Why We Exist:

Passive fire protection has many advantages and countless applications in preserving asset values and critical infrastructure. However, if it contains or produces toxins fatal to humans, animals or marine life, then it is causing more problems and hidden costs than it is solving.

NoFire Technologies develops and manufactures the highest performance, nontoxic and environmentally safe passive fire protection coatings and systems using the most advanced technology available.

Providing the Optimal Solution in Passive Fire Protection

- A pioneer in water-base, intumescent technology, NoFire develops products for general applications and for client specific requirements
- High performance – tested to 1371°C (2500°F). NoFire has been tested to the most severe international standards and has numerous unique approvals including military and marine
- Contains no solvents, halogens or any other known toxins
- Developing high performance, nontoxic and cost-effective intumescent solutions is NoFire's sole mission

	EPOXY (2 PART)	SOLVENT	WATER BASE	nofire
TOXICITY / ENVIRONMENTAL HAZARD	HIGH	HIGH	LOW	NONE
CONTAINS HAZARDOUS INGREDIENTS	YES	YES	SOME	NO
SPECIAL EQUIPMENT REQUIRED	YES	YES	NO	NO
PERFORMANCE/MICRON OF COATING	HIGH	MODERATE	LOW	HIGH
TOTAL INSTALLED COST PER M^2	HIGH	HIGH	MEDIUM	LOW
MILITARY, COAST GUARD, IMO APPROVALS	NO	NO	NO	YES

Protecting electric grids in the African bush
nofire

Protecting US State Dept personnel and assets
nofire

NoFire eliminates the disadvantages of:

- **Hazardous, toxic, and environmental hazards of epoxy and solvent intumescents**
- **Substantially greater performance than typical water base intumescents**

Protecting residential and commercial buildings
nofire

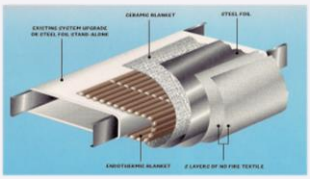
nofire
Structural steel protection for up to 4 hours without cracking, delamination and dangerous airborne fibers

Protecting the National Institute of Health (NIH)
nofire

Passing the IMO's intense fire conditions and also their stringent requirements for human and marine life safety
nofire

Protecting worker camps ... and also the workers
nofire

nofire
Applied in essential infrastructure, not only in the plane, but also in airports.



Meeting the severe requirments of nuclear power installations
nofire

Providing fire protection for US Navy including in submarines requring less than one part per billion in off-gassing
nofire

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NoFire A-18™/ NoFire LP™ [1] — **Commercial & industrial / Residential**
NoFire A-18 Marine™ [2] — **Formulated for severe marine requirements**
NoFire A-18NV™ [3] — **Military-spec coating**

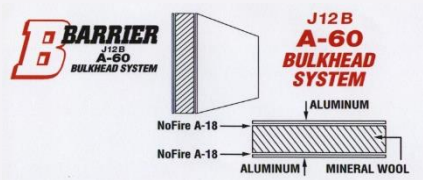
[1] *Exceeds ASTM, ISO standards for residential applications*
[2] *Tested by US Coast Guard, IMO, Germanisher Lloyd, Lloyds Register and ABS*
[3] *US Navy QPL MIL-PRF-24596 Fire Protective for surface ships and submarines*

NoFire Saftee Tape™ — **High voltage arc and fireproofing tape**

- Industrial grade fireproofing and arc-proofing of high voltage cables
- Nontoxic: no toxic gas production or visibility impairment of existing products
- Preserves data integrity in standard tests

NoFire A-Barrier™ — **Overhead fire protection system**

- A lightweight system designed to protect overheads to the stringent IMO Class A60 rating.
- Tested by multiple maritime regulatory agencies



NoFire B-Barrier™ — **Bulkhead fire protection system**

- A lightweight system designed to protect bulkheads to the stringent IMO Class A60 rating
- Tested by multiple maritime regulatory agencies

NoFire S-Barrier™ — **Structural steel fire protection system**

- Low-cost, dry, easy to install and fireproofing system for structural steel
- UL 263 and ASTM E119 approved for 2 hours (up to 4 hours for certain section factors)
- Alternative to labor intensive and/or environmentally hazardous solutions for structural steel

NoFire VersaWrap ™ — **Nuclear conduit/cable trays fire protection system**

- Approved by US Nuclear Regulatory Commission
- Up to 3 hours fire protection of critical cables used for reactor shutdown in the event of fire
- Severe requirements: One of only three systems Approved by NRC
  Lightest, least expensive, and easiest to install

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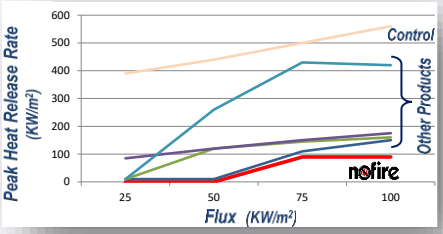
What does it mean to be 'High Performance'?

- Meets Severe Performance Criteria for Residential, Commercial and Industrial Use
- Noncombustible Under Severe Testing Conditions
- Zero Flame Spread, Zero Smoke in Benchmark Testing
- Low Thermal Conductivity at High Temperature
- Low Heat Release Rate and Total Heat Release (See Calorimeter Benchmarking)
- Requires Low Coating thickness (DFT) to Achieve Performance

Calorimeter Benchmarking
(Substrate: glass/vinyl ester)



NoFire coatings and systems are widely tested, including some unique approvals ...

Standard Test Method for Surface Burning Characteristics of Building Materials	Zero Flame Spread, Zero Smoke	ASTM E84 (UL723)
Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source	Near Zero Heat Release Rate	ASTM E162
Fire Test Procedures for Surface Flammability of Bulkhead, Ceiling and Deck Finish Materials	Low Heat Release, Low Smoke, Nontoxic	IMO A.653 Part 5
Reaction to fire tests for products — Non-combustibility test	Noncombustible	ISO 1182
Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter	No ignition < 100Kw/m^2 Low Heat Release	ASTM E1354 (Cone Calorimeter)
Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials	Low Smoke	ASTM E662
Fire Tests of Building Construction and Materials	UL Certified for Structural Steel	UL 263, ASTM E119
Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth Reaction to fire tests — Room corner test for wall and ceiling lining products	Eliminated Flashover (RFlux < 20Kw/m^2)	NFPA 286 (UBC 8-2/17-5) ISO 9705
Performance Specification: Coating Compounds, Nonflaming, Fire-Protective	US Navy Resistance to Ignition	MIL PRF 24596 Fire Protective
Guidelines for the Application of Plastic Pipe on Ships	Exceeds IMO Requirements	IMO A.753
Recommendation of Fire Resistance Tests for "A," "B," and "F" Class Divisions	Exceeds IMO Requirements	IMO A.754

What does it mean to be 'Nontoxic' and 'Environmentally Safe'?

- Water Based. Contains No Solvents, Halogens, Asbestos or Any Other Hazardous Chemicals or Airborne Fibers
- Compliant With the Stringent Environmental Requirements of California, Europe (REACH) and the IMO
- Near Zero VOC's (2.2 g/liter); Less Than One Part Per Billion Off-Gassing in Dry State
- Near Zero Toxic Products of Activation or Combustion When Exposed to Fire
- Tested For Both Oral Inhalation and Ingestion

Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings	2.2 g/liter	EPA 24
US Navy Testing for US Submarines and Warships	< 1 part/billion off-gasing in dry state	Naval Environmental Health Center
Determination of the Toxicity Index of the Products of Combustion from Small Specimens of Materials	Ultra-low Toxic Products of Combustion	NES 713
University of Pittsburgh Smoke Toxicity Method for Assessing the Acute Inhalation Toxicity of Combustion Products	LC50 41.68g	Pittsburgh Protocol
Standard Test Method for Estimating Acute Oral Toxicity in Rats	LD50 > 5g/Kg; Zero mortality	ASTM E1163
Aircraft Material - Toxicity Test: Test method for toxic gas generation by materials on combustion	Passed	Boeing Safety Standard BSS 7239
Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	Compliant	REACH
IMO Resolution: MSC 61(67) Fire Test Procedures, Part 2: Smoke and Toxicity test	Passed	MSC.61(67) FTP Code

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What does it mean to be 'Easy to Apply", 'Durable' ?

- Single Component - No Blending Required
- High Solids Content - Less Material to Achieve Desired Thickness (DFT)
- Easily Applied to Most Surfaces and Cleans Up With Only Soap and Water
- Easily applied by Brush, Roller or Spray, Including Over Painted Surfaces.
- Surface Preparation Same as Ordinary Paint
- NoFire Systems: No Need to Strip or Prep Surfaces; Easily Installed Without Special Skills
- Can be Tinted to Nearly Any Color
- Dries Quickly Minimizing Down Time Between Recoats
- Lightweight: Lower Loading Factors to Consider
- Durable, Flexible, Resistant to Impact, Cracking and Delamination Under Thermal Expansion, Bending and Vibration
- Resistance to Moisture, Salt-spray, Mold, Bacterial and Fungal Growth, Rust and Exudate Formation

'Nontoxic & Environmentally Safe' sounds great, but is it really 'Cost Efficient'?

NoFire's coatings and systems are designed to be highly cost efficient, combining cost savings attributes in materials, installation and maintenance ...

COST EFFICIENCY FEATURES OF nofire

Materials Cost Savings	HIGH PERFORMANCE: REQUIRES LESS COATING THICKNESS
	HIGH SOLIDS CONTENT - LESS MATERIAL TO ACHIEVE DESIRED THICKNESS (DFT)
Installation Cost Savings	NONTOXIC: NO NEED TO EVACUATE JOBSITE
	NONTOXIC: NO SPECIAL PROTECTIVE GEAR OR EQUIPMENT REQUIRED
	NONTOXIC: NO HAZARDOUS MATERIALS HANDLING RISKS/COSTS
	SINGLE COMPONENT. NO BLENDING
	EASIY TO APPLY TO MOST SURFACES AND CLEANS UP WITH ONLY SOAP AND WATER
	DRIES QUICKLY MINIMIZING DOWN TIME BETWEEN COATS
	ORDINARY SURFACE PREP FOR PAINTING.
	NOFIRE SYSTEMS: NO NEED TO STRIP, CLEAN OR PREP SURFACES
	CAN BE APPLIED OVER PAINTED SURFACES
	NOFIRE SYSTEMS: EASE OF INSTALLATIONN WITH UNSKILLED LABOR
	NOFIRE SYSTEMS: NO WASTE FROM OVERSPRAY OR DIMENSIONAL TOLERANCES
Maintenance Cost Savings	LIGHTWEIGHT: SIGNIFICANTLY LOWER LOADING FACTOR TO CONSIDER
	DURABLE, FLEXIBLE, RESISTANT TO IMPACT, CRACKING/DELAMINATION FROM THERMAL EXPANSION, BENDING AND VIBRATION
	RESISTANCE TO MOISTURE, SALT-SPRAY, MOLD, BACTERIAL & FUNGAL GROWTH, RUST & EXUDATE FORMATION

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