

Vacuum Dust Sampling Procedures for qPCR Analysis

I. QPCR (ERMI or HERTSMI-2) Dust Sampling Kit:

1. Dust Collector (The Dust Collector contains a main holder, a cap on each end and a filter insert).
2. 1 re-sealable bag for the dust collector.
3. Sampling Instructions and Chain-of-Custody (COC) form.
4. 1 pair of clean disposable gloves

II. Dust Sampling Equipment & Consumables (*Not Provided in kit*):

1. Vacuum Cleaner.
2. 1 tape measure.
3. Timer, or a clock/watch with second hand.
4. 1 roll of masking tape (or any tape that could map out the sampling area).

III. Sampling Procedures using the Vacuum Dust Collector:

1. Retrieve Equipment and needed supplies as indicated above.
2. Locate the floors of two primary rooms, such as the Common Living Area (CLA) and the Bedroom (BR). (**Combining basement or crawl space dusts with upstairs living space samples is strongly discouraged.**)
3. Wear gloves through all the procedures (optional).
4. Go to the **CLA**, locate the sofa or the most commonly used chair in the room. Using a tape measure and masking tape, mark a **1 Metre x 2 Metre** rectangular sampling area on the floor immediately against the selected sofa (or other primary use chair). If the sample location cannot accommodate a sample area of these dimensions, adjust the dimensions accordingly (but try to sample a total of 2 M²) and record these dimensions on the QPCR (ERMI) Sample Log section of the COC form.
5. Plug in and test the vacuum to be sure that it runs properly.
6. Detach the head/nozzle from the vacuum cleaner, carefully remove the caps from both ends of the dust collector (set them aside) and insert it onto the vacuum cleaner.

Note: It may fit loosely until the vacuum is turned on. You may wrap a piece of tape between dust collector and the vacuum hose to prevent the dust collector from accidentally falling off while in use.

7. Turn on the vacuum (the dust collector and vacuum hose should fit tightly together). Place the dust collector at one corner and start to count the time using a stopwatch or a clock with second hand.
8. Vacuum the sampling area (total of 2 M²) for at least 5 minutes (Check the filter insert for accumulation of dust samples. If not enough samples are accumulated, either increase the vacuuming time or expand the vacuuming areas.)

Note: Slightly tilt the dust collector to one side while vacuuming to increase the vacuum's efficiency. The opening of the dust collector in total contact with the floor surface will not collect the sample as it completely blocks all airflow

9. At the end of sample collection in the **CLA**, hold the dust collector facing up, turn off the vacuum and replace one plug in the end of the dust collector so the dust does not fall out.
10. Next, move all the required equipment and supplies to the **Bedroom (BR)**. Locate the bed and repeat the same steps as in CLA (Step 4 to 9). Briefly, using a tape measure and a roll of tape, mark the corners of a **1 metre x 2 metre** rectangular sampling area on the floor immediately against the selected bed. If the sample location cannot accommodate a sample area of these dimensions, adjust the dimensions accordingly.
11. Turn on the vacuum. Place dust collector at one corner and start to count the time using a stopwatch or a clock with second hand.
12. Vacuum the sample area (total of 2 M²) for at least 5 minutes. (Again, check the filter insert for accumulation of dust samples. If not enough samples are accumulated, either increase the vacuuming time or expand the vacuuming areas.
13. At the end of sample collection in **BR**, hold the dust collector facing up, then turn off the vacuum.
14. Replace the plug in the small end of the dust collector, remove the dust collector from the vacuum hose, turn it around so the big side is facing up and replace the other plug.
15. Place the capped dust collector into a re-closable bag.
16. Place the dust collector, the COC form, in the re-closable bag and send back to NSJ EnviroSciences.

VI. Other Sampling Methods – (When a vacuum is not feasible)

1. If unable to use standard vacuum procedure, due to space/or other restrictions, please refer to instructions for collecting dust by **QPCR (ERMI)-Cloth™**.