INSPECT-R® Density Gauge

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Overview

The INSPECT-R® Density Gauge is a device used to verify the R-value of Owens Corning® PROPINK Complete™ Blown-in Wall System in a wall cavity.

Features and Benefits

There are many benefits to using the INSPECT-R® Insulation Density Gauge:

- Non-destructive – No insulation samples required. Just place it against the wall and read the gauge.
- Fast – Results in seconds.
- R-value – The INSPECT-R® Insulation Density Gauge is used to verify R-value.
- Saves money – Use it to prevent under filling and overfilling the wall cavity.
- Convenient – It uses the same air compressor that is used for a pneumatic staple gun.
- Durable – It can take the abuse of the worksite and still deliver accurate results.

Getting Started

To begin using the INSPECT-R® Density Gauge, you will need a compressor with at least a 6 gallon capacity and a 2 HP motor.

- Set the regulator on the compressor at 75 to 80 psig. Note: This setting will allow you to use other tools such as a pneumatic stapler without changing the setting.
- Attach a ⅜ inch pneumatic hose (with quick disconnect) to the compressor and to the INSPECT-R® Density Gauge.
- Start the compressor and allow it to increase to its rated pressure, which is typically 120 psig.

* This device has been designed for use with the Owens Corning® PROPINK Complete™ Blown-in Wall System exclusively and cannot be used with other fabrics or insulation systems.

Figure 1

Figure 2

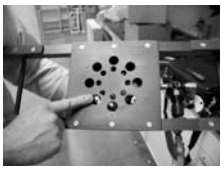
Figure 3

Calibration

Step 1: Set the INSPECT-R® Density Gauge to 10 psig (Figure 1).

Step 2: Hold the gauge in the vertical position so that you are looking at the large dial (Figure 2). If the needle reads zero, then proceed to the next step (Step 3 in calibration). If the needle is more than one bar from zero, use a small screwdriver to turn the screw on the face of the dial and adjust the needle to zero. Turn on the air switch. The needle should still read zero.

Step 3: If the air switch is on and the needle does not read zero, inspect the air passages on the back of the gauge for any obstructions (Figure 3). Repeat procedure after repairs.

Figure 4

Figure 5

Figure 6

Measurement and Conversion to R-Value

Step 1: You will need at least one filled wall cavity with stud spacings between 12 and 24 inches to measure density. Measurements should not be taken at the nozzle entry points, where there is an obvious hole in the insulation, or closer than 2 inches from any framing feature (Figure 4).

Step 2: Grip the handles on both sides of the INSPECT-R® Density Gauge and press the device against the studs, centered between them (Figure 5).

Step 3: Open the air switch and read the gauge. Note the reading. Move sensor to another location within the cavity space. Repeat this step five more times to get a total of six readings (Figure 6).

Step 4: Average the six readings from the INSPECT-R® Density Gauge. On the conversion chart, find the highest W.C. minimum reading that matches the average without going over. Read across the chart to see the density and R-Value achieved.

Step 5: Enter the readings on the Attic & Wall Card (see Owens Corning publication number 10018804) upon completion of the project. This Attic & Wall Card certifies that the house has achieved a given R-value.

Example:

The following pressure readings in W.C. are noted from the INSPECT-R® Density Gauge measured at 6 points on a 2x4 wall: .70, .75, .75, .70, .65, .70. Added together they equal 4.25. Divide by 6 to get an average of 0.71. Find the target R-Value for the cavity size in the charts below. Ensure that your average INSPECT-R® Density Gauge W.C. reading meets or exceeds the W.C. value listed on the chart.

2 x 4 Walls

Need a minimum average INSPECT-R® Density Gauge reading (W.C.) of	with a density (PCF) of	To reach an R-Value of
0.40	1.25	14
0.62	1.45	15
1.47	2.20	16

2 x 6 Walls

Need a minimum average INSPECT-R® Density Gauge reading (W.C.) of	with a density (PCF) of	To reach an R-Value of
0.40	1.25	22
0.51	1.35	23
0.96	1.75	24
1.64	2.35	25

Inaccurate readings

The following practices can produce inaccurate INSPECT-R® Density Gauge readings.

1. Large holes in blown cavity

If the installer blows the cavities with large holes (2 inches or larger), the INSPECT-R® Density Gauge will tend to overestimate the density of the cavity.

2. Measuring over the injection point

Readings taken over the injection point are generally not representative of the density of the cavity and should be avoided.

3. Poor contact of the INSPECT-R® Density Gauge with the stud

The INSPECT-R® Density Gauge should rest firmly against the studs. If the pads are raised above the studs, the density will be underestimated.

4. Compressed fiberglass

The fiberglass should be measured after it is blown in the wall. Do not broom the cavity before you measure the density. If a cavity has been handled and compressed, the reading will be underestimated.

5. Not enough data points

A single data point in a cavity does not give an accurate measure of the density. At least six points should be measured to get an average (within 10% of actual). More data points will improve the accuracy. A house should have five cavity measurements per floor. Selected cavities should be spread throughout each floor.

6. Gauge orientation

When the gauge is laying on the floor, the needle will read about 0.1. The gauge should read zero when it is held properly as shown in Figure 5. The gauge should not be held in any other orientation than illustrated. *Measuring a ceiling will result in inaccurate information.*

7. Source pressure

If a small compressor is used, you should closely watch the regulator pressure. If a small compressor does not keep up with the air usages, the pressure may drop below 10 psi. This will result in inaccurate information. When using a small compressor, switch on the air only to take a reading. Turn the switch off between readings.

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Pub. No. 59363-I. Printed in U.S.A. October 2016.
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