PRELIMINARY TECHNOLOGY ASSESSMENT – MAY 2021

Snap-on Window Insulation Panels

Technology Overview

Windows, especially single-pane windows, are the weakest energy-efficiency link in the building envelope. They account for approximately 39% of the energy used annually to heat commercial buildings in the U.S. and 28% of the energy used to cool them. Snap-on window insulation panels improve the thermal performance of windows while maintaining window transparency and operability. The panels snap on with small, clear fasteners and trap air between the existing window and the panel. Like the gap between panes in a double-pane window (or the pockets of air in a down comforter), it is this layer of enclosed air – and its thickness in particular – that creates a barrier, improving the efficiency of the window. The panels are lightweight and custom-manufactured to accommodate windows of different sizes. Custom software supports accurate window measurements so that panels are correctly sized.

Why is GSA Interested?

High-performance windows could reduce GSA's window-related energy loss by approximately 75%, but replacement can be costly, especially in older buildings where lead paint and/or asbestos must be remediated as part of a window replacement. Snap-on window insulation panels can improve the insulating power of low-performing windows without the expense of replacing the windows themselves. They can also help improve occupant thermal comfort. Because they attach directly to the window itself rather than to the frame, they maintain window operability. And because they do not require modifications to a building's facade, they are suitable for historic buildings, which account for one-third of the GSA-owned portfolio.

How Will Success Be Measured?

The testbed design will assess four key manufacturer claims: 8-11% whole-building heating savings; easy snap-on installation; improved thermal comfort; and payback of less than 7 years.

Deployment Potential

Snap-on window insulation panels are applicable to single-pane and older, lower-performing double-pane windows. They are best suited to cold climates and appropriate for historic buildings.

[1]Apte, J., Arasteh, D. (2006), *Window-Related Energy Consumption in the US Residential and Commercial Building Stock*. Berkeley, CA: Lawrence Berkeley National Laboratory report, LBNL-60146

Green Proving Ground (GPG), in association with a Department of Energy national laboratory, is evaluating the real-world performance of Snap-on Window Insulation Panels in federally owned buildings within GSA's inventory. The technology will be provided by WexEnergy (Rochester, NY) and coordinated with other ongoing evaluations of this technology.