

# **IWCA Safety Certification Program**



## **COURSE STUDY PROGRAM**

**For Window Cleaner Safety Certification**

***Route/Residential Operations***

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# Route/Residential Operations

## Route Company



A **route company** is a window cleaning company that concentrates on first or second floor commercial window cleaning and cleans these accounts on a daily, weekly or bi-weekly basis. This company's accounts will be storefronts, shopping malls, professional buildings, restaurants, automobile dealers, etc. There are companies that are exclusively route and there are route companies that also do residential windows cleaning as schedules allow.

## Residential Company

A **residential company** is a window cleaning company that does residential window cleaning exclusively. There are many such companies in business. A residential window cleaning company will use different strategies in marketing, scheduling, advertising, hiring and training employees than a route company.

The residential window cleaner will be confronted by a host of different situations and cleaning challenges. The residential window cleaner must demonstrate the care and concern for the customer's property, in a way that is different from the route situation.

The tools for the residential window cleaner are primarily the same as for the route window cleaner with some exceptions. A start-up residential company must have a greater selection of tools at the ready. There are so many different situations in residential window cleaning that require the tools necessary to complete the work effectively. The residential window cleaner needs a broader selection of squeegee channel sizes. It is probably advisable to have every size from six to eighteen inches and acquire sizes in between by cutting channels to the desired size. Residential windows come in many sizes.



## *TOOLS OF THE TRADE*

- **Squeegee**

The tool used to remove water and cleaning solution from glass. Its parts are the handle or grip, the channel that is fastened onto the handle with two machine bolts and nuts through a back plate, and the squeegee rubber that slides into the channel.



There are several variations of the squeegee handles, the brass or stainless steel or plastic handles of several types. There are handles that swivel or pivot to allow easier access to difficult places. There are handles with quick release mechanisms that allow

for the speedy changing of squeegee channels. There are handles that hold the channel and the squeegee rubber in place by a spring loaded jaw grip back plate.

There are several variations of squeegee channels: the traditional brass or stainless steel; and thicker, heavier aluminum channels, as well as thin aluminum channels.

The squeegee rubber is what does the work. The channel holds the rubber, the handle holds the channel, the window cleaner holds the handle, but the rubber moves the water. There are also several varieties and qualities of rubber. Every professional squeegee is equipped with replaceable rubbers. Some rubber will fit only the channel designed for it. The rubber fits inside the channel and is held by end clips in some channels, or in some channels by a spring-loaded clamp that is part of the lower jaw on the handle.

The window cleaner's knowledge and skill, and the quality of the tools that are selected for use will determine the quality of work. Overly worn squeegee rubber will detract from high quality results. Squeegee handles and channels usually last a long time. But the rubber will wear out. A good rule is to change it frequently, like daily. Of course, the more windows the rubber cleans the quicker it will wear. Jobs with lots of glass, like an office building, might require changing rubber several times during each cleaning. The squeegee rubber can be "turned over," that is removed from the channel when one side of the rubber becomes worn and turned around to expose the other edge to the glass. Usually the second edge does not last as long as the first.

Another consideration to remember is that rubber is a natural material that disintegrates in heat and direct light. It is best to store extra squeegee rubbers in a cool, dark place.

Long time window cleaners affectionately call the rubber a "blade."

- **Brush**

A wooden or plastic block with hog hair bristles fastened to the block with glue or resin. There are also brushes with synthetic bristles. The brush is used to put water and cleaning solution on the window. The wooden or plastic block has a hole or handle, which will receive the tapered end of an extension pole.



- **Strip washer**

The strip washer is also used to put the cleaning solution on the glass. Its parts are a metal or plastic t-bar (a rod with a handle grip attached) and a cloth fabric cover that slides over the t-bar and is Velcro or snap fastened. The grip or handle will receive the tapered end of a pole. Strip washers are offered in several lengths, styles, types of fabric for the cover, with handles that are rigid, and with handles that swivel. Experience will be the best teacher on choosing the strip washer best for the individual window cleaner.



The greatest efficiency in cleaning windows is probably gained by the method of applying the cleaning solution onto the glass. The longer strip washers, up to 30 inches, provide a quick way of doing large plates but are less versatile for all around window cleaning. The swivel handle strip washers offer great versatility. The most popular length strip washer is the 18-inch. The type of fabric covering varies from manufacturer to manufacturer but the utility that is desired is the ability to hold water and the ability to remove grime adhering to the glass.

- **Pole or stick**

Poles come in many varieties. There are wooden poles and aluminum extension poles of many different lengths and construction. There are two-section poles, three-section poles and four- and five-section poles. There are poles that telescope and poles that snap together to form the length desired. Recently composite extension poles have been introduced to the window cleaner. The leading squeegee companies, as well as other manufacturers, make poles of several varieties. There are extension poles that twist lock; these poles have an end-to-end smooth appearance with no collars or locking devices on the surface of the pole. Locking the pole in place to achieve the desired height is done by turning the pole one half turn. A concentric device within each section of the pole performs the lock. To loosen, the pole is turned in the opposite direction. Other poles have tightening devices; screw down collars or a levered concentric that holds the pole when lengthened. Each type of pole has advantages and disadvantages.

- **Cone adapter**

A tapered wooden or plastic piece that fits of the end of an extension pole to receive the strip washer or the squeegee. Some poles come with a threaded end that the cone adapter screws onto and some poles receive the cone adapter by a clip on or friction fit method.

### Water fed poles

Water fed poles apply water and cleaning solution to the window through small diameter hoses that run the length of the pole to a brush at the end from a ground floor water source. The window is wet brushed, rinsed and allowed to air dry. De-ionized water is often used to improve the quality of the work done in this way.

- **Bucket**

The bucket holds the water and cleaning solution, the brush or strip washer, as well as the squeegees ready to be used. Buckets can be the round five-gallon, plastic pails, rubber buckets or the rectangular buckets made especially for window cleaning. There are carts or pods made to hold and transport buckets easily. If extra water is carried in a five-gallon plastic bucket, a lid for that bucket might be advantageous.

- **Squeegee holster**

A leather or nylon fabric device with one or two loops that the squeegee handle slides into. The holster fits on the belt that holds up the window cleaner's pants.

- **Work belts and pouches and belt buckets**

Canvas belts with loops to hold tools. Pouches with pockets for accessories for window cleaning like detailing cloth, chamois, razor blade holder, pencil, etc., that also fasten to the canvas belt.

The belt bucket is a tubular plastic device that holds the strip washer lengthwise and also has slots for squeegees to be placed into to avoid dripping. They're very handy when working inside or on ladders.

- **Combination tools**

There are tools available that combine the water applicator and the squeegee onto one handle. This allows for speedy application and removal of water. These tools require a certain expertise but can be useful in special situations.

- **Razor blades and razor blade holder**

Single-edged razor blades are used to remove tape, paint, stickers and other debris routine washing will not remove. The razor blade holder is the tool that holds a single-edge razor blade. The holder has a retractable blade for safety reasons. Wet the glass before blading or scraping to minimize the possibility of scratching the glass.

- **Wide blade scraper**

Tool made of plastic or metal that receives a wide, four to six inch very sharp blade. These scrapers are made to be used on a pole as well as hand held. The blades typically have covers for safety. Again, wet the glass first before "blading" and always "blade" or "scrape" in one direction. Never pull the wide blade scraper back on the glass for the same reasons as stated above. See "Blading" in Definitions

- **Sponge**

Product used to pick up excess water left on windowsill, ledges or on the floor. Sponges can also be used to apply water to window glass. There are synthetic cellulose sponges and natural sea sponges. The natural sponge is a wonderful tool but is relatively expensive compared to the cellulose sponge.



- **Chamois**

The chamois is a towel created from a tanned leather animal skin. The chamois is used to pick up small amounts of water left behind by the squeegee on the edges of the glass. The chamois is treated with cod liver oil to make it soft. The chamois can be used damp or dry. It is essential that the chamois be kept clean to be the most effective. Some window cleaners swear by the chamois and disdain the "rag." Always wash a new chamois to remove the oil before using in window cleaning.

- **Towels or Rags**

Usually made of linen, but cotton cloth does nicely, used for the same purpose as the chamois. These "rags" can be purchased new. The towels usually are linen surgical towels and highly absorbent. Some window cleaners use old cotton bed sheets or dishtowels that have been laundered many times. The fabric in these "rags" has broken down and this makes the cloth highly absorbent, thus a good "shine" cloth. In the old days window cleaners used a product called "scrim," a highly absorbent linen fabric that looks and feels like a potato sack. It is still popular in some European countries.

- **Soap or solution**

There are solutions especially prepared for cleaning windows, too many to name here. Some solutions are prepared for the brush and squeegee method of window cleaning, some for the chamois and shine method. Some window cleaners use off-the-shelf household cleaners made for washing dishes. A solution sold for the squeegee method would be the best to start with. Every janitor supply store or window cleaning supply distributor will have these products.

- **Acids or caustic cleaners**

Chemicals or abrasives used to remove stains or mineral build up on window glass. There are many products for the many different types of stains and mineral deposits. Education and caution is advised. See **Protectants** in this section

- **Alcohol**

Window cleaning in cold climates requires some kind of anti-freeze for the water in the winter months. The best such product is methyl alcohol, trade name Methanol. Polypropyl can also be used, as well as isopropyl. Methanol is the most available and least costly, and easiest to use. Be aware of the hazards of exposure to these kinds of chemicals. The alcohol in windshield washer fluid is methyl alcohol. Always follow instructions when using any of these chemicals.

- **Angle adapters**

Device made to put on the end of a pole with squeegee attached to reach over sills and window ledges. The angle can be changed to what the job demands.

- **Ledger**

Goose necked squeegee handle that fits on an extension pole to reach over sills and window ledges. There are several sizes of Ledgers to accommodate different widths of window ledges.

- **Window Easel**

Tool used in residential window cleaning to support storm windows when cleaning. The easel saves bending over or working in a crouched position. There is an advantage to bringing the storm window to a height where it is easier to see the work as it is completed whereby a better quality is achieved. The easels usually have a trough that collects the excess water created in the cleaning process. These easels are meant to hold only a couple windows at a time.

- **0000 Steel wool**

Steel wool of the finest variety can be used dry in residential window cleaning to remove dirt and stains from glass. It is best and most efficient when cleaning small panes. Steel wool is also very effective in detailing small panes when everything is completely dry. Damp or wet steel wool is useless. A disadvantage to steel wool is that it disintegrates into steel dust and rust.

- **Protectants**

Products used to protect window glass from chemical or mineral stains such as alkaline build up, ferric oxide, aluminum oxide, and concrete efflorescence. Some areas of the country the minerals in water used to water lawns and plants coat windows with a substance not easily removed in normal cleaning process. Water run-off from concrete exteriors on buildings can deposit a mineral coating on glass called concrete efflorescence. Once the stains are removed these protectant products can be useful to protect the glass from future staining and make the cleaning process much safer and easier. The window cleaner should charge extra for removing stains from glass. There are several types of protectant products on the market.

### ***DEFINITIONS USED IN WINDOW CLEANING:***

- **Window**

A unit made up of glass set in a frame, which can be wood, metal or vinyl. Windows are placed in homes or professional buildings for the purpose of letting in natural light and fresh air or in commercial establishments for showing off merchandise to the potential shopper, or for architectural effects. Windows in commercial establishments are usually stationary; windows in homes and offices can move up and down, sideways, crank open or flex open. Windows can be round, square, rectangular or many sided or odd shaped. The part of the window unit made up of the glass is called a pane or plate and the frame the pane or plate is set in, is called a sash.

For bidding purposes in residential work, a “window” is defined as everything in a window unit, the sash, the frame, the sill, the storm, etc.

- **Picture window**

A large plate set in a frame to allow for broader views of street or landscape. On residences, a picture window may have an insert storm window attached to the exterior of the window frame. These can be very difficult to safely remove, clean and replace, especially if a ladder is needed or there are bushes in the way.

- **Double hung window**

The anatomy of a double hung window is:

1. The frame made up of a header, sill and sides.
2. Sashes; (side rail, top and bottom rail and mullions if the glass is divided into small panes). The double hung has two sashes, top and bottom, that are supposed to slide by each other, but in older homes the top sash often gets painted in so it does not operate. Most double hung windows will have a locking device and a lift handle on the bottom sash and also include weather stripping.
3. Balances are the assists to help move the window sash up or down or hold it in a desired position. On older windows this is a rope, weights and pulley system. On newer windows the balances can be spring loaded and include weather stripping.

The **double hung window** is usually found in residences, single family homes and apartments. Older homes have double hung windows throughout with storm windows attached. Newer homes have double hung windows that tilt into the interior of the house or “take outs,” windows fitted with removable sash. Tilt-in windows usually are hinged or pegged at the bottom of the sash and tip in by pulling the top of the sash inward while pressure is applied to the side of the window frame or the vinyl or metal weather strip. “Take outs” can be tricky to manipulate. Care must be taken if balances are to be detached when the window is removed. The sliding or balance mechanism on “tip ins” can offer a challenge if the sash comes out or is dislocated from that part of the frame. The trick is to keep the sash level when tipped in to clean. Many or most multiple story apartment dwellings have windows with removable or tip in sashes.

- **Gliders or sliders**

Windows that have sashes that open and shut in a lateral movement. Sliding glass doors can also be defined as "sliders." Most gliding windows are "take outs." This is accomplished by moving the sash to a center position, taking hold of the side rails at the bottom of the sash and lifting up while pulling the bottom of the sash out. The top weather strip flexes in to allow the removing of the sash. Both sashes come out on this manner. In apartment buildings or motels sliders will have one sash stationary. This will pose some safety problems when cleaning. See Safety Section.

- **Casement windows**

Windows with sashes hinged on one side that open outwardly with a crank or a push rod. If these windows have screens, the screen is on the inside of the house.

- **Awning windows**

Windows with sashes that have hinges on the top that open outwardly with a crank or push rod. If these windows have screens, the screen is on the inside of the house.

- **Hopper windows**

Windows with sashes that have hinges on the bottom that tip inwardly. If these windows have screens, the screen is on the outside of the house.

- **French windows, or "cutups"**

The sashes on double hung windows, top or bottom, or both, divided into smaller panes separated by wooden mullions. Many window cleaners refer to these kinds of windows as "cutups". Casement windows can also be divided this way but it is unusual. Many newer homes have plastic or wooden inserts that give a "French window" appearance.

- **Storm windows**

Windows applied to house windows for the purpose of keeping out the heat in summer and cold in winter. There are several types of storm windows;

**Combination storms** are the storms that are self-storing and move up and down, or sideways, in an aluminum track. All combinations are designed to be removable and have four parts, two windows (sash, usually glass set in a metal frame) and one screen and the frame, or tracks, the windows slide in. There are two dominant styles of combination storms, the two tracks and the three tracks. In the three tracks both the storms and the screen bypass each other in that each has a separate track. In the two tracks the front or inside storm can be moved up and down, the rear or upper storm is fixed because the screen fits under it. On the three tracks, the screen is inside the storms, on the two tracks the screen is outside one of the storms and under the other. In either case these storms slide out of the frames from the inside of the house for the purpose of cleaning. A word of caution here, the frames of these windows are secured to the glass by glue and a piece of plastic or rubber caulking and can easily be pulled away from the glass if not handled carefully. If this happens it can make replacing the window into its proper frame difficult. Handle the windows by applying pressure with the hands at the sides on the frames.

On older homes a window cleaner might encounter some unusual metal storm windows. There are more types than can be explained in this publication; just remember all of these windows were meant to be removable. Sometimes it takes some head scratching to figure it out.

- It is also important to note that all combination windows are manufactured in units. The sash and the frame, or tracks, are a unit. Do not intermix sashes and frames. The sash that comes out of a certain frame must go back into that same, certain frame.

Be reminded that the screen in aluminum combination windows also needs to be cleaned. Refer to the Technique Section for different ways of screen cleaning. When writing bids for cleaning combination windows consider the time needed to clean the tracks and bid the track cleaning separately then ask if the homeowner wants that service also. Cleaning tracks thoroughly is a time consuming task, charge accordingly.

**Wooden storms and screens** are applied to the outside of the house window much the same as the combination. These storms are best removed from the outside of the house. Second story removal can be challenging and dangerous. For safety reasons, it is a good idea to have assistance when working second story

homes with wooden storms. Most of the time, wooden storm windows have companion screens that fit in the opening after the wooden storm is removed. This requires the window cleaner or a helper to store the windows in a basement or a garage.

**Aluminum storm inserts** are applied to casement, awning and hopper type windows, In some cases these can be on the outside of the window. In most cases, especially newer homes these inserts are on the interior. Metal or plastic clips hold the storm inserts. Removal and cleaning storm inserts can be as time consuming as combinations. Care should be taken when cleaning this type of storm as the very thin metal frames can come apart when handling especially those applied to the exterior of the house window. These windows also have a tendency for moisture to condense in between the window sash proper and the storm insert after removal, cleaning and replacement if soap, water, and squeegee cleaning method are used. The windows fog up as a result. Allowing drying time before replacing the storm insert minimizes this effect. The inserts applied to the exterior of casement or hopper windows tend to be flimsy or fragile. Caution is advised.

There are manufacturers of casement windows that put mini blinds in between window and the storm insert. These windows can be difficult to clean taking two to three times longer to clean than regular casements with storm inserts.

- **Glass**

Glass is the product used in modern windows. There is not sufficient space in this publication for the entire science of glass to be covered. **However, this subject is of the utmost importance to all window cleaners! Many window cleaners have had to pay for glass damaged in the post construction cleanup process and have left the industry of window cleaning as a result.**

Modern glass comes in several varieties and degrees of surface qualities. Sheets of plate glass or flat glass are created from molten glass. The molten glass is floated onto a molten tin bath, where the molten glass ribbon is drawn through the tin bath on rollers, then through an annealing lehr where it cools. All float glass is of the same hardness, as is all annealed and tempered glass. The basic types of glass are annealed, tempered, and laminated. All glass is annealed. Annealed glass is tempered to increase its strength so it can withstand a greater impact before breaking. This glass is then called tempered glass. Most modern storefront window glass is tempered.

Laminated glass is two or more sheets of glass with a very thin layer of plastic between sheets. Laminated glass is used in and around entrances and exits for safety purposes. This glass can be tempered or annealed.

Tinted glass can be annealed or tempered. In most cases tinted glass is tinted throughout. The color, usually iron oxide, is added in the float tank. In some cases the tint is applied to the surface of the glass thereby creating a different quality of surface. Low E or energy efficient insulated glass is designed to have this tinted coating on the inner surface of the unit. Due to quality control problems at the glass manufacturer, the tinted surface is sometimes on the outside of the glass unit. The unsuspecting window cleaner can severely damage this glass in the cleaning process. All tinted glass demands a more cautious approach when cleaning, especially during a post construction cleanup. This process requires a more aggressive method in removing, mortar, concrete, paint, paper, plaster, etc., from the glass. The glass can be damaged in that process if proper precaution is not taken. **The window cleaner must identify if it is tinted glass, or tinted film, or a tinted coating before cleaning.**

Some tinted glass, usually the gold, blue or green, may have a very thin metallic coating on the outside of the glass. This glass has a method for cleaning recommended by the manufacturer of the glass. This coated glass is very susceptible to scratching or etching if cleaned improperly.

The many different manufacturers of glass have different quality standards. Any routine cleaning of glass poses the unlikely occurrence for damage to glass surfaces. Problems can occur during post construction cleanup when razor blade scrapers or stain removing acids are used. Metal scrapers used inappropriately can cause glass surfaces to be scratched. Acids can cause etching on the surface of tempered glass. Always test in an inconspicuous corner.

All of the types of glass previously mentioned are also used in residential construction. Here single strength and double strength is a factor. Most combination storm window glass is single strength. As previously stated the routine cleaning of this glass poses little problems for possibility of damage to glass surfaces. A wise window cleaner will educate him or herself on the differing qualities of glass. The type of glass and the manufacturer of the glass is usually identified by a seal or stamp in one of the corners of the piece of glass.

- **Important information**

Within the glass industry a lack of quality control allows some tempered glass that may have been manufactured improperly to come to the market place. The glass surface is not “cleaned” properly at the manufacturer and glass dust (fine particles or “fines”) are embedded in the surface of the glass. This is not visible to the eye but can be discerned to the touch. It "tinkles" or makes a "sandpaper sound" when scraped. These “fines” will act as an abrasive and fine scratches will result if scraped with any kind of scraper or with any method of scraping. This is another reason to always test in an inconspicuous corner. While this is not common, it happens frequently enough to be a problem to window cleaners and glass installers. If you encounter this condition, bring it to the attention of the owner or person in charge. This glass can be cleaned but should not be “bladed” or “scraped” and the window cleaner should not be responsible for it if it is damaged.

The routine cleaning of any type of glass poses little problems in regard to damaging the surface. Sometimes cleaning necessitates the use of abrasives, chemicals or razorblade scrapers requiring greater care, concern and caution.

- **Plate**

Term used to describe a single commercial window. As in "There are 5 plates in that store front." Commercial window cleaners usually charge by the "plate." Most residential window cleaners charge by the “window.”

- **Window Cleaning**

Term used to describe activity of removing dirt from window glass. Activity also pertains to cleaning frames around windows. The term is the same as "window washing;" it only sounds zippier. The writer of this material "washes" dishes, but "cleans" windows. The term used is of little consequence provided the window is cleaned or washed well.

- **Brushing or wetting**

The term used to describe the action of putting water on or scrubbing the window glass.

- **Rubber**

The squeegee rubber as defined in the “Tools” section. Rubber comes in different lengths and types.

- **Notching**

Cutting a very small part of the corners off a squeegee rubber. This makes it track better on the edges of window glass set with rubber caulking strips. This is proposed to reduce detailing. Notching is especially helpful when cleaning aluminum combination storm windows. Not every window cleaner “notches”.

- **Squeegeeing**

The term used to describe the action of removing the water from the glass with the tool called the squeegee.

- **Fanning or snaking**

The terms used to describe the serpentine movement many window cleaners employ when removing the water from the glass with a squeegee. See Techniques

- **Cutting**

The term used to describe the action of pulling water away from the tops or sides of the window. This is done by tilting the squeegee at an acute angle to the horizontal at the top, or the vertical at the side with one end of the squeegee in contact with the glass at the window frame. The squeegee is moved back and forth

across the top of the window to pull the water away from the frame. Then poling the window can be done with less chance of leaving water at the top to run down or "tear." This motion can be done on the side of windows when squeegeeing straight across the window and not fanning.

Cutting is also a technique used when cleaning French windows as it can greatly reduce the need for detailing.

- **Poling**

The defining term for the use of the pole and squeegee together to remove the water and cleaning solution. This is usually done in a straight down motion starting from one end of the window and progressing to the other. On large plates it is best to pole down to about eye level for greatest efficiency, then finish squeegeeing the plate by hand. The expert window cleaner will develop the skill of cutting and fanning a plate while using the squeegee and pole to a place where the squeegee can be removed from the pole with no interruption of motion and the squeegeeing completed by hand. It is the most efficient technique when poling.

- **Runnies, or tears, as in crying**

Undesirable water left behind by the squeegee at the top of a window when poling. This water will run down and leave ugly reminders or hack marks when dry.

- **Breakaways**

Undesirable water left behind by the squeegee at the edge of the window. This water will break away from the edge and run across the window leaving a hack mark when dry. This occurs more readily on windows with the glass set in tube caulk or rubber caulking. Beads of water hang up on the caulking, run down the sides of the window and can break across the glass at some point in their journey. "Detailing" these windows is usually necessary to avoid breakaways.

- **Detailing**

Using a chamois or cloth to remove "runnies," "tears," "hack marks," "breakaways" or any water left behind that collects around stickers on doors, painted signs on window glass, etc. Detailing is an essential part of the complete job in quality route/residential window cleaning. Proficiency with the squeegee can reduce the time spent "detailing."

- **Scraping or Blading**

Removing tape, paint, and other stubborn debris like bug residue, which wetting or brushing does not remove. This is done with a razor blade or a wide blade scraper. Same as "scraping" only "blading" sounds less abusive. Care should be taken to avoid damaging the glass when "blading" or "scraping." "Blading" should only be done on wetted glass. It is best to blade in one direction. Small particles of sand or grit can become caught on the bottom side of the blade causing fine scratches on the glass if the blade is pulled backwards while on the glass. By "blading" in only the forward motion, lifting the blade off the glass with each repetitive motion so that the grit is left behind, the possibility of damaging the glass is greatly reduced. There are window cleaning horror stories of damage to glass from improper "blading" or wrong use of cleaning materials. The horror of these stories usually involves a window cleaner paying for damaged glass. See "Glass" and "PCU's" in this section.

- **Post Construction Cleanups**

This term that defines the activity of cleaning windows after construction. This activity usually involves lots of "blading." This is the activity where the window cleaner's knowledge of glass can be helpful. If done improperly, construction cleanups can be destructive to glass surfaces. It is always best to get the window manufacturer's recommendations for cleaning. While most glass manufacturers recommend cleaning the glass upon installation and then protecting the glass from the hazards of the construction process, some types of glass have a specific method of cleaning. However, certain types of tinted glass carry specific methods of cleaning. Some window cleaners use only a brush to apply the cleaning solution to the window in the post construction cleanup process. Always apply a cleaning solution to the window before beginning work on removal of debris.

Test in a small area in a corner of the glass before “scraping” or using abrasives or caustics. Consult the experts for know how and always consult the installers of the glass for cleaning specifications if you are unsure. Construction cleanups take three to four times longer in time than routine window cleaning.

Window cleaners should know that insurance companies won’t cover or pay for scratched glass because they believe that window cleaners are in control and should have taken appropriate precautions.

- **Sponge, chamois and shine**

A technique used to clean smaller windows like storms or French panes. The water is applied to the glass in modest amounts, removed with chamois, and then the glass is shined with the cloth, or towel. While this technique is not used widely, it is good to know how to do it. It can come in handy in some places.

- **Soap**

The chemical product used in the water to act as a wetting or cleaning agent to accommodate cleaning. Most such products are more accurately defined as detergents but the term “soap” persists. There are chemical solutions specifically prepared for cleaning windows. Their use is highly recommended mainly because glass is transparent and any solutions or chemicals need to consider that.

## **Duties Of The Window Cleaning Contractor**

- To provide window cleaning and safety equipment which meets all regulatory standards and is regularly inspected and maintained in safe working condition.
- To insure that all services are performed according to Federal, State and Local Regulations including labor laws.
- To maintain a valid Safety Program. This should include documented training, re-training and any related information.
- To prohibit all window-cleaning operations when adverse conditions may affect the safety of the worker, workers or the public. (i.e. inclement weather, unsafe building, etc.)
- To uphold the Code of Ethics of the International Window Cleaning Association (IWCA)
- To provide any person or person's contracting their services, with proof of the following;
  - a) Adequate liability and workmen's compensation insurance in accordance with Federal, State or Local regulations.
  - b) Compliance with Federal, State or Local licensing and/or registration requirements.
  - c) That all subcontractors used maintain a legal business and are adequately insured.

## **Duties Of The Employee**

- To follow all guidelines set forth by the employer.
- To become proficient in the use of all window cleaning and safety equipment which they are expected to operate.
- To attend all Safety and Training programs offered by the Employer
- To use all equipment for its intended purpose only and to report any damaged or worn equipment immediately

# Supervising Safety

The basic responsibility for ensuring occupational safety and health on the job belongs to the supervisor. To accomplish this, the supervisor must first understand the factors that influence accidents.

## Environment

The physical layout of the work area should be designed in a manner that ensures employees' safety. Job procedures and tasks should be specified with safety in mind to prevent employee injury. The work process must be orderly without undue obstacles.

## Equipment

The right tools must be matched to the task at hand. In addition, tools and equipment must be well maintained and periodically inspected. Consider the relationship of the worker and their equipment.

## Employees

Employees must be trained how to do their jobs properly. They should be assigned to tasks that they are capable of performing. The environment and equipment can be relatively easy to identify and correct, when necessary. It is the people factor that is most difficult.

## Why do people take safety risks ?

Generally, people take safety risks to save time and effort. They do this because in the past, accidents have not occurred when taking that risk. As a result, the unsafe behavior was “rewarded”.

## Why is it important not to take risks ?

If you take risks enough times, eventually you may become seriously injured. The laws of probability make it inevitable.



For every lost time accident, there is an even larger number of accidents which require first aid or medical treatment. All of these accidents, despite their consequences, are a result of an even greater number of unsafe acts. The higher the number of unsafe acts, the greater the likelihood of accidents requiring medical treatment and the greater the chances of lost time accidents.

By simply reducing the number of unsafe acts, the number of accidents throughout the workplace can be reduced.

In order to reduce unsafe acts, it is important to focus attention on employee behaviors and not on employee attitudes.

# Attitudes and Behavior

## What is the difference between attitudes and behaviors ?

Attitudes, like feelings, occur internally. Behaviors, however, are observable actions.

Supervisors should focus on behaviors because they can be seen and, therefore, are easier to change. Attitudes are more difficult to identify and, therefore, are more difficult to change.

Traditionally, many safety programs have tried to change attitudes through slogans, poster, or incentive programs. This is difficult because we can only guess what a person's attitude is, since it can not be seen.

In time, as people become accustomed to behaving in a certain way, their attitudes will tend to change.

## Behavior Modification

The techniques a supervisor can use to modify behavior of workers involves modeling, reward, and correction.

### Modeling

Modeling simply refers to any means by which you demonstrate the proper technique to do a job. Modeling occurs when people behave in a way that other people can imitate. The supervisor should set a good example.

Supervisors day-to-day actions are observed by the employees they work with and it is from those actions that employees should learn to work safely. However, when they see you by pass a known safety procedure, you have sent a mixed message. You said one thing, but did another. In this instance, two wrongs do not make a right.

### Rewarding

Rewarding a desired behavior will make it occur more frequently. Rewarding employees for performing a task correctly is the best method to use to improve safety. Tell them when they do a good job, which includes not only the completion of the task, but the safe performance of it as well.

### Correction

Follow these steps to correct unsafe behavior

- Identify the unsafe act or condition you see.
- Inform the employee of the correct method you want used.
- Check to be sure that the employee understands the required change in behavior.



- Emphasize the importance of the employee's safety to you and the company.

## **Attitudes versus Behavior**

Attitudes are internal and difficult to assess. Behavior is an observable action. Remember, unsafe behavior does not just happen. As a supervisor, you make the difference between a safe workplace and one that is unsafe. You influence the behavior of those people under your direction. And through your influence you can in fact, manage their behavior. A constant management of behavior will eventually affect an attitude.

## **Think Safety by Planning Ahead**

Risk and hazard in window cleaning is usually associated with the high rise industry. However, statistics bear out that more accidents occur with ladders than any other piece of window cleaning equipment. Accidents with ladders usually are devastating, many times resulting in loss of life or permanent injury. These accidents are always attributable to the misuse of the ladder or poor judgment by the person involved in the accident.

While misuse of ladders is a source of accidents, window cleaners have also been injured falling over their own bucket or slipping in water they left on the floor or by getting tangled up with their pole resulting in a fall. Residential and route window cleaners have lost their lives because they did not fully understand the physics of high voltage electricity and the arc distance of electricity.

Customers of window cleaner clients have slipped on water or stumbled over unattended equipment or have been hit by the end of a window cleaning pole. When cleaning windows on busy sidewalks, inattentive window cleaners have caused injury to pedestrians. The landscape of window cleaning is cluttered with cases of accidents stemming from a disregard for the window cleaner's personal safety and a disregard for the safety of others in that landscape.

There are also as many stories about window cleaners damaging property of others as there are window cleaners. Mistakes happen, windows are broken or flawed, merchandise soiled or spoiled, house siding dented or marred, unattended ladders or extension poles blowing over in the wind onto automobiles or into neighboring windows. The reasons for practicing safety then, are twofold, to protect the window cleaner and employees from pain and suffering and the anguish of lost time and money, as well as protecting the property and customers of the clients the window cleaner serves.

There is no such thing as an unavoidable accident. The most important element in making those accidents avoidable is attitude. The window cleaner must develop a total safety consciousness. Total time lost because of taking chances that result in death or injury far overshadows the time gained from taking those chances. No hard working, success driven window cleaner will start out their day with this thought in mind, "Well, I guess I'll go injure myself today!" or "I wonder what I can do today to cause pain and suffering to my employees?" or "What careless act can I do today to cause my best customer to be sued in a court of law?" Of course not! But by not thinking safety and planning for safety, the result might be the same.

When we take chances we need to consider how many people we are putting at risk, our self, our family, our clients, their customers and sometimes pedestrians. One might conclude that life is full of risks, which may be true, but may we also conclude it is the management of risks that leads to a safety consciousness? Safety education can help us better understand the full consequences of our actions. The IWCA strongly recommends safety training for all aspects of window cleaning. The first rule of safety is

simple: “Do not take chances with your life and the life of others!” The second rule is to use education and training so unsafe practices can be recognized and avoided.

The basic responsibility for ensuring occupational safety and health on the job belongs to the supervisor. To accomplish this, the supervisor must first understand the factors that influence accidents as explained in the Supervising Safety section.

## Access Equipment

The ladder is an essential tool for the route and residential company. See the Ladder Safety section of this publication. This section is required reading for anyone interested in starting a window cleaning business. There are more fatal and serious-injury accidents involving ladders than any other piece of window cleaning equipment. Choose your ladder carefully and learn about the proper, safe use of that ladder. A good rule of initial safety is buying the best, strongest ladder.

## Extension Ladders



Extension ladders are popular provided that a high-quality ladder is selected. Probably the ladders sold at the discount stores will not withstand the rigor of everyday use. A good ladder is an insurance policy towards an extra degree of safety. The extra money paid for a high-quality extension ladder spread over many years of use becomes insignificant but the extra measure of safety a high-quality ladder provides is not insignificant. Builder’s ladders, also called progressive sectionals, or stack ladders, all of which are commonly referred to as “window cleaner ladders,” are very popular among experienced window cleaners. These ladders come in six-foot sections that slip together to achieve the height desired. Each set of ladders has a top section, a bottom section, and two or three middle sections. Extra middle sections of different lengths can be purchased. Sectional ladders cost more than extension ladders of the same length but this ladder is extremely versatile, easier to handle and transport than extension ladders.

## Stepladders

Stepladders or portable work platforms are critical to the residential window cleaner. Caution on the side of safety is asked again. Be aware that the stepladder is the most dangerous tool in any household. Pick a stepladder for strength and stability and be educated in the safe use of that ladder. It is a good idea to have several sizes of these ladders.

## Other Equipment

Truck or van: Because of the extra equipment like ladders, step ladders, long poles, etc., the residential window cleaner might want to start their business with a small pickup or an enclosed van. It is probably a good idea to get signs identifying the company for the sides of these vehicles.

Drop cloths and throw rugs also make up necessary equipment additions. It is essential when offering a quality service to protect the homeowner’s property. It is an unhappy occasion when, because of carelessness,

a window cleaner might have to pay for the cleaning or replacement of carpeting or furniture. Painter's drop cloths, the fabric kind usually made of lightweight cotton canvas, work nicely. Some builder supply stores have rather large, lightweight doormats. These mats are rubber backed and have highly absorbent fabric on the topside. These can be rolled up, fastened in the roll by a bungee cord and easily transported. These mats work out well to protect floors when cleaning windows on the inside and can be easily moved from window to window. These mats can also be hung up in the car wash and power washed when necessary. One can conduct an experiment to do to determine how much dripping there is from your equipment. Put down some brown paper or colored bed sheets that show water easily on the floor in a controlled situation, such as your own home. Now clean some windows and try to be as careful as you can possibly be and see how much you still drip. Drop cloths are essential!

## **SAFETY GUIDELINES**

### **Basic Safety for Window Cleaners**

1. Window cleaning shall be prohibited when the window cleaner's work area is exposed to excessive winds. Excessive winds are considered to be any wind, which constitutes a hazard to the worker, public or property.
2. Fall protection, perimeter guarding, personal fall arrest systems or a personal fall restraint system (as applicable) shall be provided for all work areas (with the exception of working from a ladder supported at grade or using a window cleaner's belt and window cleaner's belt anchors) that expose a worker to a fall hazard when approaching within 6 feet (1800 mm) of an unguarded edge or unguarded skylight. The means or methods used shall comply with industry standards.
3. When equipment used to access windows is suspended over or erected near an area traversed by workers, the public or vehicular traffic, warning signs shall be positioned below and the ground area directly under or adjacent to the work zone shall be effectively blocked by means of barricades. A competent person shall determine if additional means of protection are necessary.
4. Unprotected, energized electrical lines or equipment shall not be contacted with tools or equipment. A minimum safe distance is no less than 10 feet (3 m). If unsure, the power company should be consulted.



### **Specific Guidelines**

1. Reaching out to clean a window may be done only if the following criteria are met;
  - a) the window can be safely accessed;
  - b) all the glass surfaces can be cleaned with only one arm (the part of the body below the worker's shoulder) of the window cleaner extended beyond the outermost glass plane when his or her feet are firmly on the floor or safe working surface without the use of a ladder or other access device;
  - c) the height of the sill prevents the worker from falling through the opening;
  - d) the window and all its appurtenances are sound and in proper working order;

e) the worker is protected from falling through the opening, in a manner that complies with industry standards.

2. Workers should not place any body weight on the window or window frame while reaching out to clean.

3. Workers should not walk or place body weight on any overhead glass in a skylight or atrium. Walking on the framework is acceptable if it has been designed for such loading. Proper personal fall protection shall be engaged along with appropriate danger signs and barricades.

4. If the cleaning process produces excess water it is the workers responsibility to remove it immediately and place appropriate danger signs.

5. When performing window cleaning on or around a public entranceway, extreme care shall be taken. Proper danger signs should be in place.

6. When working on the inside of a building the worker should store their bucket and all tools out of the way of public traffic.

7. When using extension devices of any kind extreme care should be taken while working around electrical lines or devices. Unprotected, energized electrical lines or equipment shall not be contacted with tools or equipment. A minimum safe distance is no less than 10 feet. If unsure, the power company should be consulted. Proper danger signs should be in place if the extension devices are longer than 20 feet. When an extension pole or device is used while working on or from ladders, platforms or suspended access equipment near areas traversed by the general public, tools, attachments and the pole itself shall be secured to prevent them from falling.

8. Window cleaning should not be performed on any exterior window sill or working surface without either proper fall protection or personal fall protection.

9. Any areas of a job site which have been labeled as dangerous by the building owner or manager should be avoided until access has been determined as safe.

10. Any window cleaning company, which also provides pesticide control, shall do so according to Federal, State and Local regulations.

11. When chemicals are used for window cleaning it shall be the employers' responsibility to establish a written hazard communication program complying with OSHA 29 CFR 1910.1200, and to adequately train and provide all information to employees that will be working with the chemicals. Hazardous or corrosive materials shall not be used in the course of window cleaning when they may endanger the health and safety of the worker or may affect the safe operation of the equipment.

When hazardous or corrosive materials will be utilized in the course of window cleaning, the employer will consult with qualified persons regarding the chemical agent's compatibility with the window cleaning apparatus and safety systems. To determine compatibility, laboratory testing may be required.



Employees that will be subjected to working with hazardous or corrosive chemicals shall use personal protective equipment in accordance with the chemical's "Material Safety Data Sheet" (MSDS) and in compliance with OSHA 29 CFR 1910.134 through 1910.136.

### **EQUIPMENT THAT SHALL NOT BE USED FOR WINDOW CLEANING**

1. Portable Sills.
2. Window Jacks

### ***General Safety Do's and Don'ts***

- Be committed to safety education for yourself and for employees.
- Always work with your bucket between you and the window, preferably up close against the building.
- Never place your bucket in the pedestrian walkway, in front of a door or the middle of the sidewalk. The customers of the client are more important to that client than the window cleaner. Blocking entrances while working will be frowned on and can cause safety problems.
- If a pole must be left unattended lay it down against the building behind the bucket. Round things like poles roll and can cause horrible injuries when stepped on by the window cleaner or a passerby. Poles leaned up against the building can blow over in the wind or can be stepped through by a pedestrian not watching where they are going.
- When using long extension poles, firmly affix tools to the pole.
- When cleaning in heavy pedestrian traffic areas display, "caution" signs.
- If work must be done on pedestrian busy sidewalks, choose the shortest pole possible for the work to be done; all of the pole should be between the window cleaner and the window; squeegee down to eye level with the pole and hand squeegee the rest. Long extension pole work should be done during off peak traffic times.
- Be aware and beware of electric lines overhead when using long extension poles. Learn about the arcing ability of electricity. Most electric lines in urban areas are shielded but never assume this. Find out! Contact with high voltage electricity is instant death! The arc distance of high voltage is up to ten feet!
- When cleaning windows on a sloping sidewalk hillside, work from the low side to the high side. This will reduce the chance of falling.
- Clean up excess water on floors for the safety of the window cleaner as well as others.

- Caution! A long squeegee in a squeegee holster is a sweeper of items off tables in restaurants, off desks in offices, produce in grocery stores. It can catch in doors, in peoples clothing, in shopping carts, etc.
- Neon signs are high voltage devices. Turn off electricity at the source, not on the sign.
- Learn about what chemicals can be safely mixed. Read MSD sheets provided by manufacturers of cleaning chemicals. These sheets should be posted in your office and copies carried in all vehicles, as OSHA requires this information to be posted at all job work sites. If you have employees make sure they are made aware of the MSDS information. Ammonia and certain detergents are incompatible. Know the health hazards and side affects of alcohol used in cold weather window cleaning.
- If ladders are used, attend a ladder safety course. Do not assume existing knowledge is sufficient. Applying knowledge of side loading and stress point dynamics can prevent serious accidents. See Ladder Safety Section
- Make sure all equipment is in good serviceable condition.
- Practice, teach and demand safe driving!
- Learn and think safety
- Reward employees for safe work habits.
- Carry adequate insurance to protect company, customers and employees.

## CHEMICAL USE

### **Hazard Communication**

This section deals with some of the danger involved in the window cleaning industry. Primarily, one can envision that most of the danger lies within falls from elevations. This is typical, however, in this day and age and new concern is abound in just about every industry as well as ours.

This concern is the use of chemicals in the workplace and regulations have come about recently that will keep this concern to a minimum.

Before chemicals are introduced into the workplace, special considerations must be made, such as: training, handling, storage, transportation, health hazards and emergency measures. The use of chemicals in any work place is one of the hottest global topics today, and the following information will assist you in meeting compliance with the current regulations.

The use of common sense is usually all that is needed to identify the material to be removed from the window or architectural surface.

When dealing with water stains, a water sample can be taken and tested for minerals or other ingredients to aid you in choosing the proper chemical for removal of the stain. The trial and error method works as long as you choose an inconspicuous area of the window.

If you are removing stains or foreign materials from a building surface, the chemical you choose may produce an unwanted chemical reaction with the material you are trying to remove. Some reactions are dangerous fumes or heat that can injure workers or damage the building surface.

Choosing the correct chemical is critical. The manufacturers of exterior building materials may not tell you how to remove the foreign substance from their product, but they can provide you with name or names of chemicals that are not to be used. This valuable information may prevent you from using a chemical that will not only remove the foreign material from the surface but the surface itself.

A window cleaner needs an education of the following before any chemicals are used:

1. **The type of foreign material or residue to be removed**
2. **The reaction the chemical will have on the material/residue**
3. **The composition of the surface that the material/residue is to be removed from**
4. **The affect the chemical may have on the person using it [if exposed]**
5. **The affect the chemical may have on the environment [if exposed]**

### **The Importance of Reading a Label**

Labels on chemicals you may use for window cleaning, come in many formats. Some labels use words to describe the hazards, and some use number and colors to help you quickly identify the kind and degree of hazard the chemical could present.

## **ALWAYS READ THE LABEL FIRST**

Always read the label before you move, handle or open a chemical container. It has a lot of valuable information and instructions.

### **A Label Will Tell You:**

- The identity of the chemical-the common name, the chemical name or both. If the substance contains more than one chemical, they will all be listed.
- The name and address of the company that manufactured or imported the chemical.
- The chemical's physical hazards. (What might happen if you handle it incorrectly)
- The chemical's health hazards. These are the possible health problems that could result from overexposure.
- Some labels include important information on storage and handling instructions.
- Basic protective clothing, equipment, and procedures that should be used when working with the chemical are usually listed.

## **Material Safety Data Sheets (MSDS)**

The Material Safety Data Sheet (MSDS) is often called the key to hazard communication. The MSDS is the one place where you can find all the important information on the chemical. (Labels contain a lot of useful information, but because of their small size they can't provide all the information you may need to stay safe.)

MSDSs do not have to follow any specific format. But they all have to provide the same kinds of information. OSHA's recommended MSDS format is most widely used and is the one the IWCA recommends. The MSDS is divided into eight sections.

Important: Always be sure that you are using the latest version of an MSDS.

### **THE MSDS- SECTION BY SECTION**

The MSDS will first tell you the identity of the chemical. This will include the product name and the common name of the material. The identity must be stated exactly the same as on the label.

#### **Section 1-Supplier's Information**

Section 1 tells you:

The name, address, and phone number of the company that makes the chemical; and

The date the MSDS was prepared.

#### **Section 2-Hazardous Ingredients/ Identity Information**

Section 2, Hazardous ingredients, identity, information, lists:

Hazardous components of the chemical, including mixtures, by their scientific and common names.

Safe exposure limits for workers will include OSHA's Permissible Exposure Limit (PEL). The American Conference of Governmental Industrial Hygienists' Threshold Limit Value (TLV) is another common limit listed.

The only time you won't see the exact chemical components listed here is if the chemical is a manufacturer's "trade secret". The exposure limits and other hazard and safety information still have to be provided. And even trade secret identities must be given out in certain circumstances.

#### **Section 3-Physical/Chemical Characteristics**

Section 3, Physical/Chemical Characteristics, may look very scientific, but the information in the section is actually very basic and important. It tells you what conditions will change the chemical's form, which could affect the type and degree of the chemical's hazard.

Example: A chemical with a very high vapor pressure probably needs to be treated differently than one with a low vapor pressure. A high vapor pressure, which means the chemical evaporates quickly, will require better ventilation, and possibly a respirator and other protective measures.

Here's what you'll find in Section 3:

- \* Boiling point and melting point;
- \* Vapor pressure, vapor density, and evaporation rate; and
- \* Solubility in water and specific gravity.

This section also tells you how the chemical should look and smell under normal conditions,

### **Section 4-Fire and Explosion Hazard Data**

Section 4 of the MSDS, Fire and Explosion Hazard Data, is just what it sounds like. This extremely important section tells you:

- The chemical's flash point and its
- Flammable or explosion limits.

This section also tells you what to use to put out a fire started by the chemical, as well as any special hazards or firefighting procedures to be aware of.

### **Section 5-Reactivity Data**

Section 5, Reactivity Data, shows whether you need to be concerned about what could happen (the reaction) if the chemical is mixed with air, water, or other chemicals. It also explains what conditions and chemicals to keep it away from.

### **Section 6-Health Hazard Data**

Section 6, Health Hazard Data, delivers critical information to help keep you safe. It begins by telling you how the chemical could get into your body:

- Inhaling; and/or
- Swallowing; and/or
- Through the skin.

Then it tells you what health hazards could result from exposure to the chemical. These health hazards could be either:

Acute, showing up right after exposure

Chronic, taking a long time to show up.

There's also space in this section for symptoms of exposure, like headache or skin rash. The MSDS also tells you whether the chemical might aggravate an existing medical condition, such as breathing or heart problems. If the chemical is believed to be carcinogenic (cancer-causing), that's here, too.

The final part of the health hazards section is emergency and first-aid procedures to follow for accidental exposure to the chemical. You should always be familiar with this information, in case something goes wrong.

### **Section 7-Precautions for Safe Handling and Use**

In Section 7, Precautions for Safe Handling and Use, you'll find instructions for the correct way to handle, store, and dispose of the chemical. There's also information on what to do if the chemical spills, leaks, or is released into the air. Naturally, you need to know this information before you start the job.

Your company may have a standard procedure for handling the chemical, which takes into consideration the chemical's use at your workplace. Know your company's procedures and follow them.

### **Section 8-Control Measures**

The final section, section 8, is Control Measures. This is where you'll find out what type of protective clothing and equipment to use when working with the chemical. You'll also see what type of ventilation is called for and what work and hygiene practices-such as washing your hands after working with the chemical-you need to follow to prevent accidental exposure.

Again, your company may have procedures different from those listed in the material safety data sheet. If you're not sure what to do, ask your supervisor.

## **REGULATIONS**

In the past, any chemical hazards were fined by OSHA under the General Duty Clause, Sec. 5 (a) (1) of the Act. This worked well, however it was too broad. Recently, OSHA produced regulations that would cover every aspect of chemical use in it's CFR 1910.1200.

This is a very involved standard and at times difficult to understand.

Fortunately, the standard is available in pamphlet form and is titled: " Hazard Communication Standard " OSHA publication number 3084. Also available, " Hazard Communication Guidelines for Compliance " OSHA publication number 3111.

A brief summary of what your responsibility is under the Hazard Communication Standard is:

- To maintain a verbal and written hazard communication program for your work place.**
- To assure that all containers of chemicals are and remain properly labeled.**
- To implement a training program regarding the use of hazardous chemicals and protective measures.**
- To maintain a list of chemicals used in the work place and the MSDS for inspection by employees and customers.**

**[SAMPLE MSDS]**

**Material Safety Data Sheet**

May be used to comply with OSHA's 29 CFR 1910.1200. Standard must be consulted for specific requirements.

**US Department of Labor**

Occupational Safety and Health Administration  
(Non mandatory form)  
OMB No. 1218-0072

Identity (as used on label and list)

Blank spaces are not permitted and NA- not applicable must be used

**DAWN DISH DETERGENT**

Manufacturer's name, address, emergency phone number and date prepared.

Proctor & Gamble  
Ivorydale Technical Center  
Cincinnati, OH 45217

(800) 543-0485

February, 1990

**Section 2-HAZARDOUS COMPONENTS ( Specific Chemical identity, common name(s)-OSHA pel-Other limits**

Ethyl Alcohol	(Ethanol)	1900mg/m3	64-17-5
	<b>OSHA PEL</b>	<b>ACGIH TLV</b>	<b>% Optional</b>
			<b>CAS No.</b>

**Section 3-PHYSICAL/CHEMICAL CHARACTERISTICS**

<b>Component</b> DAWN	<b>Boiling point</b> unknown	<b>Vapor pressure</b> unknown	<b>Vapor density(air=1)</b> unknown	<b>Specific gravity(H2O=1)</b> 1.30 g/cc
<b>Melting point</b> N/A	<b>Evaporation rate</b> unknown	<b>Solubility in water</b> completely soluble	<b>Appearance and odor</b> clear blue liquid-perfumed	

**Section 4-FIRE AND EXPLOSION HAZARD DATA**

<b>Component</b> DAWN	<b>Flash point</b> 116 F Closed cup	<b>Flammable limits</b> ----->	<b>LEL</b> N/A	<b>UEL</b> N/A
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**Extinguishing media**  
CO2, water or dry chemical

**Special Fire Fighting Procedures**  
None. Although this product has a flash point below 200 F, it is an aqueous solution containing ethyl alcohol which does not sustain combustion.

**Unusual Fire and Explosion Hazards**  
None

**DOT Classification**  
N/A

**Section 5-REACTIVITY DATA**

<b>Component</b> DAWN	<b>Stability</b> Stable/Unstable Stable-----	<b>Conditions to avoid</b> None known
<b>Incompatibility(materials to avoid)</b> Chlorine Bleach	<b>Hazardous decomposition or by-products</b> None	
<b>Hazardous polymerization may occur [</b>	<b>] may not occur [ WILL NOT ]</b>	



## Ladders and Ladder Work

**SPECIAL NOTICE:** It is important to note that ladders, when used for window cleaning, do not afford fall protection to the user. With that in mind it is recommended that consideration be given to other methods before ladders are used for window cleaning.

Employees shall be trained in the use and care of ladders before they may be permitted to use such equipment. Training shall include but not be limited to understanding the manufacturer's instructions, inspection, correct selection of a ladder, proper assembly and disassembly, carrying, moving, climbing, descending and a full understanding of safe working conditions considering as a minimum, fatigue, slippery/wet surfaces and wind.

1. All window-cleaning ladders will be of approved design and are to be used for their intended purpose only. Ladders supported at grade shall not be used to clean a window whose top is more than 45 feet above the floor, adjoining ground or flat roof.
2. Ladders are to be inspected before and after each use. All damaged or excessively worn ladders should be reported immediately. They should be permanently labeled and taken out of service until repairs or replacements can be made.

NOTE: On section ladders, special attention should be given to inspecting the rubber feet or plugs, the yokes and rung assemblies, side rails, rungs, and rivets.

3. All repairs to ladders should be done by the manufacturer or according to manufacturer specifications.
4. Ladders should be used according to the manufacturer's specifications, Federal, State and Local regulations.
5. Ladders should be stored properly to prevent them from damage. If they are stored on or transported on exposed vehicle racks, they shall be properly secured and care shall be taken to ensure that prolonged exposure is not harmful. Wood ladders shall not be stored near radiators, stoves, steam pipes, outside or other places which are subject to excessive heat or dampness.
6. Assembled height of sectional ladders should not exceed the manufacturer's specifications. Stand-offs, put-outs or stabilizers shall be used on ladders when they are used to reach windows whose top is more than 35 feet above the ground, grade or work level.
7. Middle or top sections should not be used as a base section unless they are adequately secured or equipped with ladder safety shoes.
8. When using ladders, the horizontal distance from the base of the ladder to the wall should never be less than 1/4 of the ladders height in feet. When a worker is on a ladder over 37 feet long, an additional person shall stand at the foot of the ladder, face it and hold it with both hands.
9. Prior to using a ladder, the areas to be serviced shall be visually inspected and where necessary, appropriate measures shall be taken to ensure that building features, such as window ledges, frames,

entranceways and landscaping will not impair the safe climbing, descending and moving of a ladder. These areas should be noted in the plan of service.

10. Ladders or sections of ladders should not be connected or fastened to each other unless they are designed for that purpose.
11. All ladders must be leveled before climbing. The leveling device must be an approved or certified device.
12. The top portion of a ladder must be set securely against the building to insure that the bottom of the ladder will remain stable. No ladder shall be used to gain access to a roof unless the top of the ladder extends at least 36 inches above the point of support at eaves, gutter or roof line.
13. When ladders are being used on a slick surface the base of the ladder should be secured.
14. Ladders should not be used on extreme slants or angles.
15. Ladders should not be placed on unstable objects in order to gain more height, nor shall they be placed in front of doors unless the door is blocked open, locked or guarded.
16. If a hook ladder is being used, the ladder should be tied back to an adequate anchorage. The worker should be equipped with a personal fall protection system. The lifeline should be anchored independently of the ladder and its tieback.
17. Extreme caution should be taken when using ladders around electrical lines or devices. It is recommended that metal or metal reinforced ladders not be used around such areas.
18. When ascending or descending the ladder, the user shall face the ladder. When working on the ladder, the user shall face the ladder and the center of their torso shall not extend past either side rail of the ladder. Over-reaching is strictly prohibited. When using ladders the worker should wear adequate supportive footwear.
19. The top rung of any ladder should not be used for support. While working from a ladder, the worker shall not stand above the 3rd rung from the top of the ladder and shall keep the center of their torso between the side rails of the ladder. The uppermost resting point (fulcrum) of the ladder must not be below the second rung from the top of the ladder at any time when a person is working on the ladder.
20. Ladder work should be discontinued when wind speeds or other weather conditions may affect the safety of the worker or public.
21. Whenever performing ladder work on or around public areas, proper danger signs and barricades should be in place.



## *Duty Rating of Ladders*

Ladders are designed and constructed to safely hold up to a specific amount of weight. The Duty Rating is defined as the maximum safe load capacity of the ladder. A person's fully clothed weight plus the weight of any tools and materials that are carried onto the ladder must not exceed the Duty Rating.

The Duty Rating is the maximum safe load capacity of the ladder. Duty Ratings are described in terms of pounds. Please refer to the chart below for understanding what each Duty Rating is applied to. As a professional window cleaner, industrial and extra heavy duty industrial ladders are the preferred choice.

<b>Duty Rating-</b>	<b>200lbs.</b>	<b>225lbs.</b>	<b>250lbs.</b>	<b>300lbs.</b>
<b>Type-</b>	<b>III (3)</b>	<b>II (2)</b>	<b>I (1)</b>	<b>IA (1A)</b>
<b>Use-</b>	Household	Commercial	Industrial	Extra Heavy Duty Industrial

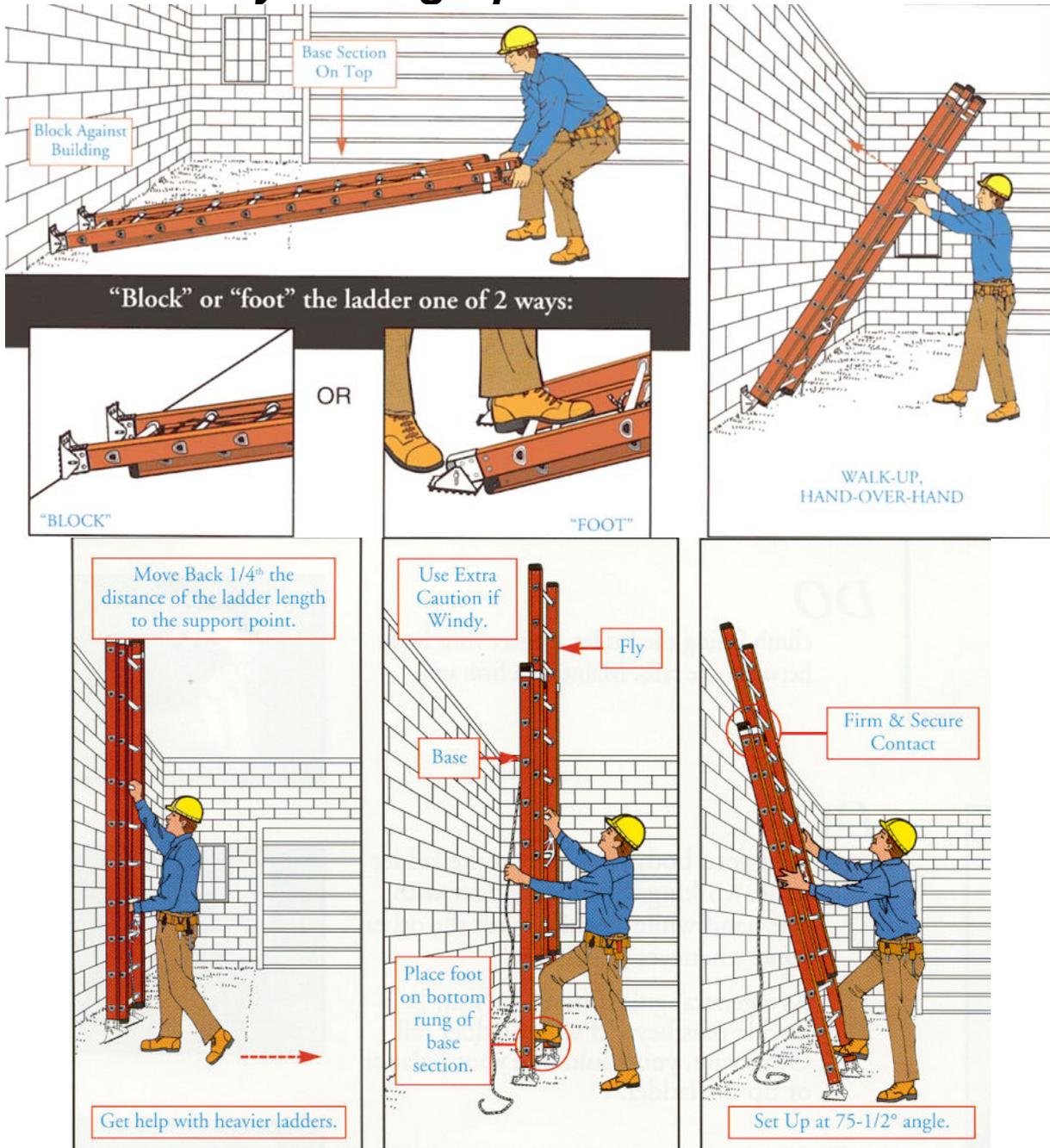
**Duty Rating = Load Capacity**

**Weight of person + Tools, Clothing & Materials must  
NOT EXCEED DUTY RATING.**



**ANY LADDER YOU USE SHOULD HAVE A STICKER ON IT IDENTIFYING WHAT THE DUTY RATING OF THE LADDER IS. BE SURE AND LOCATE THIS STICKER SO THAT YOU KNOW THE DUTY RATING OF THE LADDER BEFORE USING IT.**

# Correctly Setting Up an Extension Ladder



1. Lay the ladder on the ground at the point on the building where it will be erected. Make sure that the base section of the ladder is up and the extension fly is on the ground.
2. Block the ladder using the building or have a co-worker stand with one foot on the bottom rung and one foot on the foot of the ladder.
3. Lift up the top section of the ladder using both hands and to your highest point of reach.

4. Working hand over hand, push the ladder toward the building until it is raised to a point where it can be rested against the building.
5. Lift the base of the ladder and move it away from the building to a point no farther than 1/4th the ladders height.
6. Extend the ladder using the pre attached rope and pulley system making sure the ladder locks correctly into place before climbing.

## **OSHA REGULATIONS & ANSI STANDARDS**

### OSHA (Occupational Safety and Health Administration)

**LADDERS-**

**OSHA CFR 29-1910.25 THRU 1910.26**

**OVERALL EMPLOYEE SAFETY AND CHEMICAL USE-**

**OSHACT,OSHA-CFR29-1910.1200[HAZ-COM]**

To obtain copies of the entire Codes of Federal Regulations as listed, contact 1-202-783-3238. They are also available from their website at [www.osha.gov](http://www.osha.gov). A complete list with links directly to the previously mentioned regulations can be found at the IWCA website at [www.iwca.org](http://www.iwca.org).

### ANSI (American National Standards Institute)

**LADDERS**

**ANSI/IWCA I-14.1**

**OVERALL EMPLOYEE SAFETY**

**ANSI/IWCA I-14.1**

**HARNESSES,LANYARDS,LIFELINES**

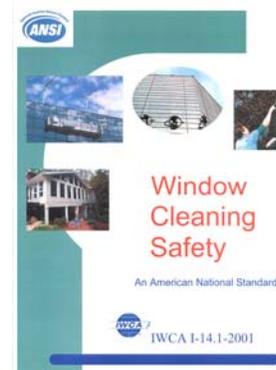
**ANSI/IWCA I-14.1  
ANSI Z-359**

**CHEMICAL USE**

**ANSI/IWCA I-14.1**

To obtain ANSI Standards, call 1-800-843-2763  
Their website is: [www.ansi.org](http://www.ansi.org)

To obtain the ANSI/IWCA I-14.1 Window Cleaning Safety Standard, call 800-875-4922. Their website is: [www.iwca.org](http://www.iwca.org)



# **END OF ROUTE/RESIDENTIAL STUDY SECTION**