



## Kalwall and Reduced Glare



# Kalwall® and Reduced Glare

Kalwall®, by its very nature, is an insulating product and can help architects, specifiers and designers comply with Part L and other energy efficiency requirements.

Another key feature which makes it a popular choice for specifiers is its ability to enhance daylight and distribute it internally without shadows, glare and hotspots.

It eliminates the need for blinds and curtains or external solar control while evenly diffusing Museum-Quality Daylighting™ into the interior to create a calming and attractive ambience, even on cloudy days.

Kalwall's unique composition diffuses light so efficiently that even direct sunlight is converted into evenly-distributed daylighting. Panels can be selected to transmit various percentages of light according to individual project requirements. Using our free daylight modelling service, we help architects and designers achieve the desired lux levels within a space.

Furthermore, it also has the ability to transmit these large amounts of usable light with a relatively low levels of solar heat gain. Less radiant energy transmitted, coupled with diffusion, does away with the hot spots which are so common to other light transmitting materials.

The broad diffusion of light over a large area reduces the need for sunblinds, shades and louvres. The resulting illumination gives a soft restful light in work areas as well

as leisure environments. This lighting environment prevents eyestrain, increases efficiency and saves energy while at night the Kalwall will glow softly presenting a striking external appearance.

In areas where glare can be an issue, Kalwall is often specified to eradicate problems associated with other options.

Kalwall is a good choice for specifiers for a wide range of applications. For example, it's used for lighting the interior of museums and negating the risk of direct sunlight onto paints and objects. It's also frequently specified in office environments to create restful light in work areas, to keep glare off computer screens and rooms free from sharp shadows and contrast.

It's particularly popular in the sports and leisure sectors and commonly used around swimming pools and sports halls. Glare on a swimming pool surface is a common concern with dazzling rippled sunlight bouncing off the surface which can cause discomfort to swimmers. In addition it can be a serious safety concern as lifeguards can struggle to see swimmers should they be in need of assistance. In sports halls, it's important that there is an even distribution of light so that players can distinguish markings on the floor as well as easily spotting balls and shuttlecocks etc.

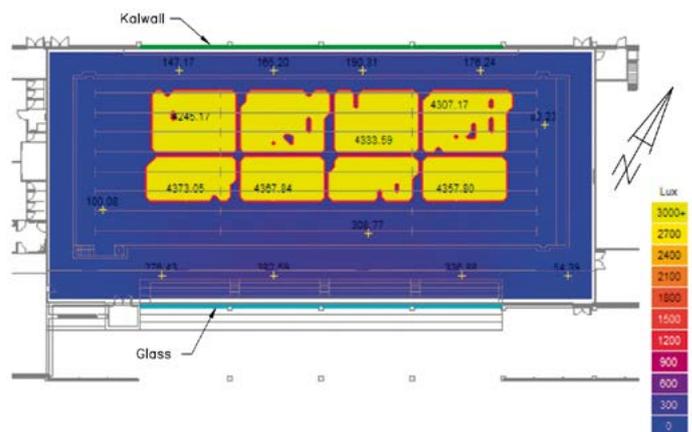
Kalwall is highly resistant to impact making it excellent for use in schools, pools, gymnasias, offices and other public buildings.

## GLARE PATTERN ANALYSIS

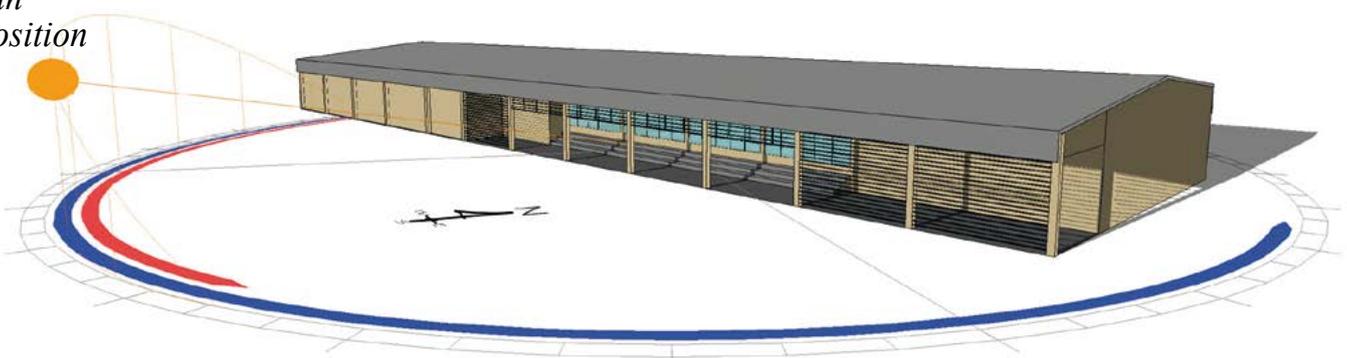
Kalwall offers a free Glare Pattern analysis.

This tool calculates luminance (measurement of glare) within a space. It is used to analyse glare, which is important to know in many situations, such as in sports halls and swimming pools.

These are two examples of glare pattern analysis. Glare is measured in luminance  $\text{cd/m}^2$ . Any reading of direct sunlight over  $3,000 \text{ cd/m}^2$  can be considered glare and may cause discomfort and safety concerns.



*Sun  
Position*



# Reduced Glare in Practice

## LIVERPOOL UNIVERSITY

The swimming pool at Liverpool University is an interesting example of how Kalwall can be used to reduce glare.

Here, one elevation of this famous grade II listed building designed by architect Denys Lasdun in 1966 utilised old Planar glass.

On three separate occasions, sections of glass on the elevation had exploded, showering the inside and pool with glass fragments. This resulted in the pool closing for two weeks each time while the pool was emptied, cleaned, refilled and reheated.

Not only did the existing glass pose a safety problem but the glare on the pool surface was distracting and potentially dangerous making it difficult for the life guards to keep an eye out for swimmers in trouble.

The installation of Kalwall has dramatically improved several aspects. Not only is the pool area warmer due to Kalwall's inherent insulation but there is no risk of shattering glass. In addition, the cladding bathes the interior with natural diffused daylight to create an attractive ambience without shadows or glare.



## DAYLIGHTING SCHOOL SPORT

The Maelor High School, a mixed comprehensive school for pupils between the ages of 11 and 18, is located in the small village of Penley near Wrexham. It has recently acquired a large sports hall which is also used by the local community.

Designed by Wrexham Council architects, this stunning facility uses modern building technology to create the ideal playing conditions. This is achieved by cladding the sports and entrance areas with Ice Blue Kalwall which not only diffuses natural daylight but also creates perfect playing conditions by eliminating glare and shadows.

With increased natural daylight and resistance to solar gain, energy-consuming artificial lighting and air-conditioning costs have been dramatically reduced.

The clerestory daylighting, along the sides and gable ends, has been shaped to follow the lines of the curved roof. The translucent panels are also highly insulating, with U-values as low as 0.28W/m<sup>2</sup>K.

Apart from being specified for all types of new build, Kalwall is increasingly used for the refurbishment of cladding or rooflights on aged buildings.



# What is Kalwall?

Kalwall®, developed and manufactured in the USA for over 60 years, is a highly insulating, diffuse light transmitting building panel system for walls and roofs. The primary component is a translucent structural composite sandwich panel formed by permanently bonding specially formulated fibreglass sheets to a grid core constructed of interlocking thermally broken extruded aluminium 'I-beams'.

Panels are factory prefabricated to the exact size and configuration for each project. Panels can be flat or curved while opening or fixed glazed window units can be incorporated using the integral Clamp-tite installation system.

Kalwall's unique composition combines to reduce solar gain while at the same time maximising thermal insulation. Kalwall diffuses light so efficiently that even direct sunlight is converted into even illumination with reduced glare. Kalwall is able to transmit large amounts of usable daylight into a space with relatively low levels of light transmission. Panels can be selected to transmit various percentages of light according to individual project requirements. Kalwall has been tested according to the procedures of EN13830:2003 – Curtain Walling Product Standard for CE Marking.

