



# whittaker

***Consistently Cleaner Carpet. Smart Service.™***

---

## Encapsulation Carpet Cleaning and Hot Water Extraction

A Closer Look at Best Practices for Maintaining your Carpet

Consistently Cleaner Carpet. Smart Service™. Whittaker is committed to ensuring carpet adds beauty to each facility as its designer, manufacturer and installer intended. As a family-owned business with 60 years of experience and the pioneers of the first commercial encapsulation carpet cleaning system, we have the expertise to help customers effectively and efficiently maintain a consistently cleaner carpet. Our low-moisture carpet cleaning machines – including our exclusive three-brush TRIO – makes carpet care as simple as possible.

For more information, visit [www.whittakersystem.com](http://www.whittakersystem.com) or contact us at 800.422.7686 or [sales@whittakersystem.com](mailto:sales@whittakersystem.com).

# TABLE OF CONTENTS

---

## **I. The Impact of Carpet Care**

Upholding Brand Reputation.....Page 3

## **II. Carpet Care Methods**

Various Strategies to Consider.....Page 4

## **III. What is Low-moisture Encapsulation?**

Understanding the Process.....Page 5

## **IV. Encapsulation Best Practices**

Interim Maintenance Recommendations.....Page 6

## **V. What is Hot Water Extraction?**

The Ins and Outs of this Approach.....Page 7

## **VI. Hot Water Extraction Recommendations**

Common Mistakes and Tips for Success.....Page 8

## **VII. Bringing it all Together**

Executing a Thorough Maintenance Program.....Page 10

## **VIII. Carpet Care Done Right**

Protecting your Flooring Assets.....Page 11

## **IX. Encapsulation Carpet Cleaning vs. Hot Water Extraction Infographic**

A visual look at these processes.....Page 12





## I. The Impact of Carpet Care

### Upholding Brand Reputation

We're often wowed by carpet designs when we walk into hotels, casinos, airports and convention centers. Schools and long-term care facilities also install carpet in various areas to create inviting environments and reduce noise. Carpet can have a lasting positive impression on building occupants and visitors. But clean carpet is a must. In fact, research demonstrates that poorly maintained carpet can work against a brand's reputation and bottom line.

According to a Harris Poll of 2,012 U.S. adults ages 18 and older conducted in March 2020, the majority of Americans (93%) say dirty carpet with things like stains, animal hair or food residue in a facility would negatively impact their perception of that business or organization. Dirty carpet would also trigger different types of negative reactions. For example, 56% of U.S. adults would look for an alternative facility to go to and half (50%) would spend less time in the facility. Additionally, 47% of people would discuss the lack of cleanliness in the facility with their friends, family or colleagues.

One of the more concerning findings is that 58% of people would assume the facility is not clean. In the wake of the COVID-19 pandemic, no facility wants to give guests the impression that it is not committed to high standards of cleanliness. Cleanliness goes beyond appearance. Consistent cleaning, disinfecting and sanitizing helps reduce pathogen loads, thereby protecting the health and safety of groups like employees, students, faculty, children, the elderly and visitors.

Thankfully, with a smart approach to carpet care, facilities can prevent spills from becoming stains, keep dirt from making its way onto carpet and remove surface and embedded soils to keep carpet looking better for years to come. Carpet is a capital investment. Longer lasting carpet reduces landfill waste, replacement costs and the disruption associated with installing new flooring.



## II. Carpet Care Methods

### Various Strategies to Consider

There are numerous methods that can be applied to clean commercial carpet. Over the years, innovation has also led to improvements in the way facilities can approach carpet care. Some strategies are better suited than others for the demands that commercial carpet faces on a regular basis. From dirty shoes to wheeled suitcases to pet paws, carpet encounters many different challenges over the course of a day.

Some carpet cleaning methods can unintentionally damage carpet fibers. This negatively affects the look of carpet and may require carpet to be replaced sooner than expected and budgeted for. Given the time and money that organizations invest into selecting, purchasing and installing carpet, and the role that carpet has in shaping guest perceptions, it's important to uphold the appearance of carpet.

**A four-step approach to carpet maintenance is recommended. This includes:**

- 1 Preventative maintenance** – The vast majority of soil that ends up in a building is brought in on the soles of people's shoes. To keep dirt, sand, salt and other contaminants from dirtying carpet, many facilities choose to install entrance matting. Walk-off mats help scrape soils from shoes and capture moisture that can negatively impact the appearance of carpet. This preventative measure is simple to put into place and extremely cost effective when compared to intensive carpet cleaning tactics and replacement.
- 2 Daily maintenance** – There are more than 25 different types of soil in the United States. Daily vacuuming helps remove the high volume of dry soil that makes its way inside. If cleaning teams don't consistently remove these soils, it begins to act like sandpaper against the carpet fibers, creating cracks and crevices that end up collecting smaller particles of soil. These in turn are more difficult to remove.
- 3 Interim maintenance** – Low-moisture encapsulation is one form of interim maintenance. This white paper will explore it in more detail and offer best practices for performing this process.
- 4 Deep extraction cleaning** – Hot water extraction is a common form of deep restoration cleaning, which is not conducted very frequently. More information about hot water extraction is included below.





### III. What is Low-moisture Encapsulation?

#### Understanding the Process

While vacuuming removes dry soils, it's vital to have a strategy in place for removing sticky and oily soils that vacuuming won't address. This process needs to be gentle on carpet so as not to damage the fibers but still powerful enough to loosen the soil away from the fibers and then remove it.

Low-moisture encapsulation is one such method. It is a form of interim maintenance that facilities can complete between daily vacuuming and hot water extraction. You can conduct low-moisture encapsulation as frequently as every day, as is common in the lobbies of Las Vegas hotels, or even once a month if your facility has fewer carpeted areas or does not deal with high soil loads. Low-moisture encapsulation carpet cleaning advantages include cost-effectiveness, sustainability and safety.

#### So how does low-moisture encapsulation work?

In the simplest terms, encapsulation functions by using a machine to apply a mild surfactant onto the carpet along with a small amount of water. A machine with cylindrical brushes is best for activating the chemistry, which then helps the solution slip between the carpet fiber and the soil. The water evaporates and the chemistry's polymers come together along with the soil.

Thinking about this differently, encapsulation cleaning uses crystallizing polymers and detergent components to emulsify embedded soils and then bind with these particles. It captures oily soils and can also remove dry soils that vacuuming may miss. Encapsulation is a preferred interim maintenance method because it tackles soils on the surface of the carpet fibers and those stuck deep within the carpet pile.

When the carpet dries after about 30 minutes, you are left with small, brittle crystals. These can be removed immediately through vacuuming or during the next scheduled vacuuming. You can wait to remove the soils because they are encased in a clear, microscopic polymer and cannot be seen by the naked eye. Facilities rave about encapsulation because it has an immediate impact on the appearance of carpet.



## IV. Encapsulation Best Practices

### Interim Maintenance Recommendations

Understanding tips about the equipment, chemistry and tools for low-moisture encapsulation will help ensure success.

- 1 Select a high-quality carpet agitator machine.** You can either opt for a two-brush machine or a three-brush machine to complete low-moisture encapsulation cleaning. Choose a model with counter rotating brushes that will effectively agitate the cleaning solution while also lifting the carpet pile. There are different options on the market, such as economical machines with detached sprayers and models with a machine-mounted solution tank to make spraying the solution even easier. Make sure to look for user friendly equipment that is easy and lightweight for staff to use on a regular basis.
- 2 Take a close look at your chemistry.** The formulation of the chemistry you use is crucial. Be sure to ask the manufacturer how the chemistry will dry. Unfortunately, some carpet cleaning chemicals will dry as a gummy texture. This sticky residue will attract more dirt and require more frequent cleaning.

Look for products recommended by reputable third party testing organizations like the Carpet and Rug Institute (CRI), approved by the WoolSafe Organization or certified by Green Seal. This gives you added assurance that the products will protect the color and appearance of your carpet. It's best practice to have a range of different chemistries on hand that you can use to tackle different types of stains and soils like salt, coffee/tea/wine and grass.

3

**Use tools when stains arise.** To make carpet care even easier, there are handheld tools that can help you agitate carpet fibers without the use of an encapsulation machine for those in-between cleaning moments. You can use these spotting tools to treat specific concerns, like stains caused by protein or oil and grease. Lightweight, ergonomic tools help staff quickly address spills so they do not become permanent stains.

## V. What is Hot Water Extraction?

### The Ins and Outs of this Approach

Hot water extraction is often referred to as steam cleaning, but that isn't entirely accurate. This is because the hot water extraction process uses very hot water to release dirt trapped deep within carpet fibers. Meanwhile, with steam cleaning, all of the water is converted into a vapor. Because it uses water in its gaseous state, steam cleaning does not rinse or remove stains as well as hot water extraction.

Hot water extraction certainly lives up to its name. Typically, cleaning professionals conducting hot water extraction use water that is 180-220 degrees Fahrenheit. In addition to the water, the process uses cleaning solution to target stubborn stains, allergens and contaminants like sand and salt.

The last step requires suctioning out the moisture from the carpet with a specialized vacuum. It's crucial that there is strong suction because oversaturated carpet takes much longer to dry. Plus, depending on the carpet's construction, such as carpet without a vinyl backing, water can soak through to the padding and potentially into the floorboards or drywall. If not enough moisture is extracted, this can provide an opportunity for mold and mildew to grow. This can lead to indoor air quality issues that aggravate health conditions.

## VI. Hot Water Extraction Recommendations

### Common Mistakes and Tips for Success

Two of the top misconceptions about hot water extraction are that the carpet will dry quickly and the process won't damage carpet. If done properly, you can rest assured that hot water extraction will make carpet look great again. If the process is rushed, it can cause problems. The risks associated with overwetting carpet make it so important to work with a qualified professional when conducting hot water extraction.

Consider the fact that low-moisture encapsulation typically uses one gallon of water for every 1,000 square feet of carpet. In comparison, hot water extraction uses up to 200 gallons for this same area of carpet. The process thoroughly soaks the carpet and though some experts claim that the vacuuming step removes 90% of the moisture, the reality is that it is closer to 70%. With 30% of the moisture remaining, it is a lesson in patience waiting for this water to evaporate.

Another misconception around hot water extraction is the idea that it can completely restore carpet to its original state. Without preventative, daily and interim maintenance, soils will build up over time and damage carpet fibers. This will cause the carpet to lose its luster, meaning no amount of hot water can bring back its vibrant color and shine if it hasn't been taken care of between deep cleanings.

**The following hot water extraction best practices will help you vet service providers and achieve cleaner carpet:**

- 1 Use an outside expert.** If hot water extraction is only completed every couple years, it's likely that the in-house custodial manager role will have experienced turnover. Thus, bringing in a reputable third party to conduct hot water extraction is advised. This provider will have all the necessary equipment and will have the knowledge and experience required to perform this specialized process correctly.
- 2 Confirm the provider is IICRC certified and insured.** The Institute of Inspection, Cleaning and Restoration Certification (IICRC) is the non-profit certifying body for the cleaning and restoration industry. Carpet cleaners that have devoted time to become IICRC certified will be well equipped to manage hot water extraction and offer a higher level of professionalism and peace of mind. A certified expert will be sure to regularly maintain their equipment so that machines are functioning properly during the extraction process.





- 3 Conduct the process after hours.** Hot water extraction is a time commitment, and the drying process can take hours based on the size of the facility and the amount of water used. It's best to carry out hot water extraction during a timeframe when fewer people will be present. This likely means overnight for many facilities, or during a holiday when the facility will be shut down for one or several days.
- 4 Be mindful of industry guidelines.** CRI has set guidelines around the acceptable maximum temperature for hot water extraction (130-180 degrees Fahrenheit). CRI also has recommendations around water pressure. Too much water pressure can damage the carpet construction. Thus, the maximum pounds per square inch (PSI) is 180. Some truck-mounted equipment can reach 1,200 PSI, so check with your service provider regarding their process, water temperatures and pressure levels.
- 5 Allow carpet to thoroughly dry.** It's essential to execute hot water extraction by the book. Several hours after it is complete, the service provider should check the carpet's dryness with a moisture meter. Often, carpeted areas reopen too quickly and are not fully dry. While carpet may not be wet to the touch, it can still hold moisture. This moisture will reattract soil as it's essentially cleaning the soles of everyone's shoes.

### **Remember:**

Many facilities conduct hot water extraction because it reduces the risk of damaging carpet fibers compared to other methods, like bonnet cleaning. While hot water extraction can be incredibly effective at removing soils and restoring the appearance of carpet, it can be extremely costly to conduct this process frequently.

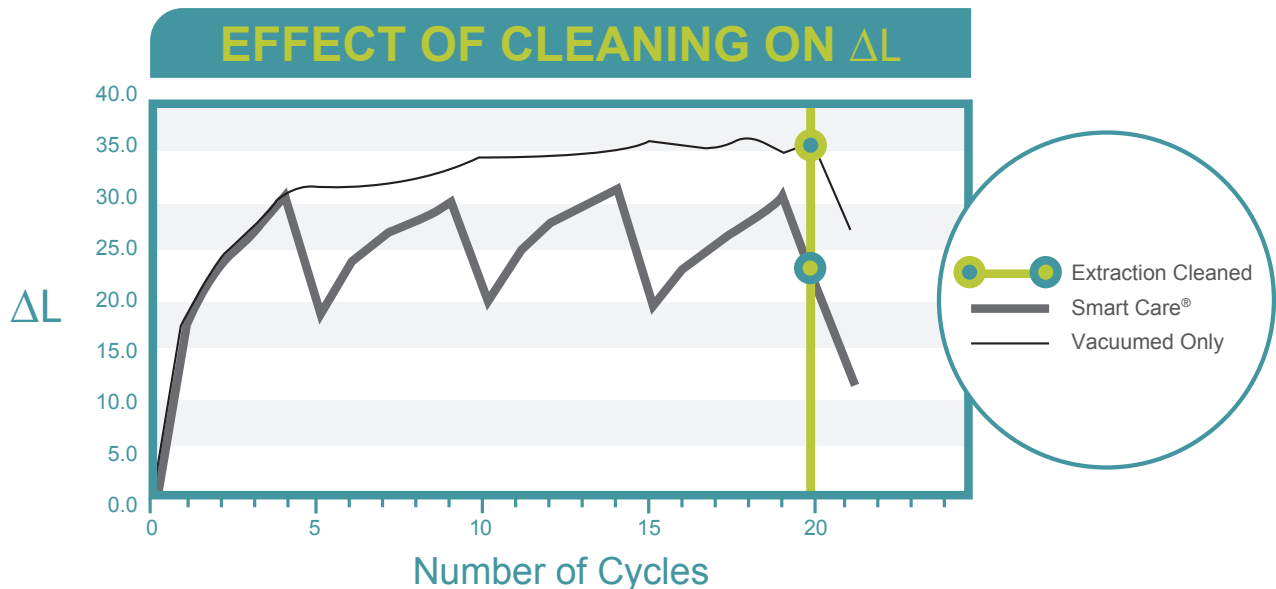
So how often should you conduct hot water extraction? Thankfully, if you have a strategic interim maintenance program in place that combines low-moisture encapsulation, regular vacuuming and entrance matting, you can usually prolong the time between hot water extractions. Generally, facilities that keep up with their maintenance tasks schedule this process every 12 to 24 months.

## VII. Bringing it all Together

### Common Mistakes and Tips for Success

Performing low-moisture encapsulation and hot water extraction can help facilities remove soils and keep carpet looking its best. It is important to note that neither process is a substitute for the other. These carpet care methods work well together and both are essential for prolonging the lifespan of carpet and maintaining its luster and color.

In fact, a study done by Cleaning Research International found interim cleaning paired with regular hot water extraction helped maintain carpet significantly better compared to hot water extraction only. Throughout soiling cycles, the carpet subject to interim cleaning brought the value of "L," the unit used to express the whiteness or blackness of a surface, down again. The higher the level of L, the darker and dirtier the carpet appeared.



The study concluded that with consistent vacuuming and interim cleaning between hot water extraction cycles, carpet can be maintained at a satisfactory level over a long period of time.

Many facilities regularly conduct low-moisture cleaning. You can set a schedule based on factors such as total square footage, level of contamination from the outdoors and average daily foot traffic.



These factors can also help determine the best frequency for hot water extraction. In some cases, facilities can go three years before needing hot water extraction if they have kept up with vacuuming and encapsulation. Others schedule hot water extraction every 12-24 months.

Often, when service providers win a new account, they will conduct low-moisture encapsulation cleaning and hot water extraction simultaneously. This helps restore the carpet at the outset of the contract. Simply use the carpet agitator with a product like Whittaker's CRYSTAL® QUICK RESTORE™. Then, while the carpet is still damp, complete hot water extraction without the use of additional chemicals to pull any remaining soils from the carpet.

## VIII. Carpet Care Done Right

### Protecting your Flooring Assets

Clean carpet sets the tone for visitors of hotels, long-term care facilities, schools, airports, retail stores and more. Research demonstrates that dirty carpet can result in complaints, negative word of mouth, lost business and reputational damage. It's important to remember that carpet warranties don't cover appearance. They are tied to carpet construction. Thus, it's paramount to have a smart process in place that includes preventative maintenance, daily maintenance, interim maintenance and deep extraction cleaning. Proper and thorough carpet care can uphold your flooring's appearance, extend its lifespan and support your bottom line.

For more information about systems for maintaining your commercial carpet, visit [www.whittakersystem.com](http://www.whittakersystem.com) or contact us at 800.422.7686 or [sales@whittakersystem.com](mailto:sales@whittakersystem.com).



# Encapsulation Carpet Cleaning vs. Hot Water Extraction

Low-moisture encapsulation, a form of interim carpet maintenance, offers many benefits:

## EXCEPTIONAL CLEANING



**9**

The number of low-residue solutions in Whittaker's CRYSTAL® Chemistry range that remove a variety of stains.



**0**

Dry and oily soils bind with the chemistry and leave no sticky residue behind that will attract dirt.

## PRODUCTIVITY



**16,000**

The number of square feet Whittaker Smart Care® machines can clean per hour.<sup>2</sup>



**30 minutes**

Carpet is dry in just half an hour.

## SUSTAINABILITY



**1 gallon**

Water usage of unheated water for 1,000 sq. ft., resulting in no water waste.<sup>1</sup>

## COST-EFFECTIVENESS



**\$5.33**

The total cost per 12 oz. bottle of CRYSTAL® Dry Extra to clean 2,000 sq. ft.<sup>3</sup>

Hot water extraction is a common yet more intensive process for cleaning carpet:



**180 to 220°F**

The process uses extremely hot water to release soils from carpet.



**1-2 years**

Most facilities conduct encapsulation cleaning regularly to prolong the time between extractions to over a year.



**3-12x**

Hot water extraction uses up to 12 times more water compared to Whittaker's low-moisture technology.

Creating a schedule that incorporates frequent encapsulation cleaning and as-needed hot water extraction can help facilities improve the appearance of carpet.



**7 years:** The average replacement cycle of commercial carpet is 7 years.<sup>4</sup>

**15 years:** Consistent interim maintenance can extend the lifespan of carpet to 15 years and beyond.<sup>4</sup>

**3x:** In addition to these methods, consider vacuuming at least three times per week, preferably daily, to remove carpet soils.

To learn more about carpet care the Whittaker way, contact **800.422.7686** or **sales@whittakersystem.com**.

<sup>1</sup> [www.whittakersystem.com/sustainable-carpet-cleaning](http://www.whittakersystem.com/sustainable-carpet-cleaning)

<sup>2</sup> [www.whittakersystem.com/professional-carpet-technicians](http://www.whittakersystem.com/professional-carpet-technicians)

<sup>3</sup> Sold in cases of 24 bottles.

<sup>4</sup> <https://blog.milliken地毯.com/what-is-the-life-expectancy-of-commercial-carpet>



**whittaker**

Consistently Cleaner Carpet. Smart Service.™