OFFSET FUNCTION

The gauge can be adjusted using an offset. The gauge applies the offset to measurements until the offset is disabled or the gauge is turned off.

Press ⟨**OFFSET**⟩. The gauge displays the *Offset* menu.

WET DENSITY OFFSET

To select wet density offset from the *Offset* menu, press ⟨**1**⟩. The gauge displays the *Wet Density Offset* menu. To enable the current offset, press ⟨**1**⟩. To disable the offset, press ⟨**2**⟩. To enter a new offset, press ⟨**3**⟩.

To enter a new wet density offset, select the offset sign (positive or negative) and enter the wet density offset. Press ⟨**ENTER**⟩.

MOISTURE OFFSET

To select moisture offset from the *Offset* menu, press ⟨**2**⟩. The gauge displays the *Moisture Offset* menu. To enable a stored offset, press ⟨**1**⟩. To create a gauge-derived offset, press ⟨**2**⟩. To manually enter a new offset, press ⟨**3**⟩.

If enabling a stored offset, the gauge displays the stored moisture offsets. Use the number keys to select a moisture offset.

If creating a gauge-derived offset, measure the moisture value and input the true moisture at the gauge prompts. To save the offset, press ⟨**YES**⟩ at the save prompt.

If manually entering a new offset, follow the gauge prompts to enter the true moisture and gauge moisture reading. To save the offset, press ⟨**YES**⟩ at the save prompt.

TRENCH OFFSET

To select trench offset from the *Offset* menu, press ⟨**3**⟩. The gauge displays the *Trench Offset* menu. To enable a stored offset, press ⟨**1**⟩. To disable the offset, press ⟨**2**⟩. To create a new offset, press ⟨**3**⟩.

When creating a new offset, select a position inside the trench and the same distance from the wall as the test measurements. Place the gauge on the standard block at this position. Press ⟨**START**⟩. The gauge displays the count progress. After the count, the gauge displays the results. To enable the new trench offset, press ⟨**YES**⟩ at the enable prompt.

TESTING AND MEASUREMENT

Before taking any measurement, the operator must do several things. Set the measurement mode by pressing ⟨**MODE**⟩. Press the number key that matches the desired mode. Check the count time. Enter the target value. Prepare the test site. For thin lift measurements, enter the overlay thickness by pressing ⟨**THICKNESS**⟩.

To begin the reading, press ⟨**START**⟩.

After taking readings, lift the gauge from the test site by the source rod handle. This returns the source rod to the **SAFE** position. When not taking readings, always keep the source rod in the **SAFE** position.

SOIL, CONCRETE, OR ASPHALT SITE

In the manual depth mode, the gauge prompts for the source rod depth. Enter the depth using the number keys. For example, with the source rod in the backscatter position, press ⟨**0**⟩ then press ⟨**ENTER**⟩.

After the measurement, the gauge displays the measurement results. To store the reading, press ⟨**STORE**⟩ (see *Storage Function*).

THIN LIFT ASPHALT SITE

When taking counts on thin layer asphalt, Troxler recommends averaging four one-minute readings taken around a point. After each measurement, reposition the gauge and repeat the above procedure for each count.

After taking counts, the gauge displays the measurement results. To store the reading, press ⟨**STORE**⟩ (see *Storage Function*).

STORAGE FUNCTION

Assign a project number before storing readings by pressing ⟨**PROJECT**⟩. Select the desired option from the displayed menu.

To store readings, press ⟨**STORE**⟩. Follow the gauge prompts to enter any additional project information.

Model 3450

RoadReader™ Plus

Surface Moisture-Density Gauge

QUICK REFERENCE CARD

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PN 107900
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GAUGE START UP

NOTE

The operator should wear a dosimeter or radiation badge when working with the 3450 Surface Moisture-Density Gauge.

Press ⟨**ON**⟩. The gauge performs an LCD test and a short self-test routine. Following the self-test, the gauge displays the battery status. To display the *Ready* screen, press ⟨**ENTER**⟩. The display is:

```
<READY> ASPH Mode
Depth STD   04/26/99
TIME-60 sec 10:21 am
PR#: Your Project
```

GAUGE SET UP

COUNT TIME

To view the current test count time (length of measurement), press ⟨**TIME**⟩. Make the desired time selection with the numeric keys and press ⟨**ENTER**⟩.

TARGET VALUES

To select or change a Marshall, Proctor, or voidless density value or Marshall and voidless density pairs, press ⟨**TARGET**⟩. The gauge displays the *Target* menu. To access the *Target Value* menu, press the number key that matches the displayed target value. For example, to edit the Proctor (PR) value, press ⟨**1**⟩.

The gauge displays the *Target Value* menu. The *Target Value* menu for the Proctor value is:

```
Proctor Value:
1: ####   2: ####
3: ####   4: ####
5: New    6: Disable
```

The *Target Value* menu shows the four stored target values (or three target value pairs) and the *New* and *Disable* options. To select a stored target value, press the number key that matches the displayed target value.

To store a new target value, press ⟨**5**⟩ (to store a density pair target, press ⟨**4**⟩). At the prompt, use the number keys to enter the target value. Press ⟨**ENTER**⟩. The gauge displays the value entered and asks if the operator wants to store the value. To store the value, press ⟨**YES**⟩. The gauge can store the value in one of four *memory cells*. Storing a new value in a cell will erase the old value. At the **Select memory cell** prompt, use the number keys to store the value.

To disable the target value, press ⟨**6**⟩ (to disable a density pair target, press ⟨**5**⟩).

THE STANDARD COUNT

To check the gauge operation and allow the gauge to compensate for natural source decay, take a standard count daily.

Place the reference standard block on a dry, flat surface of asphalt, concrete, or compacted soil at least 10 cm (4 in) thick. The location should be at least 3 m (10 ft) from any building or vertical structure and 10 m (33 ft) from any other nuclear gauge or radioactive source.

Ensure that the top surface of the reference standard block and bottom of the gauge are clean of debris. Place the gauge between the grooves on the reference block with the source rod on your left and the right side of the gauge against the metal butt plate on the block. Ensure that the source rod is in the **SAFE** position.

Press ⟨**STANDARD**⟩. The gauge displays the last standard count. To take a new standard count, press ⟨**1**⟩. With the gauge in the standard count position, begin the standard count by pressing ⟨**ENTER**⟩. The gauge displays the standard count progress.

After taking the standard count, the gauge displays the results. If the standard count *passes*, record the standard counts, then press ⟨**YES**⟩. If the standard count fails, refer to the *Taking a Standard Count* section in Chapter 4 of the Model 3450 *Manual of Operation and Instruction*.

SITE PREPARATION

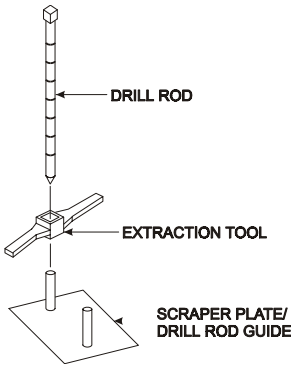
To ensure measurement accuracy, properly prepare the test site before taking gauge measurements.

SOIL SITE

CAUTION

Safety glasses must be worn during this procedure.

Place the scraper plate on the test surface. Smooth the area by sliding the plate back and forth. Lift the plate from the surface and fill any voids or depressions. Replace the plate and press down slightly to further level the surface.



Put the drill rod through the extraction tool. Put the drill rod through one of the guides on the scraper plate (see figure). Place the drill rod assembly on the test site. *Wearing a radiation badge and safety glasses*, step on the scraper plate and hammer the drill rod at least 50 millimeters (2 in) deeper than the desired test depth. The drill rod increments include the additional depth. Mark the test area. Remove the drill rod by pulling straight up on the drill rod extraction tool. **Do not loosen the drill rod by moving it from side-to-side.**

Place the gauge on the smoothed surface. Ensure that the source rod is over the hole. Lower the source rod to the correct depth, release the trigger, and gently tap the handle down. Gently slide the gauge to the right, so the source rod touches the side of the hole.

ASPHALT OR HARDENED CONCRETE SITE

Locate a smooth, level site on the asphalt. Fill the voids on open mixes with sand or cement. **The gauge base must rest on the asphalt, not the fill material!** Ensure that the gauge does not "rock." It must remain level and steady. If the gauge rocks, then find a more suitable test site. If taking a measurement around a core, the gauge may be moved a few inches away from the core to level it.

Place the source rod in the backscatter position (lower the source rod **one** notch), release the trigger, and gently tap the handle down. **Ensure that the source rod is in the backscatter position.**