



SageGlass®

# WELL v1 GREEN BUILDING STANDARDS

WELL has become the leading global rating system for buildings seeking to enhance human health and wellness. Designers and specifiers are looking for building products which contribute to their WELL project goals while delivering optimal performance.

The pioneer of the world's smartest electrochromic glass, SageGlass® is the ultimate connector between the built and natural environments. SageGlass offers benefits such the ability to optimize daylight, reduce glare and manage heat – all while maintaining unobstructed views of the outdoors, hence contributing to many of the health and well-being requirements.



BuildingGreen, Inc., the most trusted source of guidance on green building since 1992, has reviewed and approved this WELL v1 information.

## WELL CONCEPTS SAGEGLASS CAN CONTRIBUTE TO

### AIR

#### AIR QUALITY STANDARDS

Glass is inherently a non-emitting source of Volatile Organic Compounds (VOCs). Any sealants used inside the weather barrier during installation must be accounted for in the Air quality standards credit.

#### OPERABLE WINDOWS

SageGlass can be installed in operable windows to provide fresh air while managing transmitted solar heat and light simultaneously. SageGlass' ability to modulate the visible light and solar heat may allow for greater design flexibility and increased window to wall ratio.

#### ENHANCED MATERIAL SAFETY

SageGlass is participating in Declare with a Declare label which provides transparent reporting of the material ingredients and potential health hazards. SageGlass is 'Living Building Challenge Declared', with exceptions for proprietary ingredients and small electrical components. All proprietary ingredients in SageGlass represent less than 0.1% of the product by weight.

#### CLEANABLE ENVIRONMENT

With SageGlass, there is no need for additional shading systems or blinds, which allows for easier access to clean the windows and no need to clean or sanitize the blinds or shading systems. Therefore, there can also be a reduction of cleaning products used.

#### FUNDAMENTAL MATERIAL SAFETY

SageGlass does not contain asbestos or lead at levels equal or greater than 100ppm by weight. Additionally, SageGlass does not contain polychlorinated biphenyls, mercury or mercury based components.

#### ADDITIONAL INFORMATION

##### TOXIC MATERIAL REDUCTION

SageGlass does not contain perfluorinated compound, halogenated flame retardant, phthalates or urea formaldehyde at levels equal or greater than 100ppm. SageGlass does not contain isocyanate-based polyurethane at all.

##### VOC REDUCTION

SageGlass has passed the CDPH/EHLB/ Standard method v1.2 (Jan 2017) regarding VOC emissions. The attestation is available by request.



THIS DOCUMENT IS BASED ON THE "WELL BUILDING STANDARD V1"

# LIGHT

## CIRCADIAN LIGHTING DESIGN

Daylight is the most efficient light source to activate the non-visual functions of our body and regulate our circadian rhythms. With the ability to control via zones and provide variable tint, SageGlass can protect from glare by tinting only when needed, while maximizing the amount of daylight and melanopic lux present in the space.

In particular, SageGlass in-pane zoning (differential tinting within a single glass pane to different transmission states), allows further optimization and balancing of daylight admission and glare control, enhancing the exposure to the non-visual light necessary for circadian synchronization\*.

\* BASED ON INTERNAL MODELLING STUDIES. MORE INFORMATION IS AVAILABLE BY REQUEST.

## AUTOMATED SHADING AND DIMMING CONTROLS

SageGlass can be tinted according to occupants' and spaces' requirements, through automated (as required by WELL) or manual control.

In the automated mode, the tint is controlled by exterior sunlight sensors, which detect whether there are glare conditions or cloud cover. The automated mode can also take into consideration occupancy and seasons for improved energy savings\*.

\* MORE INFORMATION ON SAGEGLASS CONTROL STRATEGIES AVAILABLE BY REQUEST.

## DAYLIGHT MODELLING

Thanks to its variable tint and independent zone control, SageGlass contributes to balancing daylight levels under any weather condition while controlling glare, thus ensuring visual comfort without compromising energy performance. For instance, studies\* by the independent engineering and sustainability consultancy firms Hilson Moran and Estia show that SageGlass is able to provide similar daylight autonomy levels as optimally controlled automated blinds systems, and considerably better performance than manually operated blinds.

\*AVAILABLE ON REQUEST

## SOLAR GLARE CONTROL

SageGlass is an electrochromic glass which enables maximum daylight exposure under any weather condition while controlling glare, thus ensuring visual comfort. Note: SageGlass can reduce visible light transmissivity by 99%.

Moreover, entire sections of SageGlass windows, only specific windows, or individual zones within a single pane of SageGlass can be tinted according to occupants and spaces requirements, through automated or occupant control, to optimize the solar glare control and maximize the building occupants comfort and well-being.

## RIGHT TO LIGHT

By utilizing zoning and the ability to independently control each zone, SageGlass regulates the level of light entering spaces as a function of the external conditions and occupants' needs. SageGlass thus offers the possibility of designing with more glass to bring daylight and a permanent external view to more occupants in the building, as it always remains transparent.

## DAYLIGHT FENESTRATION

Thanks to Sageglass, a window-to-wall ratio up to 60%—the maximum allowed by WELL v1—is possible. That's because the unwanted heat gain and glare can be controlled with less effect on comfort and energy performance than standard glass.

Depending on the IGU configuration, SageGlass in its clearest state has a visible transmittance of 60%, which WELL requires for this feature. However, instead of modulating the opacity, which inherently means the view would be obscured when it is opaque, SageGlass modulates the tint, therefore occupants always have a view to the outdoors.

# DID YOU KNOW?

Daylight and views are **essential** to our **well-being, development and health**. Research studies have suggested a 18% increase in productivity, and a 10% to 25% improvement in cognitive performances in offices with **more natural light and views** to the outdoors.

SOURCE: WORLD GREEN BUILDING COUNCIL: HEALTH, WELLBEING & PRODUCTIVITY IN OFFICES, THE NEXT CHAPTER FOR GREEN BUILDING



THIS DOCUMENT IS BASED ON THE "WELL BUILDING STANDARD V1"

# FITNESS

## INTERIOR FITNESS CIRCULATION

Installing SageGlass within stairs and high circulation areas creates aesthetic appeal and connection of the indoors with the outdoor spaces, while still controlling glare that, if left unmanaged, could be uncomfortable or unsafe.

# COMFORT

## EXTERIOR NOISE INTRUSION

Traffic, construction work etc. all these noises affect the daily quality of life, and even human health. To help reduce this exterior noise, SageGlass is produced with one laminate layer and is available as double or triple glazing, with additional sound dampening acoustic layers, which enhances sound insulation properties.

A high quality airtight frame should be used for optimum performance.

## ADDITIONAL INFORMATION

### INDIVIDUAL THERMAL CONTROL

SageGlass dynamic glazing can be controlled manually, allowing occupants to control their thermal environment when and how they want.

## THERMAL COMFORT

Through its efficient insulating and dynamic solar control properties, SageGlass contributes to creating thermally comfortable environments both in winter and summer. SageGlass can particularly help to regulate the radiant heat in the space. Note that SageGlass should be mounted in a high performance framing system. Triple pane configuration options are also available for increased thermal performance.

# MIND

## INTEGRATIVE DESIGN

Sageglass puts the comfort and the human experience at the core. Still, SageGlass remains a part of a whole design strategy aiming at bringing comfort to the occupants, and its integration thus needs to be thought as early as possible in the project life. For each project, the SageGlass team engages with all stakeholders from the earliest stages, promoting wellness and focusing on the needs of the occupants.

SageGlass also has BIM objects to help streamline this integrative design process.

## POST OCCUPANCY SURVEY

In accordance with its vision to improve the occupant's comfort in buildings, SageGlass has partnered with the Center for the Built Environment (CBE) at UC Berkeley to develop a specific module which can be used with the CBE core survey on projects with dynamic glazing. This can serve to measure the effective impact of the dynamic glazings on thermal comfort and lighting, in addition to other factors, and provide feedback for further post-occupancy commissioning.

*MIND CONTINUED ON NEXT PAGE*



## BIOPHILIA I - QUALITATIVE

SageGlass allows maximizing daylight inside and connecting with the surroundings, without having the inconvenience of too much light. This enables the incorporation of nature inside the building and connection with nature outside the building. Designing the facade with independent zoning allows the occupant to always have a pane of clear SageGlass to have view to the exterior weather, while controlling the sun's glare or heat.

## MATERIAL TRANSPARENCY

SageGlass is covered by a complete [Health Product Declaration](#) and a [DECLARE® label](#) which provides a transparency reporting of the material ingredients and potential health hazards contained.

Every year, Saint-Gobain publishes its annual report, including sustainability reporting information on SageGlass, which is based on the GRI V4 (Global Reporting Initiative) framework. The report is publicly available on the [Saint-Gobain website](#).



SageGlass®

## THE GLOBAL DYNAMIC GLASS TECHNOLOGY LEADER

SageGlass tints automatically to optimize daylight, reduce glare and manage heat – all while maintaining unobstructed views of the outdoors. With SageGlass, architects and building owners can improve occupant comfort and reduce energy demand in buildings. As a wholly-owned subsidiary of Saint-Gobain, SageGlass is backed by more than 350 years of building science expertise.

Learn more about how SageGlass helps customers achieve their project goals at [sageglass.com](http://sageglass.com). To find a local product expert in your area, visit: [sageglass.com/contact](http://sageglass.com/contact)



## A KNOWLEDGEABLE PARTNER FOR SUSTAINABLE CONSTRUCTION

Saint-Gobain is committed to offer sustainable products and solutions for its customers. To this end, Saint-Gobain continuously strengthens health and environmental performance of its products and deliver transparency documentation to prove the actual sustainability level of each product.

For many years, Saint-Gobain has been involved in local efforts to promote sustainable buildings by joining Green Building Councils (GBCs). Today, we are actively involved, both locally and globally:

- Member of the Corporate Advisory Board of the World GBC,
- Partner of the European Regional Network,
- Platinum member of the US GBC,
- Member of more than 35 national GBCs worldwide.

## DISCLAIMER

This document only provides an indication on the possible credits which SageGlass could contribute to in relation to WELL building standard v1. It is intended as a guide in the choice of appropriate glazing in relation to the WELL building standard and has no binding value. The WELL scoring of a project is influenced by a variety of factors, such as the type of building, configuration of all the other elements of the building in addition to the glass, final configuration of the glazing itself, etc. The final rating is subject to the performance of a WELL assessment as per the WELL methods and procedures available on their site. It is the user's responsibility to choose the appropriate building environmental assessments methods destined to ensure that the building meets regulatory requirements at national, local or regional level.