

# **Vacuuming Carpet**

**by Jeff Bishop**

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I spent 55 minutes vacuuming my carpet at home yesterday. 55 minutes!

“Bishop,” you say, “I always knew you ‘industry experts’ were a little divorced from reality, but this takes the cake! No one spends 55 minutes vacuuming their carpet these days.”

Hold on a minute; let me fill you in on the details. You see, that entire 55 minutes of vacuuming was spent on a 5x5-square-foot section of my carpet - that’s right, 25 square feet or just under 3 yards - at my home’s rear entry.

“Now I know you’ve lost it,” you reply in amazement. “That’s ridiculous!”

Hmmmm . . . exactly what I thought. But before you call the guys in the white coats to come pick me up, consider a few more details.

Having attended a number of indoor environmental quality (IEQ) courses in the past few years, and having taught that subject for several years myself, I’m what you’d call a little paranoid about household maintenance and cleaning. That’s especially true since my grandchildren began dropping in frequently. Like most small children, they love to tumble and play on our eight-year-old, 50-ounce Saxony carpet.

That’s fact number one.

Fact number two: Twice I’ve listened to lectures from John Roberts, MS, MEd, PE, a mechanical engineer with Engineering Plus, Inc. Mr. Roberts does research on high-volume surface sampling of household dust. He’s an expert on assessing and managing exposures and risks from pollutants in house dust, including pesticides, lead, and other toxic substances in road and household dust. He coordinated the development of the Master Home Environmentalist Program for the State of Washington.

Fact three: Currently, there is a Housing and Urban Development (HUD) funded study underway to assess the toxic effect of lead containing carpet dust (LCCD) on small children. Seems that these babies do a lot of crawling and playing on floor coverings, including carpet. They pick up lead-containing household dust and ingest it when they lick their hands or suck their fingers.

I relate these three facts to reinforce my diminished credibility, so bear with me a little longer.

Here’s what happened: Several months ago, my daughter, a Physical Therapist, and her husband, a Pediatrician, needed a new vacuum for their home - that’s the one with three of the world’s most perfect grandchildren! Thankfully, they share my concern about their kids’ environment. Based on Mr. Roberts talks at two IEQ conferences, I recommended that they check out the Hoover Deluxe with Patented Wind Tunnel Technology - whatever! Suffice it to say that it’s the one with the red-light/green-light feature that tells you when you’ve gotten efficient soil removal.

Mind you, Hoover isn't paying me to advertise for them. I think they should, certainly could use the extra money, but the fact is they aren't.

I digress.

This Hoover vacuum may not be any better in terms of construction and efficiency than a host of other vacuums on the market. Point is, *it's the only one that has a built-in system for letting you know how clean the carpet is becoming due to your maintenance effort.* Out of curiosity I called Hoover and asked them how the system worked. In layman's terms, it seems that the vacuum incorporates a small sound sensing device, or microphone, that "hears" particles as they are sucked from the carpet and enter the vacuum inlet nozzle.

Don't ask me to elaborate on that. Anyway, the microphone that hears the soil particles striking the nozzle inlet, activates a red light. When the microphone no longer hears those particles, the green light comes on.

Simple, huh? Even a worn-out old rug sucker, like myself, can handle that.

To its credit the Hoover vacuum also incorporates a double lined, high efficiency filter bag, along with a micro-filter on the outlet side of the collection chamber.

So how'd I get caught up in vacuuming my carpet? It seems that my central vacuum, you know, the one that exhausts all the recovered particles that get through paper filter bags to the outside of my home, was on the fritz. My wife had asked my daughter to drop off her vacuum for our absolutely terrific housekeeper to use during her weekly cleaning effort. I was walking out the door when my daughter showed up with the vacuum unit I had recommended to her.

I couldn't resist.

OK, are you ready for this? Here's the result of my super-scientific, totally-unique, one-of-a-kind, non-repeatable vacuum cleaner evaluation and study.

With the filter bag 1/3 full, I adjusted the vacuum nozzle to the proper pile height setting, and set the sensor on "maximum sensitivity." Checking the time on my Swiss-made, scientifically-calibrated Tag/Heuer wrist watch, I cranked her up.

Naturally, I decided to work the worst area of the carpet, a 5x5 section just inside the rear entry. Wanted to see if this thing really worked, you know. I used the fore-and-aft stroking sequence that I'd perfected with 30-years-plus experience as a professional cleaner. Red light all the way.

Having been forewarned by Mr. Roberts about the time it might take to unload the carpet, I persisted in my vacuuming effort. Five minutes; red light; 10 minutes, still red, better switch arms - maybe this thing is broken. After 14 minutes of slow and meticulous vacuuming, I finally saw the green light flash for an instant while vacuuming the far right side of the traffic lane, the area where no one walks. After 22 minutes I began to see the green light come on more frequently but not consistently. Interestingly, it came on near the wall and stayed lit until I moved over a 15"-wide path leading from the back door threshold to our burglar alarm key pad. That's the route we take almost invariably when

first entering the back door. The red light stayed on until I crossed the 15" concentrated-traffic lane, then, it turned green again.

After 29 minutes of continuous vacuuming, coupled with decidedly uncomplimentary remarks about my professional cleaning ability from my daughter, I finally got a consistent green light.

Good grief!

Not ready to end my research project just yet, I decided to put in a new filter bag, clean - as in "wash"- the final filter, and test - as in vacuum - the area again. My idea was to see what effect, if any, the increased airflow through the unobstructed bag and filter might have on the activation of the red/green light system.

After 12 more minutes of meticulous vacuuming, I began - repeat, began - getting the green light again. After 26 minutes it stayed consistently green.

Before you throw up your hands and label my "study" worthless, consider that, not only did the carpet's appearance "noticeably" improve in my totally objective professional opinion, but I got the green light much faster once the carpet had been unloaded. In other words, it doesn't take nearly that long on the rest of the carpet, especially after you unload the buildup of soil.

Fortunately, Mr. Roberts laboratory tests follow accepted scientific protocols, and he proves that the aforementioned techniques do remove significant and quantifiable amounts of soil, along with associated toxins. The research is there.

Let me anticipate some questions: No the vacuum didn't distort the pile yarns in my carpet. Considering the age of the carpet (eight years), I still had good pinpoint tuft definition. Second, yes, we have maintained this carpet with vacuuming at least twice weekly, and with hot water extraction semiannually - well, almost.

The only good news arising from all this effort was that, the next time I vacuumed the carpet, it took only 15 minutes to cover the entire house, with the green light coming on shortly after vacuuming in each room.

OK, lessons learned.

1. I'll never make a scientist: too impatient, too little time.
2. With vacuum cleaners, like everything else in life, you pay for what you get. And no, lighter weight wonder vacuums may be convenient, but they don't get the job done. Get the best, not the cheapest.
3. Cheap paper filters remove particles from the vacuum air stream down to 7 microns in size. Quality double-lined filters are essential for efficient soil removal.
4. Particles that we don't filter out of the vacuum air stream, simply are flung into respirable air, thus compounding IEQ problems.
5. Particularly hazardous are particles less than 5 microns, which not only remain suspended longer, they also penetrate deeply into tender lung tissues. Filters must

be exchanged often enough to maintain efficiency. Manufacturers say when 2/3 full, I'd suggest 1/2 full, to maintain efficient airflow.

6. All of us, especially professional cleaners, must become more knowledgeable about the types and accumulation of soils in our homes and businesses, along with their impact on health.
7. We must slow down when vacuuming. Extra time yields big dividends in terms of soil and toxin removal.

For years I have maintained that neither carpet owners nor professionals vacuum carpet effectively. IEQ concerns have opened this subject to testing and scrutiny by the Carpet and Rug Institute, under their Seal of Approval Program.

We can, we must, do a better job.

## **Facts about Dirty Buildings**

Contributed by David Frank

1. It costs more to keep it dirty than to keep it clean.
2. Dirty buildings require more labor hours to keep clean than clean buildings.
3. Tenants have a tendency to soil dirty buildings more than clean buildings.
4. Dirty buildings are mismanaged.
5. Dirty buildings attract lower lease rates per square foot.
6. No one likes a dirty facility . . . it is not a healthy environment.
7. More people and more supplies do not ensure that a building will be clean.

One of the many roles of a commercial cleaner is to educate individuals, customers and potential clients on the benefits of a clean facility. We must stop focusing on the micro issues and concentrate on the economic results of a clean and healthy facility. Clean facilities are more profitable to the entire organization.

Ed. Note: Some of these points may seem obvious, but in your effort to market to customers at their point of need, several can be converted into monetary benefits to clients.