

Technical Bulletin: Blower Door Applications



Residential New Construction Program

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The Energy Conservatory or TEC has updated their TEC Auto Test app to include a wind assistant feature. This new feature allows more accurate blower door results when the weather is windy. In addition to the wind assistant, this technical bulletin will introduce TEC's gauge app which allows raters to remotely control the blower door.

Best Practices for Dealing with Wind

Wind is one the largest obstacles to overcome when performing a blower door test. While we cannot stop the wind from blowing, raters can adjust their testing setup to accommodate for wind. Multipoint tests accuracy can greatly be affected by the wind. A 2 Pa error in a pressure differential can cause 3-7% error in the final result. Refer to the following best practices when testing in the wind.

- Placing the blower door on the leeward side, or the sheltered side, minimizes errors from the wind. An example of the leeward side is to the right.
- The reference hose that goes outside is the most susceptible to the wind. Covering the hose with a bottle or a manometer bag buffers the impact from the wind. However, never completely close off the hose to the outside as this will cause false readings.
- Pay attention to the average speed of the wind and follow the recommended testing set ups below.



Image of the leeward side of the wind provided by TEC.

Wind Speed

- >5 mph
- 5-10 mph
- 10-20 mph
- 20+ mph

Recommendations

- Normal setup
- Leeward side, 10 sec avg
- Leeward side, 30 sec avg
- Not Recommended

Wind Assistant

The newest update to the TEC AutoTest App added the wind assistant feature. This feature can be found in the settings under the Auto Test Settings (Envelope) section. An image of the location of the Wind Assistant is to the right. There are three options with the wind assistant feature.

1. Suggest When To Use (Default)
2. Always on
3. Always off

AUTO TEST SETTINGS (ENVELOPE)	
Envelope Fan Adjust Rate	2.0
Target Tolerance (Pa)	2.0
Target Search Time (seconds)	90
High Pressure Limit (Pa)	110
Wind Assistant	Suggest When To Use

Wind Assistant located in the envelope settings.

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When in the “Suggest When To Use” mode, after taking the baseline pressure reading during windy conditions, a notification appears in the app asking the user if they would like to use the wind assistant feature. The wind assistant feature then adjusts the following setting to reduce the uncertainty of the test.

- Time average period – time to measure baseline and data points.
- Envelope Fan Adjust Rate – The rate at which the fan changes speed.
- Target Tolerance (Pa) – The pressure tolerance around a data point.

WIND ASSISTANT	
Wind Assistant	Suggest When To Use
Time Average Period (sec)	30
Envelope Fan Adjust Rate	0.8
Target Tolerance (Pa)	4.0

Wind Assistant adjusted settings.

TEC Gauge App

Another TEC App is their Gauge app which allows raters to control the blower door for both the DG-700 (with a Wi-Fi link) or the DG-1000. This app is especially useful when conducting leakage to outside tests as raters don't have to walk up and down stairs to adjust the blower door. The image below shows the various button functions. To see a tutorial of the app, watch this [video](#) by the TEC.

