



**FOR IMMEDIATE RELEASE**

**AGC Expands Product Lineup of “PairPlus<sup>®</sup>” for Energy-Saving Window Remodeling  
— Will Launch Competitively-Priced Ecoglass<sup>\*1</sup>, “PairPlus<sup>®</sup> Air” --**

**Tokyo, September 28, 2011** - AGC announced today that it will significantly expand the product lineup of the “PairPlus<sup>®</sup>” series from October 3, 2011. With the expansion of “PairPlus<sup>®</sup>”, Ecoglass for energy-saving window remodeling, consumers will be able to replace conventional window glass with Ecoglass at lower cost. In addition, it will also enable energy-efficient window remodeling on the mid and upper levels of buildings by simply replacing glass, where it has been difficult to replace single-glazed glass with Ecoglass.

Against the backdrop of rising environmental awareness in recent years, the market for energy-saving window remodeling has been growing rapidly. AGC’s PairPlus<sup>®</sup>, which was released in February 2009, has been increasingly used in a wide range of buildings from single-family housing and condominium units to schools and commercial buildings as it is highly evaluated for its distinctive features including **“high heat-shielding in summer and thermal insulation in winter helps to save energy all year around by cutting utility costs for air-conditioning by about 20 percent (in Tokyo) <sup>\*2</sup>”** and **“the unit can be mounted to existing single glazing sashes with a simple installation procedure that requires only 30 to 60 minutes per window.”**

While demand for Ecoglass has been rising, we have also identified various needs among customers, such as the demand for Ecoglass that is competitively-priced at the expense of high thermal insulation performance in winter, Ecoglass that can be attached to a single glazing sash in rooms on the mid and upper levels of buildings where materials must have wind pressure resistance, and Ecoglass made of thick glass that is suitable for installation in glass-fronted premises.

In response to such customer requests, AGC will significantly enhance its Ecoglass product lineup as described below.

- (1) AGC will launch sales of “PairPlus<sup>®</sup> Air,” a new product priced about 14% less than existing products (reference price), which is achieved by filling dry air in the air layer between two sheets of glass, instead of argon gas as with existing products.**
- (2) All components of “PairPlus<sup>®</sup>” and “PairPlus<sup>®</sup> Air” have wind pressure resistance up to 2800 Pa, making them suitable for installation in rooms on the mid and upper levels of buildings where wind pressure is strong.**
- (3) Products with thick glass (18 mm in total thickness), which are suitable for use in glass-fronted premises, will be added to the PairPlus<sup>®</sup> series.**

As a company that contributes to creating a sustainable society, AGC is committed to improving the indoor environment of housing, office buildings, and commercial establishments and helping to fight climate change through various new product development.



\*1 Ecoglass is the common name for Low-E double-glazed products manufactured by three members of the Flat Glass Manufacturers Association of Japan (Asahi Glass Co., Ltd., Nippon Sheet Glass Co., Ltd., and Central Glass Co., Ltd.) that satisfy next-generation energy-saving standards with only a lace curtain drawn over a window.

Flat Glass Manufacturers Association of Japan webpage on Ecoglass: <http://www.ecoglass.jp/>

Note: “PairPlus<sup>®</sup> Air” with the air layer of 5 mm or less is not classified as Ecoglass.

\*2 Calculated based on the following assumptions.

Housing model: Next-generation energy-saving standard evaluation model (Two-story house with a total floor area of 125.88 m<sup>2</sup>/Aperture ratio of 25%)

Calculation program: SMASH ver.2.0

### **About the AGC Group**

The AGC Group, with Tokyo-based Asahi Glass Co., Ltd. at its core, is a world-leading supplier of flat, automotive and display glass, chemicals and other high-tech materials and components. Drawing on more than a century of technical innovation, the AGC Group has developed world-class expertise in fields including glass, fluorine chemistry and ceramics technologies. The group employs some 50,000 people worldwide and generates annual sales of more than 15 billion USD through business in about 30 countries. For more information, please visit [www.agc.com/english/](http://www.agc.com/english/).

#### *Media Contact*

Toshihiro Ueda, General Manager, Corporate Communications & Investor Relations

**AGC** Asahi Glass Co., Ltd.

(Contact: Kenichi Oda; Tel: +81-3-3218-5603; E-mail: [info-pr@agc.com](mailto:info-pr@agc.com))

Product Inquiries: **AGC** Glass Company Customer Center

Tel/Navi Dial: 0570-001-555

URL: <http://www.asahiglassplaza.net/>

### *Reference*

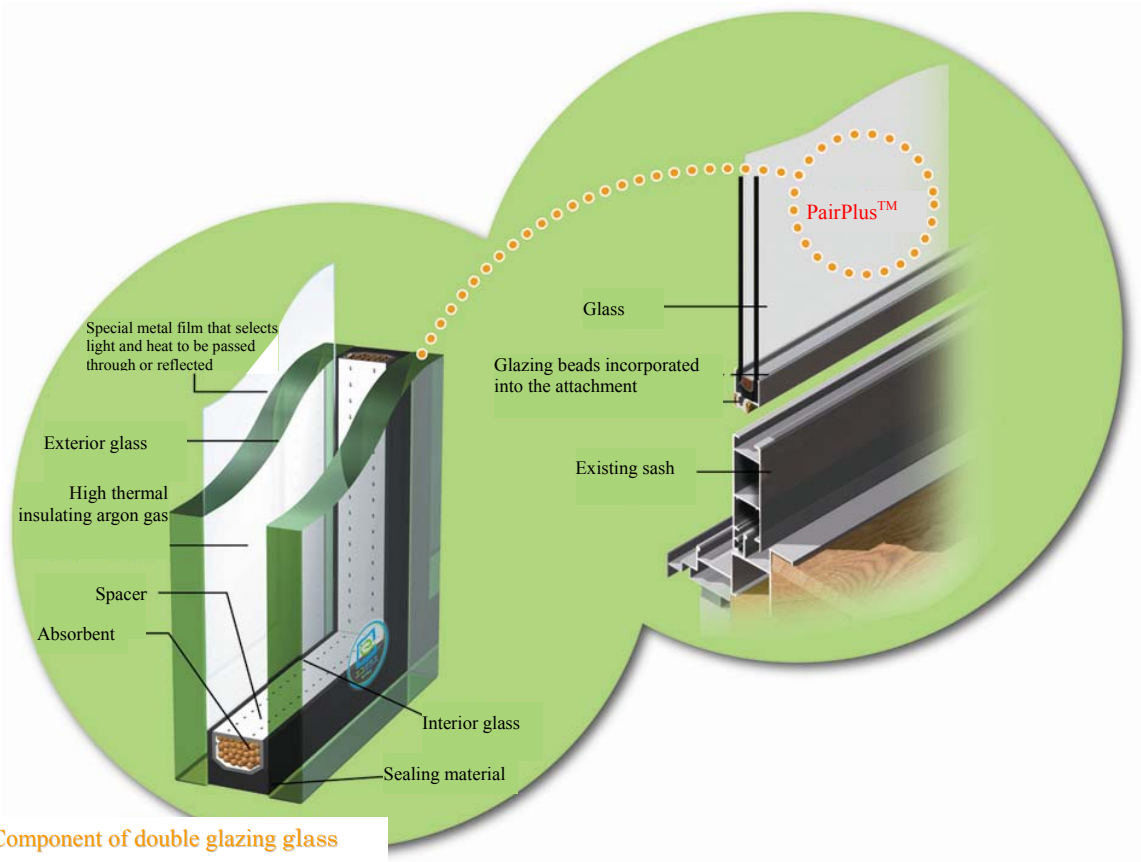
#### **Features of PairPlus®**

PairPlus® incorporates an attachment frame for Ecoglass (Low-E double glazing) so the unit can be installed to a single glazing sash used in an existing house.

The main features of PairPlus® are as follows:

- A special metal film coating on the inside of one of the sheets of glass enables the unit to keep out solar heat in summer and to insulate in winter about twice as effectively as a single sheet of glass, and to reduce air-conditioning energy consumption. If PairPlus® is installed instead of a single sheet of glass to all windows in a house, the estimated energy-saving effect per house is as follows (house located in Tokyo, estimated by AGC):
  - Air-conditioning expenses reduced by 22% a year. (Air-conditioning expenses decrease by 8,600 yen from 39,800 yen to 30,300 yen.)
  - CO2 emissions reduced by 22% a year. (CO2 emissions decrease by 138 kg from 626 kg to 488 kg.)
  
- The installation takes only 30 to 60 minutes per window simply by replacing existing glass with PairPlus®.
  
- Compared to inner windows, PairPlus® has the following advantages:
  - Easier window cleaning
  - No need to open and close windows twice each time
  - Can utilize the bay window space

## Product Image of PairPlus®



Component of double glazing glass

## Specifications, performance, and reference prices of major Ecoglass products

	<b>PairPlus® Air (to be released on October 3)</b>	<b>PairPlus®</b>	<b>Transparent double-glazing glass</b>	<b>Single sheet of glass</b>
Glass structure	Exterior glass: 3 mm Low-E Interior glass: 3 mm float		Exterior glass: 3 mm float Interior glass: 3 mm float	5 mm float
Air layer	6 mm dry air layer	6 mm air layer filled with argon gas	6 mm dry air layer	-
Thermal transmission coefficient $W/(m^2/K)$	2.5	2.1	3.4	5.9
Solar heat gain coefficient	0.43		0.80	0.86
Outside temperature when condensation starts to occur	-17°C	-26°C	-8°C	4°C
Estimated price of materials (¥/m <sup>2</sup> )	21,600	25,200	19,000	6,090

Thermal transmission coefficient (U-value):

Indicates the amount of heat that passes through an area of 1 m<sup>2</sup> in watts when the difference in temperature inside and outside glass is one degree Celsius. The smaller the U-value of glass is, the higher its thermal insulation performance is. Therefore, the temperature inside falls less rapidly and the amount of condensation on the glass surface is kept low.

Solar heat gain coefficient ( $\eta$ -value):

Indicates the ratio of the amount of heat that flows in a room assuming the  $\eta$ -value of light incident on glass surface is 1. The smaller the  $\eta$ -value of glass is, the higher its heat shielding performance is and the temperature inside room is kept lower.

Outside temperature when condensation starts to occur:

Outside temperature when condensation starts to occur on a glass surface based on the assumption that room temperature is 20°C and interior humidity is 50% (based on a simulation by AGC).