

UNIT 3 1

Removing Various Stains from Masonry Walls

OBJECTIVES

After studying this unit, the student will be able to

- identify stains on masonry work.
 - select the proper treatment for removing stains.
 - explain the importance of the proper use of cleaning agents.
 - list protective clothing items to be worn when working with cleaning solutions.
-

On occasion, there may be dirt and stains other than mortar deposited on masonry work. These must be removed by the mason when the building is cleaned. There are different types of chemicals that are used for this purpose.

CAUTION

Strict attention should be given to the directions for the use of any chemical, as they have a harmful effect if not used properly.

In many cases, small buildings or buildings that contain hard, smooth surfaces are cleaned successfully with regular soaps or detergents. This method works particularly well on glazed bricks or glazed tiles since mortar or other stains do not cling to this type of surface as easily as they do on a sand or rough-finished brick. The soap or detergent does not burn or damage the face of the masonry unit, as might other cleaning agents discussed in the previous unit. This method is more costly, however, since it is considerably slower. Because of this, regular soaps or detergents cannot be used on very large structures.

Although the mason is responsible for cleaning and washing masonry work, stains such as tar, paint, or welding splatters are the responsibility of the

subcontractor and **general contractor** working on that particular job. The apprentice should be aware of materials that may stain and damage the masonry work and report them to his or her employer at once so that the proper precautions may be taken. This unit discusses various stains, originating both internally (within the brick) and externally, and methods that may be used to correct the problem. **Figure 31-1** lists various cleaning agents and their sources.

INTERNALLY CAUSED STAINS

Efflorescence

Generally, *efflorescence* refers to a white, powdery substance sometimes seen on masonry wall surfaces. It is composed of one or more water-soluble salts originally present in the masonry materials that have been brought to the surface by water and deposited on the surface by evaporation of the water. In many cases, it can be removed by applying clean water to the wall and then scrubbing with a brush. If this procedure does not remove all of the efflorescence, the surface is scrubbed with a solution of muriatic acid or SURE KLEAN 600 Detergent mixed no stronger than 1 part commercial acid to 12 parts water (by volume). It is very important that the wall be presoaked with water before any washing is done, and that the wall be

Unit 31 Removing Various Stains from Masonry Walls 395

Agent	Supply Source
1. Aluminum Chloride	Pharmacist.
2. Ammonia Water	Supermarket. Household ammonia water.
3. Ammonium Chloride	Pharmacist. Salt-like substance.
4. Ammonium Sulfamate	Nursery and garden stores. Past use was as a base for weed killers. Not now readily available. Substitute any brand weed killer solution.
5. Acetic Acid (80%)	Commercial and scientific chemical supply firms.
6. Hydrochloric Acid	Hardware stores. Muriatic acid is generally available in 18° and 20° Baumé solutions.
7. Hydrogen Peroxide (30 - 35%)	Some commercial and scientific chemical supply firms.
8. Kieselguhr	Commercial, scientific chemical and swimming pool supply firms. Diatomaceous earth.
9. Lime-free glycerine	Drug stores. Used as a hand lotion base.
10. Linseed Oil	Hardware and paint stores.
11. Paraffin Oil	Hardware stores.
12. Powdered Pumice	Hardware stores. A sanding or polishing material.
13. Sodium Citrate	Pharmacist. Appears like enlarged salt granules.
14. Sodium Hydroxide (Caustic Soda)	Supermarket. Available in brand name substances such as Drano.
15. Sodium Hydrosulphite	Pharmacist or photographic stores. A white salt or "hypo" of photographic fixing agent.
16. Talc	Drug stores. Inert powder available as "purified talc." Bathroom talcum powder may be substituted.
17. Trichloroethylene	Commercial/scientific chemical supply firms and possibly some service stations or supermarkets. A highly refined solvent for dry cleaning purposes.
18. Trisodium Phosphate	Paint stores, some hardware stores, supermarkets. Strong base type powdered cleaning material sold under brand names. Also available in brand name substance such as Calgon.
19. Varsol	Service Stations. A refined solvent by the brand name Varsol.
20. Whiting	Paint manufacturers, possibly some large paint stores. A powdered chalk. Substitute kitchen flour, if purchase is difficult.

Fig. 31-1 Sources of cleaning and masking agents.

thoroughly rinsed with water from a hose equipped with a nozzle after it has been washed with the acid solution.

Vanadium Stains

It is generally agreed that greenish stains are caused by salts present in the metallic element known as *vanadium*. While the stain is usually green, it is at times a

brownish green and, more rarely, brown. The amount of vanadium in a brick is very small, about 0.01%. It is not known in what form the vanadium is present in the raw materials, in the fired bricks, or on the surface of the stained bricks. If this could be determined, the problem of removal would be greatly simplified. Research is currently being conducted to identify the sources of the compounds involved.

396 Section 8 Scaffolding and Cleaning Masonry Work

The following are three facts about the chemistry of vanadium that the mason should know.

- Vanadium salts may be divided into two classes, which include *colorless salts* that crystallize in alkaline or neutral solutions, and *colored salts* that are obtained from an acidic solution. The colorless salts are quickly soluble in water, while the colored salts are slightly soluble.
- The reaction of the colorless salts is practically instantaneous; the colored salts change very slowly.
- Vanadium salts react much more rapidly with acid than they do with alkaline substances.

Green-stained bricks often show no sign of a stain until they are washed in an acid solution, at which time the salts mix with the acid solution and then become evident on the face of the wall as dry, colored salts. It is impossible to determine if vanadium stains are going to appear on masonry. Therefore, it is good practice to test the effect of an acid wash on masonry units by applying it to a sample wall before washing the entire structure.

If green stains appear on the surface of the wall following the acid wash, the following procedure, which provides for neutralization of the acid, should be followed.

1. Flush the wall thoroughly with water.
2. Wash or spray the wall with a solution of potassium or sodium hydroxide, consisting of $\frac{1}{2}$ lb hydroxide to 1 qt water (2 lb per gal). A paint brush may also be used to apply the solution. Allow this to remain on the wall for 2 or 3 days in order to neutralize the acid that causes green staining. An easy way to use sodium hydroxide is in the form of Drano[®]. The mixture that has been used successfully in testing by the BIA is 1, 12 oz can per quart of water. The sodium hydroxide, or Drano, leaves the white salt that can be washed off with a hose. Various proprietary compounds, such as compounds 5, 6, and 7 in Figure 31-1, have proved successful in some cases.
3. The white salt left on the wall by the hydroxide may be hosed off the wall after 2 or 3 days or allowed to set until the first heavy rain removes it.

To date, research has not developed any single method for removal of green stains that can be recommended as best for all conditions.

Manganese Stains (Brown Stains)

Under certain conditions, manganese stains occur on mortar joints of brickwork made up of units colored with manganese dioxide. It appears as a tan, brown, nearly black, or, sometimes, gray stain. The *brown stain* has an oily look and may streak down the face of the brick. The salts are deposited when the solution reaches the mortar joints and becomes neutralized by the cement or lime.

During the burning process in the manufacture of some brick, the manganese coloring agents experience several chemical changes. This results in compounds that are not water soluble but are soluble in weak acid solutions. Since brick can absorb acid, such weak acid solutions can prevail in brick washed with muriatic acid. Rainwater is also acidic in some highly industrialized areas.

To solve this problem, do not use muriatic acid solutions on tan, brown, black, or gray brick. There are proprietary cleaning compounds available for cleaning manganese brick. Advice of the brick manufacturer should be followed if there is a problem.

Permanent removal of manganese stains may be difficult. After the first removal, it sometimes returns. The following method has been very effective in removing brown stain and preventing its return.

1. Carefully mix a solution of acetic acid (80% or stronger), hydrogen peroxide (30–35%), and water in the following proportions by volume: 1 part acetic acid, 1 part hydrogen peroxide, and 6 parts water.

CAUTION

Although this solution is very effective, it is a dangerous solution to mix and use. Consult with your supervisor or instructor before attempting to mix or use this solution. Otherwise, serious injury could result.

2. After wetting the wall, brush and spray the solution on the wall. Do not scrub. The reaction is very rapid and the stain disappears quickly.

Unit 31 Removing Various Stains from Masonry Walls 397

After the reaction is complete, thoroughly rinse the wall with water.

3. A proprietary compound, Brick Klenz[®], is sometimes effective in keeping the stain from reappearing. Brush or spray a solution of 1 part Brick Klenz to 3 parts water by volume. Do not scrub it; allow it to remain on the brick surface.

An alternate solution suggested for new and light-colored *brown stain* is oxalic acid crystals and water. Mix 1 lb crystals to 1 gal water.

Using the Poultice

A **poultice** is a paste consisting of a solvent and an inert material. The inert material may be talc, whiting, fuller's earth, or bentonite. The solution or solvent used depends upon the stain to be removed. Enough of the solution or solvent is added to a small quantity of the inert material to make a smooth paste. The paste is smeared on the stained area with a trowel or spatula and allowed to dry. It is then scraped off.

The solvent in the poultice dissolves the stain on the bricks. The resulting solution moves to the surface of the poultice where the solvent evaporates. The stain that is left on the loose, powdery residue is then removed. If all of the stain does not come off the first time, the procedure is repeated. The chief advantage of poultices is the way in which they work. Poultices tend to prevent the stain from spreading during treatment and tend to draw the stain out of the pores of the brick.

If the solvent being used to prepare a poultice is an acid, do not use whiting as the inert material. As a carbonate, whiting reacts with acids to produce carbon dioxide. This is not dangerous but is messy and destroys the power of the acid.

CAUTION

The mason should wear eye protection and rubberized clothing when using any of these cleaning agents. If any of the cleaning agents are splashed on the eyes or bare skin, flush with clean water. If any discomfort persists, see a doctor immediately.

Paint Stains

For fresh paint, apply a commercial paint remover or a solution of trisodium phosphate and water (2 lb trisodium phosphate to 1 gal water). Allow the mixture to stand and remove it with a scraper and wire brush. Wash with clean water. For very old, dried paint, organic solvents similar to the above may not be effective. In these cases, scrubbing with steel wool or sandblasting may be required.

Iron Stains

Iron stains, quite common, sometimes cover entire walls. These stains are easily removed by spraying or brushing with a strong solution of 1 lb oxalic acid to 1 gal water. Ammonium bifluoride added to the solution ($\frac{1}{2}$ lb/gal) speeds the reaction. The ammonium bifluoride generates hydrofluoric acid, which etches the brick. The etching will be evident on very smooth bricks, and, therefore, the solution should be used with caution.

Another method is to mix 7 parts lime-free glycerine with a solution of 1 part sodium citrate and 6 parts lukewarm water, and mix with whiting or kieselguhr to form a thick paste. Apply the paste to the stain with a trowel and scrape it off when it dries. Repeat the process until the stain is removed. Wash well with clean water. A poultice made from a solution of sodium hydrosulphite and an inert powder (such as talc) also has been used for removal of iron rust stains.

Copper and Bronze Stains

Mix together dry 1 part ammonium chloride or sal ammoniac and 4 parts powdered talc. Add ammonia water and stir until a thick paste is formed. Place the mixture over the stain and leave until dry. An old stain may require several applications.

Welding Splatters

When metal is welded too close to a wall or pile of bricks, some of the molten metal may splash onto the bricks and melt the surface. The oxalic acid-ammonium bifluoride mixture, which is recommended for iron

398 Section 8 Scaffolding and Cleaning Masonry Work

stains, is particularly effective in removing **welding splatters**. Scrape as much of the metal from the bricks as possible. The solution is then applied in a poultice. The poultice is removed when it has dried. If the stain has not disappeared, sandpaper is used to remove as much of it as possible and a fresh poultice is applied. For stubborn stains, several applications may be necessary.

Smoke Stains

Smoke stains are usually difficult to remove. A thorough scrubbing with scouring powder (preferably one containing bleach) and a stiff-bristled brush works well. Some alkaline detergents and commercial emulsifying agents may be brushed or sprayed on. These do a good job when they are given time to work. These have the added advantage that they can be used in steam cleaners. For more stubborn stains, a poultice using trichloroethylene usually draws the stains from the pores.

CAUTION

When using trichloroethylene, make sure the work area is well ventilated since the fumes are harmful.

Oil and Tar Stains

Oil and tar stains are effectively removed by commercial emulsifying agents. For heavy tar stains, the compounds can be mixed with kerosene to remove the tar and then with water to remove the kerosene. Sometimes, a steam-cleaning apparatus is used to remove tar with the use of kerosene. In a small area or in a situation where the job must be very clean, a poultice using benzene, naphtha, or trichloroethylene is more effective in removing oil stains.

Dirt Stains

Dirt can be very difficult to remove from a textured brick. Scouring powder and a stiff-bristled brush are effective if the texture of the unit is not too rough.

Scrubbing with the oxalic acid-ammonium bifluoride solution recommended for iron stains has proved effective on moderately rough textures. High-pressure steam cleaning appears to be the most effective method for cleaning dirt stains.

Straw and Paper Stains

Stains from straw and paper sometimes result from wet materials used to pack bricks for shipment. This stain can be removed by applying household bleach and allowing it to dry. Several applications may be necessary to remove the stain. A solution of oxalic acid-ammonium bifluoride cleans the stain more rapidly.

Plant Growth

Sometimes exterior masonry that is exposed to sunlight and remains constantly damp develops plant growth, such as moss. Applications of ammonium sulfamate (marketed under the manufacturer's brand name and available in gardening supply stores) made according to directions, which come with the compound, have been used successfully to remove such growths.

Stained masonry that is being recleaned after a long period of time may require a more severe method. High-pressure steam and sandblasting are two of the most successful methods employed. The mason seldom uses these methods, as they are usually left to professional cleaning companies.

Ivy

Ivy can damage the mortar joints in a masonry wall as the suckers on the plant enter the mortar joints and cause them to erode. Avoid pulling the vines away from the joints as this may cause more of a problem. Carefully cut a few square feet of the vine away from the mortar joints designated area and examine the joints to see how much the vines are rooted. There will be some deposits left on the surface of the adjacent masonry. These usually are the "suckers" that attached and held the vines. Do not use acids or chemicals to remove the sucker. Leave in place until they dry and turn dark. Then, remove with a stiff brush and detergent.

Unit 31 Removing Various Stains from Masonry Walls 399

Egg Splatter

Brick walls that have been vandalized with raw eggs have been successfully cleaned with a solution of oxalic acid crystals dissolved in water. Mix in a nonmetallic container and apply with a brush after saturating the surface with water.

White Scum

White scum is a grayish-white haze on the face of a brick. It is sometimes mistaken for efflorescence, but technically is silicic acid scum. This condition results from the failure to saturate the wall before application or failure to thoroughly rinse acid solutions after cleaning. Generally, it is a film of materials that is insoluble in acid solutions except for hydrochloric acid, which is dangerous and not generally recommended for this use. Proprietary compounds formulated to remove this condition may be tested and their effectiveness judged. If removal is too difficult, masking of the haze may be considered. In time, weathering will remove both the mask and the white scum.

Masking solutions may consist of paraffin oil and Varosol, or linseed oil and Varosol, applied by brush to the affected brick work. Linseed oil and Varosol (10–25% linseed oil) or paraffin oil and Varosol (2 to 50% paraffin oil) will darken lighter color brick. Several batches of solutions with various concentrations should be mixed and tested. Generally, solutions of 2 to 25% paraffin oil will be satisfactory. Allow 4 to 5 days of warm drying weather to pass, preferably at 70 degrees Fahrenheit (21 degrees Celsius) minimum, before a judgment is made on the effectiveness of the solutions.

It is always recommended to test any cleaning procedure and chemical cleaning solutions in a small area before attempting to clean the entire job. Cleaning brick masonry still remains a trial-and-error procedure and should be approached in that manner.

SAFETY PRACTICES TO FOLLOW WHEN WORKING WITH MASONRY CLEANERS

Masonry cleaning products can be corrosive and toxic in nature. Common-sense safety practices should be followed at all times when handling or using any type

of chemical cleaner. The first rule is to always read the directions on the package or container before using the contents.

Some general recommendations that should be followed are to wear long rubber gloves and safety goggles when using any type of chemical liquid or cleaner, and to wear an approved mask if fumes are present. It also helps to cover areas of skin that may be exposed with a light application of a product such as Vaseline and to make sure there is good cross ventilation if you are working inside. Try to work downwind as much as possible, especially if using acid-type cleaners that emit fumes. Never open a container of chemical cleaner of any type and then take a deep breath of it. It can replace the oxygen in your lungs quickly and cause extreme discomfort and breathing problems.

When mixing an acidic type of cleaning solution in a bucket, it is a good practice to always pour the water in first and then slowly add the cleaner. Don't *spike* or add larger doses of cleaner to a solution than the directions call for, in an attempt to remove stubborn spots or stains, as it may not only burn the mortar joints, causing a discoloration but also actually affect the color of the brick face. If you do splash some cleaner on an exposed surface of your skin or in the eyes, immediately rinse it out with plenty of clear water. If this does not help, seek medical attention immediately.

SOME HANDY CLEANING TIPS THAT I HAVE USED WITH SUCCESS

- If you want to remove a stubborn clump of mortar or stain on a masonry wall, rub it with a small piece of broken masonry material that matches the wall, such as a piece of brick, as it will be less likely to scratch or ruin the face of the unit.
- In some cases, applying dry powered cement or granular cat litter on a grease or oil stain will help lift out the grease stains from masonry. Then, scrub the area with a masonry cleaning detergent and rinse with clear running water.
- If you are trying to remove an asphalt or tar stain (especially if it has not dried), use a cloth saturated with kerosene and wipe over the area.

400 Section 8 Scaffolding and Cleaning Masonry Work

Follow this up by wiping it off with another piece or two of cloth with clean kerosene on it. Rub lightly across the surface and try not to force the stain into the pores of the material being cleaned. Finish up cleaning the area with regular household scouring powder and rinsing with clear water.

- Another technique that will work sometimes is to apply *dry ice* to a lump of tar on the face of a brick or block. It helps to freeze the underside of the lump and make it pop loose. Chewing gum can also be removed rather easily by holding an ice cube against it for a couple of minutes. This will cause it to harden and then it can be scraped off with a putty knife. If a stain still remains, use a little denatured alcohol on a cloth to remove it.
- You can remove wet paint or a stain from a masonry wall by blotting it with a soft cloth or paper towel to absorb the excess. Then scrub the area with a laundry soap detergent and warm water and rinse it with clear water. If it is an oil-base paint, try blotting it with a little turpentine or paint thinner and scrub the area with some household scouring powder, followed by rinsing with water. If the paint has hardened, try using some paintbrush cleaner and rinse afterwards. Usually this will work.
- To kill moss on brickwork, spray with a good weed killer according to directions or use a solution of 1 part Clorox to 8 parts water. Rinse well afterwards with clear running water from a hose.
- To get rid of mildew on concrete block, scrub with a medium soft brush using a solution of 1 ounce of laundry detergent to 3 ounces of Trisodium Phosphate to 1 quart of chlorine bleach mixed with 3 quarts of water. Rinse well with water from a garden hose.
- To enhance the color of Vermont Slate Flagstone, which has a lot of blue, red and green in it, wash it down with a brick cleaner such as SURE KLEAN 600 or a solution of 1 part muriatic acid to 9 parts water and rinse well with a garden hose with a spray nozzle. After it dries, apply a coat of liquid self-polishing wax to bring out the colors in the stone.

Some General Recommendations on Cleaning Masonry

It is important to do good masonry work and just as important to clean it properly afterwards. Following are some general recommendations.

- Take care to keep the work as clean as possible during construction. This includes turning up scaffold planks nearest the face of the wall at the close of each workday to prevent potential rain showers from bouncing off the board and onto the wall face and staining them. Also cover the top of the wall at the close of each workday to keep any water or rain out that may occur before the next day's work.
- Store brick or masonry units off the ground on pallets and have them covered with plastic sheets. They should also be covered if left set on scaffolding between workdays or weekends. If they are soaked with water from a storm or showers the night before, the brick will not set properly as it will not absorb the moisture from the materials but instead will bleed or smear the surface or the wall. It is also counterproductive to have to lay brick or block that are too wet; this decreases the mason's productivity.
- Saturate the face of the wall to be cleaned with water before applying any type of wash-down chemical cleaners, so they do not soak in too far.
- Make sure you read all instruction carefully and do not mix the cleaner stronger that recommended before applying.
- If cleaning a masonry wall that you are not totally familiar with, try a sample test area of approximately 20 sq. ft first and observe if there is a reaction after a suitable recommended length of time which is usually listed on the label of the product.
- Protect windows, door trims, and so forth, if you think there may be a chemical reaction to the cleaner. If this is a potential problem on a job you are working on, tell the general superintendent as it is probably their responsibility. It saves a lot of grief and misunderstanding later, if a problem does develop.
- Tool or "strike" the mortar joints when they are at the proper degree of dryness by using a simple test called "thumbprint hard." To perform this, merely

Unit 31 Removing Various Stains from Masonry Walls 401

press the end of your thumb into the mortar joint. If it leaves an impression without smearing, it is ready to tool. Simple, but it really works!

- Brush the wall with a medium-soft-bristle brush after it has surface dried enough so it won't smear.
- If any splashes of concrete get on the wall, scrape and remove them with water before they dry into the surface because concrete is very difficult to remove once it gets hard.
- If any painting, spraying, or applications of liquid materials by other tradesmen is being done

near your masonry work after it has been finished and before drying, cover it with plastic sheets as soon as possible. This is especially necessary when roofing tar is being lifted and being applied to a built-up roof. It saves a lot of headaches and arguments later.

- Always wear approved safety eye protection and a breathing mask if there are fumes. If you get any cleaner in your eye, wash it out right away. If it does not improve within a short time, report it to your supervisor and have him take appropriate action.

ACHIEVEMENT REVIEW

Select the best answer from the choices offered to complete each statement. List your answer by letter identification.

1. The best method to remove efflorescence is to apply a solution of
 - a. sulphuric acid.
 - b. potassium.
 - c. household cleanser.
 - d. muriatic acid.
2. Manganese stains can be removed with
 - a. muriatic acid.
 - b. a combination of acetic acid, hydrogen peroxide, and water.
 - c. whiting.
 - d. trichloroethylene.
3. Green stains on masonry walls are caused by
 - a. efflorescence.
 - b. manganese.
 - c. vanadium salts in the bricks.
 - d. iron in the bricks reacting to the mortar.
4. The chief advantage of a poultice is that
 - a. it is easier to apply than a solution.
 - b. it draws the stain to the surface and stops it from spreading.
 - c. it presents no danger to the mason who is applying the poultice.
 - d. it permanently prevents the stain from reappearing.
5. Oil and tar stains are removed from masonry using certain compounds. Heavy tar stains are removed by adding to these compounds
 - a. muriatic acid.
 - b. household bleach.
 - c. ammonium sulfamate.
 - d. kerosene.

402 Section 8 Scaffolding and Cleaning Masonry Work

6. Plant growth on masonry work is removed by using a solution of
 - a. ammonium sulfamate.
 - b. muriatic acid.
 - c. whiting.
 - d. talc.
7. Paint stains are removed with a commercial paint remover or a solution of
 - a. muriatic acid and water.
 - b. household bleach and water.
 - c. trisodium phosphate and water.
 - d. oxalic acid and water.
8. When in doubt about the effects of a cleaning compound on a masonry wall, the best practice is
 - a. to clean only a small area and observe the results.
 - b. to use judgment as to the type of cleaner to be used.
 - c. not attempt to remove the stain.
 - d. to apply household bleach.

SUMMARY KEY TERMS, SECTION 8

- nipples** steel pins used to connect 2 sections of steel scaffolding.
- guardrails** metal rails that fit onto the scaffolding to prevent the workers from falling. Guardrails are required by OSHA federal regulations on any scaffolding exceeding 10' in height.
- toe boards** wooden boards that are attached to the bottom outside edge of scaffolding to prevent objects from falling off. Toe boards are an OSHA requirement on all scaffolds exceeding 10' in height.
- rolling scaffolding** a scaffolding that is mounted on wheels; used on relatively small jobs.
- crank-up scaffolding** metal scaffolding that can be raised with a cranking mechanism as a platform for masons to work from.
- mast climbing work platform scaffolding** adjustable metal hydraulic-operated scaffolding used in place of traditional scaffolding or swinging scaffolding to provide a safe and economical work platform that holds materials and masons while building masonry work. It is especially applicable and safe for tall buildings.
- tower scaffolding** a steel-framed scaffolding erected in a towerlike position, with adjustable height.
- scaffold sill** wooden scaffold frames resting on ground level; helps to prevent the scaffold from settling after heavy rains and distributes the weight of the scaffold and materials.
- foot boards (blocking or hopping boards)** wooden planks laid on top of bricks or concrete block to allow the mason a higher reach when laying masonry units.
- putlog** a piece of wood or steel left in the masonry wall with one end resting in a hole and the other end lying on solid ground or on a suitable base. The scaffold frame rests on the putlog, making a strong base on which to start the scaffolding.
- volatile organic compounds (VOCs)** a term masons need to be concerned with which applies to the more recent laws the United States Environmental Agency has passed concerning the limits of volatile organic compounds that may be present in paints, solvents, cleaners, and other chemical products used in construction and masonry work.

Unit 31 Removing Various Stains from Masonry Walls 403

green staining a reaction on masonry work caused by the salts contained in vanadium.

subcontractor a person who performs work negotiated with the prime contractor on a job or project, such as a masonry contractor.

general contractor the main or prime contractor on a job, who has the responsibility of coordinating all of the subcontractors' work to complete the structure according to the terms of the contract.

poultice a paste made with a solvent and an inert material that is used to remove objectionable stains on brickwork.

welding splatters the metal beads splashed on the surface of the masonry wall that soak into the surface of the masonry unit.