

OWENS CORNING COMMERCIAL ENERGY CALCULATOR USAGE INSTRUCTIONS

$k = A \cdot \exp(-E_a/R^*T)$
 $Area_{mw} \times [1 - e^{-HP_1(HC-1)}]$
 $(P + \frac{n^2 a}{V^2})(\frac{V}{n} - b) = RT$
 $\frac{dV}{dt} (\frac{1}{n}) [P + \frac{n^2 a}{V^2}] + \frac{dP}{dt} - 2 \frac{n^2 a}{V^3} [\frac{V}{n} + b] - R \frac{dT}{dt} = 0$
 $P_1 + \frac{v_1^2}{2g} = z_2 + \frac{P_2}{\rho g} + \frac{v_2^2}{2g} + \dots$



OWENS CORNING COMMERCIAL ENERGY CALCULATOR USAGE INSTRUCTIONS

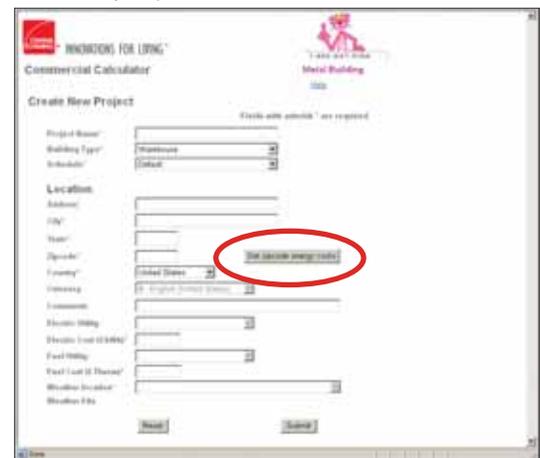
GETTING STARTED

Outlined below are the step-by-step instructions to use the Commercial Energy Calculator. To access to the tool, use the user name and password provided by your Owens Corning representative.

1. Enter the following address into your web browser:
http://www.owenscorning.com/comminul/calculator.asp
This will take you to the Log In Screen.
2. Enter the **User** name and **Password** and click the **Log In** button.
3. On the main page you will be able to view all the projects you have created under your profile as well as start new projects. Click on the **New Project** link to start a new project.
4. The following window will be displayed when you create a new project.



3. On the main page you will be able to view all the projects you have created under your profile as well as start new projects. Click on the **New Project** link to start a new project.



Here you will need to input the information specific to your construction project or metal building. Begin by entering the **Project Name**, **Address**, **City**, **State**, and **Zip Code**. Then select the **Building Type** and **Schedule** from the pull down menus. After populating these fields, click on the **Get ZIP code energy costs** button. This fills in the remaining fields on the sheet using state average utility costs and the closest weather station location based on the ZIP code. If you know the utility costs are different for your specific location, simply type over the numbers in the **Electric Cost (\$/kWh)** and **Fuel Cost (\$/Therm)** fields.

After you have filled in the applicable fields, click the **Submit** button at the bottom of the page. If you need to start over, click the **Reset** button to clear all fields.



OWENS CORNING COMMERCIAL ENERGY CALCULATOR USAGE INSTRUCTIONS



INNOVATIONS FOR LIVING™

Note: When the cursor is held over the **Schedule** drop down box a brief explanation of the available schedules will appear. Additional field information is available on the **Help** menu.

5. After pressing the **Submit** button, you will be taken to a screen where you can input the specific building dimensions, type of roof, space conditioning category and window percentages. Begin by entering the building **Length (ft)**, **Width (ft)**, and **Average Wall Height (ft)**. Next, select the **Roof Type** and **Space Conditioning** category from the pull down menus. Finally, type in the **Windows (% of Wall Area)** for each wall and **Skylights (% of Roof Area)** for the roof. Your building

design is now complete. Click on the **Calculate** button at the bottom of the screen to begin the energy cost saving simulations.

6. The following window will be displayed when you press the **Calculate** button. This page will display the progress while the Commercial Energy Calculator processes the entered project data.

Note: Please allow the calculator time to process the submitted data.



7. When the calculations are complete, the following **Results** screen will be displayed. The initial simulation targets **Proposed** energy efficiency measures for the building **Envelope, HVAC, and Lighting** systems that will achieve a 50% reduction in energy cost and qualify for the \$1.80 per square foot tax deduction per the Energy Policy Act of 2005 (EPAct 2005). The **Baseline** levels for this simulation are derived from ASHRAE 90.1-2001 as mandated in EPAct 2005.

Category	Baseline	Proposed
Electric Cost (\$/kWh)	0.080	0.039
Fuel Cost (\$/therm)	1.354	0.776
Total Energy Cost	\$193,723	\$108,254
Electric Savings		\$55,810
Fuel Savings		\$67,776
Total Energy Savings		\$123,586
Measured Cost	\$400,140	\$276,554
EPAct Tax Deduction	\$193,200	\$138,288
Final Payback	4.3	2.1





INNOVATIONS FOR LIVING™

OWENS CORNING COMMERCIAL ENERGY CALCULATOR USAGE INSTRUCTIONS

USAGE INSTRUCTIONS

8. Further, you can examine the possibility of qualifying for a \$0.60 per square foot partial tax deduction by selecting the **Envelope Only 16.67%** option from the **Results Target** pull down menu. If your energy cost savings are greater than 16.67%, your building qualifies for the \$0.60 per square foot partial deduction if you apply all of the **Proposed** envelope measures.

Note: A building cannot qualify for both the **Full EAct 50%** and the **Envelope Only 16.67%** tax deduction. The maximum EAct 2005 tax deduction is \$1.80 per square foot for a commercial building.

9. Some buildings will not qualify for either tax deduction, but the Commercial Energy Calculator is not just about EAct...it is also about **PAYBACK**. The Measures Costs & Payback estimates a payback for your building with and without the EAct tax deduction.

The Commercial Energy Calculator can be used to estimate the energy cost savings and payback associated with more thermally efficient insulation systems in metal building roofs and walls. To illustrate, let's compare the energy cost savings associated with going from an R13 to an R19 in a metal building wall assembly. First, select **Wall - R13** from the **Baseline Wall Construction** pull down menu and **Wall - R19** from the **Proposed Wall Construction** pull down menu. Next, enter your **Installed Cost (\$/ft²)** for each of these systems by typing over the default numbers. Finally, select the **No change** option from the **Proposed** pull down menu for the remaining **Envelope, HVAC, and Lighting** measures. Hit the **Recalculate** button to determine the energy cost savings associated with changing to this level of wall insulation.

If you have additional questions about the Commercial Energy Calculator contact your Owens Corning Representative.



OWENS CORNING INSULATING SYSTEMS, LLC
ONE OWENS CORNING PARKWAY
TOLEDO, OHIO, USA 43659

1-800-GET-PINK™
www.owenscorning.com

Pub. No. 10005370. Printed in U.S.A. August 2007. THE PINK PANTHER™ & ©1964–2007 Metro-Goldwyn-Mayer Studios Inc. All Rights Reserved. The color PINK is a registered trademark of Owens Corning. ©2007 Owens Corning.

