





C/S LOUVRES

“Bend it, Catch it, Drain it”

C/S have been manufacturing and selling louvres globally for over 50 years and bring a wealth of experience, design and performance to the UK range of louvres.




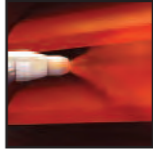
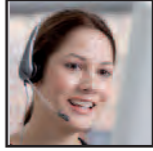
C/S own and maintain, at its research and development facility in the US, the same specification of wind tunnel as BSRIA, to ensure that all our louvres can be fully tested and are compliant with global building codes.

Louvre systems are required on most building types to provide airflow, both intake and exhaust, to the building services system and to provide weatherability against rain ingress. Louvre systems are also used for simple screening on buildings and provide an aesthetic and economical solution for this requirement.

Whether your building needs screening louvres, performance louvres or a combination of both, C/S has a louvre system to meet your specification requirements. Our technical team is here to help should you need further assistance with your louvre choice.

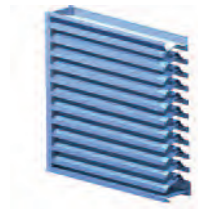
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WHAT TYPE OF LOUVRE DO I NEED?

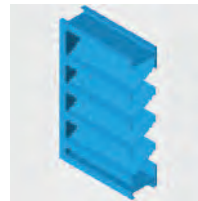
Specifying louvre is always a compromise between airflow and water ingress. Each project should be considered independently, to take into account the particular needs of each application. For example a car park may require maximum ventilation but little protection from rain penetration, so a conventional or screening louvre would be appropriate. Alternatively, a plant room containing special machinery or electrical equipment may still need high levels of ventilation but with maximum protection from water entry, in which case a performance louvre would be the best option.



STORM RESISTANT/PERFORMANCE LOUVRE

The main objective of Performance Louvres is to allow the passage of air, whilst providing the area beyond the room with protection from rain penetration.

When specifying a performance louvre we recommend comparing the airflow class and the level of rain defence provided by the louvre. The C/S RSH-5700 Performance louvre offers the best airflow, rain defence and spacial efficiency of any product in the market at the moment.



STANDARD LOUVRE

A standard louvre will provide the maximum airflow required with minimal rain defence. These louvres tend to be preferred for projects where economy is the primary consideration, high free area is important and occasional water penetration will not cause significant problems.

When specifying a standard louvre we recommend looking at the blade spacing and the free area provided by the louvre.

For the complete range of C/S louvres please visit: www.c-sgroup.co.uk/louvres



THE C/S LOUVRE RANGE

* DLC - Discharge Loss Coefficient
 ** PC - Penetration Class
 More information on pages 8 & 9

	Louvre Model	Mullion Type	Blade Spacing	Louvre Depth	DLC*	Airflow Class	PC**		
							1.0	3.0	5.0
STORM RESISTANT	RS-3105	Hidden	75mm	76mm	0.434	1	C	C	D
	RS-3200	Visible	70mm	78mm	0.333	2	C	C	D
	RS-4300	Visible	54mm	102mm	0.256	3	B	D	D
	RS-4600	Visible	75mm	102mm	0.162	4	A	A	D
	RS-4605	Hidden	51mm	102mm	0.270	3	A	A	C
	RS-5300	Visible	70mm	127mm	0.233	3	A	C	D
	RSH-5700	Visible	51mm	127mm	0.320	2	A	A	C
	RSV-5700	Visible	51mm	127mm	0.330	2	A	A	A
	RS-7305a	Hidden	75mm	152mm	0.320	2	A	C	D
	RS-8400	Visible	70mm	204mm	0.178	4	A	B	D
	75EP	Hidden	75mm	125mm	0.290	3	A	A	A
	75HP	Hidden	75mm	125mm	0.138	4	A	A	A
	LSM	Hidden	75mm	155mm	0.282	3	A	A	D
	STANDARD	A4080	Visible	102mm	102mm	0.39	2	C	D
A4085		Hidden	102mm	102mm	0.39	2	C	D	D

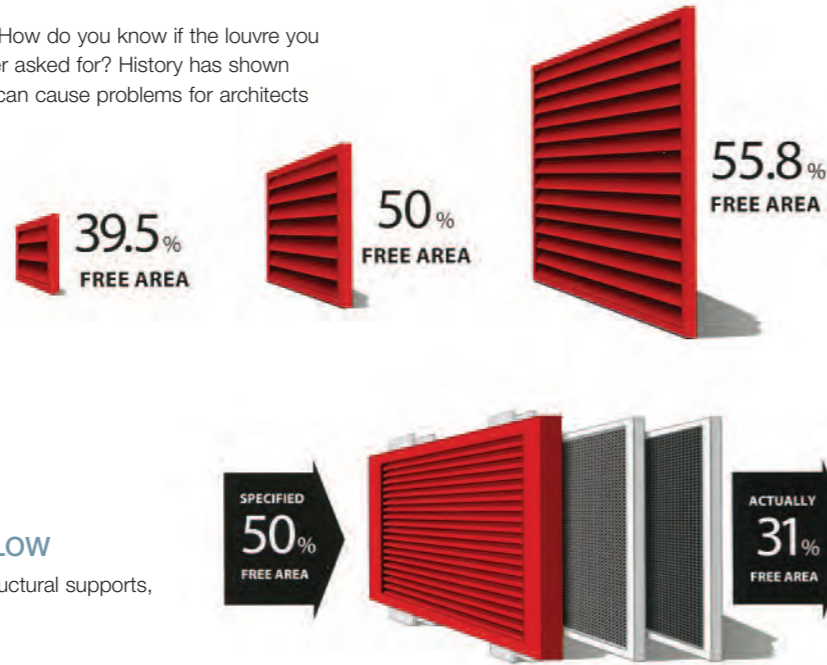
SPECIFYING

SPECIFYING LOUVRES ON FREE AREA ALONE CAN CAUSE SERIOUS PROBLEMS:

The principle reason for using louvres is to move air. How do you know if the louvre you specify will actually deliver the air volume the engineer asked for? History has shown that sizing and specifying louvres on free area alone can cause problems for architects and owners.

WHEN YOU SPECIFY A 50% FREE AREA LOUVRE, WHAT ARE YOU REALLY GETTING?

Free area is affected by the size of the louvre. In this example the louvre design is identical, only the size has been varied. The industry typically quotes free area using a 1.2m x 1.2m square louvre. In reality louvres are never precisely this size.



OTHER FACTORS ALSO IMPACT AIRFLOW

Louvre frames add resistance to airflow. Mullions, structural supports, bird screens and insect screens also reduce airflow.

A MORE EFFICIENT SPECIFICATION SOLUTION IS BASED ON THE NEEDS OF THE BUILDING. IT IS THEREFORE IMPORTANT TO CONSIDER THE FOLLOWING WHEN SPECIFYING LOUVRES:

- Site location and exposure
- Severity of local (site) weather conditions
- Location and exposure of louvres on building
- Airflow rate and direction through louvre
- Maximum acceptable pressure drop
- Degree and depth of water penetration acceptable
- Aesthetics of the building

TESTING

The industry standard for weather testing of louvres in the UK was developed by BSRIA (Building Services Research and Information Association) and HEVAC (Heating, Ventilation and Air Conditioning Manufacturers Association) and was adopted in 2001 as a British and European Standard: BS EN 13030:2001.

C/S own and maintain the same specification of wind tunnel at its research and development facility to ensure all our louvres can be fully tested.

BS EN 13030:2001 TESTS LOUVRES IN 3 KEY PERFORMANCE AREAS::

- **Effectiveness:** The ability to prevent rain penetrating the louvre.
- **Discharge Loss Coefficient:** The airflow characteristic of the louvre, the higher the coefficient, the less resistant the louvre: allowing air to pass more freely.
- **Overall Performance:** This is determined by multiplying the effectiveness by the coefficient. This should not be used as the sole determining factor when choosing louvres as it can mask poor weather performance on a louvre with good airflow.

TESTING

The HEVAC/BSRIA test method enables specifiers to relate one manufacturer's performance against another at set benchmarks, helping to make specification easier. The 2 tables below outline those set benchmarks.

LOUVRE EFFECTIVENESS (PENETRATION CLASS)

Class	Effectiveness (PC)	Maximum allowable penetration of rain l/h. m ²
A	1 to 0.99	0.75
B	0.989 to 0.95	3.75
C	0.949 to 0.80	15
D	Below 0.8	Greater than 15

AIRFLOW CLASS (DISCHARGE LOSS COEFFICIENT)

Airflow Class	Discharge Loss Coefficient (DLC)	Rating
1	0.4 & above	Excellent
2	0.3 to 0.399	Very Good
3	0.2 to 0.299	Good
4	0.199 & below	Fair

C/S Louvres are also tested to the AMCA Standard 500-L-99 Laboratory Methods of Testing Louvres for Rating "Water Penetration" (Non - Wind Driven Rain Test) and the "Wind Driven Rain Water Penetration Test" of the same body.

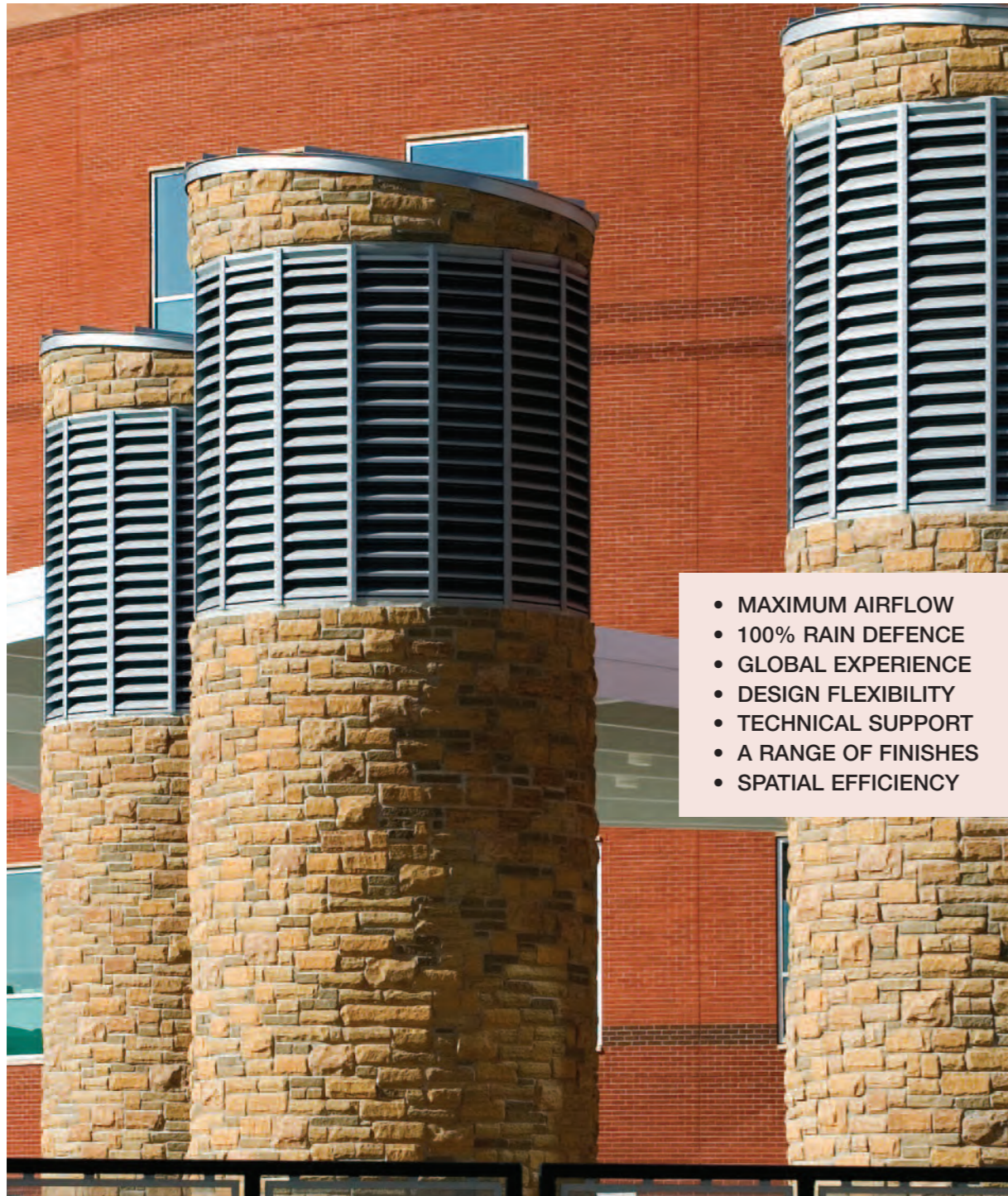
All C/S Louvres are tested in our exclusive test chamber.
The C/S Test chamber enables our engineers to test our designs, or your designs, under real world conditions.

The external wind generator can produce hurricane force winds up to 90 mph creating wind driven rains.

Wind driven rain simulator directs vast quantities of water at the louvre. Up to 230mm of water per hour.

The equipment directly behind the louvre and how much air it requires is a major design consideration. We can supply the correct louvre to meet your required effectiveness at the required core ventilation rate.

WHEN YOU SPECIFY C/S LOUVRES YOU GET:



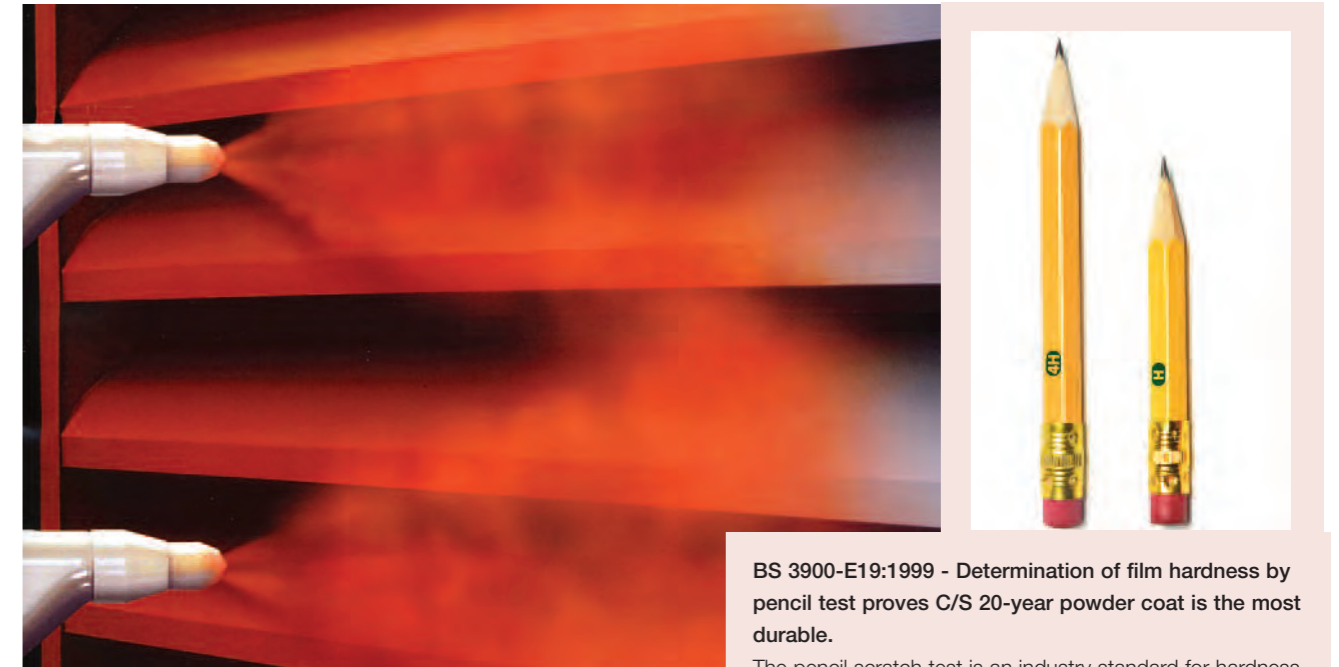
- MAXIMUM AIRFLOW
- 100% RAIN DEFENCE
- GLOBAL EXPERIENCE
- DESIGN FLEXIBILITY
- TECHNICAL SUPPORT
- A RANGE OF FINISHES
- SPATIAL EFFICIENCY

Construction Specialties' reputation for producing high quality products is reinforced by a strict quality management programme to the requirements of ISO 9001.

In over 50 years serving the louvre market, C/S has supplied and installed louvres in some of the world's most exciting and prestigious buildings, including supplying 15,480 m² of specially designed performance louvres for the Freedom Tower in New York, a project we are proud to be associated with.

FINISHES

C/S is heavily invested in powder coat finishing technology. Our plants utilise the most advanced finishing equipment to ensure a perfect finish on all C/S louvres. The C/S 20 year powder coat finish is non-toxic, VOC-free and a more durable alternative to the liquid fluoropolymers. C/S has a broad range of standard, pre-formulated colours, but if your project requires a special colour, we can match it.

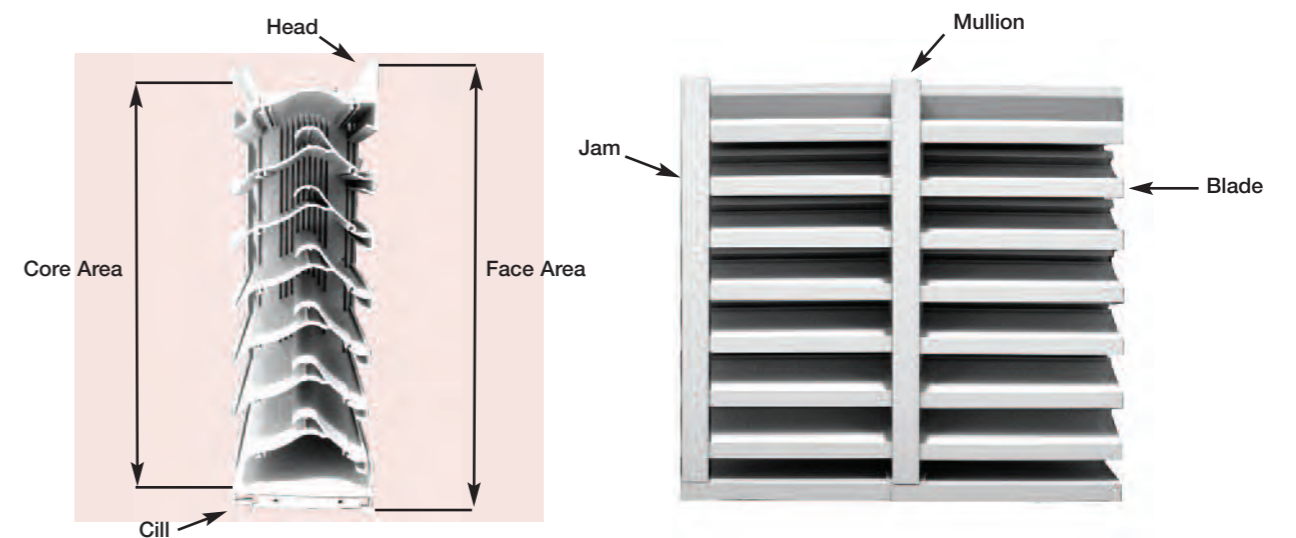


BS 3900-E19:1999 - Determination of film hardness by pencil test proves C/S 20-year powder coat is the most durable.

The pencil scratch test is an industry standard for hardness and scratch resistance. Our C/S powder coat achieved a hardness rating of 4H. Liquid fluoropolymer rated H.

TECHNICAL

The 2 diagrams below depict the different areas of a louvre that may be referred to in any of the literature which accompanies the C/S louvre range.



For more detailed technical information, not contained within this brochure, please see the louvre data sheets or contact our technical department on 01296 652800.

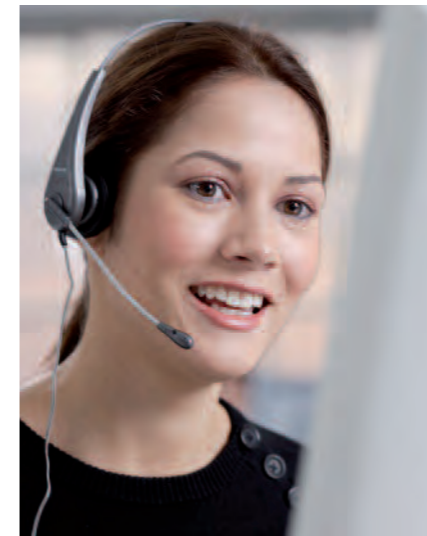
THE C/S ONLINE SPECIFICATION TOOL

We have developed an online tool that takes the guesswork out of louvre selection. Get the correct louvre, Free Area and Pressure Drop every time with the C/S Online Airflow tool. Visit www.c-sgroup.co.uk/louvres for more info.



1. Choose the Louvre model and select what you wish to calculate.
2. Input the necessary measurements, and press calculate.
3. The required calculation will appear at the bottom.

OUR SERVICE



C/S TECHNICAL SUPPORT

We look forward to assisting you with any queries which you may have and ensuring that you have made the right selection for your project. Call us on +44 (0)1296 652800 to speak with our Customer Service Team, Technical Team or Area Representatives.

C/S SPECIFICATION SUPPORT

Please contact our Customer Service Team for the samples you require. info@c-sgroup.co.uk +44 (0)1296 652800

C/S SPECIFICATION SUPPORT

Should you require specification assistance please call us on +44 (0)1296 652800.



NBS Specification Clauses for our products are also available on NBS Plus.

INSTALLATION SERVICE

C/S offer a complete installation package through our sister company Conspec Contracts Ltd. They provide full site surveys, implement installation programmes and advise upon suitability of products. Conspec's experienced installation teams are CSCS, SAFEcontractor and CHAS accredited. More information can be found on our website www.c-sgroup.co.uk/conspec

WARRANTY POLICY

Construction Specialties (UK) Limited (the Company) warrants to its purchasers that their louvre products sold will be free from any defects in materials or workmanship and will meet the design criteria noted in our brochures when properly applied, installed and maintained. If, in the sole opinion of the Company, a product covered by this warranty is defective, the Company will replace or repair it free of any charge. This warranty shall extend for a period of two years following the date of shipment by the Company. This in lieu of all other warranties expressed or implied, and is the sole warranty extended by the Company. The liability of the Company under this warranty is limited to repair or replacement, and does not include any responsibility for consequential or other damage of any nature.

Disclaimer

The Company reserves the right to make design changes for the purpose of product improvement, or to withdraw any design without notice.

TESTING & LEGISLATION

Please see page 9 for more information or contact our technical department on: +44 (0)1296 652800.

RECENT PROJECTS

- Honda - Swindon
- MIRA - Climatic Wind Tunnel
- Freedom Tower (WTC 1) - New York
- Yankee Stadium - New York
- Boston Convention Centre - Boston
- Dubai Metro - Dubai, UAE
- Staples Center - LA
- Sama Towers - Dubai, UAE
- Ibn Battuta Gate Hotel - Dubai, UAE
- Dubai Airport Cooling Tower - Dubai, UAE



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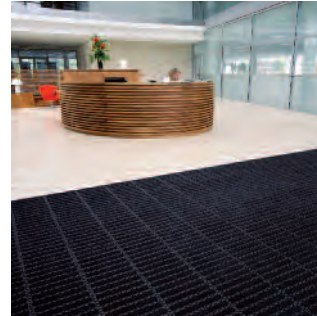
The complete range of C/S products



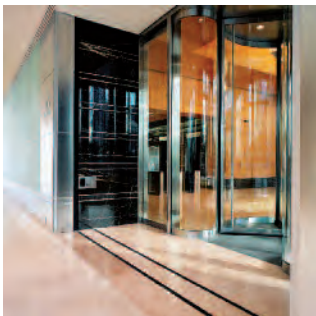
C/S Acrovyn®
Wall, Door and Corner Protection



C/S Wallglaze®
Specialist Coatings for Walls and Floors



C/S Pedisystems®
Entrance Flooring Systems



C/S Allway®
Expansion Joint Covers



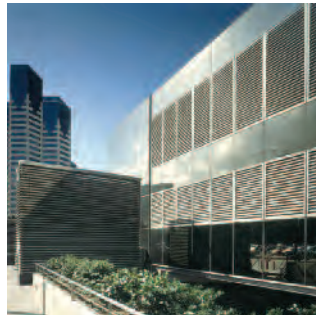
C/S Airfoil®
Solar Shading Systems



C/S Supertrak®
Cubicle Curtain Track



C/S Explovent®
Explosion Venting Systems



C/S Louvre®
Building Ventilation Systems



C/S Solarmotion®
Dynamic Solar Shading



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C/S worldwide operations

- UK (also servicing: Republic of Ireland, Scandinavia, Malta, Portugal, Iceland)
- France
- Germany
- Austria
- Italy
- Spain
- Poland
- USA
- Canada
- Australia
- Singapore
- Hong Kong
- Taiwan
- UAE
- Uruguay



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