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# comar1,3,4 & 8

## Ground Floor Treatment

Innovative, integrated aluminium ground floor framing suites.

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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 next weekly delivery. Single and dual colour polyester powder coating can be delivered in 15 working days. For architects and specifiers, a Nationwide team of architectural advisors 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 Company. Comar is a sponsor member of the CWCT, 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 Ground Floor Treatment

Comar's four integrated suites of ground floor framing provide distinctive façade solutions to schools, retail outlets, shopping centres and corporate headquarters. The extensive profile range incorporates variable angle corners, three-way glazing options and high span mullions that provide design solutions for single storey projects which are curved or angled, with large expanses of glazing, such as a car showrooms, or entrances that create a focal point to a building.

To complete the envelope the four suites integrate with Comar 7 high performance doors and Comar 5 windows to provide opening lights.

Comar 1 and Comar 3 are single and double glazed ground floor framing suites. A two part channel and plate clip together to form a 100mm x 45mm box section enabling modular sash construction. Both systems include 3-way glazing options, corner profiles to allow 90° and 135° returns, variable angle corners with special beads and carriers to accommodate glass and panels from 4mm to 36mm.

Comar 4 is a 45mm x 45mm system which integrates fully with Comar 1 and is often the perfect solution for partitions or less demanding façades. Glazing pockets suit 4mm to 13.5mm glazing and a wide range of profiles and components are available to support aluminium or timber doors.

For a fin and bead system, Comar 8 provides a fast and cost effective store front solutions.

## Technical Back-up

Supporting the Comar 1,3,4, and 8 suites is Comar's Technical Department who offer advice to architects, specifiers and fabricators on calculations such as wind loading, integration with other Comar systems and envelope materials. This service is offered on a project-by-project basis at any stage of the tender process.

## Thermal Performance

Under current legislation, store fronts are exempt from Building Regulation Approved Document L. Comar 1,4 and 8 are single glazed systems and can be used where thermal performance is not a consideration and can be traded off against other elements of the building envelope. If, however, thermal performance is required, Comar would recommend Comar 3 which permits double glazing. For further information Comar's Technical Department will provide U-value calculations on a project-by-project basis.

## V6

Through our Nationwide network of approved fabricators, Comar supplies V6 estimating software. V6 is a powerful estimating tool; it provides fast, accurate pricing from plans and tenders for the entire Comar product range.

V6 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 V6, ensuring Comar approved fabricators provide accurate budget pricing and tender returns.

## Research and Development

Comar 1,3,4 and 8 have been continuously developed to ensure they 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.



COMAR 1,3,4 & 8

# solution

## Comar Ground Floor Framing Suites

### COMAR 1

#### Description

Comar 1 is an aluminium single glazed low rise ground floor framing system, with 45mm sight-lines, variable angle returns, expansion facility and 3-way glazing options.

#### Types

Single glazed façades are dependent on wind loading and should be discussed with Comar's Technical Department.

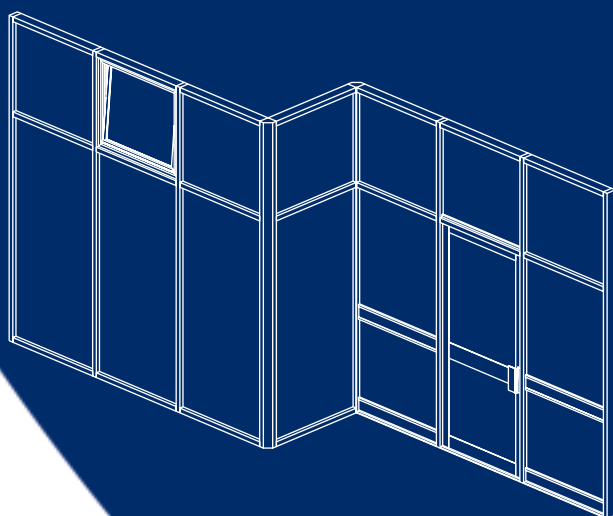
### COMAR 3

#### Description

Comar 3 is an aluminium double glazed low rise ground floor framing system, with 45mm sight-lines, variable angle returns, expansion facility and 3-way glazing options.

#### Types

Double glazed façades are dependent on wind loading and should be discussed with Comar's Technical Department.



### COMAR 4

#### Description

Comar 4 is an aluminium single glazed system used for less demanding facade work or internal partitions with 45mm sight-lines. A range of profiles and components support aluminium or timber doors.

#### Types

Single glazed façades are dependent on wind loading and should be discussed with Comar's Technical Department.

### COMAR 8

#### Description

Comar 8 is a low rise fin and bead single or double glazed aluminium system, with 45mm sight-lines, used for fast-track installation, with variable angle returns and sash rails.

#### Types

Single glazed façades are dependent on wind loading and should be discussed with Comar's Technical Department.

## Combinations

Comar 1, 3, 4 and 8 integrate with Comar 7 doors to create single storey façades. Comar 7 doors can be hung directly from the framework on overhead closers from the AXIM range. Door configurations can be swing, pivot, rebated, sliding and sliding/folding. For automatic store entrances Comar ground floor treatment suites can incorporate Comar 7 Auto Door beams: a single extrusion that supports most major manufacturers bolt-on automatic door gearing. If opening lights are required Comar 5, 5It and 5Pi integrate directly into Comar 1,3 and 8. Multiple runs of single storey screens can be achieved through various coupling options.

# 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 1, 3, 4 and 8 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 1, 3, 4 and 8 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 12373-1 : 2001 or BS 3987. Liquid organic coating to BS 4842 : 1984. Polyester powder coating to BS 6496 : 1984.



## Weather Performance

In the absence of a British Standard for framing systems, Comar 1, 3, 4 and 8 conform to industry standards adopted by trade associations such as CWCT and elements of BS 4873.

# perform

## Glazing & Gaskets

### Glazing

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

Glass or panels from 3mm to 35mm thick are supported on glazing packers. Optional beads & carriers are available for special conditions. Glazing is set dry against EPDM rubber gaskets.

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.

### GLAZING OPTIONS

SYSTEM	MINIMUM	MAXIMUM
Comar 1	4mm	13.5mm
Comar 3	22.5mm	32mm
Comar 4	4mm	13.5mm
Comar 8	6mm	35mm



## Security

Comar 1,3,4 and 8 have been designed to conform to the relevant industry standards, such as those laid down in the CWCT's "Standard and Guide to Good Working Practices".

## Materials

Extruded aluminium profiles are of aluminium alloy 6063 T5, T6 to BS EN 755-1 : 1997. Glazing gaskets are extruded from EPDM rubber, complying with the requirements of BS 4255, Part 2.

## System Limitations

The critical limiting factor in specifying ground floor framing is wind loading. Comar's Technical Department are able to offer guidance on wind loading on a project-by-project basis that conforms to BS 6399 Part 2.

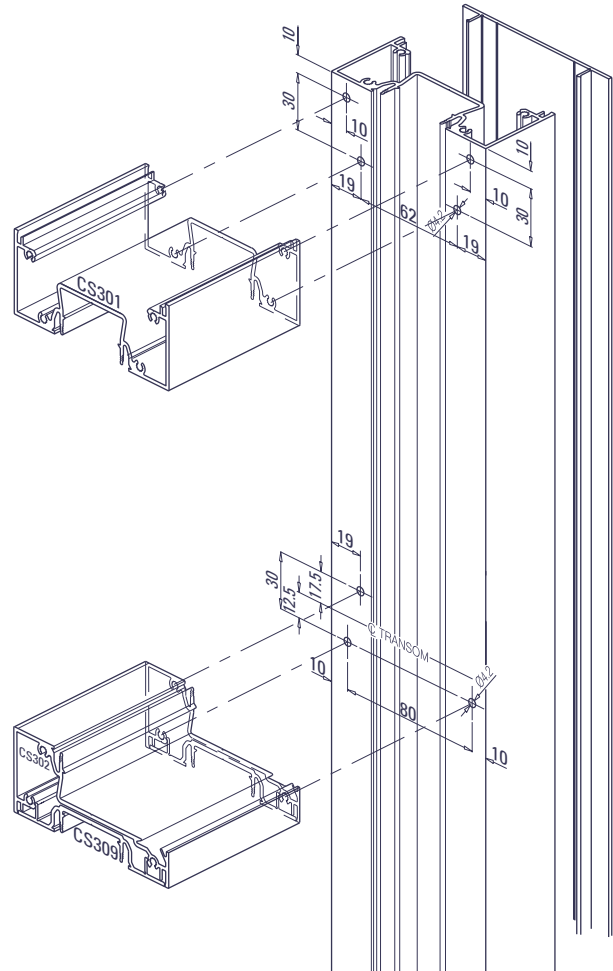


# perform

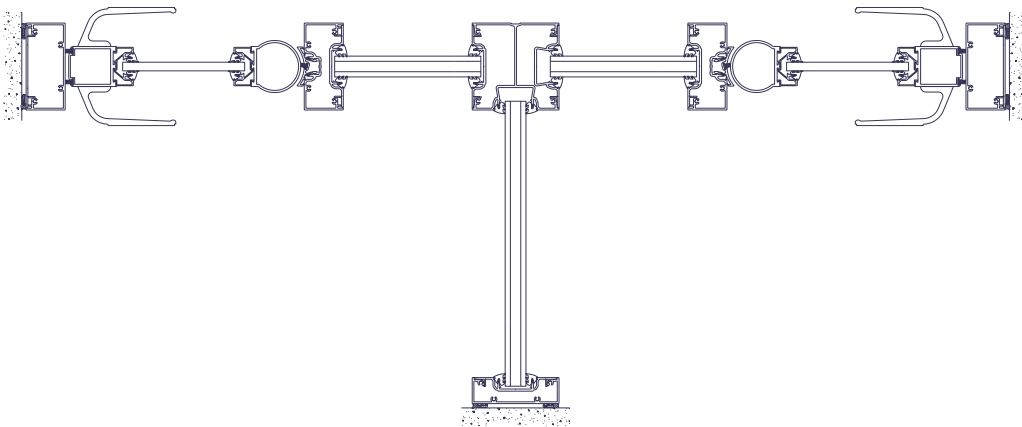
## Construction

### Comar 1, 3, 4 and 8

A two part channel and plate mullion clip together to form a 100mm x 45mm box section enabling modular sash construction. All main extrusions have four fixing screw ports for superior joint strength. Additional corner profiles allow for 90° and 135° returns, variable angle corners and three way glazing. Various cill sections provide drainage to the exterior.



## Three-way Glazing

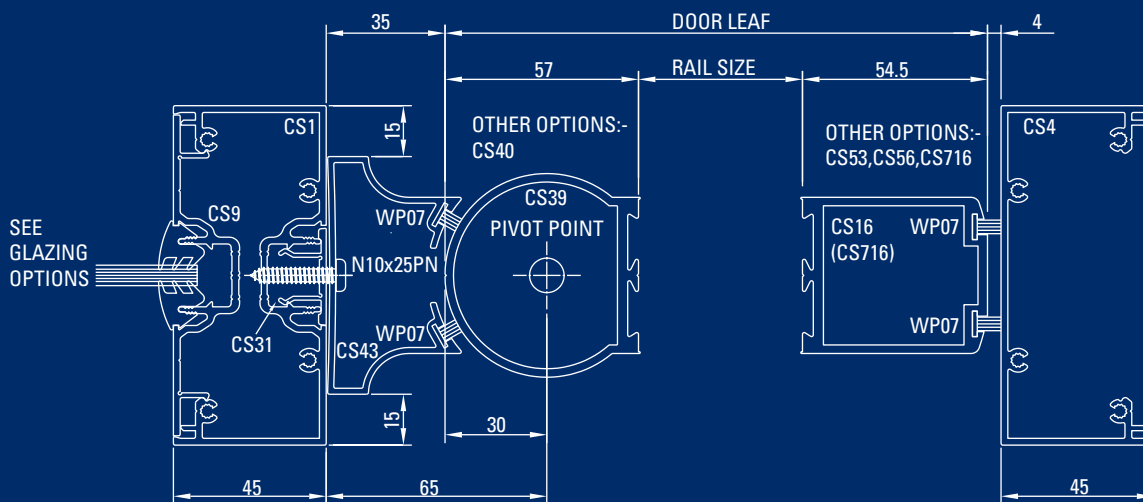


COMAR 1, 3, 4 & 8

# on-time

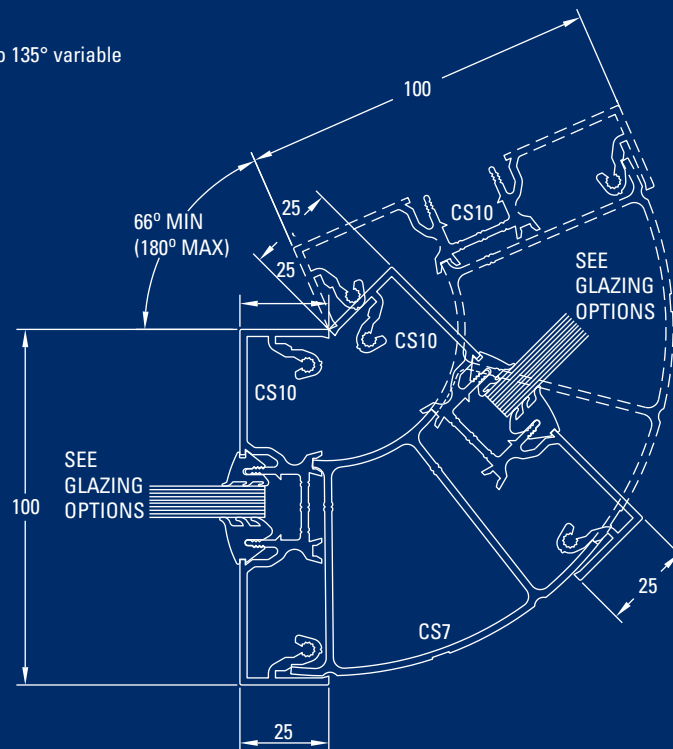
## Comar GFT Integration with Comar 7

General arrangement showing integration on the Comar 7 door range with anti-finger trap stile.



## Comar Variable Angle Returns

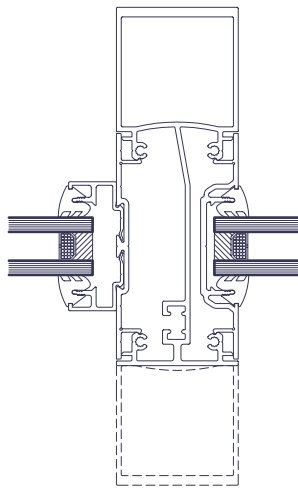
General arrangement showing 90° to 135° variable angle return option.



# on-time

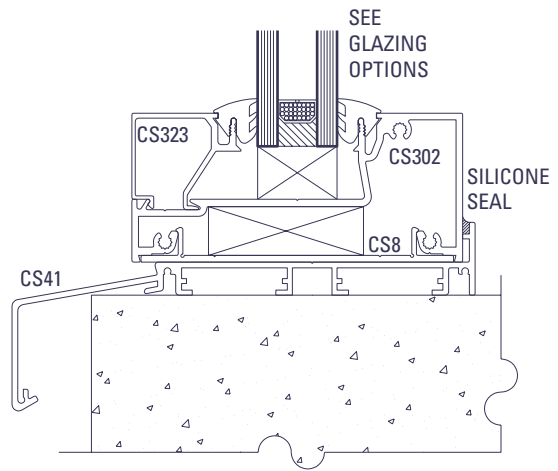
## Comar GFT High Span Mullion

General arrangement showing High Span Mullion.



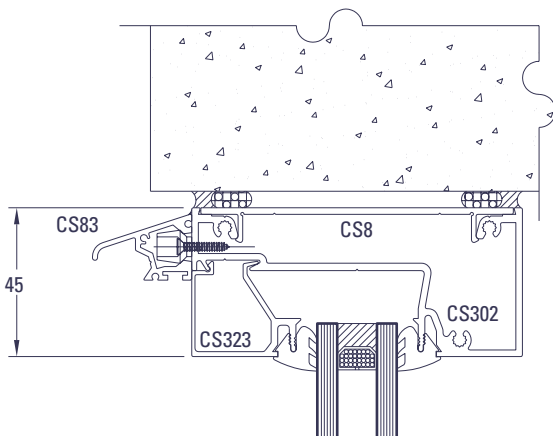
## Comar 3 Sill Detail

General arrangement showing Sill details of Comar 3 Ground Floor Framing.



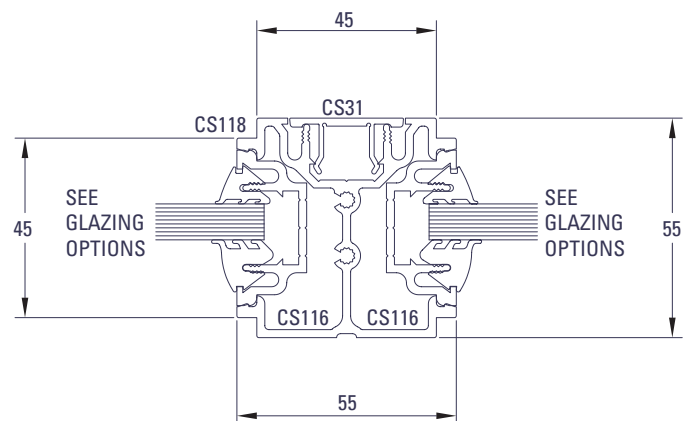
## Comar 3 Head Detail

General arrangement showing head details of Comar 3.



## Comar 4 Mullion Detail

General arrangement showing 45mm Comar 4 mullion detail.



# sustainable

Today's world calls for us all to be more conscious of our environment. In 1998 the world recognised 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 façades.

## 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 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 materials natural durability. Comar's powder coater's guarantee their finishes for 25 years and anodiser's 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 & The European Aluminium Association.



## 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
C.W.C.T.	Centre for Window & Cladding Technology

## 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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