

## INDOOR AIR QUALITY AND CARPET CARE LOOK DOWN TO CLEAN UP

*The green cleaning movement - which champions more environmentally responsible cleaning products and methods - has also elevated cleaning professionals to a new level of importance in society. In fact, the responsibilities of cleaning workers, carpet cleaning technicians and other in-house facility providers have never been greater.*



This is especially true when it comes to protecting indoor air quality, also known as IAQ. In the past, IAQ standards focused on building temperature, humidity, circulation of fresh air and the number of occupants working in or visiting a facility. Today, IAQ protocol includes a much broader scope of considerations that takes into account the overall health and safety of a facility.

Interestingly, while outdoor air quality is improving in many parts of the world, many indoor environments are actually becoming more contaminated by dust, odours and soils. Meanwhile, building users everywhere are becoming more aware of the importance of IAQ.

According to the Australian Department of Environment, Water, Heritage, and the Arts: "Exposure to air toxins can result in a variety of health effects ranging from mild and immediate

effects, such as watery eyes, to more extreme effects, such as lung damage, nervous system damage or even birth defects and cancer."

For employers, this is not only a health issue, but a financial one as well. Recent studies suggest that improved IAQ can increase worker productivity from 1 percent to as much as 8 percent, with an average of about 3 percent.

### Carpet Cleaning and IAQ

The products and methods that cleaning employees and carpet cleaning professionals choose can do a great deal to protect a facility's IAQ.

Most offices and other types of facilities are covered with acres of carpeting. These carpets act as a sponge, absorbing contaminants and dust and preventing them from becoming airborne. In fact, tests conducted at Professional Testing Labs in Dalton, Ga., (US) found that airborne particle levels are as much as nine times higher on smooth (hard surface) floors as on carpeted floors.

Eventually, however, carpets must be thoroughly cleaned in order to remove the contaminants they successfully trap. Otherwise they can become a major culprit in lowering IAQ, causing worker illness and reducing productivity.

### Preventive Care and Proper Maintenance

In 2001 a Cornell University study reported that, "as long as facilities use vacuum cleaners with high-efficiency filtration and keep the carpets clean, carpets can be healthy, safe and economical floor coverings in most any facility." In other words, preventive care and proper maintenance are key to carpet care, which is in turn crucial to protecting IAQ.

Preventive carpet care requires the use of proper matting systems at building entrances.


"The first step in keeping a facility clean is preventing contaminants from entering in the first place," says Christopher Tricozzi, vice president of sales and marketing for Crown Mats and Matting, a leading manufacturer of high-performance matting systems.

"This involves much more than just placing a rental mat at the door. It involves a three-stage high-performance system, with each component of the system contributing to the cleanliness and health of the building."

According to Tricozzi, all key facility entries need to have about 5 metres or more of high-performance matting in place, including:

- A scraper mat placed outside the door. These mats scrape large debris and moisture from shoe bottoms.
- A combination scraper/wiper mat placed just inside facility doors. These mats continue the task of soil and moisture removal.

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>> • A final wiper mat, usually placed in the lobby of a facility. These mats are the final defence against contaminants that are carried in on shoes.

"We refer to this as the Rule of 15s, explains Tricozzi. "With the proper matting and length of matting, 70 percent to as much 80 percent of all outdoor soils will be kept outside, helping to protect IAQ."

**Carpet Cleaning: What You Need to Know**

Any contaminants that do enter a facility can usually be removed using high-performance vacuum cleaners. Frequent vacuuming with true HEPA vacuum cleaners helps to remove particulates embedded in carpet fibres, preventing them from becoming airborne. If a true HEPA vacuum cleaner is not available, machines with high-efficiency micro-filtration vacuum bags can also trap very small particulates.

Although high-performance matting and HEPA vacuums are the keys to proper carpet maintenance, routine extraction-style carpet cleaning is also mandatory.

According to Dr Michael Berry, author of *Protecting the Built Environment: Cleaning for Health*, "The benefit of [carpet] extraction is the overall reduction of respirable particles, which causes positive health effects, reduced cases of biologically induced illnesses, reduced lifetime cancer risks and reduced complaints for building owners and managers."

Carpet soiling is actually normal even with frequent vacuuming. While some contaminants are brought into a facility on shoes, much of it is actually already present within the facility. Particles suspended in the air settle into the carpet, just as dust settles on furniture. Eventually, when the carpet reaches its saturation point, the soiling becomes noticeable as well as harmful to IAQ.

"This is when restoration or carpet cleaning is necessary," notes Mike Genteman, a senior product development engineer with U.S. Products, manufacturer of professional carpet, floor and restoration cleaning equipment. "Removing the harmful dust and contaminants with hot water, low moisture extractors is the most effective approach."

Heat is required for proper carpet cleaning because it improves the effectiveness of the cleaning chemicals, according to Genteman. This reduces the amount of chemical needed, protects IAQ and is environmentally responsible.

Because most multi-story facilities must use portable carpet extractors, Genteman suggests looking for machines that include the following features:

- Variable psi from 0 to 500; this much pressure is comparable to some truck mount systems.
- Instant heat of 100 deg C, which ensures that the machine is ready to perform when you are.
- Low moisture usage; machines with this feature use less than 4 litres of water per minute, minimising the possibility that mould or mildew will develop.
- Large water capacity; machines with a capacity of at least 55 litres result in less

downtime, improving worker productivity.

• Gold Certification from the Carpet and Rug Institute (CRI); this certification means that the machine has been independently tested and awarded the highest performance ranking.

**Looking Down to Clean Up**

Today's effective building managers must aggressively deal with IAQ issues. Health, worker productivity and the bottom line are all at risk should it be ignored. And properly caring for floors is an integral part of caring for air quality. Says Genteman: "Without question, proper carpet care is essential to protecting IAQ."



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