

Ultra High Speed Burnishing Method Bulletin 1405



A complete guide to selecting maintenance chemicals, pads, and equipment for high speed burnishing programs.

Prime Shine Ultra®
Max 33
Clear Essence
Decade 100
Premier
Splendor®
R.S.B.
Energize Plus



STOP - READ BEFORE PROCEEDING

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Overview of Burnishing

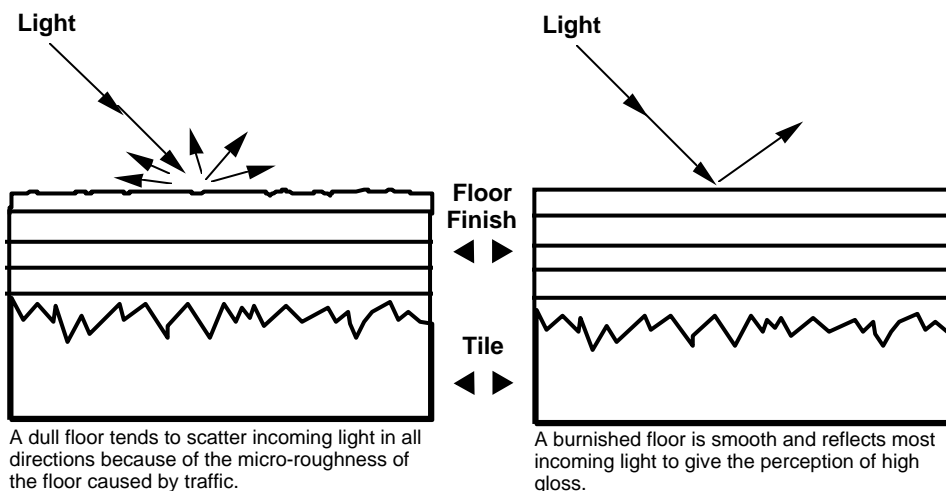
High speed burnishing continues to be the most efficient method used to maintain a high gloss shine on floors. Advances in equipment, pads and polymer technology have made high speed floor care easier than ever before. This bulletin is designed to help guide in selecting the best products, equipment, and pads for a high speed maintenance program tailored to the needs of each customer.

Confusion exists on exactly what burnishing accomplishes. Words used like “thermal” or “thermoplastic” when describing burnishing processes and products implies that heat caused by friction plays the major role in the high speed burnishing process.

The reality is that burnishing is more accurately described as an abrasive process. An appropriate definition would be:

Burnishing: An abrasive polishing process that makes a rough, non-reflective, surface into a smooth, highly light reflective (glossy) surface. This is accomplished with machinery that moves an abrasive pad at high rotational speeds making the process highly effective and efficient.

The Burnishing Process



Burnishing Facts

- 1) All floor finishes are based on a type of polymer called “thermoplastic”. The scientific definition of a thermoplastic is a polymer that can be softened (melted) by heat and re-formed into another shape. The melting temperature of a polymer is far higher than what is achieved with burnishing. Thermoplastic acrylic polymers range in properties from very soft to very hard.
- 2) Dry burnishing does not reduce the slip resistance of a floor finish.
- 3) Some dust generation is an inevitable part of burnishing because of the abrasive nature of the process. Excessive dusting suggests that the finish formulation is not appropriate for burnishing or more likely, the pad is too aggressive for the machinery being used.
- 4) The best burnishing pad for a particular application is dependent on several variables:
Machine Type: electric, battery, propane
Machine Speed: RPM (Revolutions Per Minute)
Floor Finish: burnishing or extended wear finish.
- 5) All Multi-Clean finishes can be successfully burnished. The highest “wet look” gloss is achieved with finishes specifically designed for high speed burnishing.

The System: Equipment & Pads & Finishes

A high speed burnishing program encompasses several key variables to consider when designing a system. The equipment, pads and finishes, used are the most important factors.

Equipment: Burnishing equipment consists of three distinct types: cord electric, battery, and propane powered. (Table I) The machinery is offered in many different Rpm's ranging from 1000-3000.

Pads: Burnishing pads are available in a variety of textures. In this bulletin, pads are placed in three broad categories, aggressive, moderate, and light. A sampling of pads from three manufacturers is included in Table II.

Floor Finish: The appropriate floor finish for an application depends on customer expectations, as well as the quality and frequency of maintenance.

Burnishing Finishes: For regularly scheduled high speed burnishing programs where the customer wants and expects a "wet look" appearance there are two choices:

- 1) Prime Shine Ultra: Prime Shine Ultra provides the highest "**wet look**" gloss appearance after burnishing. It is designed to be used in frequent burnishing programs (4-7 times/week).
- 2) Clear Essence: Certified Floor Finish. Based on a polymer cross-linking technology that does not require the use of zinc or other heavy metal to produce a durable, high quality finish. Clear Essence exhibits excellent burnish response using high/ultra high speed equipment. Green Seal Certified. Part of Multi-Cleans "Certified Floor Care System".

Versatile Finishes

- 1) DECADE 100: **Ultra high initial gloss** with fewer coats provides application labor savings. Burnishes to a high gloss finish that is more durable than competitive high solids products. "Soil Shield™" technology enhances cleanability and helps prevent floor discoloration due to soiling.
- 2) SPLENDOR: The #1 Multi-Clean finish offering an extraordinary **balance** of performance properties combined with excellent economy.
- 3) Opti-Shine: High Performance, Low Odor. A great 25% solids floor finish that does not have the objectionable odors that traditional floor finishes have. Perfect for use in: hospitals, nursing homes, schools, etc.

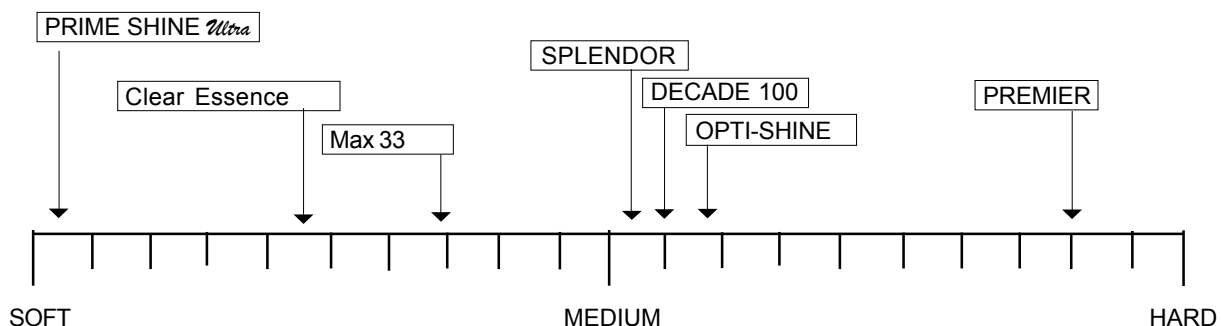
Extended Wear Finishes: For maintenance programs based on spray buffing, no buffs (scrub & re-coat only), or programs that involve infrequent burnishing:

- 1) PREMIER: Ultra **durable**, high performance floor finish. Most scuff resistant, black mark resistant Multi-Clean finish. Requires use of a restorer when high speed burnishing with a cord electric machine.

Restorers: These products are a blend of polymers, waxes, solvents and cleaning agents to aid burnish response. Restorers also help fill in scratches and scuffs to smooth out a floor. The use of a restorer can help prolong the appearance of the floor and reduce re-coat frequency. Two choices:

- 1) R.S.B.: High Speed Restorer
 - Dilute 1:3 for mop-on application. (Most effective for interim maintenance and reduced re-coat frequency.)
 - Dilute 1:8 for spray burnish use.
- 2) Energize Plus:
 - RTU restorer

FINISH RATING HARDNESS/DURABILITY SCALE



BURNISHING PAD GUIDELINES

The number and types of burnishing pads on the market continues to expand making pad selection more confusing. However, experimenting with different pads offers a simple and easy way to optimize appearance and achieve maximum performance.

The correct pad for any given situation depends on the type of equipment and floor finish used. As a general rule of thumb harder floor finishes require more aggressive pads while softer finishes respond better to less aggressive pads.

To extend floor finish life, the least aggressive pad that accomplishes the desired effect should be used.

BURNISH PAD COMPARISON CHART

| AMERICO | 3M | ETC | Glit | Microtron |
|--|---------------------------|-----------------------------|-------------------------------|---|
| Impress Luster Lite | 3100, Aqua Burnish | Aqua Plus, Blue Ice | Blue Ice Joey | Blue Ice VL UHS Aqua |
| Image-Beige | 3200 Topline Speed | Gold High Speed | UHS Beige | PL High Speed Yellow PL Beige Polythermal |
| Combo | 3300, Natural Blend White | Gorilla Lite Jaguar Lite | Jackeroo Lite | |
| Remover Champaigne Porko Elite | 3400 Tan Burnish Pad | | Peach Buffing Jackeroo | PL 40-D Red Natural Poly |
| Porko Plus Porko Natural Porko Extreme | 3500 Natural Blend Tan | Jaguar Gorilla | Buckaroo | Natural Fiber |

BURNISHER PAD SELECTION GUIDE

| Burnisher Type | Finish Rating (see chart page 2) | Pad Recommendation |
|--------------------------------|-------------------------------------|---|
| Propane Burnisher | Soft Medium Hard | Light Moderate Moderate |
| Battery Burnisher | Soft Medium Hard | Light Moderate - Aggressive Aggressive |
| Cord Electric Burnisher | Soft Medium Hard | Light Moderate - Aggressive Aggressive |

Types of Burnishing Equipment

| | Advantages | Disadvantages |
|-----------------|--|--|
| <i>Electric</i> | Efficient, lightweight, easy-to-use and maintain, economical. No fumes. Dust control option. | Pad pressure(s) limited by power source. Requires cord. |
| <i>Battery</i> | More efficient, easy-to-use and maintain, no fumes, dust control option. No cord limitation. | Requires periodic charging, batteries add weight. |
| <i>Propane</i> | Most efficient. No cord limitations. | Odors can affect indoor air quality, noisy, hazardous pressurized fuel, high maintenance, can burn floors. |

FACTS ABOUT THE COMPETITION

Several competitors have recently introduced very soft floor finishes. These finishes are being referred to more as “flexible finishes” to avoid the negative connotations of the word “soft”.

The ultra soft products offer excellent burnish response, but lack of durability makes these types of products unnecessarily high maintenance. Multi-Clean high speed finishes offer a superior balance between durability and burnishability. Prime Shine and Fortress offer the same wet look appearance as ultra soft products when burnished, however, are more resistant to scuffs and loss of gloss. With advances in equipment, pad technology, and floor finish chemistry, the sacrifice between durability and burnishability no longer needs to be made. Some of the problems with very soft burnishing finishes include:

Poor Abrasion Resistance: The fact that these floor finishes tend to swirl when burnished with standard natural fiber pads indicates a lack of abrasion resistance. This means that floor shine will be lost more quickly and require more maintenance.

Scuffing: Soft finishes scuff and mark very easily creating an unsightly appearance which add to maintenance headaches.

Soiling: Soft finishes (due to physical characteristics) can become quickly embedded with dirt and soils from regular traffic. This ground in dirt speeds floor yellowing and increases stripping frequency.

BURNISHING TIPS

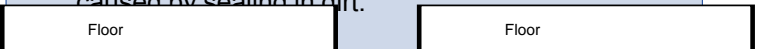
- 1) A clean floor free of soil and abrasive grit is essential to achieving the highest shine and durability. Prior to burnishing, place a piece of white paper on the floor, then move the paper back and forth with your hand, then look for signs of dirt picked up on the paper. If the floor has grit and soils, dust mop followed by mopping or wet scrubbing.

Use a good quality cleaner such as Century Maintenance Cleaner, Blue Blazes, or Red Lightning for damp mopping or preferably with an auto scrubber. For everyday cleaning, a neutral pH cleaner such as Century is the preferred choice.

- 2) If the burnisher is not equipped with dust control (such as the Minuteman PAMS), dust mop after burnishing.
- 3) The most aggressive pads can be more effective at removing light scratches and scuffs. However these pads may not provide the highest achievable gloss. A system using two different pads can be beneficial. Example: Burnish four times per week, three times utilize a moderate pad, one time use a highly aggressive pad.
- 4) Try different pads to determine what type works best with the floor finish and equipment used. The most aggressive pads may work exceptionally well on some products, but may be too abrasive for others and may result in excessive and unnecessary finish loss.

- 5) ^{Finish 3 (missing)} To delay stripping while maintaining a high quality ^{Finish 2} appearance, an effective scrub and re-coat procedure is essential.

^{Finish 1} When scrubbing prior to re-coat, a blue pad is used ^{Finish 1} to help remove embedded dirt in the top layer of floor ^{Seal 2} finish. This process helps prevent floor yellowing ^{Seal 1} caused by sealing in dirt.



Scrub and Re-coat

Worn Floor

Finish worn and soiled



Scrubbed Floor

Ready for Finish

Worn, soiled finish removed

Re-Coated Floor

Floor restored to high gloss

DEFINITIONS

- Burnishing:** An abrasive polishing process that makes a rough, non-reflective surface into a smooth, highly light reflective (glossy) surface. This is accomplished with machinery that moves an abrasive pad at high rotational speeds making the process highly effective and efficient.
- Gloss:** A measure of light reflectivity of a surface.
- Natural Fiber Pads:** A type of burnishing pad made with a blend of animal hair (hog's hair) and synthetic fiber and resins.
- Slip Resistance/Anti-Slip:** A floor finish is considered to be a safe slip resistant surface if it is tested and found to have a static coefficient of friction of 0.5 or better. Slip resistance is tested on the "James Machine" according to ASTM test method D2047.
- Spray Buffing:** The precursor to burnishing. Uses a low speed floor machine (175-350 Rpm) and a special blend of polymers, cleaning agents and waxes to clean and restore shine to a worn floor.
- Swirling:** A visible, circular scratching effect left in a floor finish after burnishing. Often found in soft finishes where an aggressive burnishing pad has been used.
- Synthetic Pads:** The materials used to make the pads are from man made resins/fibers (polyester or nylon).
- Thermoplastic:** A scientific term used in the classification of polymers. Thermoplastic polymers can be softened (melted) by heat and re-formed into another shape. Examples of Thermoplastics include acrylic latexes, polyethylene, and nylon.
- Ultra High Speed (UHS) Burnishing:** Usually considered to be when RPMs of machinery are 2000 or greater.
- PAMS (Passive Air Management System):** A dust control system used on Minuteman burnishers (optional) that takes advantage of natural airflow created by pad rotation to conveniently collect dust generated in the burnishing process.
- Spray Burnishing:** When using a high speed machine (>1000 rpm), a specially formulated compound that assists in gloss restoration is lightly sprayed onto the floor while burnishing.

ULTRA HIGH SPEED FINISHES

Prime Shine *Ultra*

Spectacular gloss and repairability make Prime Shine *Ultra* the ultimate finish for regular UHS programs. Designed for burnishing 4-7 times per week with propane, battery or electric machines. Contains unique SoilShield™ technology that repels and reduces dirt induced yellowing. 21% solids, non-yellowing thermoplastic acrylic copolymer.

Max 33

Provides outstanding gloss with fewer coats. Max 33 is easy to apply *and builds gloss faster than most conventional floor finishes*. 33% solids, non-yellowing acrylic copolymer.

Clear Essence

Clear Essence: Certified Floor Finish. Based on a polymer cross-linking technology that does not require the use of zinc or other heavy metal to produce a durable, high quality finish. Clear Essence exhibits excellent burnish response using high/ultra high speed equipment. Green Seal Certified. Part of Multi-Clean's "Certified Floor Care System".

EXTENDED WEAR FINISH

Premier

Durable, brilliant gloss, scuff and black mark resistant. Designed to be low speed spray buffed. 20% solids non-yellowing acrylic co-polymer, no ammonia.

Multi-Clean®
Your Guide To Clean

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VERSATILE FINISHES

Splendor

The No. 1 Selling Multi-Clean finish. Splendor offers exceptional gloss and clarity in a durable, high wearing finish. Maintenance versatility allows Splendor to be maintained with high speed, ultra high speed and low speed equipment. *19% solids; non-yellowing acrylic copolymer.*

Decade 100

Pour on the gloss with the high solid content of Decade 100. Decade 100 stands up to high traffic and is maintainable with high speed or low speed equipment. Multi-Clean's unique SoilShield™ technology is incorporated into Decade 100 to repel soils and reduce dirt induced yellowing. *25% solids, non-yellowing acrylic copolymer.*

Opti-Shine

Opti-Shine: High Performance, Low Odor. A great 25% solids floor finish that does not have the objectionable odors that traditional floor finishes have. Perfect for use in: hospitals, nursing homes, schools, etc.

RESTORERS

R.S.B.

Restorer Spray Burnish

The versatile restorer that brings back a beautiful shine when used with all types of high speed equipment. Concentrate can be diluted for mop-on restoring, spray burnishing or even used through an automatic scrubber. *Formulated to restore maximum slip resistance to floors.*

Energize Plus

A ready-to-use spray refinisher for use with high speed equipment. Produces a wet look gloss and enhances burnish response and productivity. Contains SoilShield™ dirt repellent to enhance soil resistance and cleanability.