nofire®

TECHNOLOGIES INC.

# Handbook

# and

# Applicator Training Manual

nofire®
TECHNOLOGIES INC.

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# Introduction to NoFire Technologies

Since 1987, NoFire Technologies, Inc. has been a pioneer and the leader in the development of non-toxic, environmentally friendly, high performance, fire-retardant Paints (coatings) and textile wrap systems (S-Barrier), leading to numerous patents - related to our intumescent technology and other passive fire protection technologies and solutions.

NoFire Technologies, Inc. develops and manufactures the highest performance, non-toxic and environmentally safe Fire-Retardant Paint, Products and Systems using the most advanced technology available worldwide.

We are a leader in developing and manufacturing patented products and technologies that increases effectiveness of fire protection to meet all requirements.

We manufacture our products and systems using the highest quality ingredients, and according to strict guidelines, rigorous quality assurance and standards to serve our clients with Fire-Retardant Paints (Coatings), Products Technology and Systems that provide the **"ultimate solution in Fire Prevention and Fire-fighting"** in Residential, Commercial, Industrial, Maritime, Nuclear and Military applications worldwide.

Nofire Products substantially STOPS FIRE, reduces and or eliminates the potential for "FLASHOVER" in a structural fire, and effectively increases the "FIRE RESISTANCE" of many materials and or surfaces (e.g. Wood, Concrete, Composites, Plastics, Ceilings, Bulkheads etc.), preventing, eliminating and mitigating the devastating effect and collateral damage caused by Fire to Installations, Buildings and Properties.

NoFire Paints (coatings) belong to a class of materials called INTUMESCENTS, which means the paint activates, foams and expands in size (up to about 50 times its original dry film thickness) when it comes into contact with fire or heat that burns at a minimum temperature of $200^0$C.
When Nofire Paint comes in to contact with fire or heat at temperatures above $200^0$C, the paint activates, forming **"a thermally insulating and fire-retarding carbonaceous char or foam which acts as a Protective Shield or Barrier between the Fire and the Material or Coated Surface"** that can retard the propagation and effect of the fire and help coated materials or surfaces to retain their strength in the event of a fire.

Nofire Paints (coatings) can intumesce up to several (50) times their original thickness, thus extending the time it takes for materials to reach their critical failure temperatures. This extra time allows a facility's occupants more than enough time to escape or evacuate while enhancing the ability of fire fighters to bring a fire under control (if needed) and save the asset from structural failure.

NoFire Paint (coating) is like ordinary latex paints in appearance and application to a surface, is certified GREEN, it is environmentally safe, and it is easy to apply with ordinary equipment (e.g. Roller, Brush and by Spraying). It effectively adheres to many surfaces and provides a durable and long-lasting flat finish.

NoFire's proprietary products are covered under eleven (11) U.S.A and PCT patents and patents pending on fire retardant intumescent coatings, fire retardant wraps, and fire-retardant systems for nuclear, military, maritime, residential, commercial, industrial and transportation applications. In addition, the NoFire Products have been certified and approved according to the Safety of Life at Sea (SOLAS) requirements for the International Maritime Organization (IMO), U.S. Coast Guard, Underwriter's Laboratories (UL), U.S. Navy and various Military standards, U.S. Nuclear Regulatory Commission ("NRC"), American National Standards Institute ("ANSI"), and American Society for Testing and Materials ("ASTM") guidelines (among many others).

Nofire Products provide passive fire protection: that is, they have no moving parts, require no maintenance, and do not fail in activating as could happen to sprinkler systems and other active firefighting systems. NoFire Paints/Coatings work to contain, Retard, Stop and Prevent the spread of fires. It Retards the conditions that would permit a localized fire to erupt into a large or uncontrolled fire, which occurs in all structural fires - a condition known as "FLASHOVER".

Industries that currently use NoFire coatings include Civilian, Maritime, Military, Ships and Land vehicles, Nuclear Power Plants, Construction, Electrical, Commercial and Industrial Properties, Wood Products and Manufacturing, Government, Public and Private Housing, Hotels, Automotive, Railway, and Airports etc.

# Classes of fire protection systems

**1.** Active Systems

Examples: Sprinkler Systems
Halon
Foam Systems

**2.** Passive Systems

Examples: Ceramic Blanket
Mineral Wool
Ablative Coatings
Intumescent Coatings

1. Two Part - Epoxy
2. Solvent Base - Toxic
3. Water Base - Toxic

Non-Toxic- NoFire Paints & Coatings

## Intumescent Coatings

Intumescent coatings activate in response to high heat or fire, typically at temperatures between 300º-500 º F (149 º - 260 º C). They expand in thickness, up to 50 times the original size, to form an insulation barrier, protecting the surface material.

1. Advantages

Passive- no moving parts, no maintenance required
Thin Film – Easy to apply, requires little space, dries to attractive finish
Lightweight, relatively inexpensive protection

## Introduction to NoFire Paint

NoFire Paint is an intumescent material. In response to high heat or fire, it forms a highly insulating, non-combustible barrier, providing protection against fire and heat at temperatures in excess of $2000^0$ F (1093 º C).

It is effective, economical and easy to apply to most common materials such as wood and wood products, gypsum wallboard, concrete, walls, steel and other metals and many types of plastic and composites.

NoFire is patented in the United States and in nearly 50 industrialized countries. NoFire complies with the most severe performance requirements for applications in residential, commercial, military, maritime, and industrial environments.

The NoFire coating can be best explained in one line.

**"NoFire does everything that ordinary paint does... except burn!"**

When coating a home, office, commercial building or industrial space or installations with NoFire, you are not only providing an attractive appearance... you are also helping to protect the facility and its occupants from the devastating effect of fire and the spread of fire.

This brief outline is not an attempt to tell you how to paint a facility. Rather it is an attempt to make you aware and to advise you of the difference in priorities, subtleties and responsibilities when applying NoFire Fire Retardant Paints (Coatings) as compared to regular paint.

## Properties of NoFire Paint

NoFire is a patented, water base latex coating

- Identical in appearance to ordinary paint
- Easily applied by brush, roller or spray
- No special preparation surface or protection required
- Easy cleanup with soap and water

NoFire is a high performance intumescent
Effective protection of most common materials, including metals, wood products, walls, composites, electrical cables etc.
Meets the most severe performance requirements for residential, commercial and industrial environments

NoFire can be tinted to nearly any color
Durable, Non-Toxic, & environmentally safe

- "NoFire does everything that ordinary paint does…
  …Except burn!

## Advantages of NoFire Paint

1. Single Component
2. Water Base
3. Nontoxic, environmentally safe
4. Resists Mold, Mildew, and Bacterial Growth
5. Non-hazardous, even if accidentally swallowed
6. Low VOC
7. No lead, asbestos, halogens or solvents
8. Ordinary surface preparation
9. Ordinary equipment –brush, roller or spray
10. No special applicator protection gear

## Comparison Between NoFire and Ordinary Intumescents

| | Epoxy (2 PARTS) | Solvent | Ordinary water base | **NoFire** |
|---|---|---|---|---|
| TOXICITY | HIGH | HIGH | LOW | **NONE** |
| ENVIRONMENTAL HAZARD | HIGH | HIGH | LOW | **NONE** |
| CONTAINS HAZARDOUS INGREDIENTS | YES | YES | SOME | **NO** |
| SPECIAL EQUIPMENT REQUIRED | YES | YES | NO | **NO** |
| PERFORMANCE | HIGH | MODERATE | LOW | **HIGH** |
| NUMBER OF COATING APPLICATIONS | MULTIPLE | MULTIPLE | MULTIPLE | **ONE** |
| COST | HIGH | HIGH | MEDIUM | **MEDIUM** |
| MILITARY, COAST GUARD, IMO APPROVALS | NO | NO | NO | **YES** |

## NoFire Certifications and Approvals

Nofire coatings have numerous US and international certifications and approvals for applications on many surfaces including wood and wood manufactured surfaces; steel, aluminum and metal surfaces; many types of composite materials, and gypsum and plaster wallboard. A selection of the major approvals follows:

1. Underwriters Laboratories UL 723 – Low Flame Spread and low Smoke Development
2. ASTM E84 - Low Flame Spread and low Smoke Development
3. ASTM E119 – Structural Steel Fire Protection up to two hours
4. ASTM E119 – Wall Assembly Fire Protection up to two hours
5. Underwriters Laboratories UL 94 – Flammability Protection for Plastics
6. US Navy Qualified Product – MIL PRF 24596, Fire Protection for Surface Ships and Submarines
7. US Federal Aviation Administration FAR 25.855, 25.853 Plastic Flammability Protection
8. International Maritime Organization (IMO) A.653 Low Surface Flammability, low smoke and low toxic products, and Resistance to ignition for use on all international shipping
9. IMO A754 Class A60 – Bulkhead and Overhead Structural Fire Protection
10. US Nuclear Regulatory Commission (NRC) Approval for 3-hour Fire Protection of Cables, Conduits, and Cable Trays

In addition, NoFire coatings have been tested and approved for many applications by independent US and international fire test agencies such as: Intertek Laboratories, Southwest Research Institute, CSIRO Australian Government Laboratory, Danish Fire Test Laboratory, SGS US Testing, HPVA Laboratories, US Navy Fire Test Laboratory, Wimpey Laboratories, UAE, RST GmbH, Berlin,

# Application Procedures

**Application Instructions- NoFire A-18**

The application of NoFire A-18 is as easy as the application of an ordinary latex paint. It may be applied by any ordinary equipment or technique: brush, roller, or spray (airless or conventional).

- BRUSHES – A good quality bristle brush is recommended. Select the brush that is the most comfortable or convenient for you.

- ROLLERS – A 3/8" to ½" (8-12 mm) nap roller cover provides best results. In general, the heavier the nap the more textured the surface finish.

- SPRAY – Both airless and conventional spray are effective means of applying NoFire A-18. The determining factors are typically the availability of equipment or the desired finish. Typically, airless spray application provides a smoother finish.

    - Conventional Spray System – a pressure pot system with a 0.050 – 0.070" (1.25 – 1.75 mm) spray orifice is recommended.

    - Airless Spray System – a 3000 PSI Delivery System or greater using a 0.035 –0.040" (1 mm) spray orifice is recommended. (NOTE: a larger orifice requires a higher PSI delivery).

  When using either spray systems, remove all filters except the pickup filter on the supply pail. This filter should be no smaller than 0.035" (1 mm) opening.

A particle or dust mask and eye goggles should be utilized when applying any paint, especially when spraying.

The NoFire A-18 should be applied to the required thickness in as uniform a coating as possible. Wet thickness should be checked regularly. (NoFire Technologies, Inc provides wet thickness gauges.)

Thoroughly machine mix the NoFire A-18 product from the bottom. A handheld drill with mixing blade or paint shaker is adequate.

The product should be mixed at least once each day during use, and especially prior to any use if the material has not been used for two days or longer. Close lid of any partially used pails at end of each day.

The surface to be coated must be free of water, dirt, dust, grease, or any other foreign or loose materials.

Any existing surface coatings (primer/paint) must be clean and dry with no flaking or peeling. If the surface requires priming, follow the manufacturers recommended application procedure. Primers for NoFire coatings must be alkyd type. Any other type such as; 2-part epoxy, 2-part urethanes, or water base, is not suitable for NoFire A-18 and will result in poor adhesion and poor performance.
Any questions related to the primer should be directed to NoFire Technologies Technical Dept. at 001201-818-1616 or 002330-765-6464

Glossy surfaces or enamel paint surfaces must be sanded to achieve a rough or dull surface finish (40-80 Grit sandpaper is recommended). If surface is sanded it must be cleaned thoroughly afterward to remove sandpaper residue.

The NoFire A-18 is water-based and cleans up with soap and warm water. Any uncoated or damaged areas can easily be "touched up" using brush or roller.

Do not apply multiple coats until the prior coat is dry to the touch. Do not apply when the air temperature or temperature of surface being coated is below 40° F (5° C). Do not apply when the relative humidity is above 90%.

For exterior uses, do not apply during times of any precipitation or when precipitation is expected within 24 hours. Surface must cure for at least 24 hours and be coated with an approved topcoat before exposure to rain.

**Application Procedure with Sprayer**

Hold the spray gun 12 to 14 inches (30-35 cm) from the surface. Overlap each pass by approximately 30%.

Up to 24 mils (600 microns) wet thickness can be achieved in one wet application coat by following these instructions:

Do not try to apply the total desired wet thickness in one pass. Rather start with a tack coat covering approximately 80 square feet (7.5 square meters). Then return to beginning to apply successive layers until desired thickness is achieved (no more than 24 mils in one wet application). Allow it to dry for 2 hours or until dry to touch before applying layers in excess of 24 mils.

The wet film thickness should be checked frequently with a wet film thickness gauge.

A practice surface should be used to gain some familiarity with the coating material and equipment. After a few minutes of practice, the operator should be able to spray a smooth coat with the desired thickness.

The coverage should be as uniform as possible, including surfaces that are normally not in plain view such as underneath and behind overhangs. This will probably be the region with the most intense heat in the event of a fire and requires the best protection.

Any chips, cracks or thinly coated areas can be "touched up" upon inspection.

The coating should be allowed to dry for 2 - 3 hours before a second spray coat is applied, if necessary.

The coating should be allowed to dry and cure for 48 hours if possible, but no less than 24 hours, prior to topcoating.

## Application Procedure with Brush and Roller

After proper mixing and surface preparation, apply the product directly from the container. Coat evenly and thoroughly over surface to be coated with a natural bristle brush or roller. Any chips, cracks or thinly coated areas can be "touched up" upon inspection.

For best results use any good quality bristle brush or 3/8" to 1/2" nap roller cover.

## IMPORTANT

In both interior and exterior applications, the **surfaces must be coated** as **uniformly** as possible **to the required thickness**.

**USE YOUR WET MIL GAUGE AS OFTEN AS POSSIBLE!**

Remember, NoFire looks like ordinary paint, but it is a fire retardant. A thinner coating than required will be aesthetically good looking... but it will not retard fire effectively.

The **proper thickness must be applied throughout**... you must constantly use the wet mil gauge to ensure that there are no undercoated areas.

Equally important is to insure there are no areas left uncoated... anywhere. Hard to reach locations and areas not readily visible must be coated to the correct thickness. Remember fire is blind and will penetrate under-protected areas.

NoFire can be applied by spray, brush or roller. When thicker coatings of 12-20 mils wet is required on certain substrates, spraying is recommended. This is because the required thickness can be achieved in one cost-effective application. Using brush or roller will require at least two coats with several hours drying in between. (See Exhibit I attached "General Application Procedure & Technical Data Sheet".)

**DO NOT, UNDER ANY CIRCUMSTANCES DILUTE, THIN OR ALTER COLOR OF THE NOFIRE PRODUCT!**

Consult with distributor to determine appropriate thickness for specific substrates and code requirements.

## EXTERIOR USE

For exterior applications NoFire is used as a (white) undercoat. The exterior topcoat should be selected from the recommended topcoat list. Topcoats may be selected from: epoxies, urethanes, acrylic latex paint, and alkyd paints, all rated for exterior use. The selection depends on the application, including severity of exposure, appearance requirements and ease of application. For recommendations on specific application, contact NoFire's Technical Department.

NoFire can be applied directly over any previously painted surface, provided the surface is properly prepared. Preparation is identical to that of an ordinary paint job. If the surface requires a primer, for example, on open grain woods or surfaces with large amounts of loose materials, use the recommended primer for the surface. Be sure the primer is thoroughly dried and cured before applying NoFire.

**Please Note:**

To provide proper fire protection for residential homes (or a building facility) the following is strongly recommended:

1. The roof must be fire rated with a minimum of a 'C' rating (an 'A' or 'B' rating is highly preferred). The absence of a rated roof eliminates the home as a candidate for comprehensive fire protection.

2. All openings in the eaves should have fire dampers installed.

## INTERIOR USE

Fire protection of homes and other building facilities can be substantially increased by using NoFire and eliminating potential breaches. The degree of protection increases substantially with each potential **breach** eliminated.

1. The basic level of protection includes coating the walls and ceilings with NoFire. This effectively eliminates these surfaces as flame paths, reduces heat penetration through the wall to other rooms and most importantly, reduces the risk of flashover (the fire ball effect).

2. Ideally, all vents including air conditioning and hot air registers should have fire dampers installed.

3. Doors are usually a weak link. Ideally, they should be solid core with fire rated hardware. Hollow core doors, sculptured doors, and panel doors can be substantially improved by applying a double spray coat of NoFire, with several hours of drying time between coats. This will afford some degree of protection and help contain a fire to the room of origin.

4. When you survey the interior of your home or building facility, look for all potential **breaches.**

5. Interior colors can be closely matched **only** by your distributor who has the special pigments compatible with the NoFire fire retardants. **NEVER ADD COLOR OR PIGMENTS TO THE MATERIAL YOURSELF.** This could radically affect NoFire's fire retardant properties.

6. Any alteration of the NoFire product voids the warranty and certifications.

## INTERIOR USE - COMMERCIAL, OFFICE AND APARTMENTS

NoFire can be used in office buildings, public housing and apartment buildings and other high-rise buildings.

Uses include:

- Stairwells and public access areas
- Utility & Electrical rooms, Server & Data Rooms, indoor Electrical Sub-stations etc.
- Kitchens
- Cafeteria's and executive dining rooms
- Elevator Lobbies - both freight and passenger
- Mechanical rooms, storage and garbage retention rooms.
- Escape routes

Additionally, warehouse and manufacturing areas of plants, previously painted with oil base paints, are fire hazards and can be effectively protected by NoFire.

In areas where there is a potential for exposure to water (such as kitchens, bathrooms, etc.) or areas requiring additional protection, against dirt, fingerprints, or high traffic areas, top coats such as water based polyurethanes, acrylic, and alkyd paints, all rated for interior use is recommended as a topcoat to NoFire.

TECHNOLOGIES INC.

## LIMITED WARRANTY

NoFire Technologies, Inc. warrants this material to be free from defects or workmanship for one year from date of purchase.

At the time of application, NoFire Technologies warrants:

For five (5) years from date of application when applied and cured according to manufacturers specifications, NoFire Technologies warrants:

- Coating will not peel from properly prepared surface.
- Colors will not noticeably fade.
- Coating will not stain brick or glass trim.
- Coating resists chalking.
- Coating will not erode and expose the substrate.
- Coating will not support the growth of mold or mildew.

If this coating fails to perform as specified above, NoFire Technologies will furnish an equivalent amount of new product at no cost.

If, at any time during the warranty period, mold and mildew stains appear, NoFire will schedule an inspection. Upon establishing that the stains are the result of mold and mildew on the paint film, NoFire will furnish a **sufficient amount of NoFire A-18 to correct the problem.**

This warranty does not include labor or cost of labor for the application of any coating.

This warranty gives you specific legal rights and you also may have other rights which vary from state to state.

# Brief Review of Surface Preparation

Surface Preparation

1. Types of Surfaces

- NoFire can be applied to any surface that can be painted, such as, walls, ceilings, doors, cables, conduits, and trays.
- NoFire can be applied to metals, wood, wood products, and composites.
  (Some metals or composites may require a primer)

2. Preparation

- Ordinary preparation for painting using ordinary equipment such as brushes, rollers, and paint sprayers.
- Consult Application Manual for minimum nozzle size and pressure for spray equipment.

3. Touch Up

- Uncoated, damaged or undercoated surfaces can be easily touched up with a brush or roller.

## Application Procedures

1. Prepare surface using ordinary painting preparation. A surface suitable for painting is suitable for NoFire.

2. Thoroughly machine mix product in pail

    - Ordinary 3/8" drill with stirring blade

    - Thoroughly blend product from the bottom for at least 3-5 minutes, each day before use.

3. Check wet film thickness often using wet film gauge.

4. Apply NoFire as uniformly as possible to final required wet film thickness.

## Protective Equipment

**1.** NoFire is non-toxic and environmentally safe. Applicators should use ordinary particle mask, eye and clothing protection

**2.** Use ordinary masking tape to protect surfaces not to be painted.

**3.** Soft surfaces (e.g. furniture, carpets, drapes) should be covered or removed from spray area.

## REVIEW OF KEY POINTS

1. Be sure all surfaces to be coated are smooth, dry and free of loose materials.

2. NoFire must be applied as **uniformly as possible to the required thickness**. Be sure to check thickness using the wet mil gauge as often as possible.

3. Be sure there are no uncoated areas. Check all areas that are hard to access or not readily visible.

4. Be sure that NoFire has cured for at least 48 hours before applying any topcoat. Be sure a topcoat is selected from the approved list.

5. Exterior **breaches** must be completely protected. Roof must have a minimum of a 'C' fire rating, exterior openings must be properly fire damped.

6. Interior **breaches** must be reviewed with client and client should be encouraged to protect these breaches.

7. **Do not dilute, thin or alter NoFire Products. Any alteration voids the warranty and any certifications.**

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# LIST OF CLIENTS (INTERNATIONAL)

**I. Nuclear Power Plants**

Susquehanna Power, PA
Salem Nuclear Plant, NJ
Quad Cities Plant, IA
Zaporozhye Nuclear Power Station, Ukraine

**II. U S Government**

a. US Department of State
   i. Baghdad Embassy, Iraq
   ii. American Consulate in Germany, Leipsig, Berlin
b. US Department of Defense
   i. Baghdad, Iraq
c. US Navy
   i. Portsmouth Naval Shipyard, ME
   ii. Naval Surface Warfare Center, Carderock, MD

d. US Army
   i. Picatinny Arsenal, NJ
   ii. Day and Zimmerman
   iii. SB Innovations' Deployable Structures – US Army, US Marines
e. US Department of Health & Human Services – National Institute of Health, MD

**III. State and Local Governments, US**

a. State of Hawaii
b. Board of Education, Scottsdale, AZ
c. State of Rhode Island
d. City of Paradise Valley, AZ

**IV. Foreign Governments**

a. Port of Tema, Ghana, West Africa
b. Government of India, Army
c. Government of Malaysia
d. ERYA Endustriyel Urun, Istanbul, Turkey
e. Australia Navy
f. Chinese Consulate, Ankara, Turkey

g. Saudi Electric Company (SEC), Saudi Arabia
h. Yuksel Construction
i. SWCC Desalinization Works, Saudi Arabia
j. Aramco
k. Khimji Permoglaze, Muscat, Oman

**V. Shipbuilding and Shipping**

a. Ingalls Shipbuilding (Northrop Grumman), Pascagoula, MS
b. Bender Shipbuilding, Pascagoula, MS
c. J.M. Martinac Shipbuilding, Tacoma, WA
d. Argent Marine Operations, Yorktown, VA
e. American Classic Voyages, Honolulu, HI
f. Electronica Navale, Trieste, Italy
g. A.F. Theriault, Meteghan River, Nova Scotia, Canada
h. Fincantieri Shipbuilding, Trieste, Italy
i. Westport Shipyards

**VI. Transportation**

a. Bombardier Transportation, Amity, PA & Derby, UK
b. Shri Sai Works, Dombivali, India
c. Monorail Malaysia Technology, Malaysia
d. LaBock Technologies, Weston, FL
e. South Beach Fire, Miami, Florida
f. Boeing Corporation, Long Beach, CA
g. American Airlines
h. Am Tran School Bus Co.
i. Fiat Motor Company, Torino, Italy
j. Airports – Vancouver, Montreal, Toronto, Saskatoon, Winnipeg, Edmunton
    i. Aircraft Loading Walkways
k. Airbus A380 Project
    i. Weber Aviation – TX
    ii. Topkey – Taiwan
    iii. Siam Aviation – Thailand

**VII. Colleges, Museums, Hotels, Hospitals**

a. Independent Seaport Museum, Philadelphia, PA
b. Valley Forge Military Academy and College, Wayne, NJ
c. Shalom Mountain Retreat, NY
d. Resorts International Hotel, Atlantic City, NJ
e. Le Cirque Restaurant, Mexico City
f. Hotel Park Villa, Mexico City
g. Four Seasons Hotel, Maui, HI

**VIII. Construction, Commercial**

a. Benjamin Moore, Newark, NJ
b. Corrosion Engineering Services, San Diego, CA
c. Sherwin Williams, Marinette, WI
d. Richwood Industries, Grand Rapids, Michigan
e. Woodtone Industries, BC, Canada
f. Western Pacific Roofing, Palmdale, CA
g. Chris Fischer Productions, Phoenix, AZ
h. Scenic Technologies, New Windsor, NY
i. Appletree Designs, Cincinnati, OH
j. Alcoa Aluminum, Pittsburgh, PA
k. NY Times Building, New York, NY
l. BPL Mobil Cellular Ltd., India
m. Al Ajnaha Industrial Equipment, Dubai, UAE
n. Bechtel Construction
o. Burns and Roe, New Jersey
p. Showman Fabricators, Long Island City, NY
q. Indian Farmers Fertilizer Cooperative Ltd., India
r. ICI – Large Home Development Project
s. Halliburton, International Zone, Iraq
t. Aquatherm Pipes

IX **Construction Residential**

a. ICI Industries
b. KB Homes, California

**X Clients in Ghana**

a. Port of Tema, Ghana, GPHA
b. Gold Fields Ghana Limited
c. Foreen Electrical Engineering Services Limited
d. Herona Company Limited
e. N&N Electrical Services Limited
f. Fox Cooling Company Limited
g. Home Base TV
h. Euroget De-Invest Ghana
i. CNQC Ghana
j. Watch Tower Ghana
k. Stellar Logistics
l. Newmont Ghana Limited

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## Frequently Asked Questions

**Q.** Can NoFire be mixed into composite materials to make them fire retardant?
**A.** No. It's a coating, not an additive.

**Q.** What is the shelf life of NoFire in its container?
**A.** The company guarantees 18 months from date of shipment.

**Q.** How long does it last once it is applied to a substrate?
**A.** Indefinitely under normal conditions, as long as it is not cracked, chipped, eroded, or damaged.

**Q.** Does it come with glossy, semi-gloss finishes?
**A.** No. A glossy or semi-gloss finish can be obtained by top coating.

**Q.** Does it come in colors?
**A.** White is standard, but NoFire paint can be manufactured in nearly all other colors.

**Q.** Does it come clear?
**A.** No!

**Q.** Can it be used outdoors?
**A.** Yes, but only with a protective topcoat.

**Q.** How thick is it applied?
**A.** Thickness depends on specific requirements. Consult the application manual and technical data sheets.

**Q.** Is it toxic?
**A.** No. It is a nontoxic, water base coating.

**Q.** What does 'intumescent' mean?
**A.** When exposed to heat or fire at temperatures over $190^0$C (375ºF) it expands & swells to approx. 20-100 times its applied thickness.

**Q.** Do you have approval for ASTM E119 on structural steel?
**A.** Yes for NoFire A18 and NoFire S-Barrier wrap system, a NoFire patented system for steel columns.

**Q.** Can you make curtains and wallpaper from your textile material?
**A.** No, it is not suitable for fabrics.

**Q.** Does it insulate?
**A.** Not at room temperature; only when activated at high temperature due to fire or high heat.

**Q.** Is it Class A Rated?
**A.** Yes.

**Q.** Is it UL Classified?
**A.** Yes

**Q.** Is it a coating or paint?
**A.** It is both. Typically a "coating" provides protection & a "paint" is used to decorate.

**Q.** How is it applied?
**A.** Ordinary brush, roller, airless spray or conventional spray equipment.

**Q.** Any special surface preparation?
**A.** Surface preparation required is identical to an ordinary paint job; no special preparation.

**Q.** Does it require a primer?
**A.** Ordinarily a primer is not required, except when coating highly glossy surfaces or when using certain types of surfaces, such as enamel or steel in a marine environment where corrosion protection is recommended.

**Q.** What kind of primer?
**A. Primer must be alkyd type.** Consult with NoFire's Technical Department for specific recommendations for your application.

**Q.** How long for drying and cure?
**A.** This depends on air temperature, relative humidity and coating thickness. At room temperature and humidity, a minimum of 2 hours drying is required before applying additional coats. Curing time recommended is 48 hours, but 24 hours is minimum after the final coat.

**Q.** When applying outside, what is the highest or lowest air temperature allowable?
**A.** The highest and lowest air temperatures are 180º F and 40º F, respectively.

**Q.** Can I thin the liquid?
**A.** Thinning or any alteration of NoFire is prohibited. If the liquid viscosity is too high, contact NoFire's Technical Department.

**Q.** What if it accidentally comes into contact with my skin? Eyes? or swallowed?
**A.** Wash with soaped and water. Refer to MSDS document for further instructions.

**Q.** In what size containers is it shipped?
**A.** 5-gallon pails or 50-gallon drums.

**Q.** Does it have a "one hour" or "two hour" rating?
**A.** The NoFire coating will provide fire protection up to two hours, depending on the materials, coating thickness applied, and type of exposure. NoFire ratings are contained in NoFire's Technical Manual.

**Q.** What if I accidentally crack or chip a section of a painted surface?
**A.** The affected area can be "touched up" similar to ordinary paint with no loss of performance.

**Q.** Can I tint it to another color?
**A.** No, it must be ordered and manufactured to the desired color.

**Q.** How do I know what thickness is required?
**A.** Refer to the application documents. For specific applications refer to the Technical Manuel or contact the Technical Dept. of NoFire.

**Q.** Can I make ordinary paint fire retardant?
**A.** No!

**Q.** Can I spray this material on furniture, drapes, or carpets to make them fire retardant?
**A.** No! NoFire is a coating only.

**Q.** Can it be supplied in lower or higher viscosity?
**A.** Yes, viscosity can be varied upon request.

**Q.** What types of surfaces will it protect?
**A.** Nearly all paintable surfaces, such as wood, wood products, metals and composite. It is not useful for soft materials such as carpet, etc.

**Q.** What types of surfaces will it not provide protection?
**A.** Carpet, drapers, fabrics, etc.

**Q.** Is it harmful to children or animals if swallowed in liquid form or chips from a wall surface?
**A.** No! Refer to Acute Oral Toxicity Test in the Technical Manuel.

**Q.** How do I clean up after use? (brush, rollers, spray, hands, etc.)
**A.** Ordinary water and soap.

**Q.** What is the difference between fire retardant, fire protective and fireproof?
**A.** These are colloquial terms that are interchangeable and non-specific. Ratings are defined by standards published by international organizations such as: ASTM, UL, ISO, and IMO.

**Q.** Are there other fire-retardant coatings on the market? What is the difference?
**A.** Yes. The major differences are level of performance, thickness required, toxicity and smoke, durability, ease of application and approvals and certifications for use.

***"Nofire does everything that ordinary paint does... except burn!"***