



Corporate 2000



# Contents

2  
Crittall – the company

3  
Why choose steel windows?

4  
A window for all needs

7  
Corporate 2000 windows and doors

8  
Corporate W20 windows and doors

10  
Berkeley windows and doors

13  
Homelight range

15  
Crittall doors

16  
Accessories and fittings

17  
Hardware for doors

18  
Berkeley fittings

19  
Finishes

20  
Essential data



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 unparalleled 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

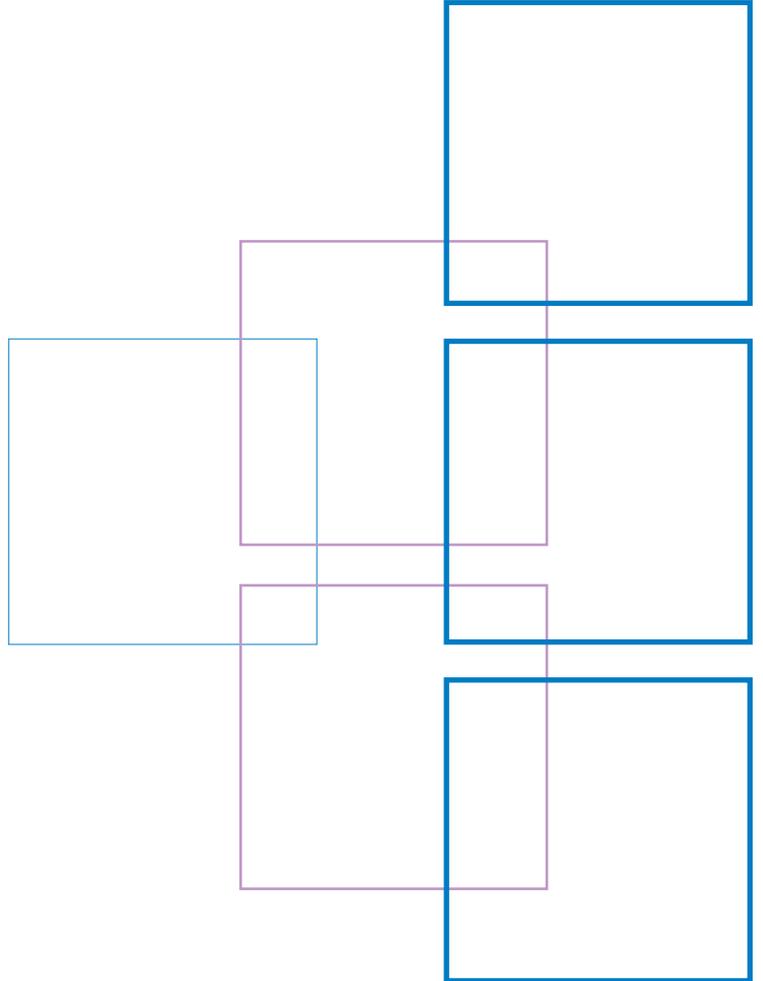
The versatility of steel enables its use in both traditional and contemporary building designs. Steel windows can be used internally as well as part of the external fenestration, providing consistency in design throughout the building. The aesthetic appeal of steel confers elegance to classically styled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



# 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<sup>9</sup>/<sub>16</sub> inch), allowing 29mm (1<sup>1</sup>/<sub>8</sub> 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<sup>9</sup>/<sub>16</sub> inch) when gasket glazed and 16mm (5<sup>5</sup>/<sub>8</sub> inch) wet glazed. It offers the narrowest possible sight-

lines. 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<sup>5</sup>/<sub>8</sub> 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<sup>3</sup>/<sub>4</sub> inch).

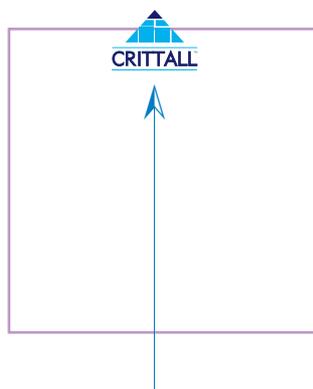


Corporate W20

Performance Table\*

TYPE OF OPENING LIGHT	EXPOSURE CATEGORY (Pa)	AIR PERMEABILITY: NOT MORE THAN 16m <sup>3</sup> /h/m JOINT, AT (Pa)	WATER TIGHTNESS: NO LEAKAGE, AT (Pa)	WIND RESISTANCE: NO DAMAGE AND ONLY PERMISSIBLE DEFLECTION, AT (Pa)
<b>Corporate W20 range</b>				
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
<b>Corporate 2000 range</b>				
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
<b>Homelight range</b>				
Side hung open out	2000	300	200	2000
Top hung	2000	300	200	2000
<b>Berkeley range</b>				
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

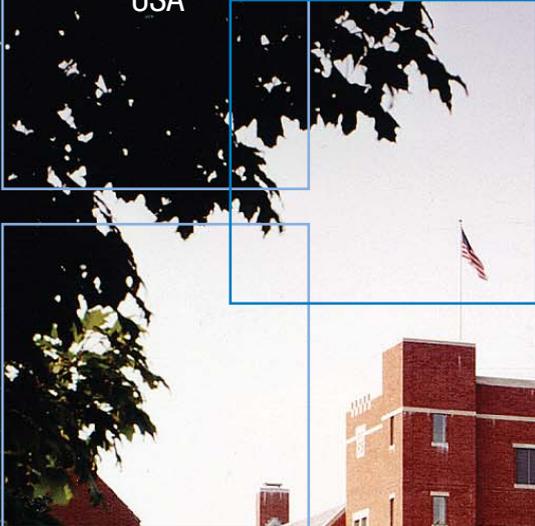
\* Main performance is based on UK test criteria. For US value equivalents (ASTM) – consult Crittall  
X A higher wind resistance can be achieved.



Pitcher & Piano Bar,  
Newcastle-upon-Tyne



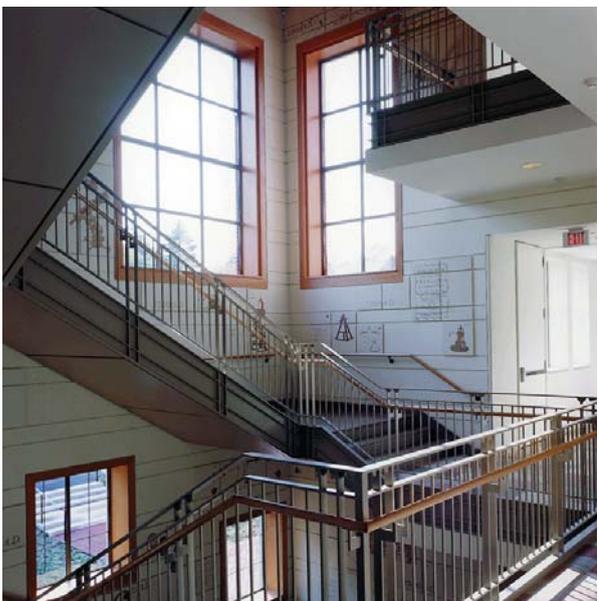
Taft School  
Watertown.  
USA



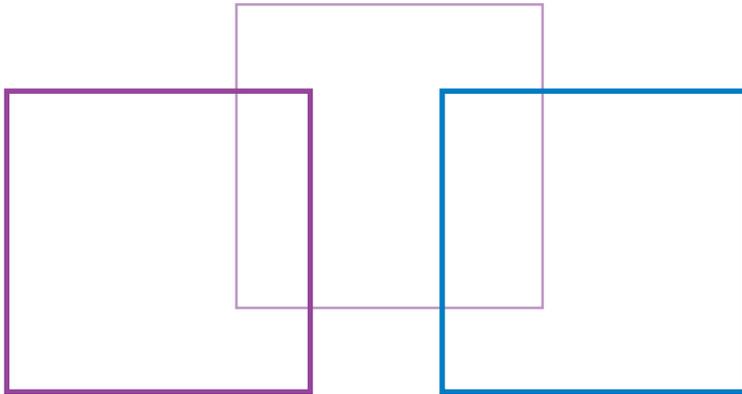
Corporate 2000



6



# Corporate 2000 windows and doors



## The ultimate in system efficiency

A re-design of the traditional hot rolled steel window. Whilst retaining the slender styling so characteristic of steel fenestration, Corporate 2000 has just three master sections. This slimline rigidity of steel sections allows the design of flat and unobtrusive 'minimum' coupling – with no protruding mullion or transomes – for all but the largest glazing spans.

Corporate 2000 is equally suited for residential, institutional and commercial applications, and can be used to produce unusual and innovative curtainwall designs. Major user sectors are offices, hotels, hospitals, universities and schools.

## Corporate 2000 Window Types and Limit Chart

TYPE		MAXIMUM LENGTH	MAXIMUM HEIGHT	MAXIMUM 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
	Projected side hung	800 31	1700 67	● 5000 197
	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. Multilight details are available on request.

## Principal features:

- High performance/pressure equalised design
- 40mm (1<sup>9</sup>/<sub>16</sub> inch) front to back dimension
- Insulated double glazing up to 29mm (1<sup>1</sup>/<sub>8</sub> inch) thickness, using dry gaskets and aluminium glazing bead
- External rainscreen and internal airseal gaskets positively secured
- Unitised construction
- Hot-dip galvanised
- Factory-applied Duralife polyester powder coat finish
- Double integral co-extruded TPE weatherstripping
- General exposure category: 2000pa (40p.s.f.)



# Corporate W20 windows and doors

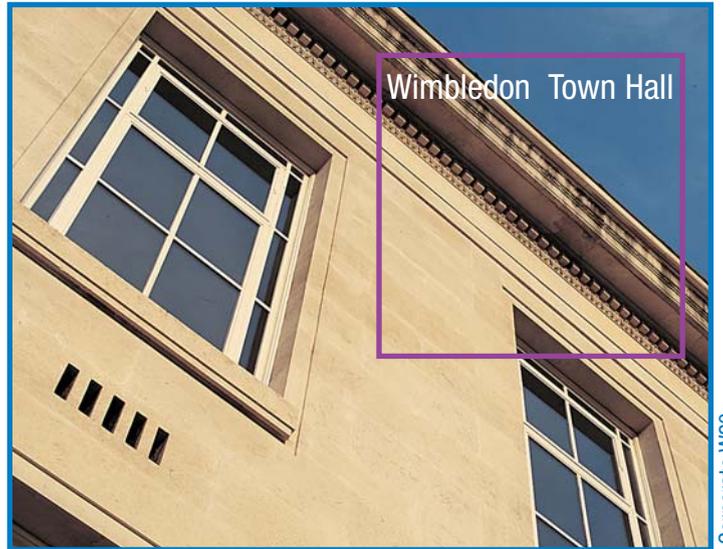
## For the future – and the past

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 ( $\frac{9}{16}$  inch) when gasket glazed and 16mm ( $\frac{5}{8}$  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 ( $\frac{5}{8}$  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
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	Vertical pivot	1300 51	2440 96	6400 252
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	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.

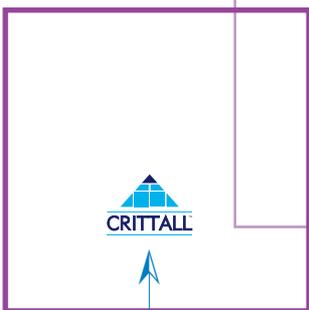
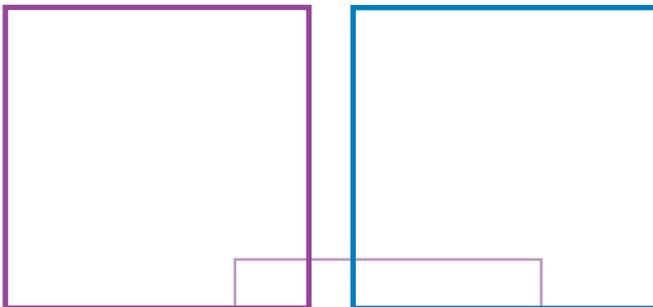
Lower dimensions in inches

\* Limits for single pane only.

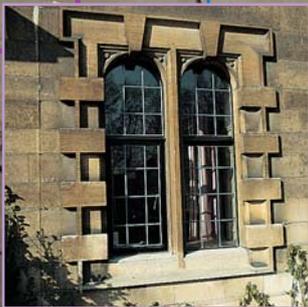
● Subject to glass weight limits.

■ 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



# Berkeley windows and doors



Berkeley

## Principal features:

- High performance
- Unique articulated frame and sash
- Hot dip galvanised
- Factory-applied Duralife polyester powder coat finish
- Double integral EPDM weatherstripping
- Glazing up to 18mm (¾ inch)



## Versatility in replication and new build

The Berkeley window was originally created in order to replicate existing 1920s and 1930s steel windows that were predominantly single pane leaded glass, exterior putty glazed. For the Berkeley window, Crittall developed an entirely new series of hot rolled steel sections where a solid steel chamfer replicates exterior putty glazing, whilst the interior glazing improves access for reglazing and security.

Berkeley offers an ideal solution for both replacement projects and new construction where minimum sightlines, maximum daylight and fine detail are desired. The system is suitable for high-end residential, institutional and commercial applications.

## Berkeley window types and limit chart

TYPE	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
 Projected side hung	800 31	1700 67	● 5000 197
 Bottom hung	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.



Yale University,  
New Haven, CT.  
Architect: Kieran,  
Timberlake & Harris



Lichfield Court,  
London



12

Homelight

# The Homelight range

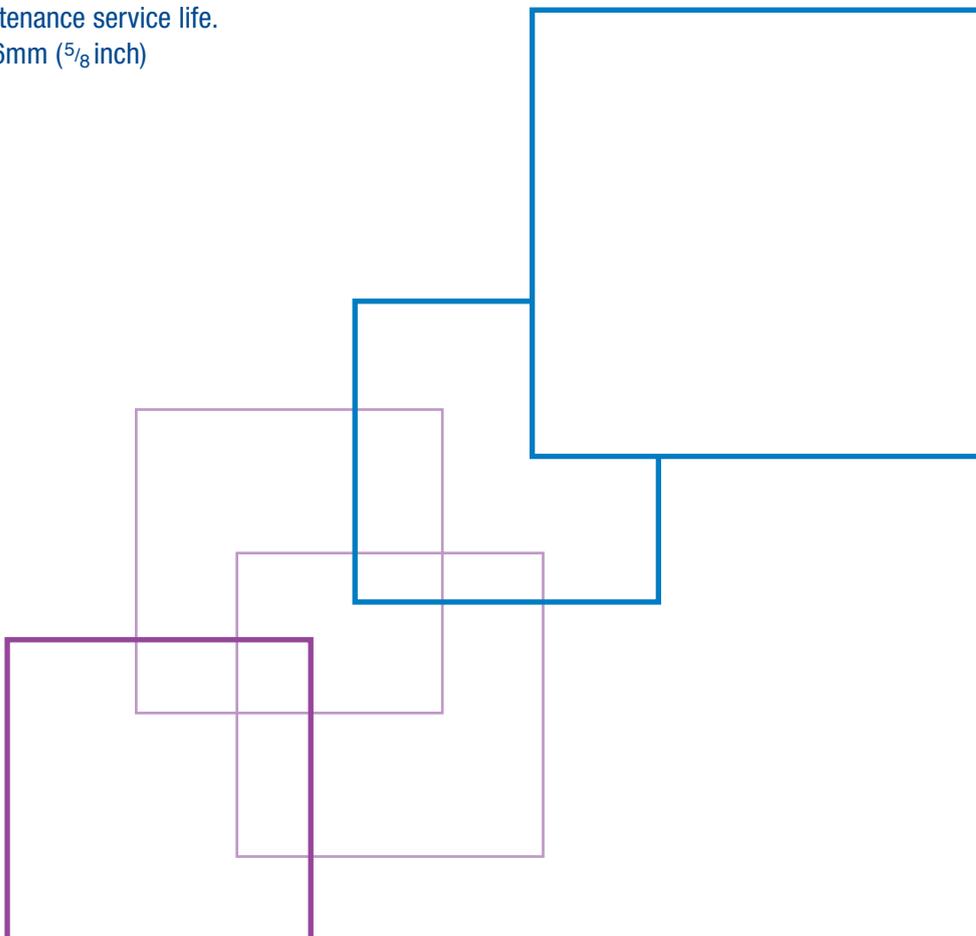
## Homelight window system

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.

## 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 ( $\frac{5}{8}$  inch)



Greater detail is available in a separate Homelight brochure.

Private residence in Connecticut



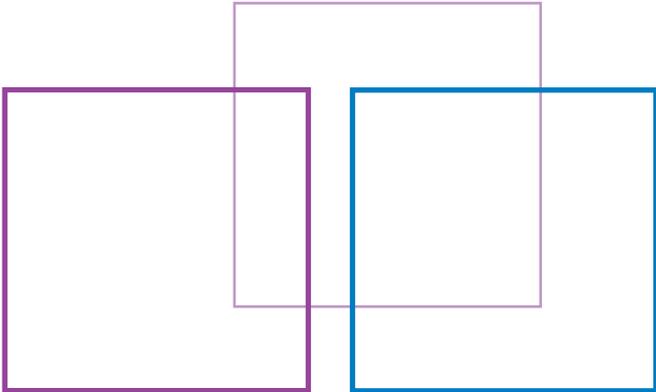
Berkeley

# Crittall doors

## For the total system approach

Matching doors are available with Crittall's Corporate 2000, Corporate W20 and Berkeley windows to provide designers with a total system solution. Hot-dip galvanised and polyester powder coated doors match the slim sightlines of the windows.

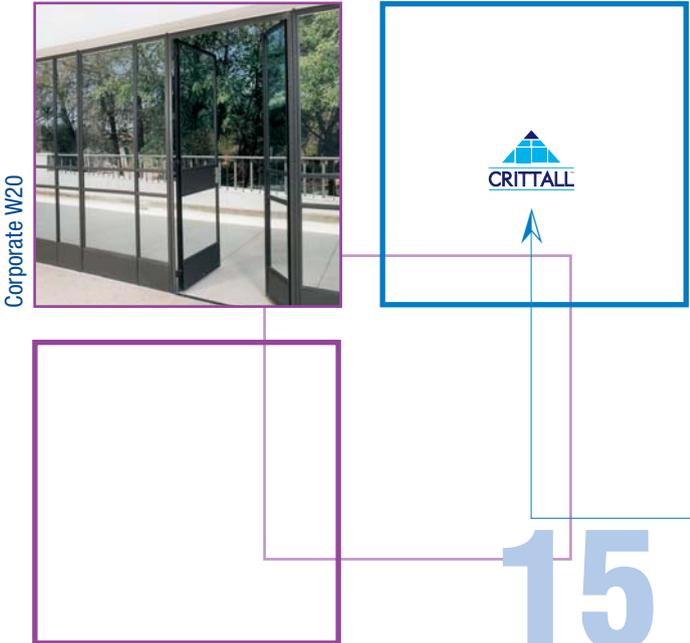
Crittall's door range is enhanced by an extensive range of narrow style hollow profile (cold formed) doors.



Cold Formed



Berkeley



Corporate W20

# Accessories and fittings

## Corporate 2000 hardware

Corporate range of windows have the hinges welded to the frame and then the window is galvanised and polyester powder coated.



Standard open out handle on Corporate W20 and Corporate 2000 – satin chrome or roto toned dark

## Corporate W20 hardware



Standard open in handle on Corporate W20 and Corporate 2000 – satin chrome or roto toned dark



Thumbturn option on Corporate W20 and Corporate 2000 windows and standard on doors – satin chrome or roto toned dark



## Homelight hardware



Standard handle – satin chrome or roto toned dark



Standard projecting hinge (shown here). Non projecting hinge on top hung windows

# 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



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



Peg stay – satin chrome or roto toned dark

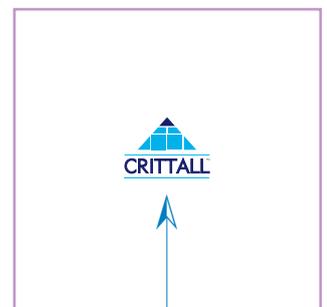


## Corporate W20

- 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



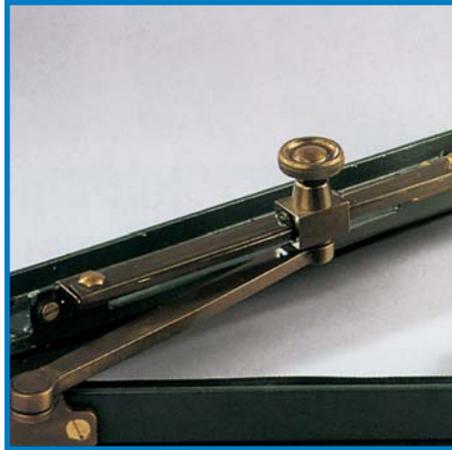
Peg stay – satin chrome or roto toned dark



# Berkeley fittings



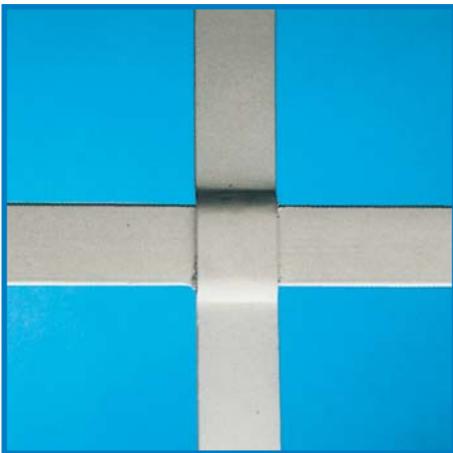
Non-projecting self-aligning hinge



Sliding stay



Filigree handle plate  
Two-position night ventilation handle

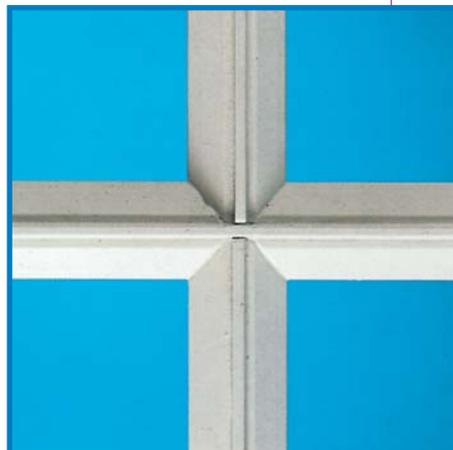


Standard for Corporate W20  
and Homelight

## 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

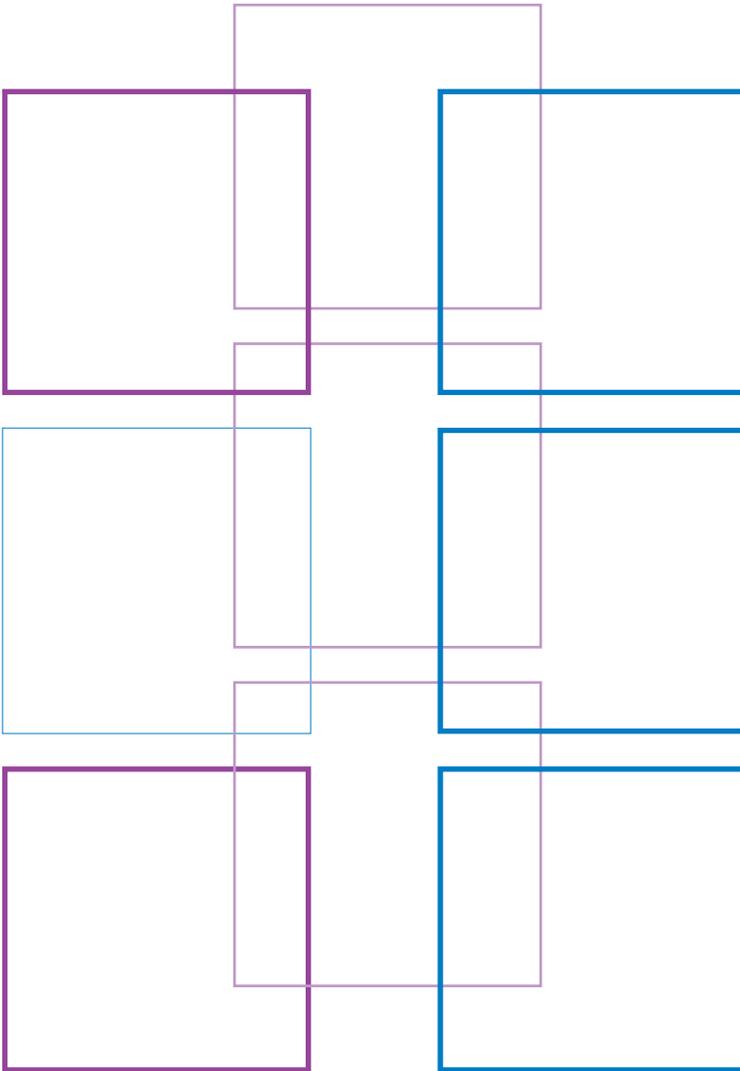
## Flush joint



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

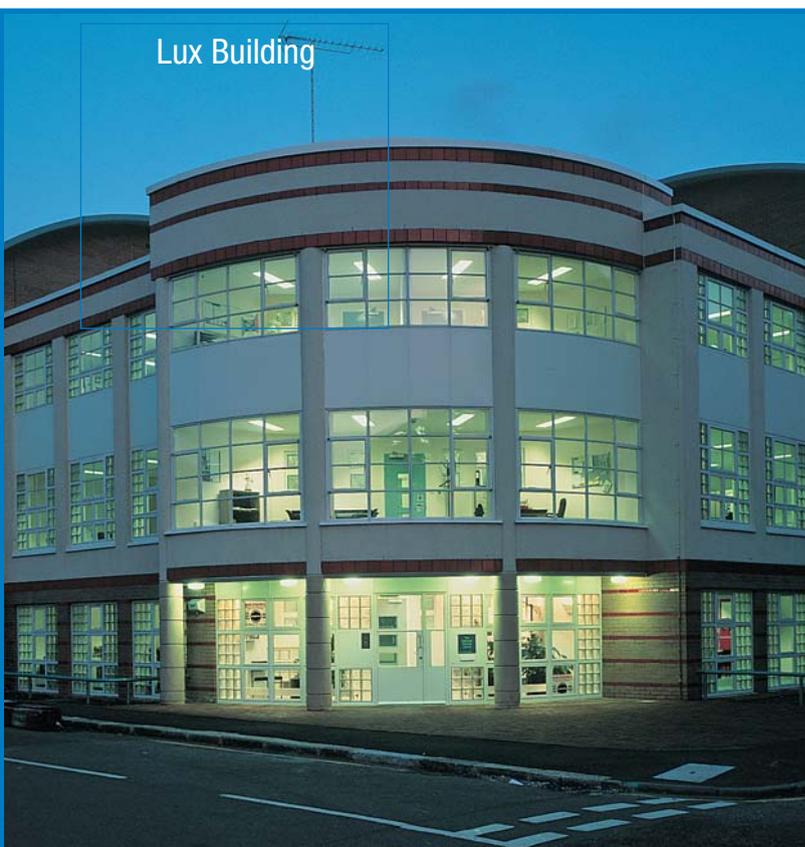
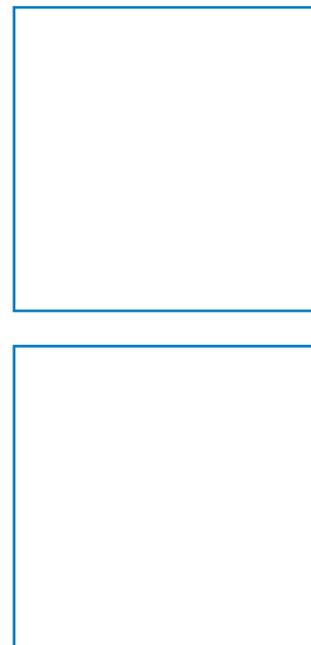
Standard or purpose-made pressed metal sills, finished to match the windows, are available.

## Trickle ventilators

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

## Condensation channel

For use with all product ranges.



Corporate W20

# Crittall steel windows – essential data



## Performance

### Mechanical Properties

Hot-Rolled Steel Section:	Metric	Imperial
Tensile Strength	355-510 N/mm <sup>2</sup>	25.7 – 37 Ton (US) Force/inch <sup>2</sup>
Yield Stress	230-260 N/mm <sup>2</sup>	16.7 – 18.9 Ton (US) Force/inch <sup>2</sup>
Design Working Stress	185 N/mm <sup>2</sup>	13.4 Ton (US) Force/inch <sup>2</sup>
Modules of Elasticity (E) Youngs Modulus	207000 N/mm <sup>2</sup>	15,011 Ton (US) Force/inch <sup>2</sup>
Elongation	22% minimum	22% minimum (US)
Coefficient of Thermal Expansion	0.000011/°C	6.1 x 10 <sup>-6</sup> °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.