

SETTING UP A GOOD SET OF BID SPECIFICATIONS

The goal of issuing a bid incident to purchasing facilities maintenance products is to allow for the purchase of effective products that meet a facilities needs at the best possible price. Different products can provide different levels of performance, so to achieve the primary goal, standards and test procedures must be established that allow a subjective comparison of similar products. Before a set of bid specifications can be issued or even a normal purchasing decision made, a number of considerations should be taken into account.

Product considerations

1. Product performance- how good a product do you want? Given the competitive nature of the janitorial supply and facilities maintenance industry, you generally will get the quality of product that you pay for.

In order to purchase the best product at the best price it is critical to make sure that you are comparing products with similar physical and performance characteristics. The specifications used to describe various physical characteristics of a product type are very helpful, but to get the most from this information you must understand what the specifications really mean and how they relate to each other. A good example is solids content in floor finishes. Much is made about solid content when specifying purchase requirements, but this specification is often misunderstood. Solids content indicates how much polymer is left behind when the product dries, but not what is left behind. Different polymers have substantially different physical properties, so products with the same solids contents don't all perform the same way. Below is an example of products with similar solids contents but very different performance. This demonstrates that it is important to compare multiple characteristics in conjunction with each other to get the whole picture.

<u>Product Number and Name</u>	<u>Solids</u>	<u>Gloss/5 coats</u>	<u>Abrasion Resistance</u>	<u>Cost/Gal.</u>
Apex High Solids Finish	21%	56@60°	Visibly scratched after 1 pass	
#5@22% Perma Lock Finish	22%	85@60°	2100 Grams (scratched @ 10 passes)	\$13.60
#30 Cutting Edge Finish	22%	90@60°	6480 Grams (no scratching @ 10 passes)	\$16.53

2. What is an acceptable balance between product performance, personnel safety and environmental impact? Do you want "green" products? Do you want green "certified" products and if so what certification do you want? What relative weight are these considerations going to be given?

When it comes to floor finishes, floor finish strippers, gloss maintainers and cleaners it is all about the chemistry. Different combinations of chemicals provide different performance characteristics and influence the level of risk both to the personnel that are using the products and the impact that they have on the environment. The interaction of these factors is a complicated subject which can't be adequately covered in just a few paragraphs.

A basic understanding, however, can be obtained by reviewing the Safety Data Sheets (SDSs) that suppliers are required to provide. Regulations propagated by the U.S. Occupational Safety and Health Administration (OSHA) require that SDSs be presented in a standard format which explains any hazards presented by a product. First, SDSs contain HMIS ratings that provide an indication of four aspects of a product's hazard level from 0-4 with 4 being the most severe. These aspects are Health, Flammability, Reactivity and Personal Protection. This is a good place to start when trying to determine the hazards which might be presented by a product and how it might affect maintenance personnel. Section 2 of SDSs contains a list of any ingredients, with percentage ranges, considered under OSHA's definition, which is very broad, to present a potential for causing adverse health effects in maintenance personnel. This section allows for a basic comparison of the chemical composition of different products.

Regarding "green", the desire for products that are safer to use and have a lower impact on the environment has been increasing. What constitutes a green product has been evolving and again presents a complex set of concepts. The common perception is that green products are both safer for maintenance personnel to use and create less pollution of the air, water and soil both during use and disposal. While this is a reasonable expectation, it doesn't always apply, at least not to the extent that might be expected. For example, chemical ingredients that are approved for use in green formulations that are environmentally less detrimental, may still pose health risks to maintenance personal and vice versa. There are multiple organizations offering "green certification" programs and they often have significant variations in their definitions of "green." Choosing a product with a third party green certification does insure that the product at least meets a set of standards, but making sure that those standards provide products with the characteristics you consider most desirable and effective requires that you obtain a more detailed understanding of a certifying organizations guidelines.

Although the quality and availability of "green" ingredients is improving, the reality is that there is still a much wider variety of standard chemistry ingredients available for formulating facilities maintenance chemicals and coatings whose relative costs remain lower. Many "non-green" formulations were developed and widely used because they offered a very effective balance between cost and efficacy and it is sometimes just not possible to obtain the same level of performance with

green chemistry. This doesn't mean that organizations should avoid implementing green cleaning programs; it will just require that they adjust their expectations and accept that the program may involve somewhat higher costs and altering their program procedures.

3. What are the trade-offs between cost savings and convenience? For example, what is the cost-per-gallon of concentrates that must be diluted by the user, versus the cost-per-use-gallon for more convenient ready-to-use products? What are the comparable performance characteristics of the two?

Below is an example of the difference in cost-per-use gallon between ready-to-use (RTU) and concentrated glass cleaners.

<u>Product Number and Name</u>	<u>Purchase Cost/Gallon</u>	<u>Cost/Use Gallon</u>
#930 See Thru Glass Cleaner	\$5.00	\$5.00 (Ready-To-Use)
#109 Glass Sparkle Glass Cleaner	\$5.31	\$2.66 (1:1 Dilution)
#108 Glass Sparkle II Glass Cleaner	\$8.69	\$1.09 (1:8 Dilution)
#1000 Easy-Mix Glass Cleaner	\$13.23	\$0.21 (1:64 Dilution)

Although they are convenient Ready-To-Use (RTU) products are often expensive. Concentrated products generally cost substantially less money to use although their cost per container may make them appear more expensive. Barring situations where water just isn't available to dilute concentrated products or convenience is an over-riding consideration, concentrates are going to represent a better value. There is also a wide variety of dilution control equipment available that can help make concentrates more convenient to use.

4. How is a determination regarding product performance going to be made? Will the organization rely simply on product specifications provided by suppliers or will on site performance testing be done? Will on site testing be performed by the facility's maintenance personnel or will the vendor be performing the application and testing?

As previously mentioned, product specifications can provide useful information about a range of aspects of a product's performance. However, many of the specifications are the result of laboratory testing which may not take into account the specific environmental conditions that a facility present which significantly affect a products performance. The best way to determine whether a product is going to meet an organization's needs is to conduct performance testing at the facility under the actual conditions in which it will be used. Admittedly, this requires the expenditure of time and resources that can be substantial, particularly if multiple products are being tested. There are some ways to reduce the costs of product testing. For example, vendors can be required to provide product and perform the applications or demonstrations necessary to indicate product performance. One consideration with vendor testing is that some of the aspects of product performance such as how easily a floor finish is to apply (i.e. drag, leveling, foaming with the application equipment used by the facility, etc.) can only be definitively determined by actually working with a floor finish. It may be reasonable for organizations to incur the additional labor and expense of having their personnel test products to get a real "feel" for how products work.

5. What weight is given to the value added aspects of the relationship between the supplier and purchasing organization? Sometimes paying a bit more for a product to obtain superior service and technical support is a good economic choice.

With the facilities maintenance requirements becoming increasingly complex just obtaining the cheapest product often isn't the best economic decision. In addition to the considerations involved in the physical maintenance of a facility, managers must also address the companion issues of regulatory compliance, product safety, employee training, maintenance program analysis, etc. Applicable regulations governing chemical and facilities safety, storage, personnel information requirements and training are propagated by multiple state and federal agencies and staying current with them can be challenging. Add to this the constant changes in industry standards, new chemistries, new equipment and changes in construction materials composition means that staying current can sometimes stretch the capabilities of a facilities maintenance department to the limit.

Partnering with a supplier that can go beyond simply supplying product and can offer support with these associated aspects of facilities maintenance can make the difference between having a successful program and not.

Floor Maintenance Program Considerations

Like tools, different floor finishes, floor finish strippers, gloss restorers and floor cleaners are formulated by manufacturers to provide a variety of performance characteristics that can be used to implement particular floor care programs. The specifications for these products need to be written based on the type of maintenance program that will be implemented after considering and balancing the availability of personnel, time, equipment and budgetary resources.

There are two basic types of floor maintenance programs, scrub and recoat and high speed burnishing.

Scrubbing and recoating involves initially applying enough sealer and finish to build up a film that will provide the desired level of gloss and protect the floor. Maintenance consists of sweeping and/or vacuuming to remove coarse abrasive soils, followed by washing with a neutral pH cleaner to remove fine soils. When wear from traffic degrades the appearance, restoration involves scrubbing the finish with a blue or green cleaning pad and an alkaline pH general purpose cleaner. Cleaning is followed by the application of from one to three additional coats of floor finish to restore the floor's appearance. Eventually, this type of program results in enough finish being applied that it builds up to a point where it needs to be removed by stripping.

High speed burnishing maintenance programs generally involve maintaining the finish by sweeping or vacuuming to remove coarse abrasive soils, followed by routinely damp mopping or autoscrubbing, using a high speed maintainer which is a combination of a neutral cleaner and special additive which cleans and applies a burnishing aid at the same time. Periodically depending on the traffic conditions and desired level of gloss, the floor is burnished using a 2500+ Rpm polishing machine.

Floor Finishes

Floor finishes for scrub and recoat programs tend to have higher solids contents so that they build more quickly and require fewer coats when recoating, thus reducing labor costs. They also tend to be made from polymers that form a softer more resilient film that is more resistant to scratching but doesn't respond very effectively to buffing or burnishing.

Floor finishes designed for high speed burnishing programs tend to be of moderate solids content that reduces their tendency to build up on floors and form a slightly harder film that is more prone to fine scratches but responds better to being burnished which removes the scratches and restores the gloss characteristics.

Characteristics that need to be considered for both types of finishes are ease of application, leveling characteristics and drying times.

Floor Finish Strippers

Floor Finish Strippers can be divided into two basic categories of products.

Alkaline pH strippers are formulated using combinations of alkaline detergents such as sodium hydroxide, potassium hydroxide, sodium metasilicate, etc. and water soluble solvents. In addition to effectively removing most floor finishes, alkaline pH strippers also provide excellent results when used as degreasers to clean both petroleum and protein-based greases and oils. When used at very low concentrations (1/2-2 ounces per gallon of water) they can also be used to make an alkaline pH general purpose cleaner. The cost effective price and high degree of flexibility inherent in these strippers can make them a good choice for programs in which there is a desire to use one product to perform multiple functions. One issue associated with these types of strippers is that at full concentration they are often corrosive and present some serious health considerations to personnel using them. Their corrosive nature requires care and the use of appropriate safety equipment when handling the concentrate and higher concentrations of diluted stripping solution. Also, the alkaline ingredients in these types of strippers can leave a residue that will negatively impact floor finishes, so floors must be adequately rinsed prior to applying coatings. Alkaline strippers will also often not remove pure acrylics or urethane modified acrylics that are used as finishes on stone floors like slate or ceramic tile.

The second category of finish strippers are generally described as "**no-rinse**" strippers. This description generally indicates that the active ingredients consist primarily of water-soluble solvents that are designed to evaporate without leaving a residue that can adversely affect floor finishes. or require rinsing. Although these strippers have alkaline pH values they are generally not corrosive so they don't present the safety considerations that "alkaline" strippers do. They also more quickly dissolve heavy finish or sealer buildup and will often remove straight acrylic or urethane modified acrylic

stone sealers that alkaline strippers won't remove. A consideration with these strippers is that they are somewhat more expensive to use, aren't as good as general purpose degreasers, and don't perform very well as general purpose cleaners because they have limited detergency and soil suspension properties.

Floor Cleaning and Maintenance Products

In conjunction with the different types of floor finish maintenance programs there are generally two kinds of floor maintenance cleaning products used, neutral pH floor cleaners and floor maintainers/restorers.

Neutral pH cleaners are the primary type of product used to clean and maintain floors in scrub and recoat programs. These cleaners, as their designation implies, have a combination of surfactants which creates pH characteristics of between 6.5 and 7.5. pH values within this range allow floors to be effectively cleaned without reducing the shine/gloss levels of floor finishes.

Floor maintainers/restorers are commonly used products for maintaining floors in high speed burnishing programs. These products are a combination of surfactants and resins that both clean floor surfaces and aid in maintaining and restoring the gloss of floor finishes in conjunction with high speed burnishing programs.

All of these categories of products can present a range of chemical compositions, concentrations, delivery systems and performance characteristics. Finding the best product requires that they be subjected to the scrutiny previously outlined in the product considerations section. This can be accomplished by writing up specifications for these categories of products that indicate those characteristics that are most important to successfully implementing a maintenance program that meets the specific needs of an organization and their facilities.

The following are some examples of how specifications can be written to accomplish that goal.

SAMPLE FLOOR FINISH BID SPECIFICATIONS

GENERAL DESCRIPTION: All floor finishes quoted should be manufactured using water-based polymers, formulated to perform effectively when applied to Vinyl or Vinyl Composition Tile. The Finish should dry within 30-45 minutes, when applied to floors with a temperature of 65° Fahrenheit and under relative humidity conditions of 40-60%. The Finish should be easily removable with readily available alkaline or no rinse, type, Floor Finish Strippers. Finish should be easily applied with all standard vinyl tile finish applicators including string and looped end floor finish mops, flat mops and microfiber applicators. Finish should level uniformly without displaying mop marks, excess foaming, fisheyes or orange peeling.

SOLIDS: Floor Finish must have a nonvolatile solids content of no less than 18%.

Solids Content: _____

GLOSS: Floor Finish must have a lay down gloss level of no less than 88 with 5 coats of finish as measured using a Gardner Gloss Meter at 60°

Gloss Level: _____

ADHESION CHARACTERISTICS: Floor Finish must display excellent adhesion characteristics when tested per ASTM D3359 Adhesion Test where 10-40% adhesion=poor, 40-60% adhesion=fair, 60-100% adhesion=excellent

Adhesion % and grade: _____

DURABILITY: Floor Finish must display a minimum average durability level of no less than 14,000 grams when tested per ASTM D968 Abrasion Resistance Test.

Durability: _____

SLIP RESISTANCE: Floor Finish must display a static coefficient of friction (SCOF) of $\geq .6$ using neolite test feet.

Slip Resistance: _____ Slip Resistance Test Meter Used: _____

Test Standard Used: _____

NOTE: All entities submitting quotations must be able to perform on site slip resistance testing if requested.

Model Of Slip Resistance Test Meter To Be Used For On Site Testing: _____

Charge To Perform Testing: _____

Entities providing quotations should be prepared upon request to apply a test area of up to 1000 ft² consisting of 5-coats of the Finish submitted at a place and time to be designated by the _____ Facilities Maintenance Department.

Failure to provide all information requested, will result in the bid submission being considered nonresponsive.

Nonresponsive bids may be discarded without notification to the bidder at the discretion of the _____ Facilities Maintenance Department/Purchasing Department/Business Manager.

Copies of all test results will be provided in writing upon request and are subject to independent verification.

SAMPLE FLOOR FINISH STRIPPER BID SPECIFICATIONS

GENERAL DESCRIPTION: Floor finish strippers submitted must be of the “no rinse” type. Product must be non-corrosive per the definition found in Title 29 of the Code of Federal Regulations, Section 1910.1200. Strippers submitted must remove all water-based vinyl tile finishes and sealers and water-based acrylic, concrete and stone sealers. Please submit Safety Data Sheet with product specification.

PH:

SOLIDS CONTENT AT FULL CONCENTRATION:

DILUTION RATIO RECOMMENDED TO EFFECTIVELY REMOVE 10 COATS OF FLOOR FINISH:

Entities providing quotations should be prepared upon request to strip a test area of up to 1000 ft² at a place and time to be designated by the _____ Facilities Maintenance Department.

Failure to provide all information requested, will result in the bid submission being considered nonresponsive.

Nonresponsive bids may be discarded without notification to the bidder at the discretion of the _____ Facilities Maintenance Department/Purchasing Department/Business Manager.

Copies of all test results will be provided in writing upon request and are subject to independent verification.

SAMPLE NEUTRAL CLEANER BID SPECIFICATIONS

GENERAL DESCRIPTION: The Neutral cleaner submitted should be low foam, low residue, no rinse type cleaners. Neutral cleaner should contain chelating and sequestering agents capable of effectively suspending and removing all forms of ice melting compounds and salts. Neutral cleaner should perform equally well when used in damp mopping procedures and through automatic scrubbers.

PH:

FRAGRANCE:

SOLIDS CONTENT AT FULL CONCENTRATION:

RECOMMENDED DILUTION RATIO FOR ROUTINE CLEANING:

Entities providing quotations should be prepared upon request to demonstrate cleaning a test area of up to 1000 ft² at a place and time to be designated by the _____ Facilities Maintenance Department.

Failure to provide all information requested, will result in the bid submission being considered nonresponsive.

Nonresponsive bids may be discarded without notification to the bidder at the discretion of the _____ Facilities Maintenance Department/Purchasing Department/Business Manager.

Copies of all test results will be provided in writing upon request and are subject to independent verification.

