



Magic

by **INEXA**

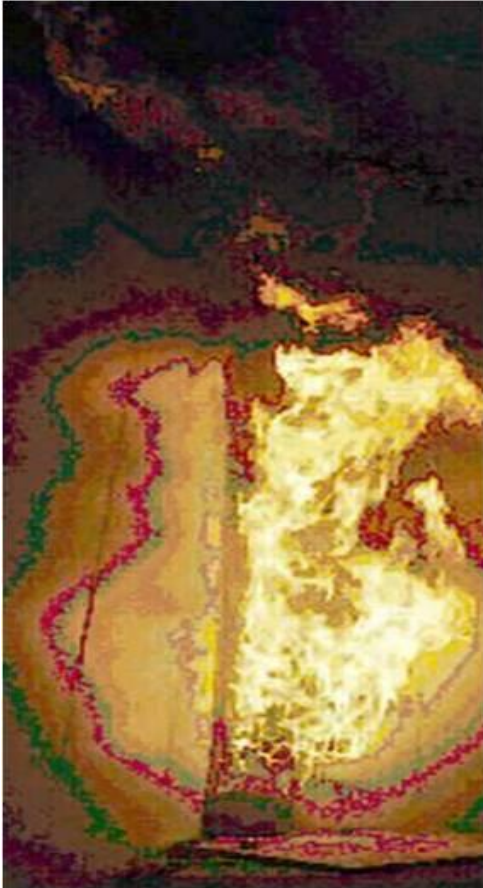
Craftsmen to the world's finest ships

A stylish new wall finish for marine interiors
Fire-retardant, lightweight, easy to maintain
and affordable

Uniquely, it encourages creativity

TNF Magic®

A revolution in ship safety and interior design



Since the mid-90'ies Inexa has delivered TNF Magic® to hundreds of ships and offshore units as an upgraded surface, complementary to the traditional pvc. TNF Magic® surpasses technical standards and is a safer and more durable and stylish surface than pvc.

- Halogen free
- Fire Retardant
- Low flame spread surface
- Low calorific value
- Non toxic
- No Chlorides
- No Cyanides
- No Dioxin
- Lightweight
- Hard Wearing
- Easily Maintained
- Competitive
- Vast Colour Range
- Stylish

TNF has more than 35 years global experience in making marine interior products to a quality that surpasses international standards. During these years TNF has become a leading brand for interior products to the world market. Contracts have been won for the supply of products to 9,000 ships, ferries, yachts, navy ships and offshore accommodation units.

A major breakthrough in technology and production systems by TNF has resulted in a revolutionary new approach to the style of a safe, fire retardant wall finish - TNF Magic®.

New designs have been created for all types of interiors. The finishes can be used in practically any situation, from the most modest of cabins to the most prestigious of public spaces.

For many years wall finishes in marine interiors, such as cabins and corridors, tended to be plastic laminate or, more recently, PVC foil. The exceptionally high levels of cyanides (HCN) in plastic laminate in fire situations have resulted in its gradual phasing out because of the danger to human life. However, its place was, unfortunately, taken by PVC foil which has its own serious problems. For a long time PVC foil wall finishes have been the norm and have been used in all types of vessels, including very large cruise ships and ferries. However, while PVC foil does not generate cyanide, it does have other equally dangerous qualities when ignited, such as the emission of chlorides (HCl) and the rapid formation of dense smoke and toxic fumes.

Although not actually conflicting with SOLAS, the use of PVC wall finishes can be a serious health risk in the event of a fire. Smoke and toxicity from a burning PVC wall finish are hazardous to health and impede fire fighting. They also attack sensitive equipment and certain types of cabling.



Shipowners, which are conscious of the need not only to meet SOLAS standards but to exceed them by a fair margin, are increasingly searching for safer options.

TNF Magic®, a safe option in wall finishes, is a non PVC material designed specifically to provide a safer environment onboard ships, yachts and offshore accommodation modules. It has a low flame spread and is halogen free. When ignited it emits no harmful fumes, such as chloride, and is light weight. Designed originally for corridors and accommodation spaces, this product has been further developed to allow it to be used in public spaces also, with big cost savings over other traditional materials. Most importantly it is competitively priced.

TNF Magic®

wins Ship Safety Award



The prestigious Ship Safety Award was presented by Mr Richard Moorhouse, Executive Chairman of Lloyd's Register (right) to Karl-David Sundberg, Chairman of Inexa TNF (center). Also present was the President of RINA, Mr Nigel Gee (left). The ceremony was held at the annual Dinner of the Royal Institution of Naval Architects in London on 27 April 2005.

The Lloyd's Register and Royal Institution of Naval Architects Ship Safety Award serves to promote a greater awareness of the need for safer ships. The award is presented to individuals or organizations whose work has made a significant contribution to improving safety at sea and the protection of environment. The distinguished judges confirmed that TNF Magic® has made a significant contribution in both areas. It is the first time the prestigious Ship Safety Award has been given to an interior accommodation system.



**THE 2004 RINA ~ LLOYD'S REGISTER
SHIP SAFETY AWARDS**

organised by
THE ROYAL INSTITUTION OF NAVAL ARCHITECTS

and sponsored by
LLOYD'S REGISTER

Winner of the Industry Category

INEXA A/S, DENMARK

For their entry

TNF Magic- A New Fire-Retardant Wall Finish

Manufactured by

TNF INTERIORS



Fire Test Presentation

In March 2004, TNF commissioned independent fire tests on its product TNF Magic® at Laboratorio Studi e Ricerche Sul Fuoco, Italy and the European Fire & Conductivity Laboratory in Denmark. Simultaneously, both laboratories conducted identical tests on PVC wall finish of the type normally used on ships. The timed photographs provide visual evidence of the poor performance of PVC compared to TNF Magic®. The scientific data recorded proved that TNF Magic out-performs PVC wall finishes.

2 MINUTES from Ignition

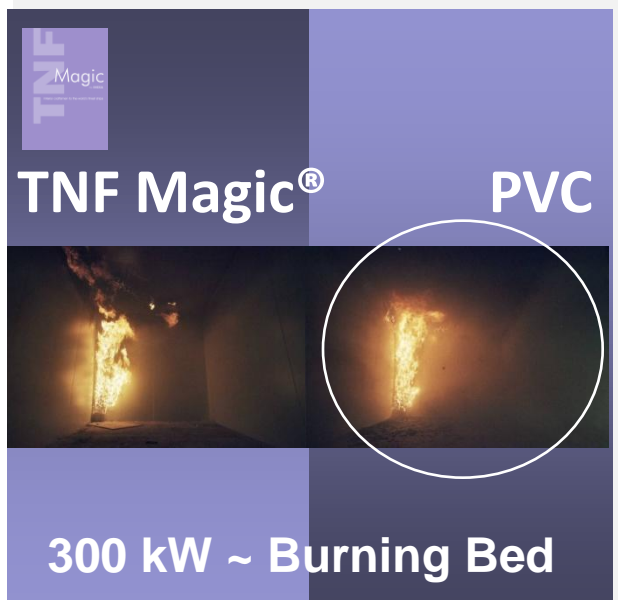
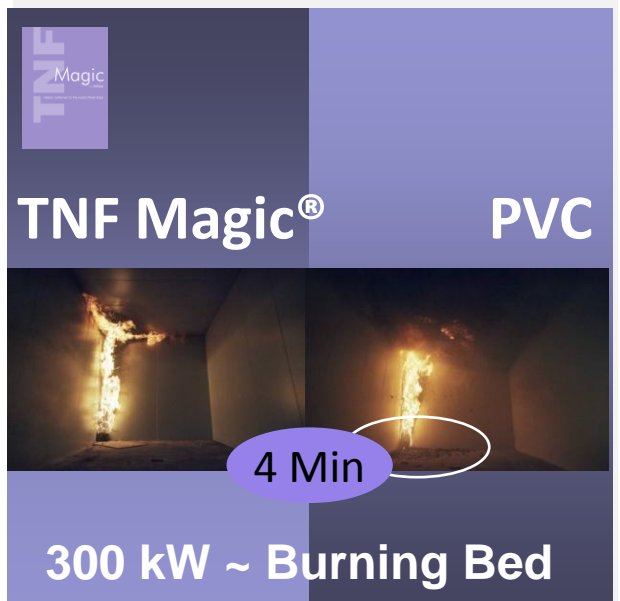
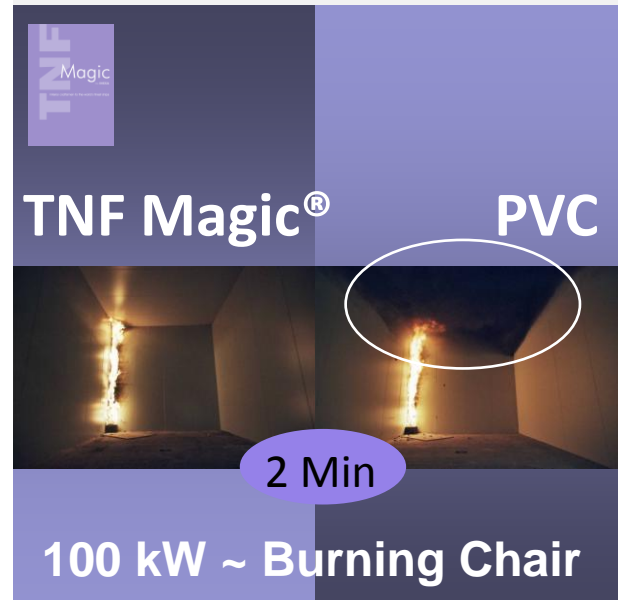
Already 2 minutes after ignition, the massive gathering of toxic fumes and thick black smoke is noticeable for the PVC finish. In contrast, the TNF Magic® room is relatively smoke free and with no toxicity evident.

4 MINUTES from Ignition

After 4 minutes the PVC room continues to fill with smoke to the point where the ceiling is completely obscured and the floor is becoming covered by the dangerous foil debris which is capable of starting fires on room contents. The TNF Magic® room is remarkably free from smoke and the absence of hot debris is obvious.

6 MINUTES from Ignition

With the passage of 6 minutes the PVC room is engulfed in toxic thick black smoke which could endanger anyone inside and would make rescue and firefighting difficult. Even more PVC foil debris litters the floor. As before the TNF Magic® room has minimal smoke, which in any case is non toxic, and of course no hot debris to cause further hazards. The results of the independent test is clear. TNF Magic® is safer than the PVC wall finishes.



The Data Produced

Independent scientific data show that TNF Magic® is substantially safer than PVC foil.

SMOKE

The massive quantities of smoke and toxic fumes generated by the burning PVC foil proved, beyond doubt, to be a serious threat to life. Smoke produced by TNF Magic® was small in comparison and was non toxic.

Carbon Dioxide and Carbon Monoxide

In the Carbon Dioxide (CO₂) test 1,500 mg/m³ was emitted from burning PVC, while TNF Magic produced 500 mg/m³. In the Carbon Monoxide (CO) test PVC burst through the 200 mg/m³ while TNF Magic® only reached 50 mg/m³

Hydrogen Chloride

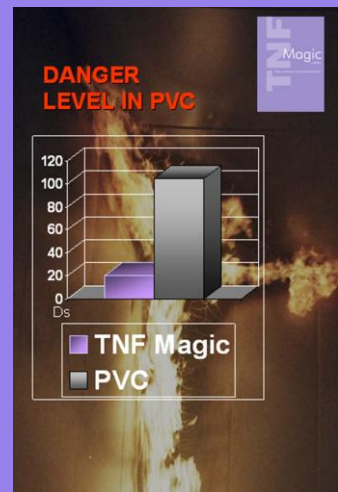
PVC foil wall finish generated dangerous levels of HCl, resulting in deeply impaired breathing in humans, leading to water in the lungs - not a pleasant way to die. High Tech and sensitive equipment would fail in these conditions. No HCl was detected in TNF Magic®.

Conclusion

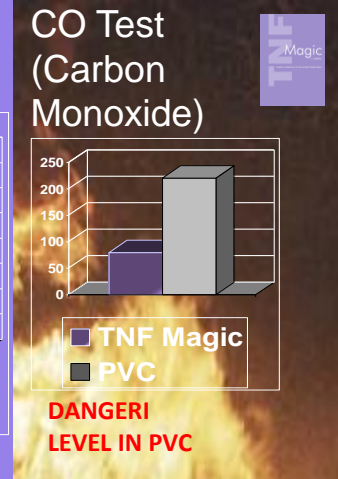
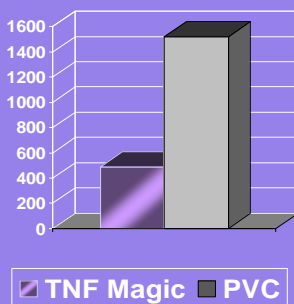
The tests proved that in a fire in a confined but mechanically ventilated space, PVC produces dangerously high levels of dense smoke and toxic fumes. In the same situation TNF Magic® produces minimal smoke and no toxic fumes whatsoever.

Smoke Density Test

- Smoke density was dangerously higher in the PVC than in TNF Magic
- High density of smoke would seriously impede rescue and fire fighting crews
- Calorific value
TNF MAGIC: 0,6-0,9 MJ/m²
PVC.foil: 5 MJ/m²

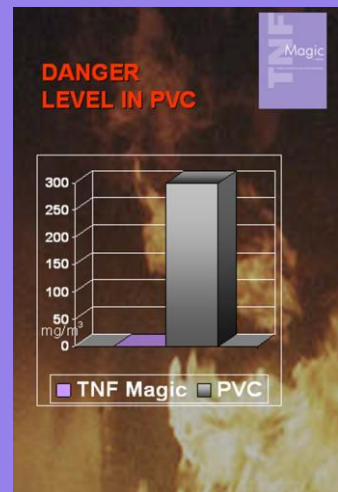


CO₂ Test (Carbon Dioxide)



HCl (Hydrogen Chloride)

- Levels of toxicity in the PVC would cause impaired breathing leading to water in the lungs
- Sensitive equipment failure
- No HCl detected in TNF Magic



TNF Magic[®] colours



2M355K 1

M1671

M1170

M1632

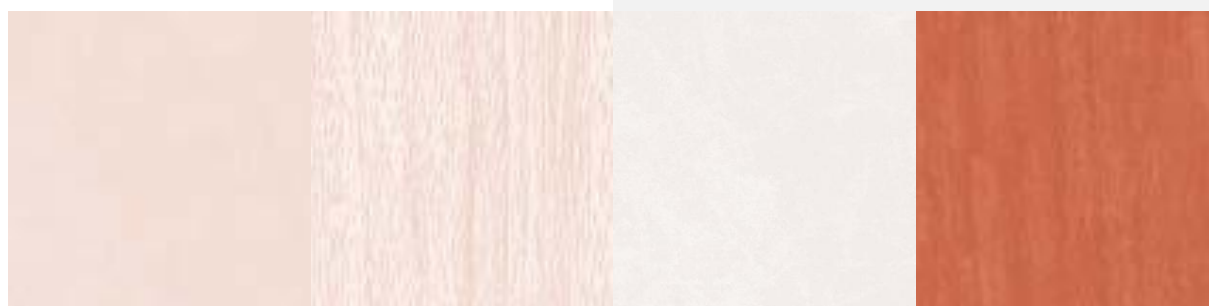


M1171

M340F

2M838K 1

M1176



M1620

2M335K 2

M1618

2M368K 401



2M3554K 5

M1174

Sample Patterns

This is a selection from the patterns available in TNF Magic[®] range. These have been reduced in scale to illustrate style. Colours are approximate in printed version.



CB10

DB10

TNF Magic
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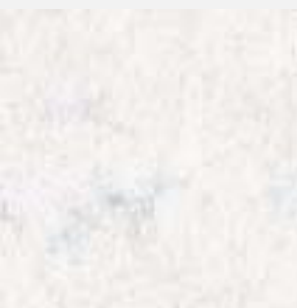
TNF Magic[®] colours



M1191



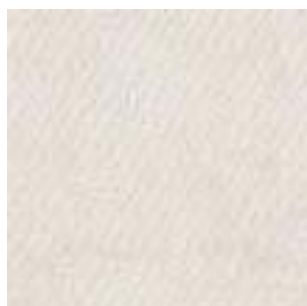
M1131



M1155



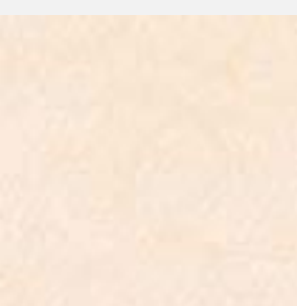
M1143



M1187



M1133



M1184



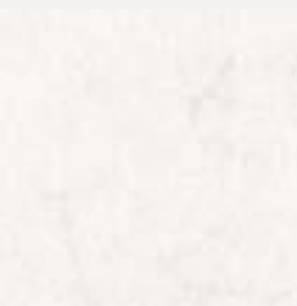
M1157



M1132



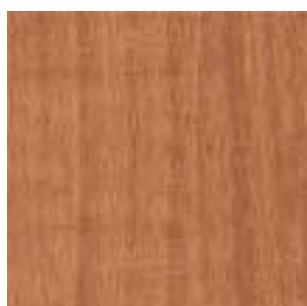
M1190



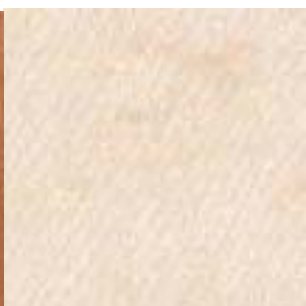
M1154



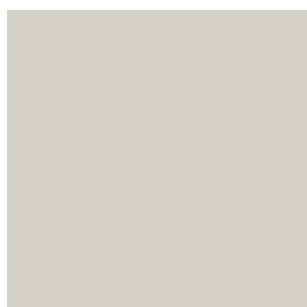
M1141



M1201



M1185



EB10

Durable surface

- Superior fire safety
- Galvanized steel or aluminium with ARS-surface
- No foil, but impressed directly into the ARS-surface
- Surface thickness: 0,033 mm
- Chemical resistant

TNF Magic
by **INEXA**

TNF Magic[®] colours



6A220D EFF

3H082F 11

6A220D I1

3K209K I1



2A505D I2

36603 I2

3H082 403

2K613K I3

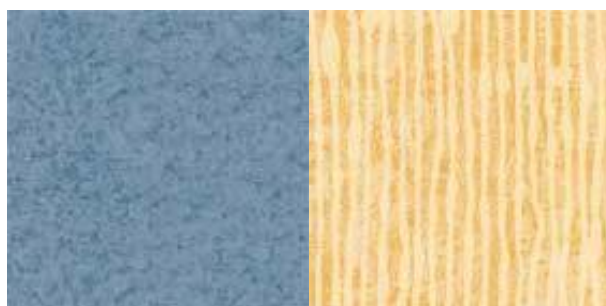


3H082F 402

LASCA I2

2A505D EFF

2K442K EFF



2A505D I3

2K442K I1

TNF Magic can be repaired

- Scratches can be repaired with paint and brush
- Shoepolish, rubber, oil and other materials can easily be removed with hot water and a cloth

TNF Magic® colours



1A367D 404

1A466D 12

1A247D 12

1A367D I1



1K220K B

1A866D 12

1A668D I1

16155 I1



1K365K 12

1A668D 12

1A367 403

1A668D EFF



1K365K I1

1K220K I1

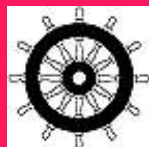
Sample Patterns

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TNF is the complete high quality accommodation system for all marine interiors. The TNF system includes wall and ceiling panels, doors, floors and wetunits. TNF has been leading the development in marine interiors since 1973. The world famous TNF quality is demonstrated in the environment, which can be designed to provide the ideal conditions for all functions.

TNF

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