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CRITTALL™

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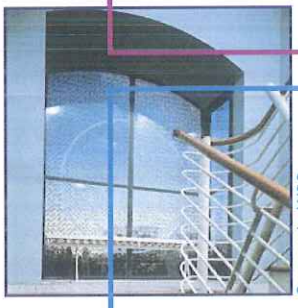
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Homelight



Corporate W20

STEEL

Crittall – the company





Excellence across three centuries

Crittall Windows is the world's pre-eminent supplier of steel windows. For over 160 years, the company has been pioneering technical and aesthetic improvements within the metal windows sector, and today sits as the dominant source of steel windows internationally.

Crittall is equally active in new construction and refurbishment. Projects range from replacing and replicating thousands of architecturally significant 1920s windows to supplying windows for the most contemporary buildings designed by today's foremost architects.

No other manufacturer of steel windows offers as comprehensive a range of hot rolled sections. This ensures maximum custom capability and responsiveness to individual project requirements.

Crittall's ISO 9001:2008 certified factory is unparallelled in its engineering and production capacity, and the company's in-house test facility and finishing plant are among the most advanced in the world.

Landmark projects around the globe include the Boots D10 building and the Hoover Building in the UK, Walter Gropius' Bauhaus in Germany, L Cordonniers Peace Palace (The Hague) and Albert Kahn's General Motors Building, Detroit.

Why choose steel windows?

The unique benefits of steel

No other material provides such a comprehensive choice of performance benefits:

Minimum sightlines

Hot rolled steel windows offer the narrowest possible sightlines, without compromising performance. Steel is unique in this respect.

Elegance and versatility

The versatility of steel enables its use in both traditional and contemporary building designs. Steel windows can be used internally as well as part of the external fenestration, providing consistency in design throughout the building. The aesthetic appeal of steel confers elegance to classically styled buildings, and strength and impact to contemporary architecture.

Strength and security

Where security is paramount, steel is unmatched. Significantly stronger than aluminium, PVC-U and wood, steel also permits greater design freedom with the use of large expanses of glass and minimum sightlines.

Durability and maintenance

Steel's life cycle performance is unsurpassed. Hot dip galvanising and polyester powder coating at Crittall's advanced finishing plants ensure that the product has minimum maintenance. Contact Crittall for details on standard warranty conditions.



New York
Botanical Gardens

A window for all needs

Crittall's comprehensive window range provides design solutions to the broadest spectrum of fenestration needs in both traditional and contemporary architecture.

Corporate 2000

Corporate 2000 provides all the benefits of modern glazing technology, while retaining the slender styling so characteristic of steel.

The Corporate 2000 window and door system was designed as an alternative to aluminium. Pressure equalised and double weatherstripped, it has a front-to-back dimension of 40mm ($1\,^{9}/_{16}$ inch), allowing 29mm ($1\,^{1}/_{8}$ inch) insulated double glass units to be incorporated into a fully drained dry glazed system using gaskets and aluminium glazing bead. It can be wet glazed if required.

Corporate W20

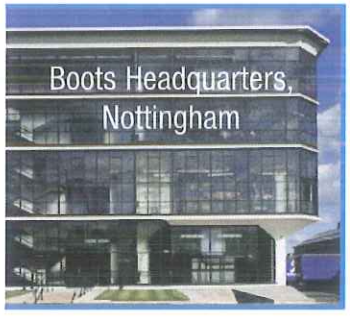
Offering classic hot rolled sections, the Corporate W20 window and door system can accept double glazing up to 14mm ($^{9}/_{16}$ inch) when gasket glazed and 16mm ($^{5}/_{8}$ inch) wet glazed. It offers the narrowest possible sightlines. W20 is favoured where a window system is needed to suit many options in building façade design, including shaped and curved types.

Homelight

This residential window system is available in custom or standard sizes, configurations and colours. Homelight offers the classic steel window characteristic of slim line frames, providing a light delicate feel to the window, at the same time delivering strength and durability as a long term investment and security measure. Homelight is available in both single and double glazed versions up to 16mm ($^{5}/_{8}$ inch).

Berkeley

The Berkeley window and door system is designed to match the sightlines and fine appearance of original single pane windows used in many historic buildings. This high performance double weatherstripped window will accept double glazing up to 18mm ($^{3}/_{4}$ inch).



Corporate W20

Performance Table*

TYPE OF OPENING LIGHT	EXPOSURE CATEGORY (Pa)	AIR PERMEABILITY: NOT MORE THAN 16m³/h/m JOINT, AT (Pa)	WATER TIGHTNESS: NO LEAKAGE, AT (Pa)	WIND RESISTANCE: NO DAMAGE AND ONLY PERMISSIBLE DEFLECTION, AT (Pa)
Corporate W20 range				
Vertical pivot	1200	300	50	X1200
Horizontal pivot	1200	300	100	X1200
Bottom hung	1200	300	100	X1200
Side hung open in	1200	300	100	X1200
Side hung open out	2000	300	300	2000
Top hung	2000	300	300	2000
Corporate 2000 range				
Side hung open out	2000	300	300	2000
Top hung	2000	300	300	2000
Horizontal & vertical pivot	2000	200	200	2000
Bottom hung	2000	300	200	2000
Side hung open in	2000	300	200	2000
Homelight range				
Side hung open out	2000	300	200	2000
Top hung	2000	300	200	2000
Berkeley range				
Side hung open out	2800	300	300	2800
Top hung	2000	300	300	2000
Side hung open in	1200	300	100	X1200
Bottom hung open in	1200	300	100	X1200

* Main performance is based on UK test criteria. For US value equivalents (ASTM) – consult Crittall

X A higher wind resistance can be achieved.

Corporate W20 windows and doors

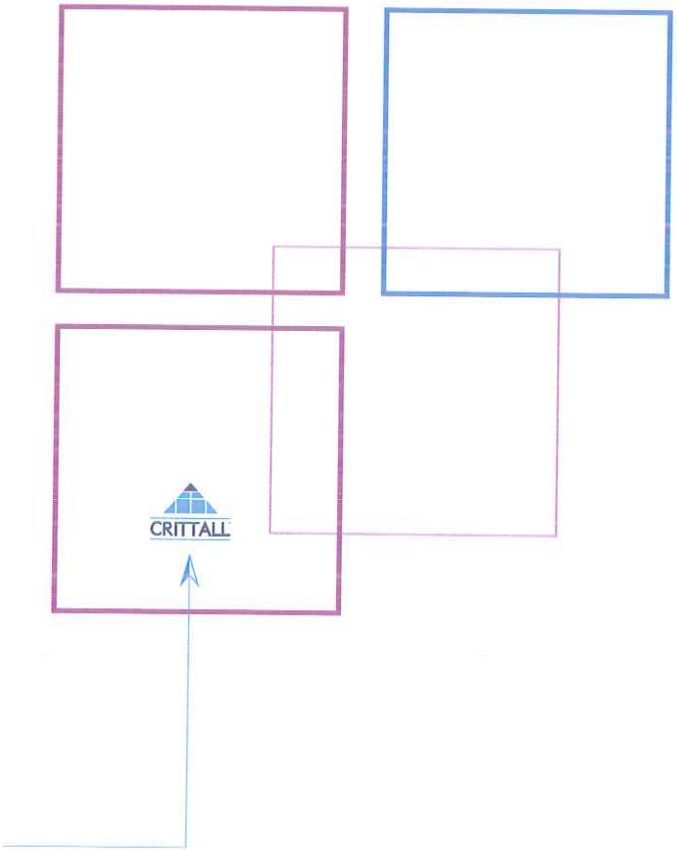
For the future – and the past

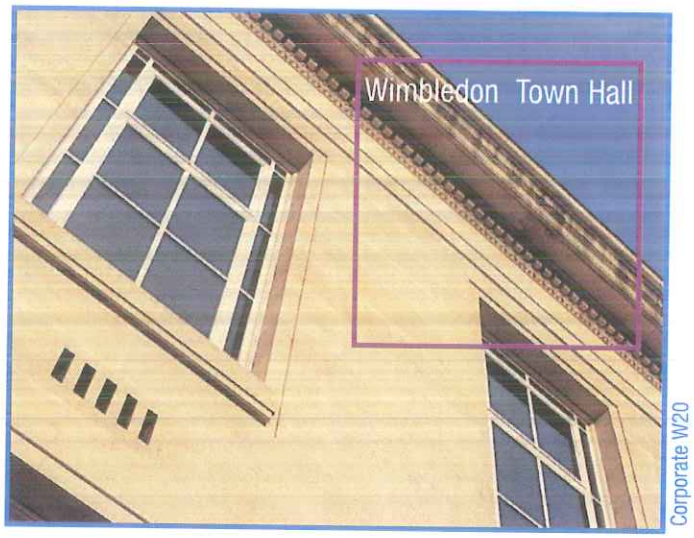
The Corporate W20 windows and doors range offers great versatility. No other steel window system offers such an extensive range of sections, allowing the designer the opportunity to create many styles including elaborate composite windows.

An effective weatherstripping system and the option of double glazing up to 14mm ($^{9}/_{16}$ inch) when gasket glazed and 16mm ($^{5}/_{8}$ inch) wet glazed ensure excellent thermal insulation properties, and the system's large opening casements and slim frame make it particularly popular with conservationists and planners.

Principal features:

- Bespoke designs
- Hot dip galvanised
- Factory-applied Duralife polyester powder coat finish
- Integral EPDM weatherstripping
- Glazing up to 16mm ($^{5}/_{8}$ inch) wet glazed





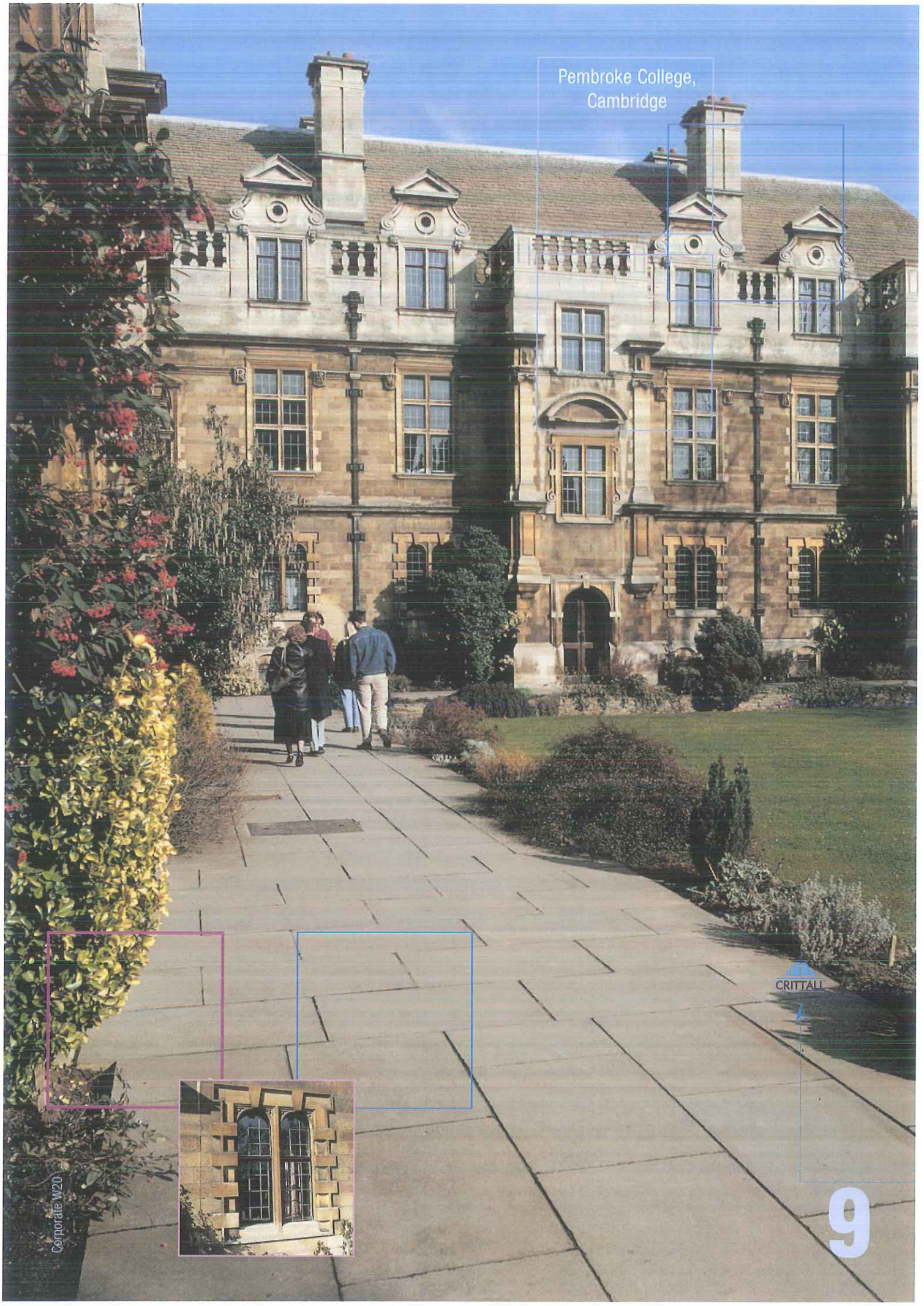
Corporate W20

Corporate W20 window types and limit chart

ELEVATION		LENGTH	HEIGHT	PERIMETER
	Fixed light	* 3050 120	* 3050 120	* 9760 384
	Top hung	1830 72	1830 72	6400 252
	Projected top hung	1700 67	1500 59	● 5400 212
	Folder o/in or o/out	1525 60	2440 96	7620 300
	Side hung o/in or o/out	915 36	2440 96	6400 252
	Bottom hung	1830 72	1830 72	6400 252
	Vertical pivot	1300 51	2440 96	6400 252
	Horizontal pivot	1830 72	1830 72	6400 252
	Single door o/in or o/out	915 36	■ 2440 96	6400 252
	Double door o/in or o/out	1830 72	■ 2440 96	8230 324

Top dimensions in mm.
Lower dimensions in inches
* Limits for single pane only.
● Subject to glass weight limits.
■ Minimum height of kicking panel 300mm (12 inches)

All maximum sizes are given for guidance purposes only. They assume the use of standard hardware specified for each type. Maximum sizes may not be achievable when heavy glass is used. Consult Crittall for advice.


Pembroke College,
Cambridge

Lichfield Court,
London



The Homelight range

Homelight window system

Crittall Homelight windows are designed specifically for applications where smaller typical window sizes do not require the weight or the depth of the Corporate 2000, W20 or Berkeley sections. Homelight windows provide maximum daylight as their design allows the incorporation of larger areas of glass than any other window of a similar size.

Hot dip galvanised and in-house Duralife polyester powder coated for exceptional performance and a minimum maintenance service life, the Homelight window is available in a wide variety of sizes and configurations to suit any specification where strength combined with slim and elegant sightlines is required.


City of Birmingham Symphony Orchestra building

Principal features:

- Fully weatherstripped
- Standard sizes, colours and configurations
- Windows offer the same sizes and styles as original Imperial units.
- Hot dip galvanised and in-house Duralife polyester powder coated for exceptional performance and a minimum maintenance service life.
- Glazing up to 16mm ($^5/_8$ inch)

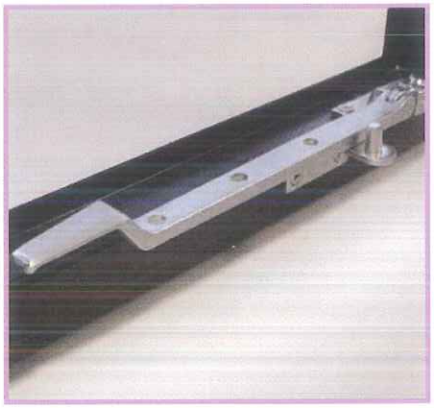
Greater detail is available in a separate Homelight brochure.

Hardware for doors



Corporate 2000

1 Standard hand operated folding opener – satin chrome
2 Spring catch – satin chrome
3 Friction arm
4 Standard friction restricting stay
5 Concealed bolt
6 Standard side arm

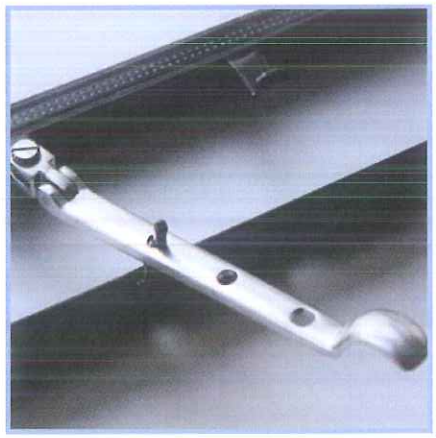


Peg stay – satin chrome or roto toned dark

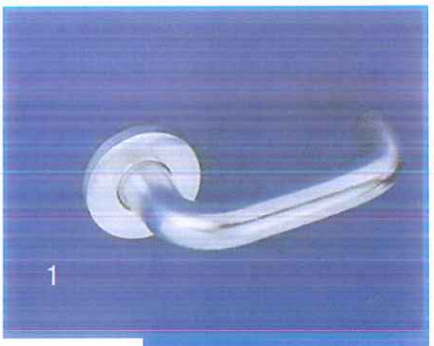


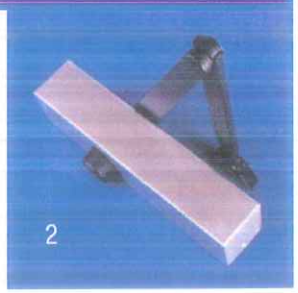
Corporate W20

1 Standard hand operated folding opener – satin chrome
2 Spring catch – satin chrome
3 Standard peg stay – satin chrome
4 Standard friction restricting stay
5 Concealed bolt
6 Standard side arm



Peg stay – satin chrome or roto toned dark

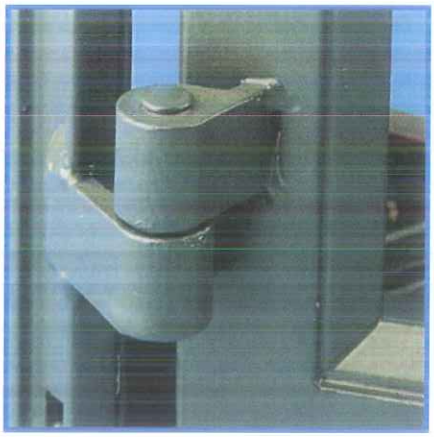




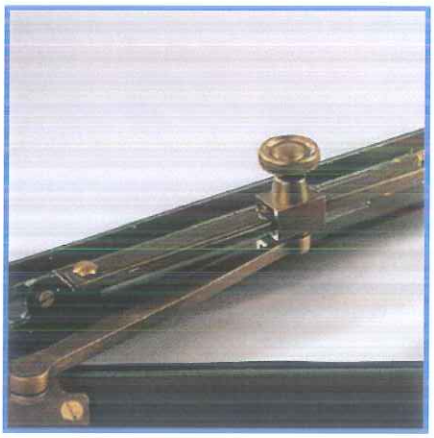
1 Standard lever door handle, satin anodised, supplied with standard cylinder lock
2 Standard door closer, silver, with a black arm

Note: Consult Crittall concerning the cost and delivery of optional hardware and alternative finishes to the fittings

Berkeley fittings



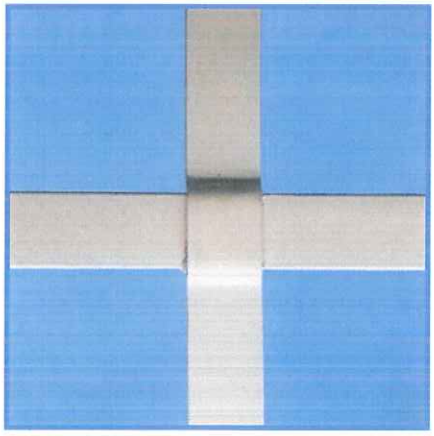
Non-projecting self aligning hinge



Sliding stay



Filigree handle plate
Two-position night ventilation handle

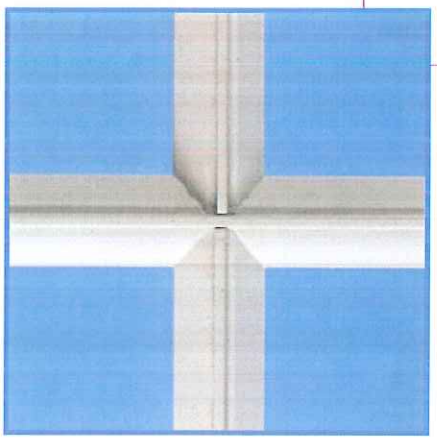


Standard for Corporate W20
and Homelight

Fenestra joint

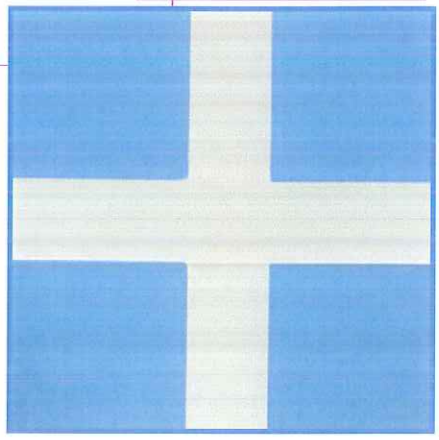
The Fenestra joint, patented and acquired by Crittall in the early 1900s, revolutionised the steel window industry. By weaving the intersecting muntins, the Fenestra joint produces unsurpassed strength, and promoted mass production in steel windows. This historically accurate detail is available only from Crittall.

Berkeley cruciform



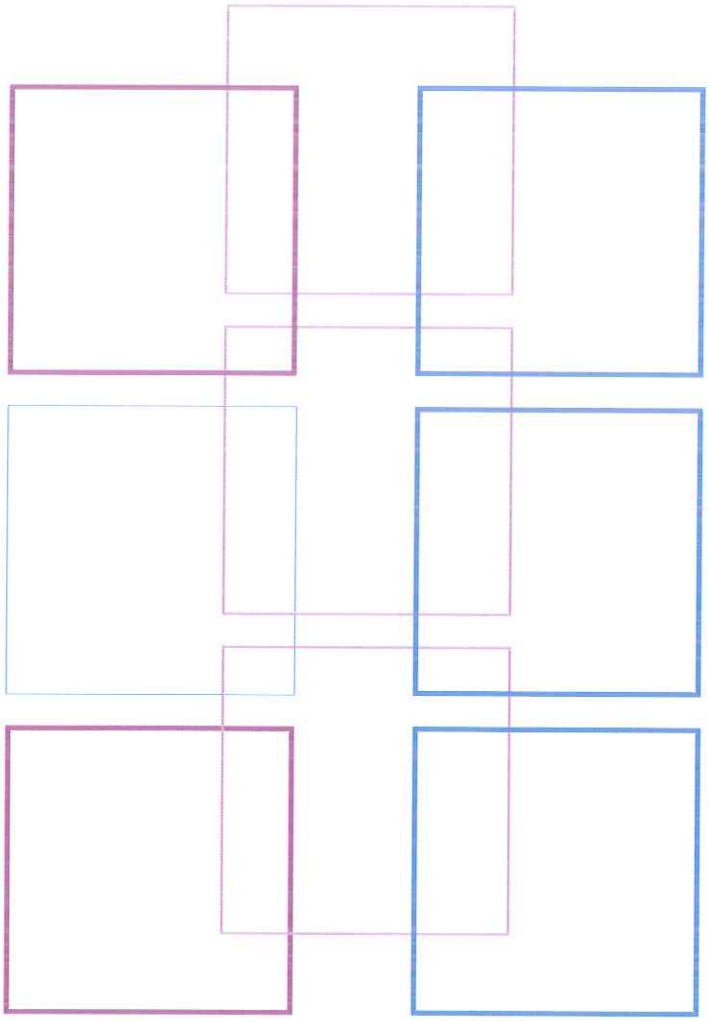
Standard for Berkeley

Flush joint



Standard for Corporate 2000. Alternative
for Corporate W20 and Homelight

Finishes



Galvanising

All windows and doors are hot-dip galvanised after manufacture to BS EN ISO 1461: 2009 and similar to ASTM 123A in the US ensuring the finished products are completely protected against corrosion.

Duralife polyester powder coating

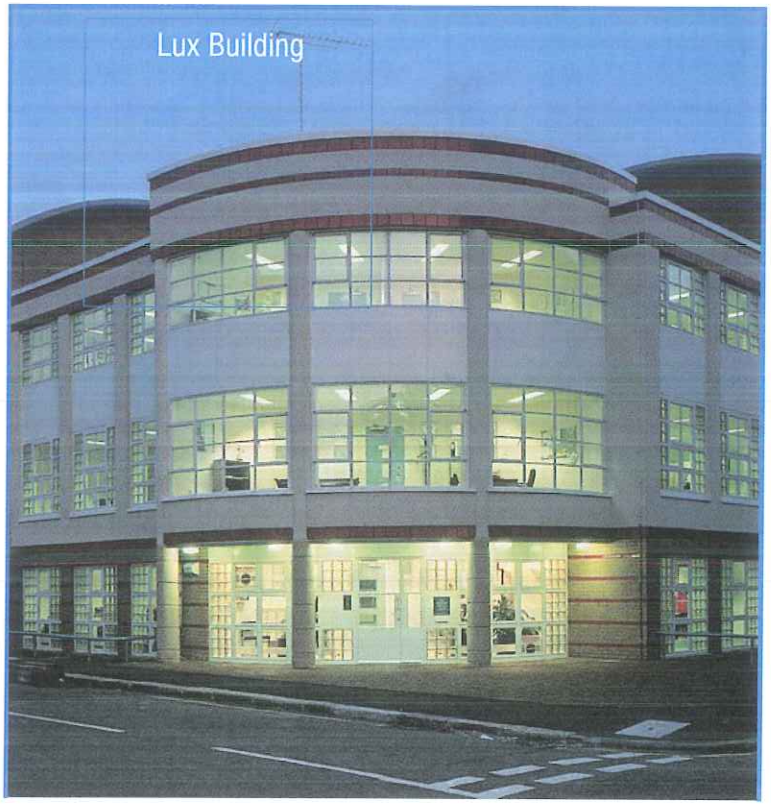
Following galvanising, the windows are chemically cleaned and pre-treated, providing a surface to which the polyester powder coat will adhere. The finishing material is an epoxy-free polyester powder, electrostatically sprayed onto the surface. A coating of 60 microns (0.0026 inches) minimum is applied to significant surfaces in accordance with BS 6497 and BS EN 13438:2005. A wide selection of colours is available. (See separate colour chart)

Sills

Standard or purpose-made pressed metal sills, finished to match the windows, are available.

Trickle ventilators

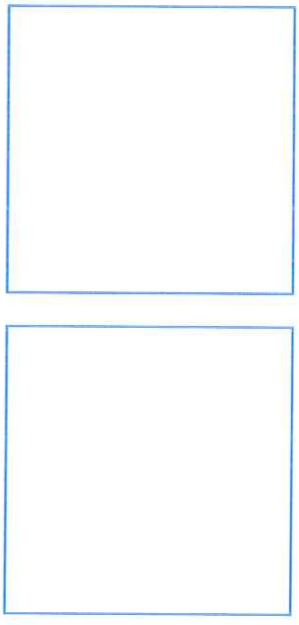
These deliver permanent or controlled ventilation and locked window security, and can be mounted through the window frame or the glazing.



Corporate W20

Condensation channel

For use with all product ranges.



CRITTALL

Crittall steel windows – essential data



Performance

Mechanical Properties

Hot-Rolled Steel Section:	Metric	Imperial
Tensile Strength	355-510 N/mm²	25.7 – 37 Ton (US) Force/inch²
Yield Stress	230-260 N/mm²	16.7 – 18.9 Ton (US) Force/inch²
Design Working Stress	185 N/mm²	13.4 Ton (US) Force/inch²
Modules of Elasticity (E) Youngs Modulus	207000 N/mm²	15,011 Ton (US) Force/inch²
Elongation	22% minimum	22% minimum (US)
Coefficient of Thermal Expansion	0.000011/°C	6.1 x 10^{-6} °F

Specification

Composition and manufacture

All Crittall steel windows and doors are made from hot-rolled mild steel sections and are manufactured under the ISO 9001:2008 management system and in accordance with procedures laid down in BS6510:2010. Corners are welded and intermediate bars are hot tenon rivetted. Frames are flat and square, and within normal manufacturing dimensional tolerances of +/-1.5mm. (+/- $^{1}/_{16}$ inch).

Corporate 2000 multi-light frames are constructed with welded butt-on fixed lights or tenon rivetted intermediate bars.

For the Homelight range hinges, handle plates and stay pegs and brackets are made of steel and are welded together to the frames. Full NBS specifications are available.

Weatherstripping

Corporate W20 windows and doors are weatherstripped with neoprene complying to BS 4255:Part1:1986, secured into the grooves of the opening frames with adhesive, whilst Homelight windows weatherstripping is secured with snap on studs.

Corporate 2000 windows and doors are double weatherstripped with co-extruded TPE and hot melt adhesive.

Acoustic properties

Sound insulation of weatherstripped windows/doors (approximate values averaged over a frequency range of 100 to 3150 Hz)

Single glass:	about 20 – 28 dB
Double glass:	about 28 – 30 dB
With secondary window and cavity of 200mm:	about 35 – 40 dB

Fire resistance

Consult Crittall for information on fire resistance.

Thermal

Consult Crittall for its guide to compliance with Part L of the Building Regulations and for US and other international standards.

Condensation

In our experience condensation is not a problem encountered in air conditioned buildings. Steel windows incorporating double glass units reduce the risk of condensation. If condensation does occur, it will occur on the window frame itself. In areas of high humidity, for example bathrooms, it is simply necessary to control the ventilation in the area to reduce the risk of condensation.

The Environment and sustainability

Crittall Windows recognises that concern for the environment is an integral and fundamental part of the Company's corporate business strategy.

Crittall makes every effort to use environmentally safe and sustainable resources and, where possible, to manufacture products from materials which are capable of being recycled.

Crittall operates within the constraints of a recognised international environmental management system ISO 14001: 2004 and set targets on solids, liquids, gaseous emissions and waste generation.