

8.00 MAINTENANCE

8.10 POLISHED INTERIOR MARBLE:

8.11 Description:

Polished marble has a glossy surface that reflects light and emphasizes the color and marking of the material.

8.12 Uses:

Polished interior marble has traditionally appeared as wall veneer. It is also seen in the form of furniture tops, desks, tables, and other items of designer quality, as well as tiles for residential installation.

8.13 Normal Maintenance:

Normal "Housekeeping" maintenance involves only periodic washing with clean water and mildly alkaline cleaners. "Soapless" cleaners are preferred because they minimize streaking and filming. However, mild phosphate-free, biodegradable liquid dish-soaps or soapflakes or powders are acceptable if rinsing is thorough. Marble surfaces should be first wetted with clean, hot (not boiling) water. Then, using the cleaner solution (following manufacturer's directions), wash in small overlapping sweeps, from bottom-up if a vertical surface. Rinse thoroughly with clean, potable water to remove all traces of soap or cleaner solution. Change the water in the rinse pail frequently. Dry with soft cloth or cotton-flannel, and allow to thoroughly air-dry before applying any top dressings. Chamois skin may be used in lieu of cotton cloth in this process.

When marble is thoroughly dry, a top-dressing may be applied. Any commercially available white paste wax, beeswax, or other dressing advertised specifically "for marble" may be used to help prevent staining and water spotting. But, do not use any oil-based dressings or colored waxes.

8.14 Maintenance Problems - Prevention and Cures:

Generally, prevention will save a great deal of time spent on cures and remedies, especially since damages to marble are often irreparable. Fine marble should receive the same care and consideration that is given a fine wood finish. Spills of any type should be immediately removed and water-rinsed. Coasters should be placed under all glasses, particularly those containing liquors or citrus juices. Hot-plates should be used under heated dishes. And, place-mats or felt bottoms should be placed under china, ceramics, silver and bric-a-brac to prevent scratching of the polished finish. See section 8.70, "Stain Removal" for cases where nominal care and cleaning procedures have not been followed.

8.20 HONED INTERIOR MARBLE:

8.21 Description:

A honed finish is a satin surface with relatively little light reflection.

8.22 Uses:

Generally, a honed finish is preferred for floors, treads, thresholds, and other locations where the presence of water might make a polished finish slippery, or where severe traffic would wear off the polished finish.

Varying degrees of honed finish marble may be used on furniture tops and in other locations where a muted sheen enhances the decor. Such "Hones" are commonly described as "High Antique Hone", and with similar names.

As a rule, honed finishes are more susceptible to soiling than polished finishes, because a honed surface is slightly more porous and absorptive than a polished finish. However, the honed finish is easier to restore because it will sustain harsher cleaning efforts.

8.23 Normal Maintenance:

Normal "Housekeeping" maintenance involves as-needed washing with clean, potable water and mildly abrasive cleaners. (The abrasive cleaner serves to retain a fine "Pumice"-type finish, while its cleaning capabilities remove the dirt). Commercially available "Soft-Scrub" thick liquid cleaners and chlorine-bleach type scouring powders are ideal for this purpose. Simply mix in clean water according to manufacturer's directions.

8.24 Maintenance Problems - Preventions and Cures:

For honed marble used on furniture tops and the like, follow care practices as described in Paragraph 8.14 for Polished Marble.

For honed marble used as traffic surfaces, care should be taken to prevent accumulations of liquids or other materials that would result in safety hazards should be done, described in Section 8.30, "Floor Marble".

In areas where normal care and cleaning prove inadequate, see Section 8.70, "Satin Removal".

8.30 FLOOR MARBLE:

8.31 Description:
“Floor Marble” Broadly includes any honed finish marble that is a traffic surface.

8.32 Uses:
The “Floor Marble” category includes treads, floors and thresholds.

8.33 Normal Maintenance:
Honed finish floors, treads, and thresholds marble subjected to traffic, should be regularly mopped or scrubbed in a manner that will not leave a hazardous, slippery film.

Marble surfaces should be first wetted with hot, clean water. Lightly sprinkle an abrasive cleaner (i.e.: a chlorine-bleaching type household scouring cleanser) over the wet stone, or put one-to-two handfuls into a pail of 2-3 gallons of hot clean water. Using a scrubbing motion, mop the marble surfaces with this solution (or with clean hot water if cleaner is sprinkled directly on the stone). Rinse thoroughly with clean hot water and dry with mop or cloths. Power scrubbers can also be used for cleaning as described above.

8.34 Maintenance Problems - Prevention and Cures:
Generally, follow guidelines presented in Paragraph 8.24 above.
See Section 8.70, “Stain Removal” for areas that do not react satisfactorily to normal housekeeping procedures,

8.35 Special Conditions and Procedures:
Often, it is desirable to protect special interior areas, and to enhance the coloration of honed marble in areas where a polished finish is not practical. In such cases, sealers may be applied after the marble has been cleaned to minimize maintenance and prevent staining around toilets and urinals, and in food preparation areas for entrances. Sealers should only be applied to clean interior marble. Follow the manufacture’s directions for application and subsequent maintenance. Terrazzo sealers are excellent for this purpose. So are silicone-based stone sealers that are sold to the general public in home-care centers.

In all cases, sealers should be of a clear, hard-finish type suitable for traffic surfaces, and definitely “Non-Yellowing”. Do not use soft-finish waxes, paste wax, or resins. These coatings collect dirt and grit. Some acrylic base liquid floor “waxes” advertised as “Non-Yellowing” can be used in place of “Permanent” sealers, but may give limited life.

8.40 EXTERIOR MARBLE:

8.41 Description:
“Exterior Marble” is a general term denoting a marble installation in a situation where temperature, moisture, and air-borne contaminants are regulated primarily or solely by the forces of nature.

8.42 Uses:

Exterior marble can be used in honed or a polished finish in any mode in an exterior environment. However, the use of a polished finish is generally avoided in exterior applications due to its suspect ability to damage by air-borne acids and wind-driven dust.

8.43 Normal Maintenance:

In accessible areas, routinely follow maintenance procedures as specified in Section 8.13 for Polished Marble, Section 8.23 for Honed Marble, as applicable. The large expanses of marble traditionally found on exterior multi-story installations generally will make it impractical or uneconomical to perform normal housekeeping maintenance on a frequent basis. However, such large installations should be given periodic overall cleaning consistent with economy, or as necessary to remove accumulated pollutants.

The cleaning of multi-story installations should be done by qualified stone contractors who have the craftsmen, equipment, resources, and technical expertise to execute the cleaning work properly, as well as performed any repair, resetting, or repointing that may be found necessary during the initial inspection. Consult the listing of Certified MIA members in your city to obtain the required services.

Generally, the process used in multi-story marble cleaning will be similar to normal procedures, except that high-pressure pumps for wash and rinse water should be employed to economize on the amount of time required due to the inherent high costs of labor and support equipment necessary to undertaking.

8.50 SPECIALITY FINISHES:

8.51 Description:

Specialty Finishes are surface finishes other than “Polished” or “Honed”, and often are provided as specialty treatments by individual Marble Contractors under specific Trade Names. Such treatments are usually patented or copyrighted products of the supplying contractor.

Examples of the types of such specialty finishes are: Polymer coatings, texturing treatments, and a variety of chemically-produced surface conditions.

8.52 Uses:

Specialty finishes are provided to meet requirements of service under which traditional polished or honed finishes prove inadequate, are subjected to unusual hazards, or do not satisfy the ever-broadening requirements of designers.

Examples of the applications of specialty finished are: Polymer coatings for liquor-dispensing and food-service tops; or textured surfaces for special lighting effects, decor enhancement, graffiti resistance, and maintenance reduction.

8.53 Normal Maintenance:

Consultant literature or instructions furnished by the supplying contractor for care and remedial measures pertinent to the specific specialty finish. (Always request this information when the installation is first made).

8.60 SPECIAL CLEANING PROCEDURES
(General Poultice Method)

8.61 Description:

The "General Poultice Method" is a special cleaning procedure for the removal of deep-seated, time-set dirt and grime. The poultice may be applied to honed, sand finished, or polished stone, and is particularly useful on intricate carvings, moldings, and other detailing difficult to scrub.

The general poultice is essentially a stronger cleaner, applied by way of holding medium, that concentrates its effort over a period of time.

8.62 Uses:

The poultice is used primarily to attack and reduce heavy deposits of normal soiling, or to remove stains resulting from the action of moisture on normal soiling.

For specific stains, i.e.: stains whereof the origin is known, see Section 8.70 "Stain Removal".

8.63 Execution:

Mix molding plaster or household laundry whiting with a common laundry bleach or a 6% solution of hydrogen peroxide to form a paste the consistency of oatmeal or cake icing. (For estimating purposes, figure a consumption rate of one pound of paste per square foot of surface.)

Moisten the surface of the marble with the same liquid which made the paste, wetting the stone beyond the extent of the stained areas.

Apply the poultice paste to the marble with a wood or plastic spatula, insuring a uniform coat about 1/2" thick. Cover the entire area to be cleaned and somewhat beyond, to prevent the soil from being forced into clean stone. Insure the poultice is in full contact with the marble, with no entrapped air pockets or voids.

Tape plastic sheeting over the poultice area to prevent quick drying-out and allow it to act for 48 hours.

After this standing period, dampen the poultice with clean, cool water to prevent undue dust generation. Remove the poultice with a wood or plastic spatula to avoid scratching the marble. Rinse the cleaned area thoroughly with clean water; blot or wipe off excess water; allow the work to dry.

When water-spotting has disappeared from complete drying, inspect for remaining soil. A second poultice application may be necessary.

NOTE: CAUTION

White, non-leaded gasoline may be used in this method instead of bleach. However, it should not be used in closed spaces and should be used only by experienced applicators. Laymen should avoid the use of flammable or explosive liquids in cleaning operations.

Several "Marble Poultice" base powders are currently available to commercial users. These powders require only the addition of plain water for activation, are not acidic, and will prove convenient and effective in many cases.

8.70 STAIN REMOVAL:

8.71 General

- 8.71.1 Adherence to normal care and maintenance procedures should help prevent staining, but should accident or neglect contribute to staining, necessary remedial measures will be completely different from general cleaning and will usually require persistence to achieve results.
- 8.71.2 When the source of the stain is not known, the "Poultice Method" should be tried first, as described in Section 8.60 above. If this method is ineffective, follow specific remedies as explained below, attempting each in turn until results are achieved.
- 8.71.3 Stains in marble will generally be caused by one of three major category sources: organic materials, metallic materials, or oils and greases.

8.72 Execution - Organic Stains:

- 8.72.1 Most organic (carbon-oxygen based) stains require an oxidizing agent treatment, and generally will respond in varying degrees to hydrogen peroxide or chlorine bleach treatment and poultices. Hydrogen peroxide (H₂O₂) should be used in a 6% hair bleaching solution. Chlorine bleaches should be used in commercially available strengths as sold for laundry and household use.

Household ammonia (NH₃) can be added to bleach poultices to accelerate action, but should be used sparingly, such as 10-drops to a 1-cup poultice mix.

- 8.72.2 Excelsior, Leaves, Bark, Bird Droppings, Foods may cause pinkish-brown stains in the presence of moisture. Outdoors, with the source removed, normal sun and rain action will generally bleach out the stains. Indoors, use hydrogen peroxide or chlorine bleach soaked in a blotter sponge, or mixed with plaster as a poultice.
- 8.72.3 Tobacco stains are usually receptive to the same treatment described in 8.72.2 above.
- 8.72.4 Urine stains, if long-seated due to neglect, should be attacked with a strong chlorine bleach poultice. Areas around urinals and water closets should be lightly sprinkled with a chlorine bleaching powder cleanser, damped, and left overnight periodically as a preventive measure.

8.72.5 Iodine stains will usually fade on their own accord with time. To hasten fading, apply a poultice of Isopropyl (rubbing) alcohol [(CH₃)₂CH]; Methyl (wood) alcohol (CH₃OH), or ethyl (grain) alcohol (C₂H₅OH).

8.72.6 Fire Stains, caused by burning wood or paper, or their smoke, can be removed with commercially available "Fireplace Cleaner" or by washing with a solution of caustic soda (Sodium Hydroxide) [NaOH]. As caustic soda is very corrosive, extreme care must be taken to protect skin, eyes, and clothing from burns. Rinse the area with clean cool water after using either of these remedies.

8.73 Execution - Metallic Stains

8.73.1 Metallic stains chemically require treatment with a reduction agent, i.e.: an agent that will attack metal salts and reduce them to soluble, colorless salts that can be rinsed away or drawn out by poultices.

8.73.2 Iron (Ferrous and Feric) Stains:

These generally appear as red-brown stains resembling rust, and result from the action of moisture on adjacent or embedded iron or steel.

Before attempting the removal of this stain, cure the cause. That is, clean and paint accessible ferrous items to prevent over-splash and run-off onto the stone. If possible, remove the sources of moisture to prevent further oxidation of the iron or steel. Where the iron or steel is embedded in the stone little can be done to prevent a continuation of oxidation and resultant staining, except to cut off the moisture supply to the metal.

Superficial, fresh stains will usually come off with a vigorous rubbing. Seated stains may be removed by the application of commercial "Naval Jelly" or other "Rust Remover", Follow manufacture's directions for use. If these remedies fail, often abrasion with a scouring powder followed by a second application of the "Naval Jelly" will remove the stain.

Should this fail, apply a poultice for not more than ½ hour using either sodium hydrosulphite (NaHSO₄) or sodium hypochlorite (NaClO). (These chemicals are not usually available to the layman, which limits their application in household remedies.) Flush at once with a sodium citrate solution.

Unfortunately, deep seated, rusty stains caused by prolonged neglect or from embedded metal (anchors, ties, etc.) may not be removed by any means.

8.73.3 Copper and Bronze (Cuprous and Cupric) Stains:

These stains appear as green or muddy-brown colorations and result from the action of moisture on nearby or embedded bronze, copper, and brass items.

Before attempting stain removal, cure the cause. Clean attached or nearby metal items and coat them with a quick drying, clear coating such as varnish, shellac, or a plastic spray-on/brush-on coating. If possible remove sources of moisture to prevent further oxidation of the cuprous metal. Where the source of stain is embedded anchor, tie, or other device, the only remedy is to cut off the moisture at its source.

Coating would be possible,

After eliminating the moisture and/or protectively sealing the metal, attack the stain with this poultice. Mix a thick paste the consistency of peanut butter, composed of plaster or laundry whiting, ammonia, and sal ammonica (Ammonium Chloride NH_4Cl), (which can be purchased at most pharmacies). If sal ammonica is not available, a fairly effective "Field Expedient" is a solution of household ammonia and table salt mixed in equal quantities into the poultice base. Apply the poultice thickly over the entire stain, beyond the limits of the stain, and leave it until dry. Remove with a non-metallic spatula and rinse thoroughly. Allow to dry. Repeat if necessary.

8.73.4 Lead

Stains caused by lead will appear as yellow or orange colorations and may appear at a distance from the source. There is no use to attack the stain if the source cannot be removed, inasmuch as lead is virtually non-reactive to chemicals, and any lead salts that may form will be extremely difficult to reduce. Generally, the stain will fade in time as a result of atmosphere action if the source is removed.

8.73.5 Ink

Inks are frequently formulated from some metallic salts, and the stains caused by inks should be attacked with the same methods as recommended for iron stains.

Non-metallic ink stains can frequently be removed using a poultice or blotter soaked in wood or grain alcohol, followed by a flushing with household ammonia. Often, a bleaching poultice (see 8.72.1) will be needed to remove remaining coloration.

8.74 Execution - Oil and Grease Stains:

8.74 Oil, grease, linseed oil, and perspiration stains normally must be dissolved chemically so the source of the stain can be flushed or rinsed away.

CAUTION

Acetone (Dimethyl Ketone) $[(\text{CH}_3)_2\text{CO}]$ is a widely available solvent that produces good results on most oils and greases. Mineral spirits and white (Unleaded) gasoline can be used as substitutes for acetone. However, the use of flammable or explosive liquids in cleaning operations by inexperienced applicators should be avoided.

- 8.74.2 After removing as much of the source of the stain as is possible, make a poultice, or saturate a blotter with the solvent, and apply over the remaining stain covering beyond the stain limits. Allow the solvent to dry, then remove the poultice and rinse with water. Repeat if necessary.
- 8.74.4 Do not use solvents containing color agents or oils on marble. Avoid these solvents: turpentine, leaded gasoline, and kerosene.
- 8.75 Execution - Paint and Paint-Stain Removal:
- 8.75.1 Paint should be removed only by use of commercial-type "Heavy Liquid" paint stripper available from hardware stores and paint centers. Such strippers are normally hydroxide types, viz: they contain caustic soda, or lye. DO NOT USE ACIDS or flame tools to strip or jute brushes for removing the sludge and curdled paint.
- 8.75.2 Normally, latex and acrylic paints will not cause staining. Oil-based paints, linseed oil putty, and "Architectural Grade" caulks and sealants usually cause oily stains. These stains should be attacked as in 8.74 above.
- 8.75.3 When removing paint and paint stains from vertical marble surfaces, take care to protect unpainted stone from run-off. If paint is accidentally dripped or overrun onto marble, remove immediately with a clean cloth followed as once by wiping with a cloth bearing acetone or mineral spirits to preclude oil-staining. Latex paint drips should be wiped off immediately with a damp cloth.