

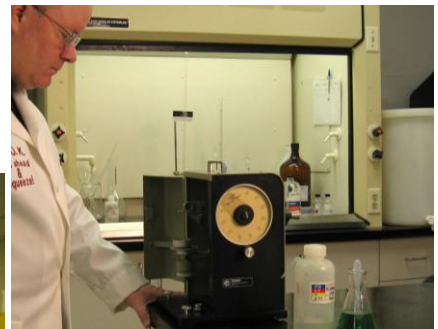
A **Multi-Clean** White Paper

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## Chemical Free Stripping.... Fact or Fantasy?



## ***The Science of Cleaning***

Can finished floors be stripped without the use of chemicals? The author of this white paper examines the chemistry of conventional floor stripping and compares this to claims of “Chemical Free Stripping”. Specialized machines and/or equipment claiming ‘chemical free stripping’ have been introduced by Clarke<sup>®</sup>, Advance, Windsor, as well as by a company called Square Scrub.

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## Disclaimer

We hope that this White Paper will generate legitimate questions and help clarify concepts associated with professional floor care.

## Introduction

The stripping of floors remains one of the most labor intensive and reviled processes in the maintenance of finished floors. It only makes sense that efforts be applied to making this job easier and safer.

Advances in stripping chemicals have produced increasingly powerful strippers that make the process easier. Modern technology has even allowed the introduction of powerful strippers

that are non-corrosive, low odor and are Green Seal Certified.

Advances in machinery, pads and brushes for stripping have focused more aggression towards the finish to make removal faster and more efficient. Propane powered stripping machines, special highly abrasive pads and brushes are increasingly used in conjunction with stripping chemicals for efficient and effective finish removal.

Now, some companies are selling cleaning equipment that they claim enable floors to be stripped without the use of chemicals. Clarke® has introduced an orbital, automatic scrub deck called BOOST® that they claim enables the “chemical free stripping of floors”. Another company, Square Scrub has introduced an orbital floor machine called the EGB-20 that makes a similar chemical free stripping claim. Recently, Nilfisk-Advance introduced the Adfinity™ X20R REV scrubber, and Windsor introduced Cylindrical Stripping Rollers (for use with several of their scrubbers).

The purpose of this white paper is to examine the validity of these marketing claims, offer practical explanations, and present ideas how to improve floor care results while stripping floors less often.

## Key Terms

- ✓ Chemical Free Stripping
- ✓ Polymers
- ✓ Zinc Crosslinking
- ✓ Scrub and Recoat
- ✓ Surface Prep Pad (3M)



## Fact or Fantasy Questions...

*The idea of simply passing an automatic scrubber or floor machine over a floor and it is completely stripped without the use of any chemical is a green marketers dream. Clarke® claims that Boost® is.... “The only autoscrubber technology that is truly capable of chemical-free stripping!” The Square Scrub claims are a bit more subdued and realistic.... “The EBG -20 machine has the ability to dry scrub several layers of finish off the floor without water or chemical involved.”*

*The Nilfisk Advance Adfinity™ XR20 REV claims “You may never need to strip your floors again. The Adfinity REV is a revolutionary way to restore floors. The Random Orbital Scrubbing power of REV technology scrubs so effectively, you can remove old finish from floors using only water.*

*According to Windsor, The patent-pending Cylindrical Stripping Rollers strip up to 1.33 coats per pass and up to 5,000 sq. ft. per roller set.*

So, here are the questions that will be addressed in this Science of Cleaning White Paper:

1. **Can floors be completely stripped without the use of chemicals?**
2. **Is this process exclusive to specially designed machines such as the Clarke Boost®, Advances Adfinity™ REV, Windsor’s Stripping Rollers or the Square Scrub?**
3. **Can other automatic scrubbers / floor machines accomplish similar results?**

## Defining ‘Chemical Free Stripping’

Clarke® has gotten a lot of marketing mileage claiming their machines allow “Chemical Free Stripping”. Now the term chemical free stripping is really being used to describe an aggressive scrub and recoat process.

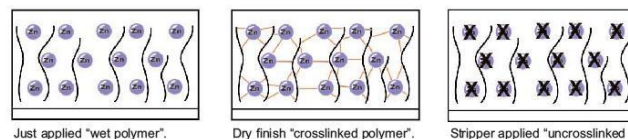
## Floor Care Chemistry

Floor finishes utilize a special ‘lock and key’ polymer chemistry to make for a durable, glossy film that can be easily removed. Floor finish is basically a clear plastic (polymer) film

that beautifies and protects floors while making them easy to clean. The ‘lock’ is a metal, most commonly zinc, that forms a chemical bond called a “crosslink” within the

plastic (polymer) as it dries on the floor, creating a tough net like structure. The “key” to unlock this interconnected, zinc crosslinked network is a simple chemical compound commonly used in floor strippers that dissolves this crosslink and makes it easy to remove.

The figure below depicts the various stages of floor finish from application to stripping.



The definition of stripping would be 100% removal of all finish from the flooring substrate. We do not believe that any machine currently on the market can say that it removes 100% of the finish from a VCT flooring substrate or that it completely eliminates stripping. Floors are simply too irregular to achieve 100% finish removal without the use of a stripping chemical as depicted below.

**“Chemical free stripping” is marketing jargon that is more aptly described as an aggressive scrub & recoat process, producing results that can be achieved with virtually any scrubber.**

Although “chemical free stripping is a misnomer, the concept of more aggressive scrubbing prior to recoating can reduce the strip finish cycle. This can be accomplished with any properly equipped machine.

The magic is in Minnesota based 3M™’s pad technology. The Scotchbrite™ Surface Prep Pad (SPP) also claims ‘Chemical Free Stripping’ using this pad. The pad, originally developed for preparing wood floors, has found application in floor care.

[CLICK HERE to view SPP brochure](#)

The Boost® Machine, Adfinity™ X20R REV scrubber, and the Square Scrub depend upon the SPP or similar pad technology to more aggressively remove finish prior to recoating.

### Chemical Free Stripping with Any Machine

Here’s how you can make any floor machine or automatic scrubber into a “chemical free stripping” machine that produces similar results to specialized machines.

**Select** the correct size SPP pad for your scrubber.

**Use** neutral or general purpose cleaner in the tank.

**Scrub** entire floor. If you want to remove more finish, scrub areas twice.

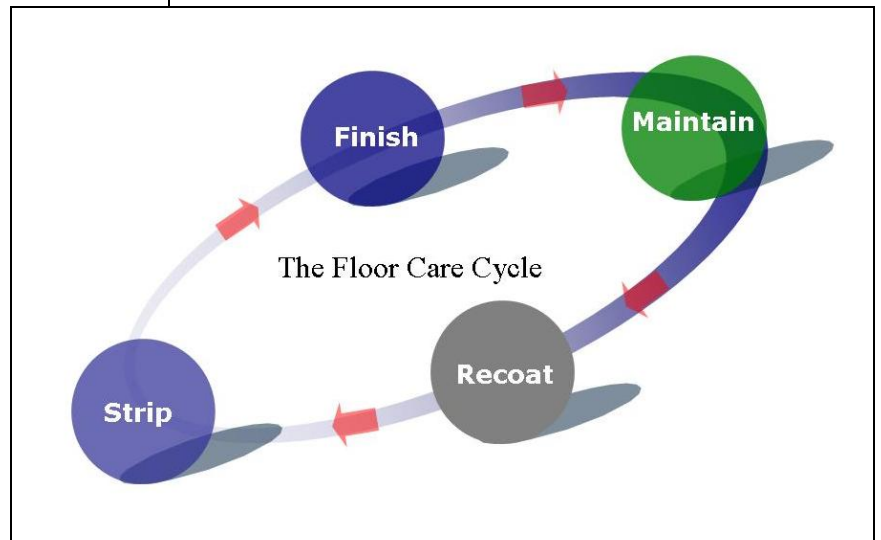
For 3M™’s specific recommendations using the Surface Prep Pad (SPP), [CLICK HERE](#)

### The Floor Care Cycle

The holy grail of successful floor care is to keep floors looking great while minimizing stripping frequency. More effective routine maintenance and recoat processes can result in lengthening the strip-finish cycle.

### Scrub and Recoat Floors

For now, we need to forget the marketing jargon of “chemical free stripping” that has successfully resonated with many end users. The reality is the process is an aggressive **scrub and recoat** process that can be



accomplished with a conventional automatic scrubber equipped with the surface prep pads from 3M™.

A proper scrub and recoat technique continues to be one of the key methods to extending the life of finished floors. The process of scrub and recoat is a well known process of removing the top 1 or 2 coats of finish to prepare a floor for additional coats. If these dirt embedded top coats are not removed, the dirt becomes locked into the finish creating a dingy, dirty look to the floors. This process uses a more aggressive pad and a stronger cleaner to help suspend abraded finish for easy pick up. The process using the Surface Prep Pad from 3M™ is more abrasive, thereby removing more finish.

We need to remember however, removing too much finish (beyond 2 coats) is wasteful and will require more added coats to achieve the necessary protection and gloss.



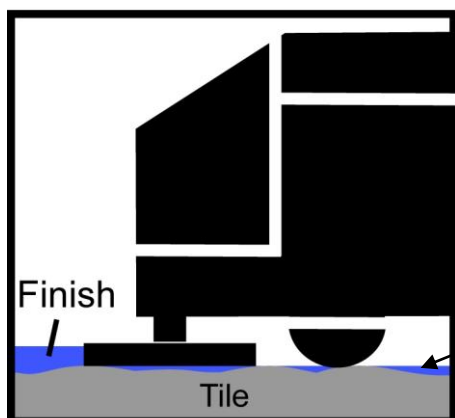
### The Green Magnifying Glass

Lengthening the strip-finish cycle should be everyone's goal. Using a more aggressive deep scrub pad can be beneficial, particularly in high traffic situations.

The Clarke Boost® also makes a green claim because it claims to use up to 70% less water. Using less water is laudable, but not unique. Similar claims can be made from competitive technology including Minuteman's AquaStop, Tennant's FAST, and Advance's Eco-Flex.

### The Real World

Many of us already know that even a seemingly flat vinyl floor has many subtle peaks and valleys. A rotary or orbital machine can easily miss low spots. In the case of stripping without chemicals, it is inevitable that finish residue will remain. The idea of extending the strip-finish cycle by using more effective scrub and recoat techniques has and continues to be one of the key methods used to increase the life of finished floors.



Low Spots on floor leaves behind finish.

### Fact or Fantasy Answers

**Q. Can floors be completely, 100% stripped without the use of chemicals?**

**ANSWER:** No, the highs and lows of floors make this unrealistic. However, more aggressive deep scrubbing can help extend the strip-finish cycle.

**Q. Is this process exclusive to these specialized machines?**

**ANSWER:** No, the results of achieving more finish removal before recoating is due to the use of the more aggressive SPP pad.

**Q. Can other automatic scrubbers accomplish similar results?**

**ANSWER:** Yes, using the 3M Surface Prep Pad will typically remove more coats of finish in the scrub and recoat process.

### Summary

Improving floor care results and maximizing budget dollars requires exploring new ways to do more with less. Prevention strategies that capture dirt before it has a chance to destroy floors should include entryway maintenance, and regular removal of soils from floors.

Stripping of floors should only be considered when and where it is truly needed.

The emergence of new tools and techniques will undoubtedly help extend the strip-finish cycle and enhance productivity of maintenance crews and that is a good thing. However, if the process is too aggressive and strips too many coats, it really is not a good process at all.