

Case Study:

"Two Lines" installation by David Chipperfield Architects

Installation with laminated safety glass containing SEFAR[®] Architecture Vision and SentryGlas[®] ionoplast interlayer at the London Design Festival 2011

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Situated at the Southbank Centre Square, London, the 28 identical vertical laminated glass panels with SentryGlas® ionoplast interlayer have fabric inserts with copper and aluminum coatings that ensure the strong, material-like appearance of the glass surface and create different visual experiences both inside and outside the installation.

The installation "Two Lines" by David Chipperfield Architects delighted and intrigued visitors to Size+Matter at Southbank Centre, one of the cornerstones of the 2011 London Design Festival. For this sensational construction, the highly renowned London architecture practice used laminated glass with SEFAR® Architecture Vision - a new and innovative fabric with a single-sided metal coating made by Swiss corporation, Sefar AG.

"Two Lines" is a sculptural dialogue between two identical forms which only differ from one another in their orientation and the metal finishes of the fabric. Each of the forms consist of a series of unframed glass panels with translucent, single-sided metal coated fabric inserts embedded in laminated glass with a SentryGlas® ionoplast interlayer. The 28 identical vertical glass panels measure 3600 x 1200 mm (141.73 x 47.24 inch). At the upper end, they are connected to horizontal glass panels of up to five meters in length by means of corresponding colored metal connections. The fabric and metal connections are set 10 mm (25/64 inch) inwards on each side so as to highlight the materials used. The excellent load-bearing capacity of the "Two Lines" is a sculptural dialogue between two identical forms which only differ from one another in their orientation and the metal finishes of the fabric. Each of the forms consist of a series of unframed glass panels with SEFAR® Architecture Vision - a new and innovative fabric with a single-sided metal coating - embedded in laminated glass with a SentryGlas® interlayer. SentryGlas® interlayer also ensures the safety and stability of the whole installation.

The concept of "Two Lines" is a focus on the interplay of the orthogonal forms with simple vertical elements. The fabric inserts with copper and aluminum coatings ensure the strong material-like appearance of the glass surface, creating different visual experiences both inside and outside the installation. The scope of this creative fabric is remarkably well demonstrated by the Size+Matter project. The resulting installation "Two Lines" was situated at the Southbank Centre Square, in central London on the south side of the River Thames.

Size+Matter - a commissions programme which is part of the London Design Festival - began in 2007 with the aim of showcasing and investigating the potential of new materials. Since its conception, these annual temporary installations by participating architects, designers, and artists have been impressing interested specialists from all over the world.

The London Design Festival is the largest design festival in the world and is therefore a trendsetter for leading architects, corporations, partners, and sponsors. Over the course of nine days, around 300 topically-relevant events take place, strengthening London's reputation as the creative capital of the world. At the same time, the London Design Festival sees itself as "trend barometer" at which creative and innovative corporations present their ideas for the future. Possibilities for co-operation in other architectural projects arise out of the conceptual collaboration in this urban environment. Astute observers

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and visitors to the event make use of the London Design Festival to discover the latest trends in design, materials, and processes.

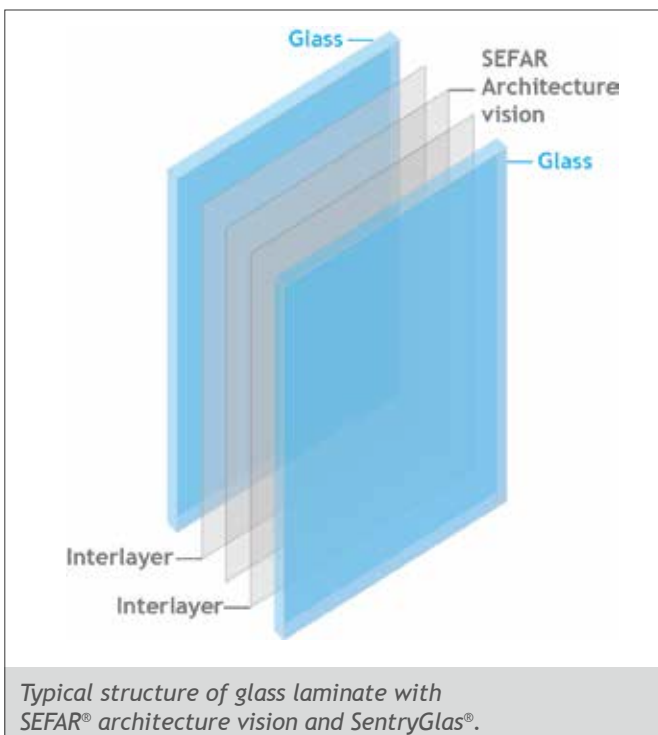
Partners in implementation

David Chipperfield Architects worked on the development of "Two Lines" in conjunction with construction and glass specialists from ARUP. In addition, the realization of this challenging project involved a number of other specialists who are familiar with SEFAR® Architecture Vision. The careful processing of this special architecture fabric was vital in achieving the desired effect. This included Kuraray Glass Laminating Solutions - the manufacturer of the SentryGlas® interlayer, who as a result of extensive research and comprehensive testing produced the optimum correlation of fabric and glass.

In addition, Glas Trösch, BGT Bischoff Glastechnik, and INGLAS - all accredited glass processors - expertly mastered the technically sophisticated glass lamination of this special architecture fabric, SEFAR® Architecture Vision.

The artistic application of SEFAR® Architecture Vision is regarded as an exciting area for the architectural possibilities of technical fabric, especially in combination with glass.

Participation in the London Design Festival provides Sefar with opportunities to present this exciting product in unusual and futuristic surroundings to an international public who are motivated by creativity, competition and new vision. Rouven Seidler, key account manager for SEFAR® Architecture Vision confirms this assessment: "This sensational installation at the Southbank Centre is only one of the many possibilities for Vision. It is very gratifying that David Chipperfield Architects chose these new materials for this project, and that we have been able to achieve the installation together with Arup and our partners."



Typical structure of glass laminate with SEFAR® architecture vision and SentryGlas®.

Lighter façade panels enable more subtle supporting structures

For decades, interlayers made of polyvinyl butyral (PVB) have been the industry standard when producing laminated safety glass. Architects are well aware of the possibilities and limitations of such glass when used extensively in façade engineering, for roofing and window panels. In contrast, SentryGlas® enables an entirely new approach because the interlayer is over 100 times stiffer and five times stronger than PVB. As a consequence, there is an almost perfect transmission of load between two laminated sheets of glass, even at high temperatures, leading to the excellent flexural behavior of the glass when under load - also under direct sunlight in high summer. Accordingly, laminates with SentryGlas® show less than half the rate of deflection when compared to laminates with PVB, when under the same load, and thus almost the same behavior as monolithic glass of the same thickness.

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As well as improved strength and stiffness, other benefits of SentryGlas® include:

- **Safety:** In the event of breakage, glass fragments remain firmly bonded to the interlayer, reducing the chance for injury
- **Security:** SentryGlas® can be used in glazing that withstands bullets, hurricane-force winds and even bomb blasts
- **Durability:** SentryGlas® is extremely durable and resistant to clouding, even after years of exposure
- **Design Versatility:** SentryGlas® can be used in glass manufactured flat or curved, including annealed, toughened, heat-strengthened, spandrel, wired, patterned and color tinted glass
- **UV control:** SentryGlas® is available with or without UV transmittance

Background to SEFAR® Architecture Vision: When used in laminated glass, SEFAR® Architecture Vision gives the glass a remarkable textile-like structural quality as well as removing its visible hardness. Up to 35 fibers per centimeter provide it with unparalleled reflection of surroundings and reflectance of sunlight. Alongside its purely creative possibilities, increased protection from sunlight and its ability to prevent birds from flying into glass are important physical characteristics.

Sefar is the leading manufacturer of monofilament precision fabrics for customer-tailored solutions for separating, coating and dosing in industrial processes, filter components, screen printing, and architectural applications. The company has a global presence with subsidiaries in 21 countries and representations in another 75 countries, with annual sales of 360 million Swiss Francs and 2100 employees worldwide.

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