# Interpreting Infrared Quiz Answer Key

# Quality Control Inspector

**DISCLAIMER: This quiz is intended for use as an interim review. Distribute to students after training the associated curriculum chapter, or the next day, to refresh the lesson. Being publicly available renders this specific quiz invalid for use as a formal assessment tool for accreditation.  See Tier 2.14(b) IREC 01022 ISPQ accreditation standard.**

 **Learning Objectives**

By attending this session, participants will be able to:

* Explain of the benefits and limitations of infrared (IR) thermography.
* Interpret infrared images as they relate to weatherization opportunities.
* Demonstrate how to assess the quality of weatherization measure installation using IR images.
* Utilize IR imaging in conjunction with the blower door to track infiltration and guide air sealing activities.

 **Questions and Rationale**

**Objective:**

* Explain of the benefits and limitations of infrared (IR) thermography.

**Question:**

**1**. Which of the following is NOT an example of an IR advantage?

1. Validates the thoroughness and effectiveness of both insulation and air sealing.
2. Provides visual feedback, both positive and negative, to crews for work improvement.
3. Provides x-ray images so crews can see what’s going on inside the walls and ceiling.

**Rationale:**

**A** and **B** are incorrect because these both *are* benefits of using IR.

**C** is correct because IR imagers do not provide x-ray vision.

**Objective:**

* Demonstrate how to assess the quality of weatherization measure installation using IR images.

**Question:**

**2**. This picture indicates which of the following:

1. The upper left corner has a void from settling insulation.
2. The middle of the wall needs insulations.
3. The darker areas of the image are hotter than the lighter ones.

**Rationale:**

**A** is correct.

**B** is incorrect. The dark area in the middle of the wall is a window.

**C** is incorrect because the temperature scale shows that darker areas are cooler than lighter ones.

**Objective**:

* Interpret infrared images as they relate to weatherization opportunities.

**Question**:

**3.** Why does the bedpost appear warmer than the back wall?

1. The bedpost is painted white, appearing lighter in the photo.
2. It is the same temperature as the room air, which is warmer than the wall.
3. The bedpost is painted black, making it warmer than the white walls.

**Rationale:**

**A** and **C** are incorrect because the IR camera is reading temperatures, not paint colors.

**B** is correct.

**Objective**:

* Utilize IR imaging in conjunction with the blower door to track infiltration and guide air sealing activities.

**Question**:

**4**. A blower door is depressurizing the home. The feathery edges near the ceiling indicate:

1. Air exfiltration patterns
2. Air Infiltration patterns
3. Paint irregularity patterns

**Rationale:**

**A** is incorrect. The home is being depressurized, so there should be no exfiltration.

**B** is correct.

**C** is incorrect because that is not what the feathery edges indicate.

**Objective**:

* Utilize IR imaging in conjunction with the blower door to track infiltration and guide air sealing activities.

**Question**:

**5**. The use of the blower door in conjunction with IR provides which of the following?

1. Verifies and speeds up understanding of air leakage.
2. Doesn’t provide anything, they are separate tests.
3. Proper diagnosis of electrical problems without load readings.

**Rationale:**

**A** is correct because, as long as there is adequate temperature difference, the IR camera can read air leakage patterns exaggerated by the blower door.

**B** is incorrect. The two tests can be conducted simultaneously to learn more than with each one alone.

**C** is incorrect. The IR camera may detect “hot” wires or overloaded fuses, but cannot accurately diagnose electrical problems reliably.

**Objective**:

* Demonstrate how to assess the quality of weatherization measure installation using IR images.

**Question**:

**6**. Temperature differentials between the outside and inside temperatures are called?

1. Emissivity
2. Thermal sensitivity
3. Delta-T

**Rationale:**

**A** and B are incorrect because neither of these terms describes temperature differentials.

**C** is correct because the Delta-T refers to the temperature difference.

**Objective**:

* Demonstrate how to assess the quality of weatherization measure installation using IR images.

**Question**:

**7**. \_\_\_\_\_\_\_\_\_\_ surveys allow a thermographer to compare results with future inspections to determine if there is a problem.

1. Quantitative
2. Baseline
3. Thermal

**Rationale:**

**A** and **C** are incorrect because neither of these terms describes the survey used to compare the pre- and post-weatherization state of the building.

**B** is correct.