



Cleaning for Health & Efficiency

A REPORT

LEARN MORE ABOUT:

Cleaning for Health

Indoor Air Quality

Productivity

Ergonomics



The information presented in this report is designed to enable better understanding of the effects of sustainable cleaning and proper vacuuming on your facility.

BUILDING OWNER'S GUIDE

ProTeam® is committed to
Cleaning for Health®



ProTeam has partnered with the American Lung Association in a campaign designed to promote public awareness and education about indoor air quality issues.

This educational partnership recognizes the American Lung Association's mission of preventing lung disease and promoting lung health as well as ProTeam's goal of developing innovative cleaning technologies to address indoor air quality concerns.

The American Lung Association does not endorse products. For more information from the American Lung Association, call 1-800-LUNG-USA, or visit their website at www.lung.com.

Historically, the quality of vacuuming has been evaluated by the appearance of the carpet. However, the statistical data of expert studies in this report will demonstrate the importance of proper vacuuming to issues of indoor air quality, particulate removal and containment, and also present new concepts on labor efficiencies.

ProTeam is committed to manufacturing superior, high-filtration vacuums that triumph over the challenges of Cleaning for Health.

Cleaning or Polluting?

By John Walker President, ManageMen, Inc. Founder, Janitor University

When we established the Janitor University Philosophy of Cleaning, one of the guiding principles was

“Clean for health first, then appearance.”

Of course, Cleaning for Health® requires the proper chemicals, equipment and machines, but more important is the system that is utilized within the cleaning operation. The system, or process, must assure that the facility is properly detail cleaned on a scheduled basis and it must assure that cleaning, rather than polluting, is the result of the cleaning worker activities in the facility.

IMPROVE CLEANING PRACTICES

Poor cleaning procedures, equipment and habits can inhibit the effective cleaning of buildings.

Workers thinking big need to

think small



skin flake magnified

when it comes to health and cleaning. Cleaning for appearance removes “big” visible soil rather than cleaning for health that removes “small” invisible bacteria, dust and airborne particulates and other micro, bio- and chemical contaminants – largely the contributors to unhealthy indoor environments.

ProTeam vacuums capture soil and safely contain harmful particles, as well as prevent them from being reintroduced back into the environment. The improved air quality is the result of ProTeam vacuums’ unique Four Level® Filtration system. This system captures tiny dust mites, bacteria, and other particles – which can cause unhealthy air.

FACTS

TO KNOW ABOUT INDOOR AIR QUALITY

CARPETS

Daily vacuuming is more important than interim deep cleaning methods.

Dry soil is abrasive; when ground into your carpet, it cuts into carpet fibers—dulling appearance and reducing the longevity.

- No. 1 Carpets cover 70% of the floors in the United States.
- No. 2 Carpet can hold more than its weight in soil.
- No. 3 70–80% of dust, dirt and grime is tracked into a building from outside.
- No. 4 30% of dirt is deposited in the first 3 feet, while 90% is tracked off in the first 25 feet.
- No. 5 Carpet soil generally consists of 85–95% dry soil and 5–15% oily soil.
- No. 6 Carpet has a high surface area and is known to act as an organic dust sink containing bio-contaminants and allergens.

HARD FLOORS

When using the correct tools, ProTeam backpack vacuums clean 52% faster than a dust mop in crowded classrooms and congested areas.

- No. 1 Using traditional dust mopping methods requires extensive time to train employees.
- No. 2 Vacuuming is a faster, healthier and more efficient way to clean hard floors.
- No. 3 Dust and dirt are immediately contained within the Four Level Filtration in ProTeam vacuums.
- No. 4 Dust mopping continually redistributes dirt and fine particulate on and into the floor, leaving scratches and dulling a high gloss finish.
- No. 5 Dust bunnies reappear in 24 hours when a floor has been dust mopped as compared to 72 hours when cleaned with a ProTeam backpack vacuum.

Sources—

Carpet and Rug Institute, Dalton GA; ISSA: International Sanitary Supply Association; IIREC: Institute of Inspection Cleaning and Restoration; Dust Mopping Floors for Health and Efficiency Test, Colorado State University, 1998; Photo: Courtesy of CRI

Protect the Built Environment

The average American spends approximately **90 percent** of his or her time indoors. Studies of human exposure to air pollutants by the EPA indicate that indoor levels of pollutants may be **2 to 5 times** – and occasionally more than **100 times** – higher than outdoor pollutant levels.

90%
time indoors

Children are more susceptible to air pollution because they breathe a greater volume of air relative to their body weight. To make matters worse, schools tend to be at a higher risk of poor indoor air quality because they can have **4 times** the occupants as a regular office building for the same amount of floor space and generally less maintenance, making air quality in schools an area of a particular concern.

4x
the occupants

A cleaning for health vacuuming strategy – with an efficiently filtered vacuum cleaner – can help schools reduce asthma triggers by removing (rather than redistributing) the dust in a building.



Environmental factors in schools can cause serious health problems for children.

Programs that promote healthy indoor air quality (IAQ) can:

- Improve Health
- Increase Students' Ability to Learn
- Improve Test Scores
- Improve Adult Productivity in the School System

Maintaining healthy physical conditions and good environmental quality in schools can yield a high rate of return on academic outcomes.

Sources—

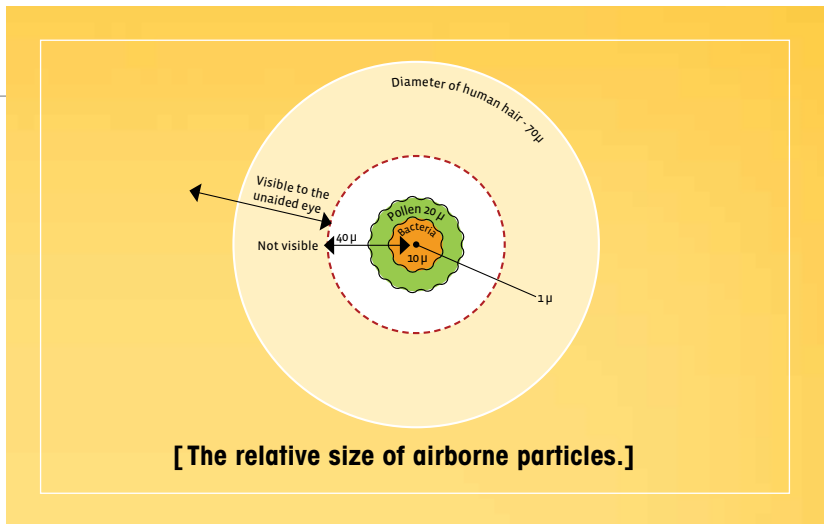
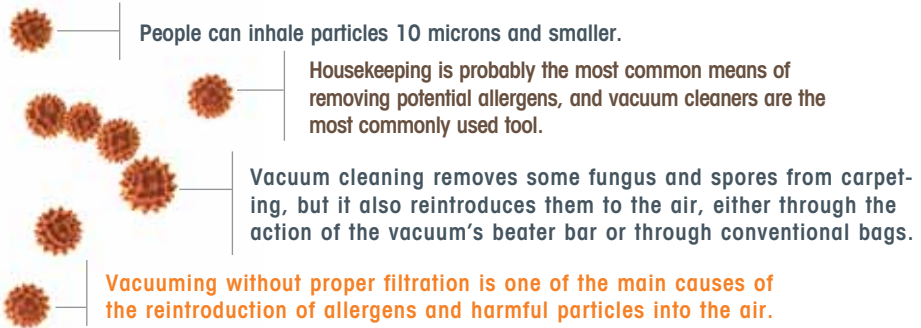
<http://www.epa.gov/region1/communities/indoorair.html>

http://www.epa.gov/iaq/schools/student_performance/faqs.html

FIL • TRA • TION:

– Noun

1. the process of filtering
2. the act of process of removing something unwanted from a liquid, gas, etc., by using a filter



Micron (μ):

This measurement of particles (1 micron = 1 millionth of a meter) is often used in promoting particle removal. To put things in perspective, your hair is about 70 microns in diameter and, without magnification, you can only see particles that are about 10 microns or larger.

Vacuums with high filtration collection systems retrieve soil and safely contain harmful particles, preventing them from being reintroduced into the built environment.

Source—JW Vaughan, JA Woodfolk, TA Platts-mills. "Assessment of vacuum cleaners and vacuum cleaner bags recommended for allergic subjects". *Journal of Allergy and Clinical Immunology*. November 1999. 104(5):914-16. Ibid. Popplewell EJ, Innes VA, et al. *Pediatr Allergy Immunol*. 2000 Aug;11(3):142-8. "Indoor Allergens: Assessing and Controlling Adverse Health Effects", Educational Committee on the Health Effects of Indoor Allergens. Division of Health Promotion and Disease Prevention. National Academy Press, Washington, D.C. pp 37-39, 86-117, 222-225;

Backpack Vacuum Cleaning Efficiency vs. Sweeping



VS.



In soil removal tests conducted at Turi Surface Solutions Laboratory:

A ProTeam Backpack vacuum removed more than 98% of the soil – a 10% increase with vacuuming compared to sweeping.

Source—

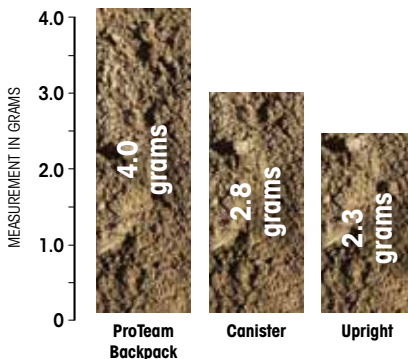
Toxics Use Reduction Institute (TURI), University of Massachusetts Lowell, November 2012.

VACUUM CLEANER EFFICIENCY

In 5 passes, the ProTeam backpack vacuum is:

43% more efficient than a commercial upright vacuum and

30% more efficient than a canister in removing soil.**



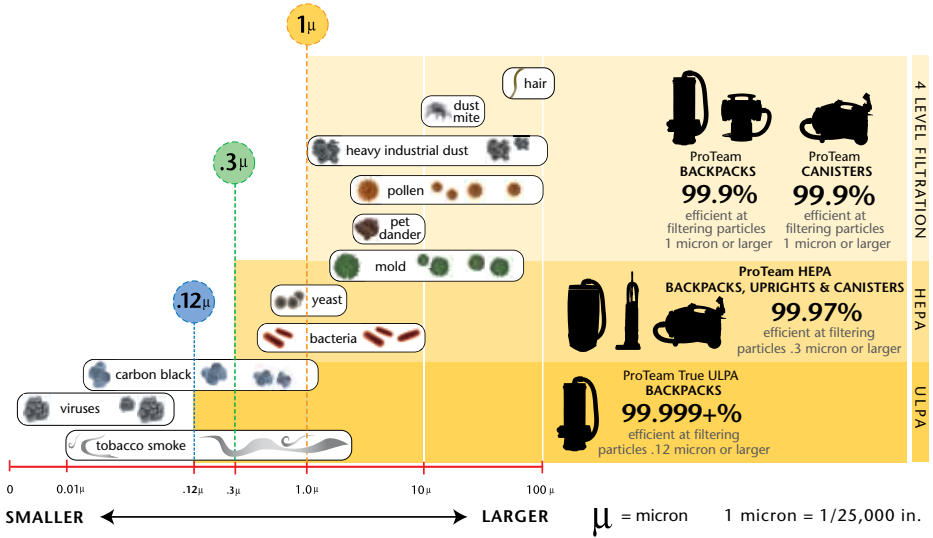
** Soil removed does not include carpet fiber

Source—

Quality Environmental Services & Technologies, 1996; APC Filtration, Inc., 1996; An Evaluation of ProTeam's QuarterVac and CoachVac in a School Environment, Dr. Eric Brown, Cleaning Research International, UK, 1994

FILTER EFFICIENCY CHART

This chart illustrates how effective ProTeam's different filtration systems are in **capturing and containing** particles of a particular size.



ProTeam backpacks & canisters with Four Level® Filtration are **99.9%** effective at capturing and containing particles measuring **1 μ** or larger.

technical definitions...

HEPA

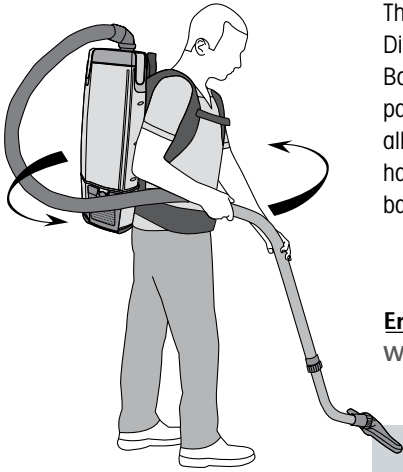
A HEPA (High Efficient Particulate Air) filter is a throwaway, extended-medium, dry type filter in a rigid frame having a minimum particle collection efficiency of 99.97% (that is, a maximum particle penetration of 0.03%) for 0.3- μ particles.

ULPA

An ULPA (Ultra-Low Penetration Air) filter is a throwaway, extended-medium, dry type filter in a rigid frame, having a minimum particle collection efficiency of 99.999% (that is a maximum particle penetration of 0.001%) for particles in the size range of 0.1 to 0.2 μ . Σ

ERGONOMIC DESIGN

FAST AND EASY TO USE



The results of two studies by the Department of Surgery, Division of Orthopedics, at Ohio State University and the Battelle Memorial Institute, determined that ProTeam backpack vacuum cleaner's ease-of-use and ergonomic design allowed workers to vacuum more than twice the area in half the time with less fatigue and body strain (a figure backed by the ISSA official timetables for cleaning).

Ergonomic Motion

With a backpack – vacuum side-to-side, not front-to-back

Requires less than half the energy and effort to clean the same area as it would take with an upright

- Backpack vacuums are lightweight. When worn properly, the effect of the backpack on body joints and posture is negligible and similar to walking.
- When working near stairs, using a backpack improves mobility and is recommended to reduce the risk of falling.
- Backpack vacuum users use a more neutral posture compared to extreme arm and leg extensions seen when using an upright.
- Experience less body stress due to the use of larger muscle groups by minimizing "hunching over" often associated with upright and canister vacuums.
- Increases efficiency by allowing more carpet to be cleaned in a shorter amount of time due to the natural walking motion used.

Arms Getting Tired?

The arms are the main muscles used when vacuuming front-to-back.

Side-to-Side Vacuuming

uses leg and back muscles that do not fatigue as easily as the arms.



"Side-to-side vacuuming, along with a typical work-rest schedule, is one of the best ways to vacuum large areas on a regular basis."

Jim Fullmer, Certified Human Factors Professional

FREEDOM OF MOVEMENT

Improves Comfort and Productivity

LESS FATIGUE

redesigned FlexFit™ harness makes vacuum feel lighter and more comfortable

STAY COOLER

open weave FlexFit harness avoids collecting (or trapping) heat during operation

FREEDOM OF MOVEMENT

articulating FlexFit harness is responsive to the motion of the user's shoulders, back and hips—increasing comfort and reducing fatigue



WEIGHT DISTRIBUTION

innovative FlexFit harness distributes weight evenly for lighter feel

20% less pressure is felt on the body with the FlexFit articulating harness vs. a standard harness.

Source— Auburn University, 2013. FlexiForce Sensor

IMPROVED BALANCE

pivoting ball joint distributes the weight to the natural center of gravity



The Team Cleaning Solution

Team Cleaning® is a flexible, efficient and cost-effective cleaning system for custodial operations. Team Cleaning applies the power of systems to reduce costs and maximize productivity.

It offers solutions to the many challenges that managers face—through better deployment of labor, effective cleaning methods, improved appearance levels and simplified training programs.

TEAM CLEANING TASKS ARE GROUPED INTO 4 DISTINCT FUNCTIONS

ProTeam Education Products and Services

Products and Services offered:



Light-Duty Specialist™

Dusting, emptying trash, spot cleaning, etc.



Vacuum Specialist™

Vacuumping carpets and hard floors



Restroom Specialist™

Cleaning, sanitizing and restocking restrooms



Utility Specialist™

Cleaning lobbies, spot cleaning, glass, mopping and scrubbing floors, etc.

Team Cleaning results in increased productivity, less equipment, clear-cut responsibilities and easier supervision.

Team Cleaning allows flexibility in staffing levels and with the size and complexity of the facility to which it is applied. The number of workers does not affect the Team Cleaning concept. In smaller buildings a worker may perform two or more specialists' duties.

CARPET AND RUG INSTITUTE APPROVED

ProTeam vacuums have earned Seal of Approval/Green Label from the Carpet and Rug Institute (CRI) signifying the vacuum systems meet higher standards for carpet cleaning effectiveness and indoor air quality. Vacuums must pass three cleaning requirements: soil removal, dust containment and carpet fiber protection.



PROTEAM IS A MEMBER

ISSA • BSCAI • NRA • ARSCI • AHE • APPA
NWFA • CIRI • IHRSA • ALFA • CFCN
VDTA • CRI • CSSA • USGBC • NPMA

PARTNERSHIPS



ProTeam has partnered with the American Lung Association in a campaign designed to promote public awareness and education about indoor air quality issues. This educational partnership recognizes the American Lung Association's mission of preventing lung disease and promoting lung health. The American Lung Association does not endorse products. For more information call 1-800-LUNG-USA, or visit www.lung.com.

TEL: 866.888.2168
customerservice.proteam@emerson.com

Mailing Address:
PO Box 7385
Boise, ID 83707

www.pro-team.com