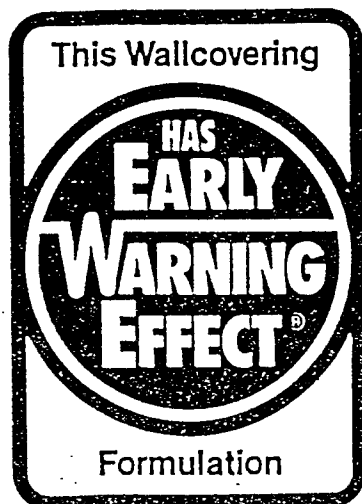


Early Warning Effect® Formulation

Koroseal® Wallcoverings

Life Saving Wallcovering



Koroseal Wallcoverings has developed a "smart" vinyl wallcovering that gives off an Early Warning Effect® when it "senses" a fire before the fire ignites. This can save lives by giving people extra time to leave a room before there's smoke or open flames.

The life-saving time made possible by this Early Warning Effect can vary from only a few seconds, in the case of a fast moving fire, to as much as a half hour or more when the heat of an impending fire is slowly building in intensity.

This Early Warning Effect works when as little as one (1) square foot of Koroseal vinyl wallcovering* is heated to about 300 degrees Fahrenheit – well below the ignition point of most common room materials. At that point, the vinyl wallcovering gives off an odorless and colorless vapor that will set off the alarm on an ionization-type smoke detector.

Consumer Reports magazine recently ran an article that claimed that more than 85% of the commercial smoke detectors installed in the U.S. are ionization-type.

Several years of research into the ionization effect of heat on various materials led to this discovery by the Koroseal Research and Development laboratory in Brecksville, Ohio. The efficacy of the Early Warning Effect was demonstrated recently in a series of tests conducted by an independent laboratory in Texas.

This Early Warning Effect formulation can be found in almost all of Koroseal vinyl wallcoverings.

Some Questions and Answers About the Koroseal Vinyl Wallcovering Early Warning Effect

Q. How does the Early Warning Effect work?

A. If you heat a one square foot section of Koroseal Vinyl Wallcovering to 300 degrees Fahrenheit, it gives off an odorless and colorless vapor that will trigger an ionization smoke detector alarm.

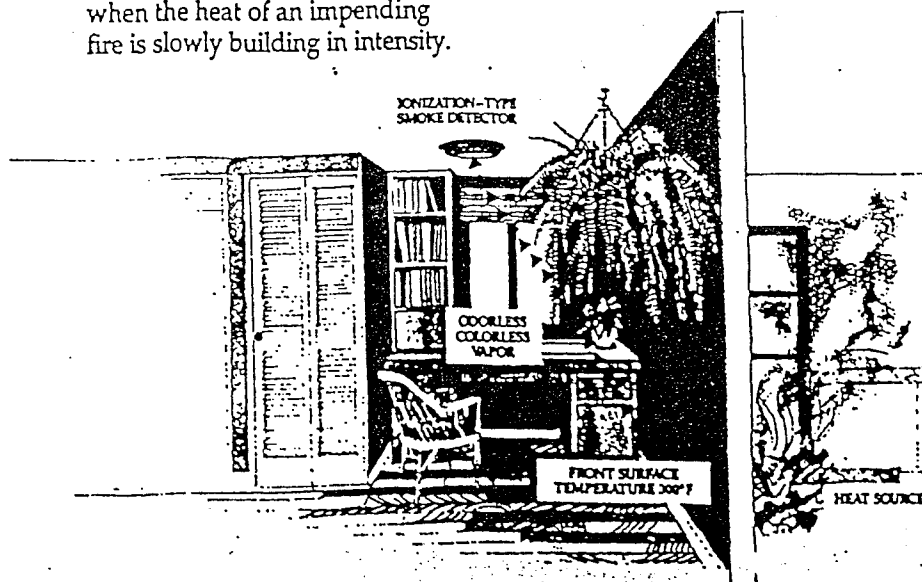
Q. How does 300 degrees Fahrenheit compare to the temperature it takes to start a fire?

A. 300 degrees Fahrenheit is well below the temperature needed to ignite most common room materials. Here are some examples of the ignition temperatures of most common materials:

Materials	Degrees, F.
Paper, Newsprint	445
Cotton	490
White Pine, Shavings	500
Polyethylene	660
Polyurethane Foam, Rigid	780
PVC	850
Nylon, Fiber	990

Q. What are ionization-type smoke detectors and how common are they?

A. Ionization-type smoke detectors utilize a low-level radiation source to generate a beam that can be interrupted by charged particles. It is the single most popular smoke detector on the market today.



*Except Tiffany Suedes, Surface, or Fresco

A recent *Consumer Reports* article estimated that 85% of the commercial smoke detectors in use today are ionization-type.

Q. How would I know if my smoke detectors are ionization-type?

A. Take the smoke detector off the wall or ceiling and examine the backside of it. If it is an ionization-type, there will be the symbol for radiation prominently displayed on the back. (The radiation symbol looks like a three-bladed propeller.)

Q. Will the Early Warning Effect detect a fire in a wastebasket or a cigarette smoldering on a bed or a couch?

A. No, the Early Warning Effect detects heat only. It does not detect smoke or open flame. The normal operation of an ionization-type smoke detector installed according to manufacturer's instructions should handle smoke or open flame situations.

Q. How far away can the smoke detector be and still function with the Early Warning Effect?

A. As long as the smoke detector is installed according to manufacturer's instructions, the Early Warning Effect will function. Most manufacturers call for a smoke detector for every 900 square feet of room space.

Q. Will air conditioning or heating systems interfere with the Early Warning Effect?

A. Under normal conditions, a functioning air conditioner or heater will have no significant effect. It is important to note that air currents in a room will affect the flow of any vapor. The air currents from normal heating and cooling operations will probably help the Early Warning Effect work more effectively.

Q. Does a Tedlar* coating or an ink wipe interfere with the Early Warning Effect?

A. Neither Tedlar coatings nor ink wipes have a significant impact on the working of the Early Warning Effect.

Q. In what kinds of situations will the Early Warning Effect work to warn people of an impending fire?

A. A pretty wide variety of situations. It will be especially valuable in bathrooms where an occupant has left a wall-hung hairdryer running or a curling iron running until it overloads and heats the surface it's on to its ignition point. Or in a situation where there's a fire on the other side of the wall and the occupants don't hear the other room's smoke detector alarm. Or when a through-the-wall heating/cooling unit short circuits or there's an electrical fire in the wall. There are more, but this gives you the idea.

Q. Could sunlight pouring down on this wallcovering set off the Early Warning Effect?

A. No, not under any normal circumstances even if the wallcovering is used in a light well or an atrium situation. Unfocused or unmagnified light simply cannot raise the temperature of the wallcovering enough to trigger the Early Warning Effect.

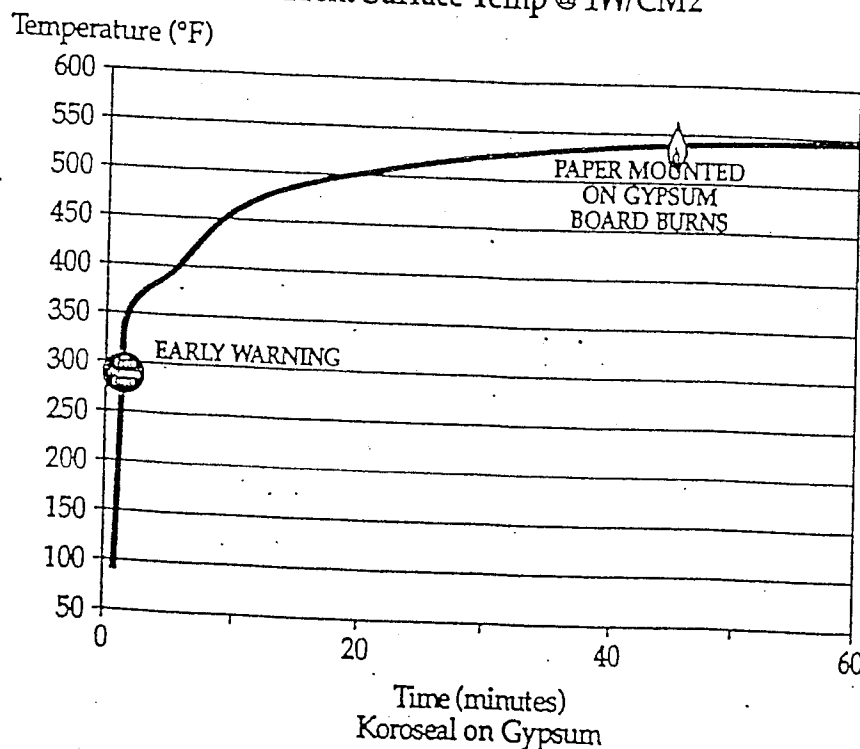
Q. Could we just use Koroseal vinyl wallcovering on an accent wall and still get the Early Warning Effect?

A. Yes, provided the source of the heat occurs in or on the front or back of the wall covered by Koroseal vinyl wallcovering. If the heat source involves a different wall, the Early Warning Effect will not be engaged.

Q. What is it in the formulation of Koroseal vinyl wallcoverings that makes the Early Warning Effect work?

A. We're sorry, but the formulation of our Early Warning Effect must remain proprietary information.

Front Surface Temp @ 1W/CM2



This chart shows how Early Warning Effect formulation acts over a given time period with a steady flow of heat. This is not typical of a fire environment as no two fire situations are alike. However, it does give you some idea of how EWE can work.

*Tedlar is a registered trademark of E.I. duPont de Nemours & Co. (Inc.)

(c) For new drywall construction, manufacturer's recommended primer should be used before application of wallcovering for ease of future removal when redecorating.

(d) Glossy surfaces shall either be sanded to dull the surface, or a coat of manufacturer's recommended primer applied prior to installation of wallcovering.

(e) If there is any evidence of mildew on the walls, the mildew must be removed and the wall surface treated to inhibit further mildew growth.

(f) All painted surfaces should be evaluated for the possibility of pigment bleed-through. If there is any possibility, a coat of sealer, recommended by the manufacturer, should be applied before application of the wallcovering.

(g) Do not install vinyl wallcovering over oil-based wood stains as a bleed-through may occur.

3.03 Installation

(a) Wallcovering shall be installed by experienced workers and contractors in strict accordance with the manufacturer's printed instructions using vinyl wallcovering adhesive recommended by the manufacturer (**WHEAT PASTE SHALL NOT BE USED**). It is absolutely imperative that installer read the manufacturer's instruction sheet in each roll before installing the vinyl wallcovering. Permanent building light shall be available for installation.

(b) Installer, before cutting, shall examine pattern and color and determine that they are the correct pattern and color as specified.

(c) Installer shall install each roll in sequence starting with largest roll number and each strip in same sequence as cut from roll. If pattern is not random, examine for repeat design. Some patterns should be lined up, matched or reversed for best results. If necessary, trim selvage deep enough to assure color uniformity.

(d) After the application of three strips, an inspection should be made and if there are any variations in color or pattern which are felt to be excessive, the wallcovering distributor or manufacturer's representative should be notified for his inspection before any further wallcovering is installed.

(e) Always bring material six (6) inches around inside and outside corners being sure to fit into corners to avoid bridging or spanning.

(f) The wallcovering should be smoothed to the hanging surface with a stiff bristled sweep brush or a flexible broad-knife to eliminate air bubbles.

(g) Remove excess adhesive along finished seam immediately after each wallcovering strip is applied. Use of clean, warm water, a natural sponge and clean towels are recommended for this use. It is very important to change water often to maintain cleanliness.

3.04 Clean-up Completion

Upon completion of work, remove surplus materials, rubbish and debris, resulting from the wallcovering installation. Leave areas in neat, clean and orderly condition.

Cleaning Instructions

Koroseal® Wallcoverings

Cleaning Instructions
for Koroseal® Vinyl
Wallcoverings

Stains should be removed as quickly as possible to eliminate any possible reaction between the staining agent and the wallcovering. (Not as critical with products coated with Tedlar* film.) Time is especially important for removing materials containing colors or solvents such as ball point ink, nail polish, lipstick, oil shampoo tints, paint, lacquer or enamel and some foodstuffs.

Precautions: Excess soiling materials such as chewing gum, asphalt crayon, paint, nail polish or tar should be carefully scraped off prior to other cleaning attempts.

It is desirable to start cleaning with mild ingredients such as soap, detergent and water. If necessary, stronger cleaners can be used such as liquid household cleaners (with or without ammonia) and rubbing alcohol. High strength detergents, chlorine bleaches,

abrasive household cleansers and rubbing alcohol should be tried on some inconspicuous portion of Koroseal wallcovering to make sure that there will not be any adverse effect on print (if any), color or gloss.

NEVER MIX CLEANING REAGENTS TOGETHER - VIOLENT REACTIONS MAY OCCUR WHICH COULD RESULT IN SERIOUS INJURY. OBSERVE ALL LABEL PRECAUTIONS WHEN USING THESE AND ANY CLEANING AGENTS.

Repeated use of stronger cleaners will extract plasticizer from vinyl wallcoverings causing the wallcovering to lose its suppleness.

*DuPont registered trademark

Staining Agents

Normal dirt - This can be removed with a mild soap or detergent and warm water; allow to soak for a few minutes, then rub briskly with a cloth or sponge. Use a soft bristle brush on rough textured patterns, rinse with clear water, then wipe with a clean, dry cloth. Repeat if necessary.

Nail polish, shellac, lacquer - Remove immediately with dry cloth and be careful not to spread the stain. Go over quickly with rubbing alcohol and then rinse with clear water.

Ball point ink - Must be removed immediately, using a cloth dampened in rubbing alcohol.

Chewing gum - Wipe off as much as possible (will come off easier if rubbed with ice cube), then rub lightly with rubbing alcohol.

Pencil, crayon - Scrape off excess crayon. Erase pencil marks. Wipe any remaining stains with rubbing alcohol.

Feces, blood, urine - Remove these staining materials quickly; wash stained area using a strong solution of soap and household-type chlorine bleach, rinse with clear water.

Cleaning Instructions

VICRTEX® Wallcoverings

Cleaning Instructions
for Vicrtex® Vinyl
Wallcoverings

The standard Vicrtex Wallcoverings are protected with VicrKlear™ water-based coating. This coating not only aids in the stain resistance and cleanability of the wallcovering but does so in an environmentally safe manner.

Stains should be removed as quickly as possible to eliminate any possible reaction between the staining agent and the wallcovering. (Not as critical with products coated with Tedlar® film.) Time is especially important for removing materials containing colors or solvents such as ball point ink, nail polish, lipstick, oil shampoo tints, paint, lacquer or enamel and some foodstuffs.

Precautions: Excess soiling materials such as chewing gum, asphalt, crayon, paint, nail polish or tar should be carefully scraped off prior to other cleaning attempts.

Cleaning: The normal cleaning of Vicrtex Wallcoverings should be

done with mild ingredients such as soap, detergent and water. If stained and stronger cleaning is required, the use of a liquid household cleaner (ex. Lestoil®) should be used.

The method of cleaning should be to rub briskly with a cloth or sponge and the detergent solution. If the pattern has a rough texture a soft bristle brush should be used. Rinse with clean water, and then dry with absorbent cloth. Examine dried area and repeat if necessary.

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Vicrtex® Tedlar®
Protected Patterns

Vicrtex patterns protected with Tedlar offer the ultimate in stain resistance and cleanability. Tedlar is a PVF film applied to the surface. This film is very resistant to chemicals and, therefore, to staining. It is a premium product and should be

used where there is a need for the added stain resistance and cleanability. The normal cleaning is the same as for the VicrKlear protected Vicrtex patterns and for additional stain removal instructions refer to the table on the back page.

Agents to Remove Stains from
Koroseal® Wallcovering
without Tedlar® Film

Table Key

0. Dry paper towel
1. Damp paper towel
2. Mild soap and water
3. High strength household detergent (full strength)
4. Solvent (Acetone)**

Stains

Acetic Acid (5%)	0	Ink (Washable)	1
Acetone	0	Ink (Stamp Pad)	1
Alcohol	0	Jam, Jelly	1
Ammonia (10%)	0	Lard	0
Amyl Acetate	1	Lipstick	3
Beet Juice	1	Lye Solution	1
Bluing	1	Methyl Purple	1
Bromocresol Green in		Methyl Red	1
Methyl Alcohol	1	Methyl Blue in	
Carbon Tetrachloride	0	Phenol Indicator	1
Catsup	2	Mercurochrome	2
ette Smoke	1	Merthiolate	1
Acid (10%)	1	Milk	1
Chocolate Syrup	1	Moth Spray	1
Coffee	1	Motor Oil	2
Crayon (Wax)	2	Mustard	1
Cold Cream	2	Nail Polish	4
Dreft Detergent	1	Mitric Acid (5%)	0
Dye (Hair)	1	Olive Oil	2
Dye (Clothes)	1	Pencil	1
Fluorescin Sodium	1	Phenol (5%)	1
Fly Spray (Flit)	2	Phenol Blue (1%)	1
Gasoline	0	Potassium Permanganate	
Grease	2	in Water (10%)	1
Grape Juice	1	Permanent Eyelash Darkener	1
Hair Oil	2	Rubber Scuff Marks	1
Hand Soap	1	Salad Dressing	1
Hydrochloric Acid (5%)	0	Shoe Polish	2
Hydrogen Peroxide (30%)	0	Silver Nitrate	2
Hypochlorite Bleach	1	Silver Protein	1
Insect Spray (Raid)	2	Sodium Bisulfate	1
Ink (Ball Pen)	3	Stainless Mercresin	0
Ink (Higgins Drawing)	1	Synthetic Perspiration	1
Ink (Marking Pen)	3	Sulfuric Acid (5%)	0
Ink (Permanent)	1	Tea	2
		Trisodium Phosphate	1
		Tomato Juice	2
		Turpentine	2
		Urea	1
		Urine (Canine)	1
		Vinegar	1
		"Vitalis" Hair Oil	2
		Water	0
		"Wright" Blood Stain	2

A soft bristle brush will aid in cleaning deeply embossed grains.

Acetone is a flammable solvent which should be used following instructions from manufacturer and its Material Safety Data Sheet.

Agents to Remove Stains from
Koroseal® Wallcovering
without Tedlar® Film

Table Key

1. Mild soap and warm water
2. High strength household detergent
3. Strong solution of soap and chlorine bleach
4. Ice cube
5. Cleaning fluid
6. Rubbing alcohol

Stains

Asphalt†	5
Automobile Grease	5
Ball Point Ink†	6
Blood†	3
Catsup†	2
Chewing Gum	4
Coffee	2
Crayon	1-6
Fecal Matter†	3
Lacquer†	6
Motor Oil	1
Mustard†	2
Nail Polish†	5
Normal Dirt	1
Paint†	2
Pencil Marks	6
Rubber Heel Marks	5-6
Shellac†	6
Shoe Polish†	5
Tea	2
Tomato Juice	2
Tincture of Merthiolate†	6

A soft bristle brush will aid in cleaning deeply embossed grains.

†These items may impart permanent stain if not removed immediately.

WARNING: Failure to follow listed instructions and/or product limitations may result in serious personal injury, property damage, death, or product failure.

Note: This data is based on tests believed to be reliable. However, these are laboratory tests that may not reflect actual conditions. The data is for your information and no warranty, express or implied, is made as we cannot guarantee the results of operations not under our direct control. The information in this publication is not intended as permission or recommendation to practice a patented invention without permission of the patent owner.

Cleaning instructions for Koroseal® Vinyl wallcoverings

Stains should be removed as quickly as possible to eliminate any possible reaction between the staining agent and the wallcovering. (Not as critical with products coated with Tedlar® film.) Time is especially important for removing materials containing colors or solvents such as ball point ink, nail polish, lipstick, oil shampoo tints, paint, lacquer or enamel and some foodstuffs.

Precautions: Excess soiling materials such as chewing gum, asphalt crayon, paint, nail polish or tar should be carefully scraped off prior to other cleaning attempts.

It is desirable to start cleaning with mild ingredients such as soap—detergent and water. If necessary, stronger cleaners can be used such as liquid household cleaners (with or without ammonia), rubbing alcohol, and solutions up to 3% of hydrogen peroxide, turpentine, gasoline or kerosene. High strength detergents, chlorine bleaches, abrasive household cleansers, rubbing alcohol, hydrogen peroxide, turpentine, gasoline and kerosene should first be tried on some inconspicuous portion of Koroseal wallcovering to make sure that there will not be any adverse effect on print (if any), color or gloss.

Gasoline, kerosene, and turpentine are explosive and should be handled carefully. **NEVER MIX CLEANING REAGENTS TOGETHER—VIOLENT REACTIONS MAY OCCUR WHICH COULD RESULT IN SERIOUS INJURY. OBSERVE ALL LABEL PRECAUTIONS WHEN USING THESE AND ANY CLEANING AGENTS.**

Repeated use of stronger cleaners will extract plasticizer from vinyl wallcovering causing the wallcovering to lose its suppleness.

Reagents:

Normal dirt

This can be removed with a mild soap or detergent and warm water; allow to soak for a few minutes, then rub briskly with a cloth or sponge. Use a soft bristle brush on rough textured patterns, rinse with clear water, then wipe with a clean dry cloth. Repeat if necessary.

Nail polish, shellac, lacquer

Remove immediately with dry cloth and be careful not to spread the stain. Go over quickly with rubbing alcohol and then rinse with clear water.

Paint, shoe polish, rubber heel marks, car grease, tar—asphalt

Wipe off as much as possible, then clean with kerosene or turpentine. Rinse thoroughly with clear water.

Ball point ink

Must be removed immediately, using a cloth dampened in rubbing alcohol.

Chewing gum

Wipe off as much as possible (will come off easier if rubbed with ice cube), then rub lightly with rubbing alcohol. Can also use kerosene or naphtha.

Pencil, crayon

Scrape off excess crayon. Erase pencil marks. Wipe any remaining stains with rubbing alcohol.

Fecal, blood, urine

Remove these staining materials quickly; wash stained area using a strong solution of soap and household-type chlorine bleach, rinse with clear water.

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