

How to test the Captain Carpet vacuum cleaner

This test measures product efficiency on different surfaces.

Captain Carpet Essentials



Note: If this is your first time testing a Captain Carpet product, read and follow the [Product Safety Information](#).

Test kit contents

Make sure you have these items:

- One assembled Captain Carpet vacuum cleaner (Model/version #)
- Phillips screwdriver
- Bag of sand (450 grams /16 ounces)
- Scale big enough to weigh the canister of the Captain Carpet
- Data recording sheet or URL where you can record test results

Optional item

Piece of dry cloth to wipe the inside of the canister between surface tests



Surface test requirements

Locate or order 1 m² (10.76 sq. ft.) samples of these test surfaces:

- Soft rug
- Shag carpet
- Hardwood



Preparation Steps

1. Select the correct height for the test surface.

This month, the heights to test are:

- 1.5 centimeters (cm) /0.59 inch (in.) for soft rugs
- 3 cm (1.18 in.) for shag carpets
- 8 cm (3.15 in.) for hardwood



2. Attach the power cord to a power source.

3. To pre-clean the test surface, use the vacuum cleaner.



- a. Press the power button to start the vacuum cleaner.
- b. Using steady movements, push and pull the vacuum cleaner over all the test surface.
Tip: Slow movements give better results than fast movements.
- c. When finished (about 3 to 5 minutes), turn off the vacuum cleaner.

4. To remove debris from the canister, do these steps now:

- a. Using a Phillips screwdriver, remove the screw that holds the canister to the vacuum cleaner.
- b. Keep the screw in a safe place.
- c. Lift the canister off the body of the vacuum cleaner.
- d. Holding the canister over an open trash can, press the button that releases the contents of the canister.

Tip: Use a cloth to wipe the inside of the canister because static electricity can cause some debris to stay in the canister.

- e. Close the bottom of the canister.
- f. Using the scale, weigh the canister, and then record its weight. When you calculate efficiency for the first test surface, this value is c_{empty} .
- g. Align the canister on the vacuum cleaner.
- h. Using the screwdriver, replace and then tighten the screw from step *a* turning it clockwise 7.5 times. After tightening the screw, you should still be able to move the screw and canister a little.

Caution: Do not overtighten the screw. This could cause the plastic to break.

5. Weigh the bag of sand b_{sand} , and then record the starting weight.

Note: Over time you will lose some sand. If you don't account for the loss, it will affect your results. The first time you do this test, measure the sand in the bag.

Test Steps

1. Make sure the test surface is visibly free of debris.
2. Pour the sand you just weighed evenly over the test surface.
3. Use the vacuum cleaner to pick up as much of the sand as possible.
 - a. Press the power button.
 - b. Using steady movements, push and pull the vacuum cleaner over all the test surface.
Tip: If you move the vacuum too quickly, it won't pick up sand well. Slower movements give better results.
4. After vacuuming the test surface, stop the vacuum cleaner.
5. Remove the full canister.
 - a. Using a Phillips screwdriver, remove the screw that holds the canister to the vacuum cleaner.
 - b. Keep the screw in a safe place.
 - c. Lift the canister off the body of the vacuum cleaner.
6. Weigh the canister with the sand you collected: c_{sand}
7. If this is the first surface test, weigh the empty bag b_{empty} that held the sand. Skip this step if this is a subsequent surface test.
8. Calculate the efficiency of sand collected from the test surface as a percentage.

$$e = 100 \times \frac{w_R}{w_S} \%$$

where

- w_S is initial weight of the sand
 - For the first test surface, use the weight of the sand and bag:
 $w_S = b_{sand} - b_{empty}$
 - For subsequent test surfaces, use the weight of the recovered sand from the previous test: $w_S = c_{sand} - c_{empty}$
 - w_R is weight of the recovered sand, $w_R = c_{sand} - c_{empty}$
9. Record the weight of the sand and percent efficiency.
 10. Carefully return the collected sand to the bag.
 - a. Put the bag on a stable surface, such as the floor or a table top.
 - b. Over the mouth of the empty bag, carefully press the button that opens the bottom panel of the canister to release the sand into the bag.
 - c. (Optional) Wipe the inside of the canister with a dry cloth. If you pick up spilled sand, add it to the bag.
 - d. Close the bottom of the canister.
 - e. Put the bag of sand in a safe place.
 11. Attach the canister to the vacuum cleaner.
 12. Repeat these steps for each test surface.
Only the first efficiency calculation uses the initial weight of the sand in the bag. For subsequent tests, use the weight of the empty and full canister: $w_S = c_{sand} - c_{empty}$

Product Safety Information

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY:



Do these things with a Captain Carpet product:

- Fully assemble the Captain Carpet product before use.
- Keep hair, clothes, and all body parts away from openings and moving parts.
- Keep the product dry.
- Turn off all controls before disconnecting it from power.
- After you finish using Captain Carpet, disconnect it from power. To disconnect the product from power, hold the plug (not the power cord) and pull.



Do not do these things:

- Do not use it outdoors or on wet surfaces.
- Do not pull or carry it by the power cord, use the power cord as a handle, close a door on the power cord, or pull the power cord around sharp edges or corners.
- Do not disconnect it from power by pulling on the power cord.
- Do not touch the plug with wet hands.