

# **IICRC R100**

## **Reference Guide for Professional Cleaning of Textile Floor Coverings**

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## *Disclaimer*

This Reference Guide (R100) is intended to provide information about the professional cleaning of textile floor coverings and to assist individuals and entities working in the textile floor covering industry in establishing and maintaining their professional competencies. Users of this document must keep abreast of the rapid developments in the field of textile floor covering cleaning, implement changes in technology and procedures as appropriate, and follow applicable federal, state, provincial and local laws and regulations. Cleaners should use their professional judgment throughout each and every project. However, the use of professional judgment is not a license to not comply with this Reference Guide. On occasion, a project might have unique circumstances that may infrequently allow for a deviation from the Reference Guide. Furthermore, this Reference Guide is not intended to be either exhaustive or inclusive of all pertinent requirements, methods or procedures that might be appropriate on a textile floorcovering cleaning project. The information upon which this Reference Guide is based is subject to change, which may invalidate any or all of the information contained herein.

This Reference Guide was developed through a consensus standard development process, which brought together volunteers representing varied viewpoints and interests to achieve consensus on textile floorcovering cleaning issues. While the Institute of Inspection, Cleaning and Restoration Certification (IICRC) administers the process and establishes policies, procedures and guidelines to promote fairness in the development of consensus, it does not independently test, evaluate or verify the accuracy of any information or the soundness of any judgments contained in this Reference Guide.

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## *Foreword*

*The information contained in this IICRC R100 Reference Guide is not part of the ANSI/IICRC S100 American National Standard (ANS) and has not been processed in accordance with ANSI's Requirements for ANS. As such, this Reference Guide may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the ANSI/IICRC S100 standard.*

The science of cleaning and maintenance of installed textile floor coverings has grown significantly during the last 20 years. The Institute of Inspection, Cleaning and Restoration Certification (IICRC) first published the *Standard and Reference Guide for Professional Carpet Cleaning* (S001) in 1991 and revised it as the S100 in 1994, 1997, 2002, 2011, and 2015.

The S100 is a procedural standard. It is based on reliable cleaning principles, review of available scientific and industry literature and information, and practical experience. In addition, there has been extensive consultation with, and information obtained from, numerous other sources. These sources include, but are not necessarily limited to: scientists, government, and public health professionals; international, national, and regional trade associations serving the professional carpet cleaning industry; chemical formulators and equipment manufacturers; cleaning training schools, cleaning firms, allied trades persons, and others with specialized experience.

The S100 establishes a procedural standard for the maintenance of installed textile floor coverings. It is intended for use by professional cleaners, carpet manufacturers, retailers, distributors, industry suppliers, specifiers, homeowners, property or facility managers, housekeepers, insurance companies, and others interested in residential and commercial on-location textile floor covering cleaning and maintenance. Factors such as, but not limited to, floor covering color, style, construction, and use dictate the specific cleaning systems and methods to be used. It is recommended that the consumer, client, or end-user, develop a plan immediately after installation for maintaining their textile floor coverings. There are charts and recommended guidelines for frequency of cleaning and maintenance located in this document. These charts provide guidance in developing an appropriate carpet maintenance plan.

This document is written for use by those involved in the textile floor covering cleaning industry, primarily for textile floor cleaning companies and workers and, secondarily, for others who procure, manage, or maintain carpeted areas. Users of this document should stay updated and informed about the rapid developments in the carpet cleaning field and implement changes in technology and procedures, as appropriate, while following applicable federal, state, provincial, and local laws and regulations.

This Reference Guide does not specifically address the protocols and procedures for remediation of contaminated (e.g., Category 2, 3 water or Condition 2, 3 mold) textile floor coverings. See the ANSI/IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration or the IICRC S520 Standard and Reference Guide for Professional Mold Remediation.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The IICRC is not responsible for identifying any or all such patent rights.

Within this Reference Guide, no attempt is made to evaluate the strengths or weaknesses of individual cleaning methods, or to compare or contrast one method or system, equipment, or product, with another. Users of this Reference Guide are reminded that the effectiveness of any method or system of cleaning varies, depending upon the skill, experience, education, and professional attitude of the cleaner and company employing those methods.

All textile floor cleaning jobs are unique and, in certain circumstances, common sense, experience, and professional judgment may justify deviation from this Reference Guide. It is the responsibility of the cleaner to verify on a case-by-case basis that application of this Reference Guide is appropriate. When in doubt, use caution and seek additional professional guidance. Users of this document assume all risks and liabilities resulting from use of and reliance upon this Reference Guide.

The S100 is presented in two parts: The procedural ANSI/IICRC S100 Standard, and this supplemental IICRC R100 Reference Guide. The Standard summarizes most of the significant and important procedures and methodologies of textile floor maintenance, while the Reference Guide restates and further explains those procedures and methodologies and provides additional background information, which supports the Standard. Although the material in the Reference Guide does not carry the official status of a Standard, the two sections complement each other and should always be considered in tandem.

The S100 does not attempt to teach carpet and rug cleaning procedures. It does, however, provide the principles and foundations for understanding proper carpet cleaning practices. The S100 is not a substitute for carpet cleaning training and certification programs that are necessary to attain competence in the field of carpet cleaning.

The S100 is a living document that is subject to change as more information regarding carpet cleaning becomes available, scientific developments occur, and advancements are made in carpet cleaning technology and practice. The S100 will be reviewed, evaluated, and validated through application in the field and thereafter revised and improved. This process and further professional and public review allows our industry to develop a body of carpet cleaning science and achieve the overall IICRC goal of improving the science of cleaning and the overall environments in which people live and work.

Volunteering to participate in an IICRC Standard writing committee requires openness to new ideas, concepts, and procedures and requires communication, cooperation, documentation, testing, and specialized education. Our evolving industry has consistently attracted professionals from all walks of life and they have donated thousands of volunteer hours promoting professionalism. Many of those dedicated individuals built the foundation that we continually modify. These modifications are necessary to enhance the performance of textile floor coverings and, at the same time, serve to protect occupants.



# Introduction

## *A Systematic Cleaning Process*

Cleaning is a systematic, science-based process of managing undesirable matter. The cleaning process as it is applied to environments is comprised of the following components:

- understanding the nature and characteristics of the environment to be made free of unwanted matter (e.g., pollution, soils);
- understanding the physical, chemical, or biological characteristics of the unwanted matter to be removed;
- separating and containing the matter so it can be removed from the environment;
- transporting or removing the unwanted substance from the indoor environment, and
- properly disposing of the matter so as to not degrade or cause harm to other environments or the natural environmental system.

Science is generally defined as knowledge attained through study or practice, or knowledge believed to be general truths of the operation of general laws as observed through the “scientific method.” Cleaning science uses observations that describe and explain how cleaning works. Cleaning helps manage environments; therefore, cleaning science can be viewed as a branch of environmental science. The process or system of cleaning, plus the knowledge and application of the sciences, provides a basis to better define a cleaner condition and ability to potentially sustain an elevated quality of life derived through cleaning.

Cleaning science challenges us to more clearly define cleaning terminology. Properly defined terms and systems are necessary to differentiate the properties of matter and the interactions of matter and energy. Cleaning science can be differentiated from what some call “pure science” because of its application to the cleaning industry. For instance, “clean” may be defined as a condition free of unwanted matter that depends on a specific application, and has a different application in carpet cleaning than it does in “clean rooms” or “surgical suites”. The process of effective cleaning removes unwanted matter to the desired extent, understanding that some residues can be tolerated while minimizing risk for humans, valuable materials, and the natural environment.

### **INTERRELATED ACTIVITIES AND INFLUENCES**

A particularly active area of the systematic cleaning process examines how carpet cleaning affects the built environment. If one area in a structure is not functioning properly, not designed properly, or is not maintained properly, then other areas may not be effectively cleaned.

Success of carpet cleaning is based not only on the application of scientific techniques, but on understanding cleaning variables because it directly links limitations on science and

matter. Limitations can be imposed or variables can exist that reduce cleaning effectiveness. In addition, the customer's expectations, manufacturer's guidelines, and business practices influence the industry standard of care that cleaners achieve. For instance, a process as simple as thorough vacuuming prior to carpet cleaning, or the necessity of a properly operating and maintained HVAC system, are examples of this.

Once the cleaning objective has been established, a carpet cleaning system can be developed and implemented. A carpet cleaning system is the implementation of principles, procedures, and methods used to achieve an acceptable level of cleaning.

### **Integrated Indoor Environmental System: Holistic Approach**

An integrated indoor environmental system is a combination of interactive parts built into a structure that provides comfort and shelter from the outside. As matter (e.g., solids, liquids, and gases) and energy flow throughout the structure, soil is distributed, moved, captured, and finally removed. Examples of items contributing to the movement of soil may include construction activities, HVAC condition and age, use and age of the interior space, ceiling, and walls, type of flooring, infiltration of unwanted matter, and ventilation. If one or more parts of this system are not functioning correctly, all others will be affected. Economic conditions may affect the integrated indoor environmental systems.

### **Integrated Indoor Management System: Holistic Approach**

An integrated indoor management system is the coordination of the maintenance, operation, and frequency of cleaning of individual parts. This includes, but is not necessarily limited to, developing a vacuuming frequency chart with planned interim and restorative cleaning frequencies, and monitoring the HVAC system for efficiency. The more activities occurring in and about a structure, the more cleaning is needed.

# **Chapter 1**

## ***Principles of Cleaning for Textile Floor Coverings***

### **PURPOSE**

The objective of professional textile floor covering cleaning is to maximize soil removal while minimizing damage to the textile floor covering. Before cleaning methods are selected, an evaluation of the textile floor covering's components, construction, use, condition, and soiling should be performed. At that point a cleaning system can be selected or developed using the methods described in this document that maximizes effectiveness.

This reference guide describes multiple methods and systems of cleaning. However, the purpose of this chapter is to define basic principles of cleaning that apply to all textile floor covering cleaning methods or systems.

### **DEFINITIONS**

cleaning: the purposeful activity of removing soil from an environment or surface to reduce damage or harm to human health, to improve the appearance of the surface being cleaned and to extend the useful life of that surface. Cleaning is the process of locating, identifying, containing, removing, and properly disposing of unwanted substances from an environment or material.

cleaning method: the chemistry and the equipment used within a system. Textile floor covering cleaning methods can be utilized on their own or in combination with other methods in a textile floor covering cleaning system.

cleaning system: a textile floor covering cleaning system is the implementation of principles, procedures, and methods used to achieve a desired level of cleaning.

principles of cleaning: underlying or supporting doctrines or assumptions which are essential to achieve cleaning.

### **OVERVIEW OF CLEANING PRINCIPLES**

For any method or system to be effective, essential principles of cleaning should be addressed to obtain the desired cleaning result. If these principles are compromised, cleaning effectiveness can be diminished. Cleaning principles discussed in this chapter are: