

## Casement Window System

The Monaframe Casement Window System creates side or top hung windows and fixed lights as individual elements or as truly co-ordinated assemblies and glazed screens. The system's capabilities and range of options, including those providing structural performance, are particularly comprehensive and can accommodate most fenestration requirements. The system is fully weatherstripped and all component profiles incorporate thermal barriers.

Monarch systems are fabricated and installed through a nationwide network of specialists and have been used successfully on many commercial and residential projects.



### ADVANTAGES

- *Versatile and comprehensive - creates top hung, side hung or fixed light windows and glazed screens*
- *Internally or externally beaded*
- *Meets BS 6375 : Part 1 Severe Exposure Category 2000*
- *Virtually maintenance-free*
- *Wide choice of colour finishes*
- *Monaframe compatible*
- *Security designed into system and hardware options*
- *Windows independently tested to the technical requirements of BS 7950 "Enhanced Security of Windows"*

### OPTIONS

- *Trickle ventilators to meet Building Regulations needs*
- *Wide range of framing, casement and glazing bead profile options*
- *Can incorporate mullions and transoms with structural capabilities*
- *Can create Glazed Screens or Bay Windows with corner junctions at any angle between 90° and 270° on plan*
- *Monalock<sup>®</sup>, Roto and Saracen multi-point security locking system*

## APPLICATIONS

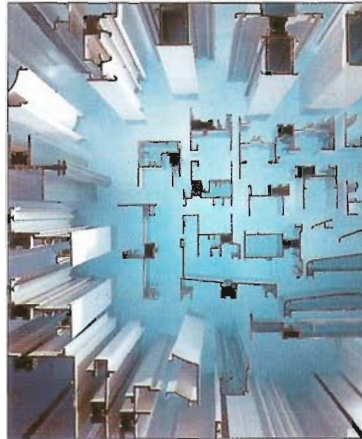
Inherently versatile and comprehensive, the Monaframe Casement Window System has a wide range of applications where specifiers wish to create:

- Individual windows which include fixed light panels and/or top, or side, hung opening casements
- Ranges incorporating windows and fixed lights; including mullion or transom divisions
- Full-height glazed screens, again including windows and fixed glazed panels; also linked to side hung single or double doors, or sliding (patio) doors - with many configurations possible

The system can be configured to be externally beaded and glazed, or for construction convenience, to be internally beaded and glazed. A wide range of hardware options includes the Monalock®, Roto and Saracen multi-point locking systems.

Fenestration can be 'cranked' on plan, at any angle between 90° and 270°, also including 225° and 210° reflex angles. Mullions (and transoms) with structural capabilities can be included, either as visible elements, or hidden within frame junctions.

Being a core element within the 75mm deep Monaframe system, Monaframe Casement Windows can naturally also be linked to other Monaframe products, including hinged and sliding doors, reversible and vertically sliding windows and to Monaframe glazed roof and conservatory systems.



## COMPOSITION

Extruded aluminium to BS 1474: 1987, specification 6063 T6 with a high strength 2-part polyurethane resin thermal barrier.

Aluminium has been tried and tested over many years in building projects, has a known long life and is inherently durable when used in building situations exposed to temperature differences, moisture and sunlight

## THE MONAFRAME SYSTEM

The Monaframe System is a comprehensive suite of thermally broken aluminium sections, 75mm in depth, which has been designed and developed not only to be configured into individual window, door, roof glazing and facade glazing applications, but also to be fully co-ordinated one with another.



Specifiers have complete freedom to evolve fenestration designs with the confidence that adjacent elements will correctly and neatly couple together.

Monaframe Casement Windows are an integrated part of the Monaframe System, fully compatible with other components and assemblies.

A specifically designed range of couplers and adaptors ensures full and complete compatibility and a properly co-ordinated end result. Please refer to the comprehensive information contained in the Monarch Specifier's Manual.

Typical applications include both commercial and residential projects where a high quality, durable and attractive window and fenestration system is required.

## STANDARDS AND QUALITY CONTROL

Monarch's quality control procedures have been approved under BS EN ISO 9001. Monarch is a member of the Glass and Glazing Federation and the Council for Aluminium in Building.

The Monaframe Casement Window System has been independently tested to BS 5368 Parts 1-3: 1985, meeting the Severe Exposure Category 2000 demands of BS 6375: Part 1: 1989. The precise weather performance of combinations of windows and fixed glazing will, of course, depend on the window (or door) types actually incorporated.

## COMPONENTS

Because of aluminium's inherent strength advantages, Monaframe profiles and assemblies are slim and neat in appearance.

Unlike some other materials no additional reinforcement is needed on structural elements.

*Full size drawings and structural capabilities of all elements can be found in the Profiles section of the Monarch Specifier's Manual.*

### Outer Framing Elements

The system can use any of a range of six outer framing profiles, all of which are 75mm deep and which can be direct glazed or be fitted with opening casements.

The range consists of :

CKDFF - 35mm high, for mitred and cleated corner joints - externally beaded when fixed glazed

CKF10 - as CKDFF, with screw ports for butt joints

CKF11 - as CKF10 - 25mm high 'slimline' profile

CKF15 - as CKDFF, for internally beaded fixed lights only

CKF18 - as CKDFF, 35mm high with rounded 'softline' internal profile

CKF19 - as CKF18, 47mm high with rounded 'softline' internal profile

The foot of the window or glazed screen can sit on Monaframe sub-cill profiles A994, A993 or A992 (depending on width of cill required) or can use the 'hidden' drainage tray A988. Alternatively, non load-bearing sub cill profiles CKC13 and CKC12 can be used.

### Mullions and Transoms

The extensive Monaframe mullion (or transom) range includes :

1) A primary, 75mm deep, mullion (or transom) range with load-bearing capabilities -

- \* CKM12 (Mullion),
- CKM16 (Box Mullion),
- CKM10 (90° Corner Post),
- CKM11 (135° Corner Mullion),
- CKM14 (135° Slimline Mullion),
- CKM18 (150° Corner Mullion),
- \* CKM22 (Heavy Duty Mullion),
- \* CKM23 (Facade Glazing Mullion).

The load-bearing Bay Pole assembly CKBMN (Mullion) and CKBMS (Shoe) allows frames to turn corners at any angle between 90° and 270°. An alternative to this traditional arrangement is offered with the limited load bearing bay mullions -

- CKM25 (115-134°)
- CKM24 (133-163°)
- CKM26 (162-175°)

*\* N.B. Softline frames CKF18 and CKF19 are not compatible with CKM12 and CKM22 - use CKF19 with CKM23.*

2) Hidden couplers which join outer frames 'back to back' -

- A983 (non load-bearing),
- CKA10 (load-bearing) and
- CKA11 (load-bearing, for use between window and hinged door frames) and CKM20 (hidden coupling mullion).

3) Mirror Adaptor CKF13 effectively converts outer frame profiles into mullions or transoms and the assembly has load-bearing capabilities dependent on the combination used.

Please refer to the load-carrying tables for individual profiles provided in the Profiles section of the Monarch Specifier's Manual. Detailed technical assistance is available from Monarch.

4) A range of transoms (or mullions), generally 45mm deep, used to create secondary divisions within outer frames or within opening casements -

- CKTRI & CKTR4 (profiled face),
- CKTR5 (with weatherbar or 'hood'),
- CKTR7 (flat face),
- CKTR3 (slimline),
- CKTR6 (deep profile) and
- CKT11 (radiused transom).

### Casement Frames

Side or top hung casements are formed using a similarly extensive range of profiles, which (except CKV11 internally beaded) can be fitted with the Monalock® multi-point security locking system:

- CKVBF (flat external face),
- CKFV2 (chamfered face),

or the Saracen multi-point security locking system:

- CKV16 (softline),
- CKV17 (chamfered)

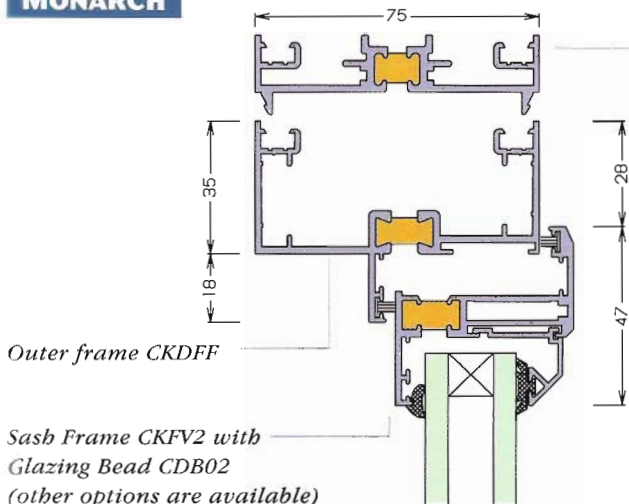
### Construction

Perimeter framing elements have either mitred junctions, incorporating mechanically crimped corner cleats, or are butt jointed and screwed, both incorporating silicone sealants. Intermediate elements, such as mullions and transoms are accurately butt jointed, silicone sealed and securely screw fixed into place.

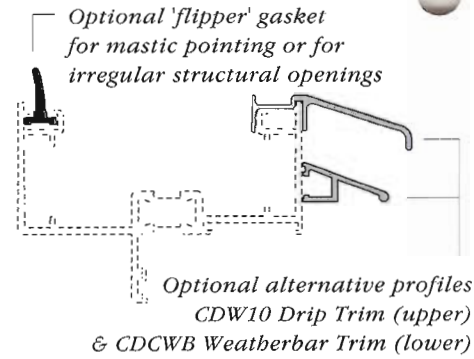
### Cover Trims

A comprehensive range of colour coated cover trim options is available, of various sizes, and in convex, concave, angled and flat profiles.

# Casement Window

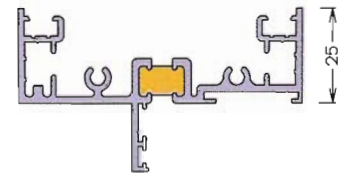


Optional Extension Piece A982 adds 15mm to Monaframe outer frame profiles. Single packers are also available to add 10mm (CDP12) or 15mm (CDP11) to one leg only of the profile



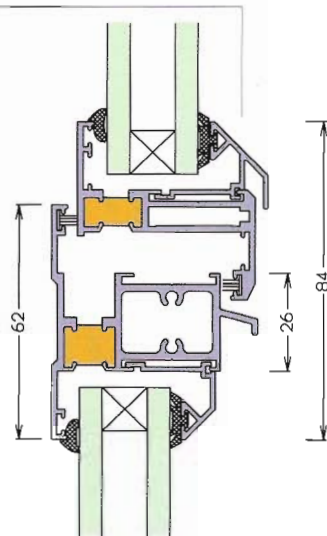
## Accessory Options

Slimline Outer Frame option CKF11

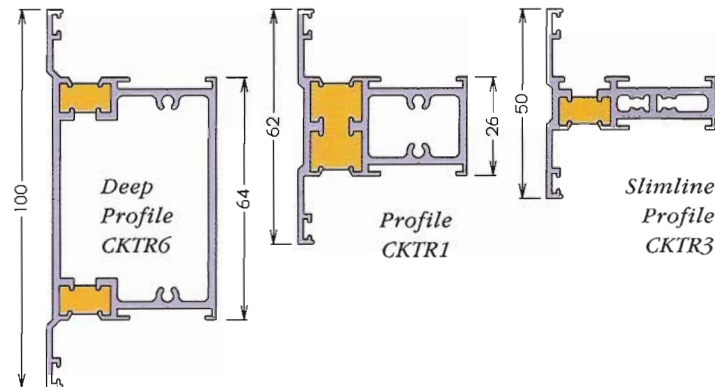


## Vertical Section - Externally Glazed Option

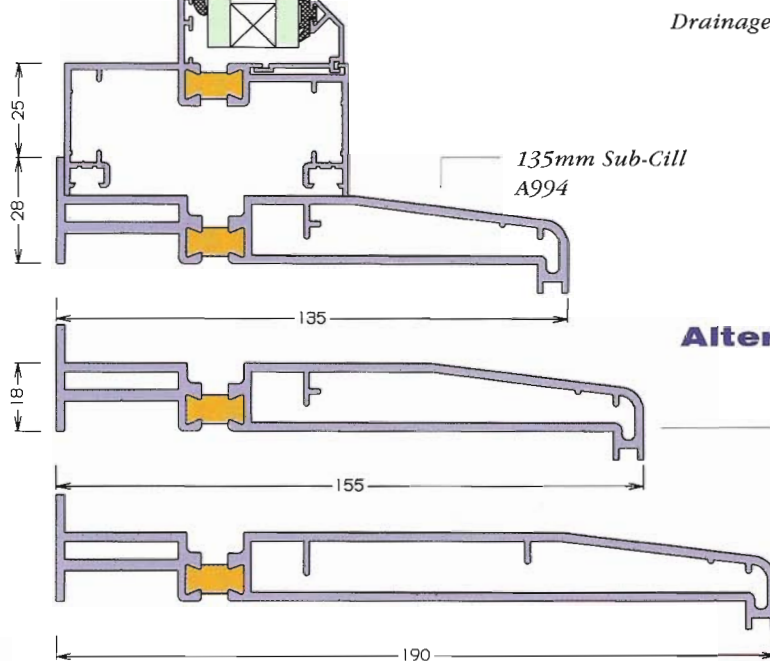
This vertical section uses externally beaded options to create a glazed screen or window assembly. Weatherbar Transom CKTR5 divides an upper opening window from a lower fixed light.



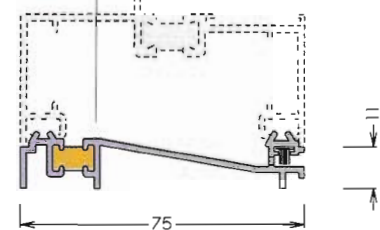
## Alternative Frame Profile



## Alternative Transom Profiles



Drainage Tray A988



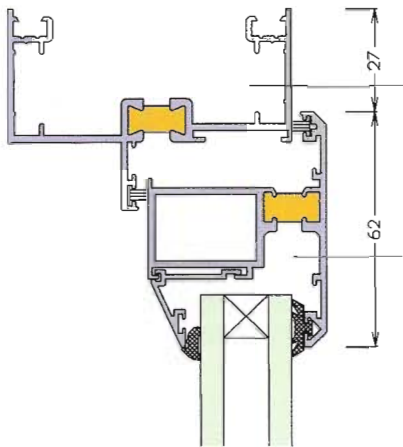
## Alternative Sub-Cills

155mm Sub-Cill A993

190mm Sub-Cill A992

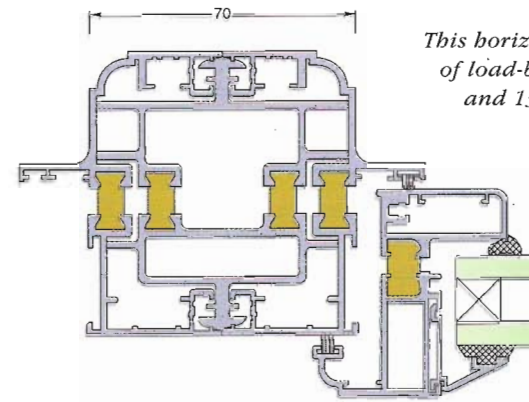


SCALE 1 : 2  
All dimensions in millimetres



Outer Frame  
CKDFF

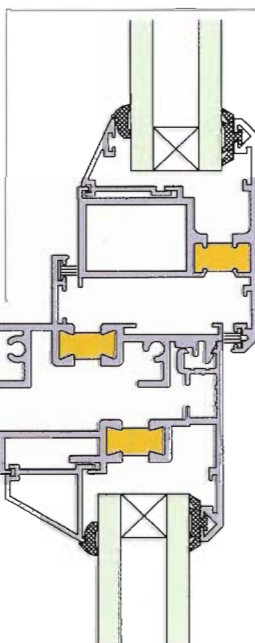
Internally beaded Sash  
Frame CKV11 and  
Glazing Bead CDB03  
(for 22-24mm glass)



This horizontal  
of load-bearing  
and 13

Sash frame CKV16

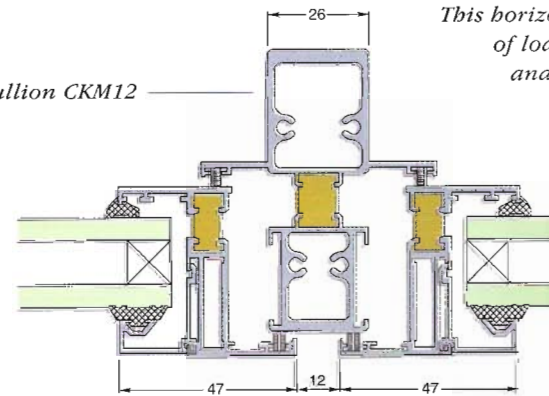
Horizontal  
Mullion  
Coupling



Mirror Adaptor CKF13

**Vertical Section -  
Internally  
Glazed Option**

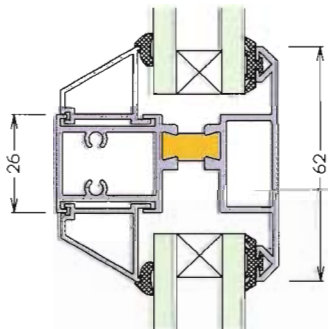
This vertical section uses internally beaded options to create a glazed screen or window assembly. The opening window uses sash profile CKV11 and Mirror Adaptor CKF13 is used with frame profile CKF15 at the transom position. The lower fixed light uses profile CKM21 as a mid-transom.



This horizontal  
of load-bearing  
and

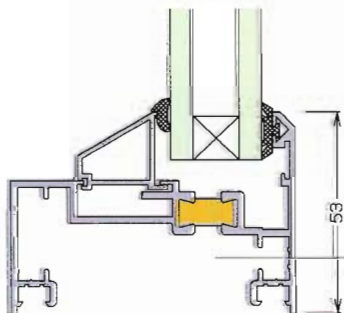
Mullion CKM12

Horizontal  
Mullion  
Bay

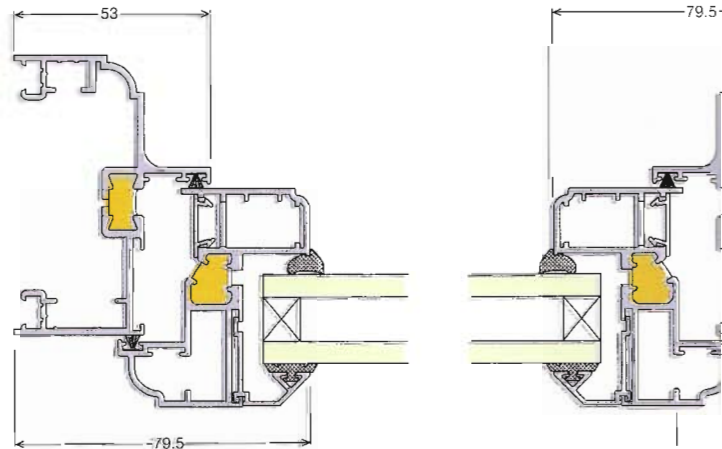


Internally beaded Transom  
CKM21 within fixed light  
assembly

Sash frame CKVBF



Internally beaded Outer  
Frame CKF15 and  
Glazing Bead CDB21  
(for 22-24mm glass)

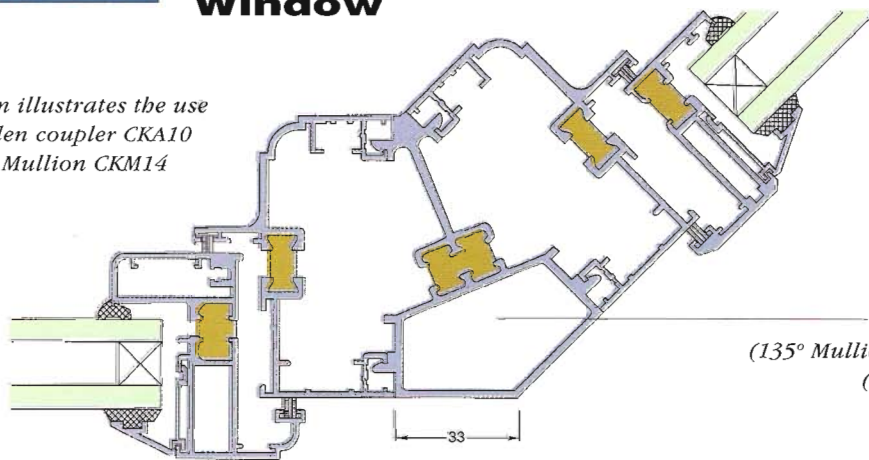


CKV18



# Casement Window

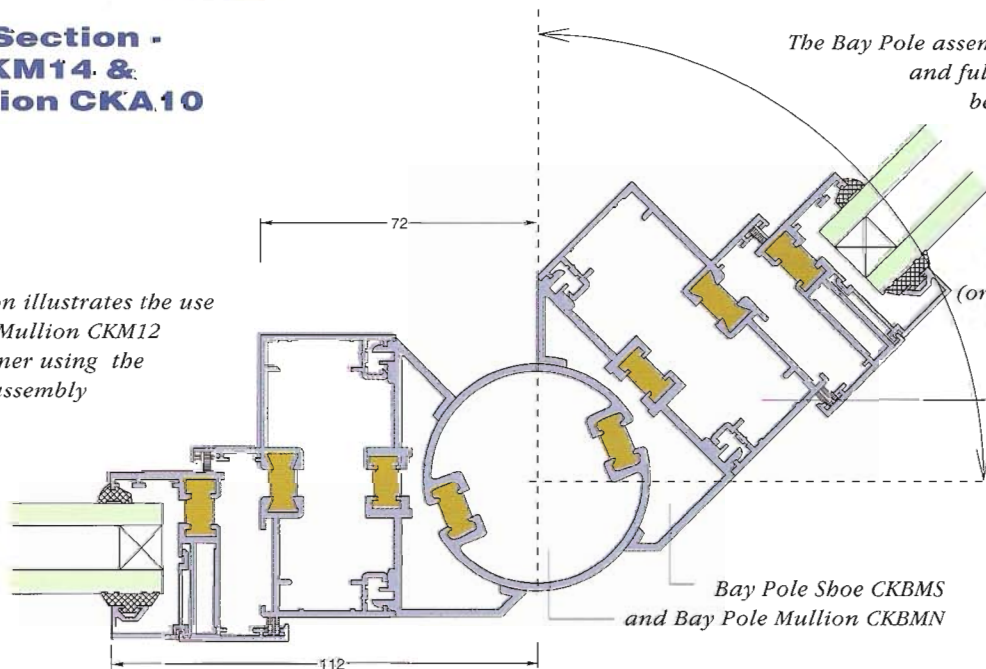
Horizontal section illustrates the use of the load-bearing hidden coupler CKA10 and 135° Slimline Mullion CKM14



135° Slimline Mullion CKM14  
(135° Mullion CKM11 could also be used)  
(For 150°, use mullion CKM18)

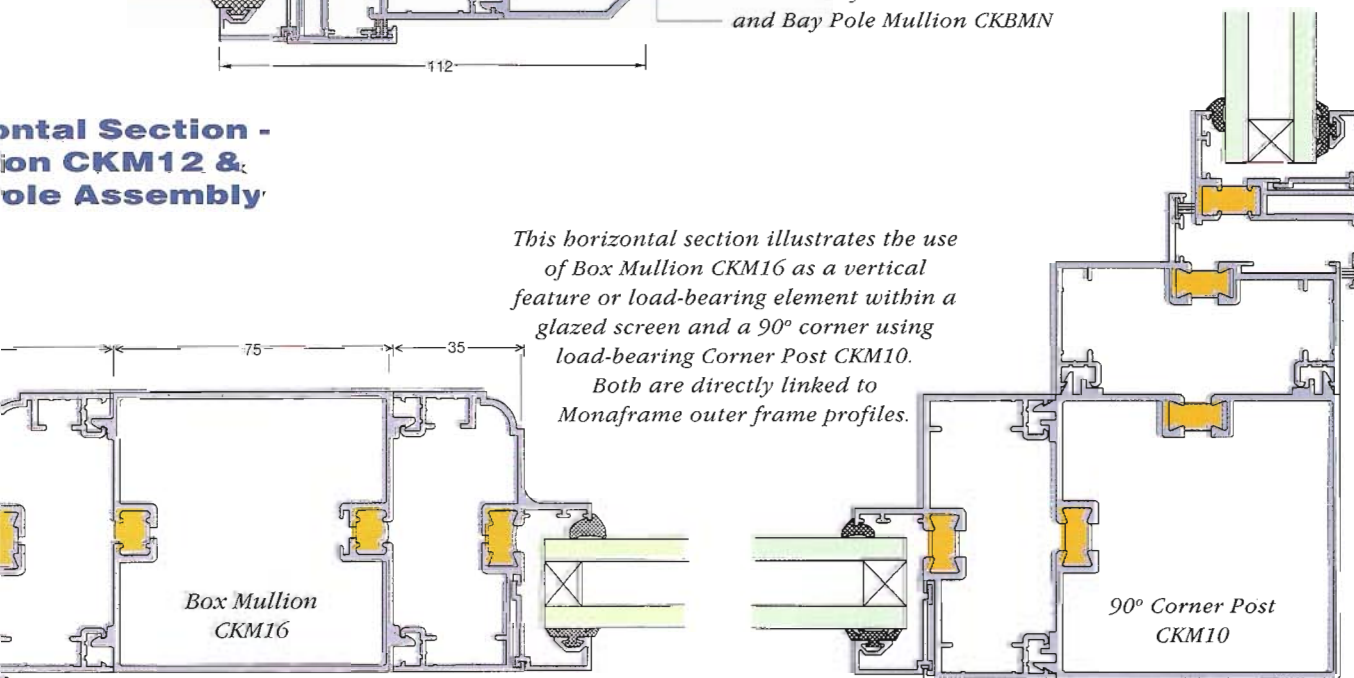
## Horizontal Section - Mullion CKM14 & Bay Pole Mullion CKA10

Horizontal section illustrates the use of the load-bearing Mullion CKM12 and a 135° corner using the Bay Pole assembly



## Horizontal Section - Box Mullion CKM16 & Corner Post Assembly

This horizontal section illustrates the use of Box Mullion CKM16 as a vertical feature or load-bearing element within a glazed screen and a 90° corner using load-bearing Corner Post CKM10. Both are directly linked to Monaframe outer frame profiles.



## Horizontal Section - Box Mullion CKM16 & Corner Post CKM10

C3345 Iss. 3 8/00



# Casement Window



## LIMITATIONS

Load-bearing mullions (or transoms) have limitations according to type, spacing and length.

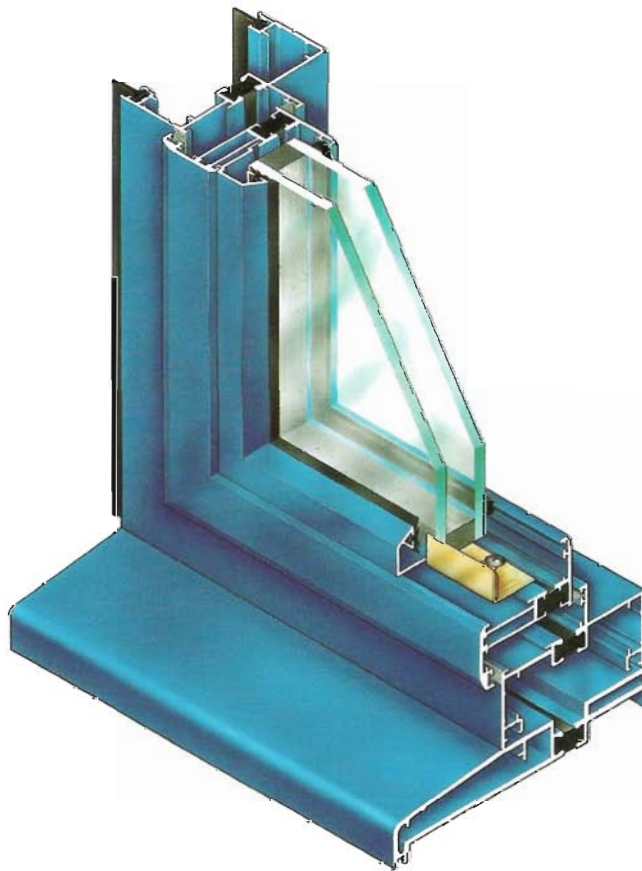
This information is given in the Profiles section of the Monarch Specifier's Manual for each relevant profile, but assemblies combining windows and fixed lights into glazed screens must be designed and calculated as such.

*Casements can be manufactured to any size within the following limitations :*

Top hung casements -  
 1200mm maximum width,  
 1200mm maximum height

Side hung casements -  
 700mm maximum width,  
 1300mm maximum height

*Fixed lights and glazed panels have limits according to glazing type - refer to BS 6262*



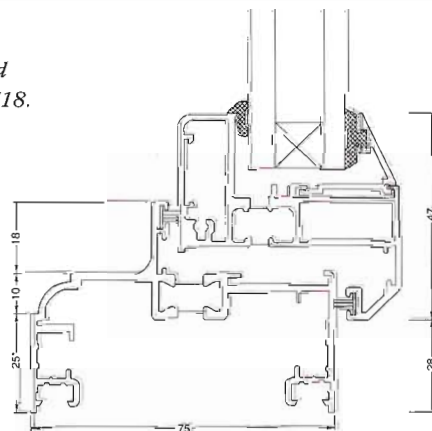
## GLAZING

The system can be glazed with single glass (4mm to 6.4mm) or double glazing units, to BS 6262. Double glazing or other glass thicknesses accommodated are from 14 to 28mm, according to glazing bead used (internal fixed glazing, using CKF15, from 24-28mm).

A suite of glazing beads and black or white synthetic rubber sealing gaskets are available to accommodate this range of thicknesses.

## 'Softline' frame profiles CKF18 and CKF19

*Chamfered opening casement frame profile CKV17 illustrated with 'softline' outer frame CKF18. (CKF19, a longer leg 'softline' profile, is also available)*



\* This dimension 37mm for CKF19 \*



## Casement Window

### OPERATION AND FITTINGS

Monaframe Casement Windows are either top-hung or side hung. All hinges are friction stayed for convenience and ease of operation. High security, easy clean (side hung only) and built-in restrictor options are available. A full opening fire escape side hung hinge is also available.

### SECURITY AND SAFETY

The Monaframe Casement Window System offers particular security and safety related features.

The externally glazed suite includes a security glazing bead, and a screw fixed security glazing clip can also be included.

Opening sashes and fixed lights can also be glazed and beaded internally. These windows and assemblies can be fully installed from inside buildings, avoiding the use of scaffolding, allowing the assembly to be fixed into position unglazed - and making it correspondingly easier and safer to handle.

Casements have locking cockspur handles. A high-security option, the Monalock® system, includes a locking cockspur which also throws two shoot bolts into opposite frame corners. These bolts can be deadlocked.

Monaframe Casement Windows fitted with the Monalock®, Saracen and Roto locking systems have been independently tested to the technical requirements of BS 7950 "Enhanced Security of Windows".

### ENVIRONMENTAL PERFORMANCE

#### *Thermal Insulation and Condensation Control*

All relevant Monaframe Casement Window aluminium sections are thermally broken using a high strength 2-part polyurethane resin barrier between internal and external components. The use of closed-cell foam infill in jambs and heads of the outer frame enhances the thermal insulation of the window system.

The absence of cold bridges inhibits condensation formation on window frames. All assemblies can neatly incorporate trickle vents each giving 4000mm<sup>2</sup> of clear ventilation.

#### *Weather Performance*

The Monaframe Casement Window System has been independently tested to BS 5368.

The system meets the Severe Exposure Category 2000 demands of BS 6375: Part 1 and has achieved the following:

Air Permeability	-	600 Pa
Water Penetration	-	300 Pa
Gust Deflection	-	2000 Pa

Assemblies include high quality resilient closing seals and gaskets to ensure full weatherstripping.

A flexible perimeter 'flipper' section is available to provide a background for mastic pointing and to accommodate structural opening variations.

### APPEARANCE

Aluminium profiles are polyester powder coated to BS 6496: 1991. Application, using the Syntha Pulvin or Interpon processes, is stringently quality controlled. Full gloss white (RAL 9910) and semi-gloss dark brown (BS 08B29) are available as standard.

Alternatively, to order, Monarch can supply profiles in a comprehensive range of 389 RAL, BS and metallic colour options, including matt, satin or gloss finishes. Anodised finishes can also be supplied.

*Please refer to separate Monarch publications for further details. Colour cards and samples are available.*

### MAINTENANCE

At the time of installation the operating fittings are thoroughly cleaned and lightly lubricated with vaseline, silicone lubricant or acid free oil. Monarch recommends that this action is repeated at least annually to ensure satisfactory operation.

The finished appearance of Monaframe Windows is easily maintained through regular cleaning.

### SPECIFICATION

Monarch recommends the use of the National Building Specification, parts LI-330 (Aluminium Windows) and LI-710 (Protection of Components).

*Our policy is one of continual system development and we reserve the right to incorporate design improvements and changes. All details were correct at time of publication.*

*Detailed advice, backup and up-to-date information, on all systems and products and their applications, is freely available from:*