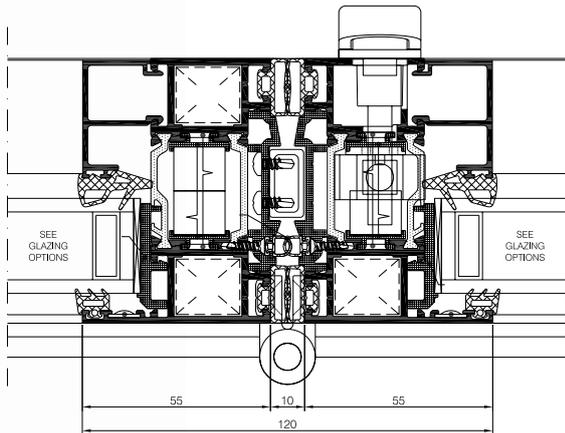
Comar 7P.i ECO Door 55mm, Open-out



General arrangement showing Comar 7P.i ECO open out head detail

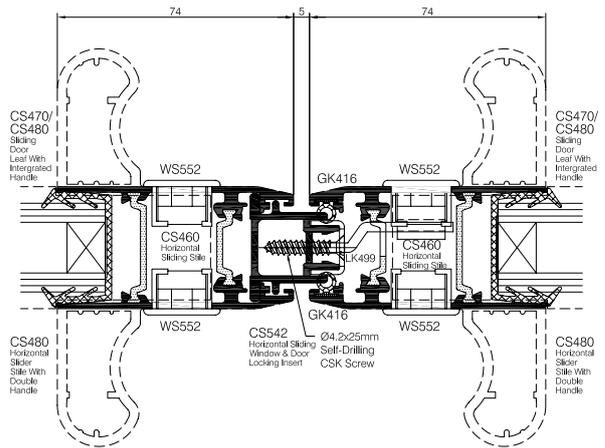
# on-time

## Comar 7P.i FSDX Mullion Detail

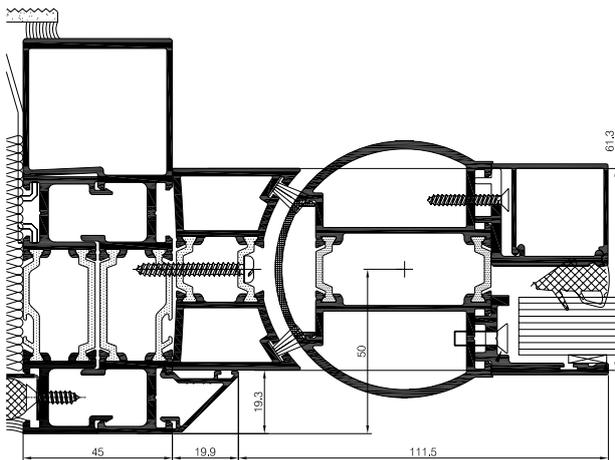


General arrangement showing Comar 7P.i FSD, floating mullion for strength

## Comar 7P.i HSD Central Meeting Stile

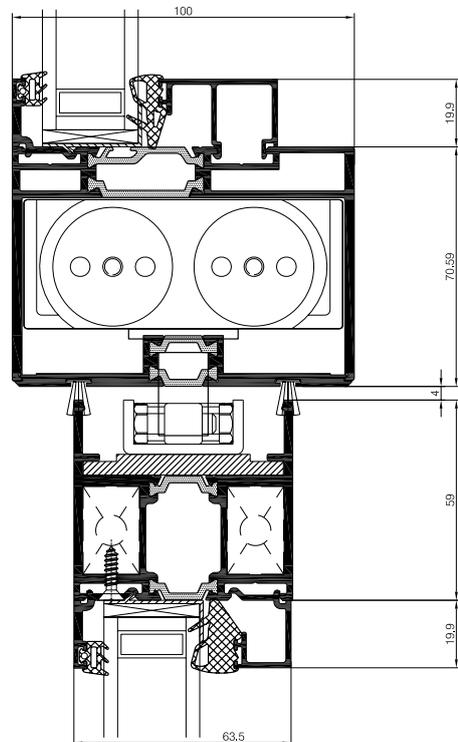


## Comar 7P.i CD with anti-finger Trap Stile



General arrangement showing Comar 7P.i Commercial Door with anti-finger trap stile

## Comar 7P.i CD Head Detail



General arrangement showing Comar 7P.i CD Head Detail with a Concealed Axim Closer

# sustainable

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, hydroelectric power. Couple this with the recyclability of aluminium and aluminium is the ideal choice for windows, doors and facades.

## 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 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 ultraviolet light. Aluminium can be polyester powder coated or anodised to a variety of colours which enhances the materials natural durability. Comar's powder coaters guarantee their finishes for 25 years and anodisers for 30 years.

## Sustainability...

The recycling process now produces high quality aluminium, which 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, therefore 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.

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.

Thus with ever increasing proportion of recycled material in use, aluminium can be accurately described as the ultimate sustainable material.

## 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 recycled. 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 & The European Aluminium Association.*



## Standards

BS ISO 9001	Quality management systems – Requirements. Certificate FM553615.
BS ISO 14001	Environmental management systems – Requirements. Certificate EMS 555373.
BS ISO 45001	Occupational health and safety management systems. Requirements Certificate OHS 613332.
BES 6001: issue 3.1	Responsible Sourcing. Certificate RS0041.
BS EN 485	Aluminium and aluminium alloys - Sheet, strip and plate.
BS EN 515	Aluminium and aluminium alloys - Wrought products temper designations.
BS EN 573	Aluminium and aluminium alloys - Chemical composition and form of wrought products.
BS EN 755	Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles.
BS 3987	Specification for anodic oxidation coatings on wrought aluminium for external architectural applications.
BS EN 1991	Eurocode 1 - Actions on structures - General actions - Wind actions.
BS EN 1279	Glass in building - Insulating glass units.
BS 4255	Rubber used in preformed gaskets for weather exclusion from buildings. Specification for non-cellular gaskets.
BS 4873	Aluminium alloy windows and door-sets – Specification.
BS 6262	Glazing for buildings.
BS 6375	Performance of windows and doors.
BS EN ISO 7599	Anodizing of aluminium and its alloys - Method for specifying decorative and protective anodic oxidation coatings.
BS EN 12020	Aluminium and aluminium alloys - Extruded precision profiles in alloys EN AW-6060 and EN AW-6063.
BS EN 12206	Paints and varnishes - Coating of aluminium and aluminium alloys for architectural purposes (powder coating).
BS EN 12365	Building hardware - Gasket and weather stripping for doors, windows, shutters and curtain walling.
BS EN 14351	Windows and doors - Product standard, performance characteristics - Windows and external pedestrian door-sets.
C.W.C.T.	(Centre for Window & Cladding Technology)

## Certificates

KM 578160	Kitemark for BS 4873 / PAS24 Enhanced Security Aluminium Windows System Supplier.
KM 578159	Kitemark for BS 4873 Systems Supplier Aluminium alloy windows.
KM 593756	Kitemark for BS 4873 / PAS24 Enhanced Security Aluminium Door System Supplier.
Q-Mark 162	Q-Mark Window General Performance to BS 4873: Aluminium.
Q-Mark 154	Q-Mark Enhanced Security Window scheme to PAS 24:2016 and BS 4873: Aluminium.
Q-Mark 185	Q-Mark Enhanced Security Door scheme to PAS 24:2016 and BS 4873: Aluminium.

## Secured by Design Licence Holder

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