

Pyrotek[®]



manufacturing quietness

OFFSHORE AND MARINE ACCOMMODATION SOLUTIONS



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INTRODUCTION

Our premium noise insulation products together with our fire protection systems are designed to meet the most stringent requirements in today's market.

Our world class team of naval architects, engineers and scientists bring a wealth of knowledge and experience to successfully control noise and increase the fire safety in demanding environments. They refine existing products, create new materials and work in conjunction with world class suppliers as required to meet the unique needs of our customers.

Pyrotek manufactures a full range of mass barriers, damped mass barrier panels, vibration damping, sound absorption, composites and thermal insulation products, as well as custom products designed for high temperature applications.

Our in-house engineering and CAD services design practical solutions, allowing you to compare the benefits of different insulation systems. We ensure our solutions meet or exceed the requirements of Safety of Life at Sea (SOLAS) and the International Maritime Organization (IMO) regulations.

Our products and services include:

- Acoustic design specification and CAD drawings
- Acoustic mass barriers and absorbers
- Vibration damping and isolation products
- Modular fire protection wall and floor systems
- Structural 'A' rated fire protection products
- Non-structural A, B and H rated interior partitioning panels
- Custom exhaust and muffler systems

Pyrotek is the most trusted name in noise and fire insulation solutions. We boast over 30 years of noise control experience, world class manufacturing technologies and advanced research and development expertise.

ACCOMMODATION & FIT OUT



PARTITION & LINING SOLUTIONS

Pyrotek offers several types of wall systems in order to provide a choice when designing the internal fire and acoustic wall furnishings.

Wall panel solutions meet A, B and H class fire ratings with noise reduction rating ranging from Rw 26 to 47 dB.

All our wall systems are supplied in various panel sizes. These light-weight, durable panels can be supplied in their natural form, without facings or with high quality veneer laminates, PVC and other SS coatings to suit our customer's needs.

Offering simple and fast joining systems like tongue and groove, omega and self-locking joints, combined with various corner, T and Y profile patterns, the Pyrotek wall panels allow our customers the ability to be totally flexible with their design.

All systems can be designed to incorporate concealed wiring, cables, hatches and doors.



BHD, Partitions & Lining Panels

Type	Profile	Thickness Excluding Surface (mm)	Weight/m ² Excluding Surface (kg)	Surface	Thickness Including Surface (mm)	Weight/m ² Including Surface (kg)	Sound Transmission Loss	Standard Size (mm)
Hard Core densities up to 300 kg/m ³								
B-0	Omega	19	5	HPL	20.6	8	26 dB	2400 x 1200
B-15	Omega	23	7	HPL	24.6	10	27 dB	2400 x 1200
B-15	Tongue & Groove	19	6	HPL	20.6	9	27 dB	2400 x 600
B-30	T&G	26	8	HPL	27.6	11	28 dB	2400 x 600
A-0	Omega	23	7	Steel	24.4	17	29 dB	2400 x 1200
A-60	T&G	52	16	Steel	53.4	26	34 dB	2400 x 580
H-120	T&G	95	29	Steel	96.4	39	39 dB	2400 x 570
Hard Core densities 450-640 kg/m ³								
B-0	C Spline	12.7	8	HPL	14.3	11	29 dB	2400 x 1200
B-15	C Spline/Omega	19	8.6	HPL	20.6	12	28 dB	2400 x 1200
A0	C Spline/Omega	19	8.6	HPL	20.6	12	28 dB	2400 x 1200
A0	Omega	12.7	8	HPL	14.3	11	29 dB	2400 x 1200
A60	Omega	2 x 19mm with 10 mm air gap	17.2	HPL	52	24	36 dB	2400 x 1200
Soft Core densities up to 150 kg/m ³								
B15 Lining	H-Profile	-	-	PVC Foil Coated Steel	25	12.4	32 dB	3000 x 600
B15 Partition	H-Profile	-	-	PVC Foil Coated Steel	50	16.4	33 dB	3000 x 600
A60	H-Profile	-	-	PVC Foil Coated Steel	100	25	-	3000 x 600
B-15 Standard Inspection Hatch	Self Interlocking	-	-	-	25/50	15.0	-	-

- Marine Panel surface can be processed to customer requirement e.g. decorative high-pressure laminates (HPL), paper, glass tissue, veneers, plywood, steel sheets or aluminium sheets & pvc foils.
- Panels can be supplied at alternative sizes or tailored; contact Pyrotek Marine Division for details.
- Inspection hatches and removable panels are compatible with some of the systems above, consult your Pyrotek representative.
- Other panels available on request which include, reinforced, conduit, high noise reduction and wet area panels.

ACCOMMODATION & FIT OUT



CEILING SOLUTIONS

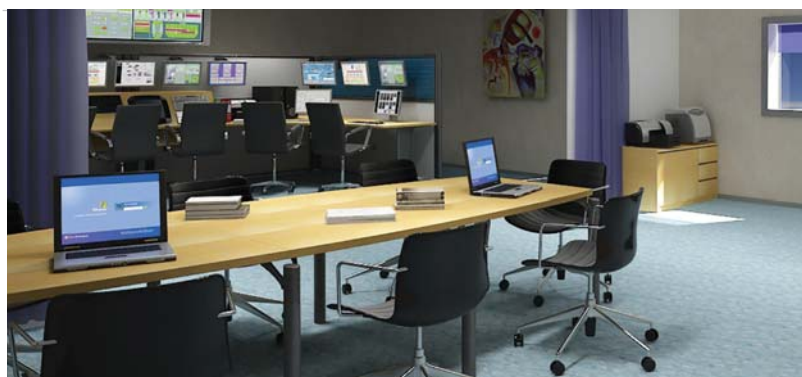
Several types of ceiling systems and materials are available, providing a choice when designing the internal finishing.

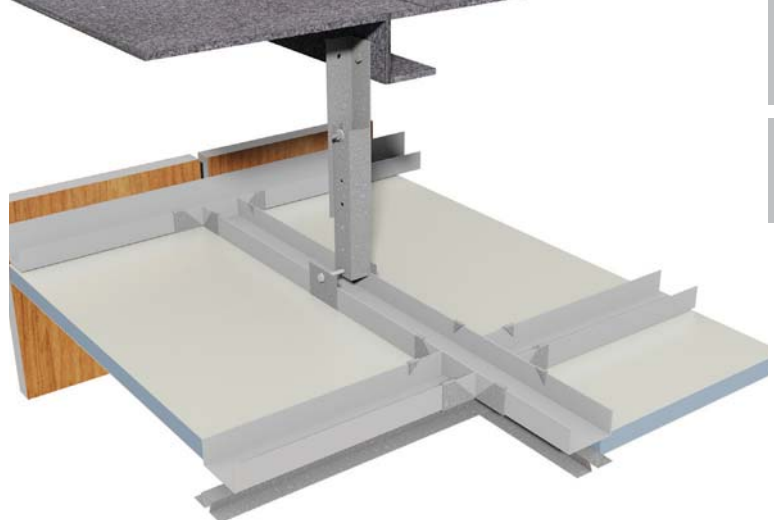
Our ceiling panel solutions meet B and C class fire ratings using non-combustible materials which also offer excellent acoustic performance.

Ceiling systems are supplied in various panel sizes and thicknesses from as thin as 9.5 mm. We are able to offer ceiling systems that can span up to 3 m without the need of ceiling supports. These light weight and durable panels can be supplied in its natural form, plain steel facing, without facings or with high quality veneer laminates, PVC and other decorative coatings to suit customer's needs.

Offering simple and fast joining systems like tongue and groove, omega and self-locking joints, combined with various edge finishings such as skirting covers and edge strips, the Pyrotek ceiling panels allow our customer the ability to be totally flexible with the design.

B-Rated ceiling systems combined with mineral fibre insulation on structure is able to provide up to A-60 structural fire protection.





Ceiling systems

Type	Profile	Thickness Excluding Surface	Weight/m ² Excluding Surface (kg)	Surface	Thickness including surface (mm)	Weight/m ² including surface	Sound Transmission Loss	Standard size (mm)
Hard Core density 450-640 kg/m ³								
C Class	Omega	9.5	6.1	HPL	11.1	8.5	-	2400 x 1200
B-15	Omega	16	7.25	HPL	17.6	9.5	26 dB	2400 x 1200
Soft Core density from 36-150 kg/m ³								
B15	Self Interlocking	-	-	PVC Foil Coated Steel	50	9.5	Upon Request	3000 x 300
B15	Self Interlocking	-	-	PVC Foil Coated Steel	50	18	Upon Request	3000 x 300
B15	Self Interlocking	-	-	PVC Foil Coated Steel	70	13	Upon Request	600 x 600
Soft Core density from 36-70 kg/m ³								
**B0	Suspended Grid	-	-	Powder coated	25	8.75	Upon Request	Multiple Solutions

- Various surface finishes are available for selection.
- Panels can be pre-cut or tailored to match required sizes.
- Inspection hatches can be incorporated into some of the systems above, please consult your Pyrotek representative.
- Self-interlocking ceilings are self-supporting in free spans of up to 3m, thereafter ceiling hangers will be needed.

**This ceiling system is available perforated or unperforated, installed in a ceiling grid of 600 mm sq tiles or 600 mm x required length. The system is also available with Aluminium, saving much more weight - although when made with aluminium, it achieves IMO Low flame spread and not the B Class.



ACCOMMODATION & FIT OUT



ISOLATED FLOORING SOLUTIONS

There are many variables when choosing the right flooring system. Thickness, Rw rating, coverage area, ease of installation, fire rating and material specifications all need to be taken into consideration.

Whether the flooring needs A-60 fire-rating, high noise reduction, limited deckhead heights or easy installation with marine approval, Pyrotek has various options available. If your requirements are not known, Pyrotek can work closely with the shipyards, naval architects, consultants or marine fit out experts to help choose the right flooring system for any particular vessel.

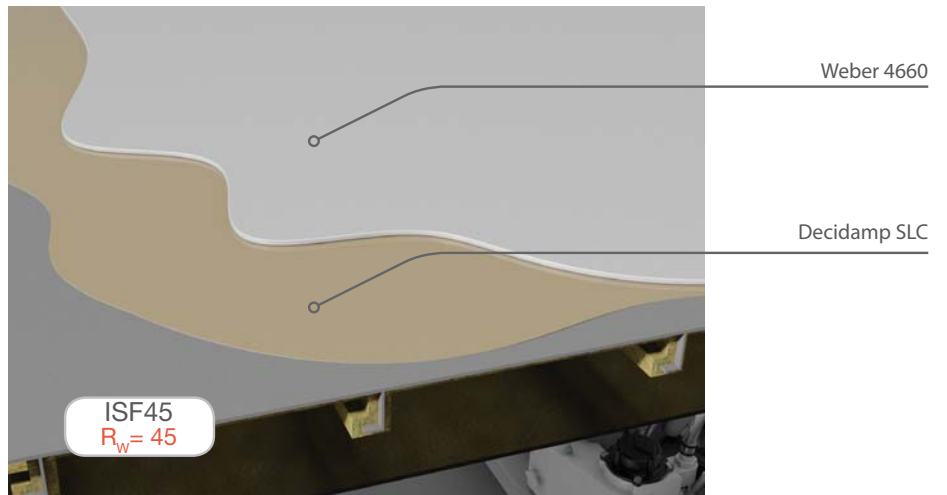
FLOORING SYSTEM PROPERTIES

Solutions	Fire rating	Weight (kg/m ²)	Thickness (mm)	Sound reduction R _w (dB)	Construction
ISF48	Low spread flame	26.5	16.5	48	<ul style="list-style-type: none"> • 1.5 mm Decidamp SLC • 15 mm Weber 4660
ISF53	A-60	29.0	70	53	<ul style="list-style-type: none"> • 68 mm non-combustible rockwool • 2 mm steel
ISF61	A-60	75	92	61	<ul style="list-style-type: none"> • 1.5 mm Decidamp SLC • 15 mm Weber 4660 • 50 mm non-combustible mineral fibre • interwoven glass fabric 100 - 3000 gsm • steel reinforcing net, 150 mm grid at 5 mm diameter • 25 mm Weber 4665

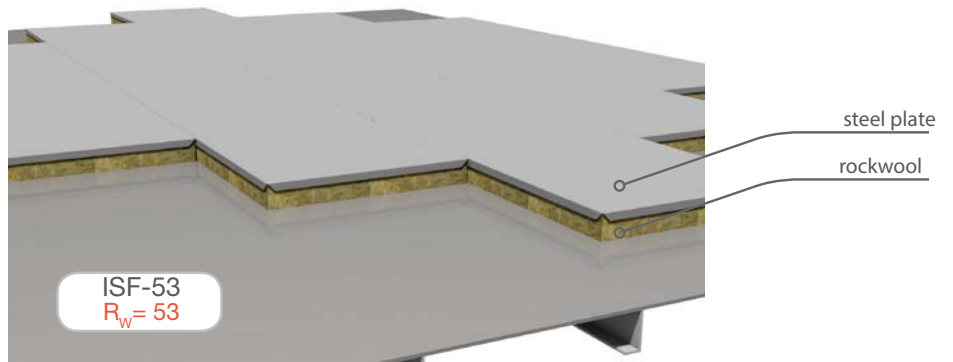
LIGHTWEIGHT FLOOR SOLUTIONS

Solutions	Fire rating	Weight kg/m ²	Thickness (mm)	Sound reduction R _w (dB)	Construction
4680N	Low spread flame	0.9	0-20	-	<ul style="list-style-type: none"> • Used for leveling in light traffic areas

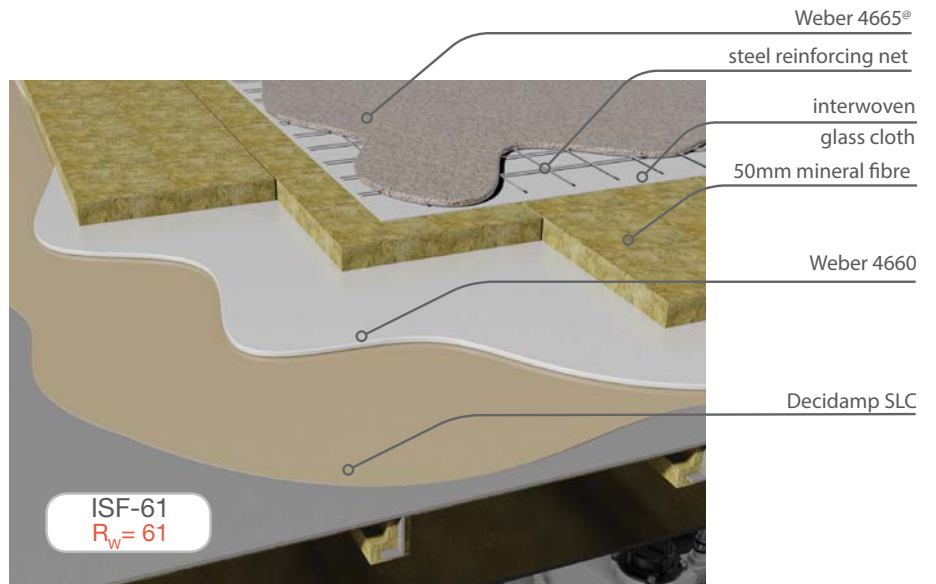
This lightweight flooring construction combines a polymeric damping compound with a self-levelling cementitious screed, providing a thin, durable and highly damped system achieving IMO - low flame spread characteristics.



Laminated panels, aligned and spot welded on site, forming an effective noise barrier whilst being floated off the main structure for vibration isolation. Designed to be a low cost, quick and easy installation system with an IMO approved A60 fire protection rating.



A comprehensive flooring system, incorporating polymeric damping compounds, self-levelling cementitious screeds, steel mesh reinforcing and mineral wool fibres, achieving the highest acoustic performance in both air and structure-borne noise whilst maintaining an A60 fire rating.



ACCOMMODATION & FIT OUT

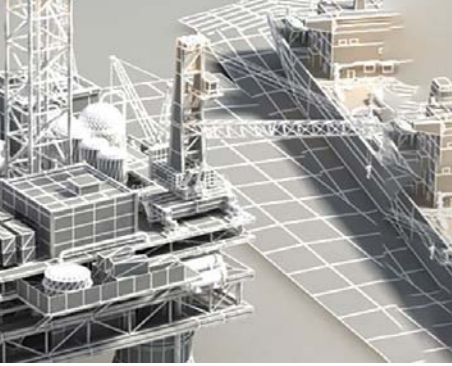


FIRE DOORS

Fire doors are an integral part of all systems that require a fire-rating. At Pyrotek, a solution can be tailored for any fire door requirements, whether it is on a luxury craft, cruise ship, work boat or offshore industry. The right door with the right specifications can be recommended and supplied to meet your needs. With over 250,000 fire doors sold worldwide, this system is a world leader in supplying fire rated doors with demand ever increasing.

With simple core design, multiple facing options and multiple ways of installation, there are hundreds of different door combinations to suit, from C-Class right up to automated double A-60 fire rated doors available - meaning the right door for all situations.

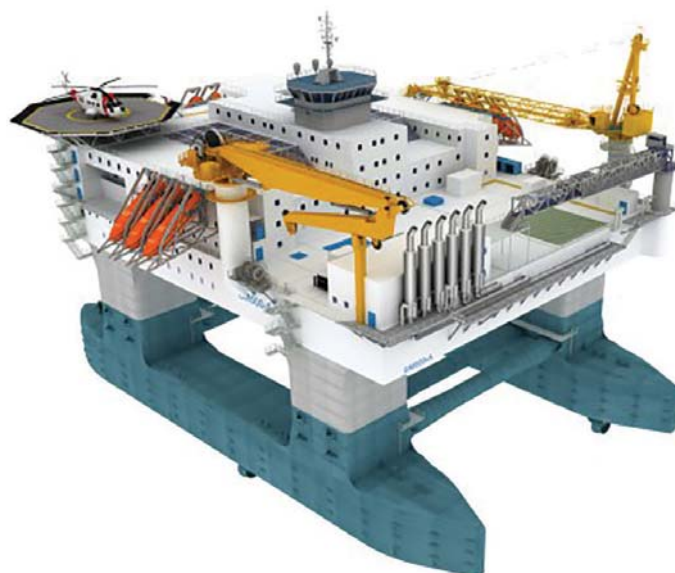
Door type name	Door leaf thickness (mm)	Sound reduction R_w (dB)	Core density (kg/m ³)	Max clear openings (W x H)	Finish	Available as/ with:	Est. Weight (700 x 1900)
C-Class	TBA	TBA	TBA	TBA	PVC, Powder Coated, Laminate or SUS	<ul style="list-style-type: none"> • Single • Over Panel • Louver • Window 	TBA
B-15	40	33	150	900 x 2080	PVC, Powder Coated, Laminate or SUS	<ul style="list-style-type: none"> • Kick out Panel • Under stairs • Double Door 	49 kg
B-15 Sound Reduction Door	39	38	150	900 x 2080	PVC, Powder Coated, Laminate or SUS	<ul style="list-style-type: none"> • Single • Over Panel 	60 kg
B-15 High Sound Reduction Door	39	43	150	840 x 1960	PVC, Powder Coated, Laminate or SUS	<ul style="list-style-type: none"> • Louver • Window • Kick out Panel 	60 kg



Door type name	Door leaf thickness (mm)	Sound reduction R_w (dB)	Core density (kg/m ³)	Max clear openings (W x H)	Finish	Available as/with:	Est. Weight (700 x 1900)
B-30	40	-	250	900 x 2080	PVC, Powder Coated, Laminate or SUS	• Single	70 kg
B-30 High Sound Reduction	50	43	150	900 x 2098	PVC, Powder Coated, Laminate or SUS	• Single • Window	70 kg
A-15	39	-	150	1000 x 2100	PVC, Powder Coated, Laminate or SUS	• Single • Window • Hose port • Rounded corner • Double door	65 kg
A-60	53.5	44	150	990 x 2095	PVC, Powder Coated, Laminate or SUS	• Single • Window • Hose port • Gas tight • Rounded corner • Double door	92 kg
A-60 High Sound Reduction	53.5	48	150	990 x 2095	PVC, Powder Coated, Laminate or SUS	• Single • Rounded corner	92 kg
A-60 Spray Tight External	53.5	48	150	990 x 2095	PVC, Powder Coated, Laminate or SUS	• Single • Window • Double door	95 kg

- Installation guide and ordering instructions are available upon request.

A-class and C-class sliding doors are also available with a mere 53 mm leaf. The sliding door can also be equipped with driving automated or pneumatic systems for bridge control and is ideal in areas where a hinged door would have little room to completely swing open.



NOISE SOLUTIONS



NOISE BARRIERS

QUADZERO™ NL

Quadzero NL is a high-performance foil faced mass loaded vinyl (MLV) noise barrier offering superior acoustic transmission loss and upgraded fire resistance.

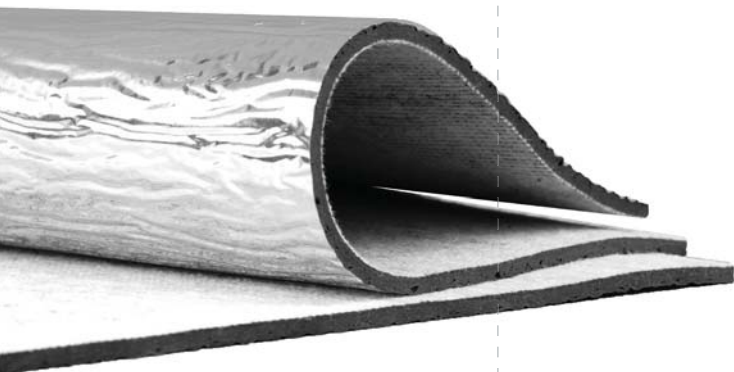
With a fire-resistant foil facing, Quadzero NL was developed to meet stringent fire safety requirements in the marine sector. The product meets the highest fire ratings complying with International Marine Organisation standards for low spread of flame and is a USCG approved MLV.

Quadzero NL reduces sound transmission in critical frequency regions of rigid panels. The thin, dense mass barrier reflects and absorbs the transmission of sound through decks, bulkheads, deckheads, walls, ceilings and floors, reducing noise generated from mechanical equipment, engine noise and electronic devices.

Quadzero NL contains no ozone depleting substances and complies with European and Australian standards for Volatile Organic Compounds emissions.

FEATURES

- Complies to IMO FTP 2010 - meets the requirements for low spread of flame of bulkhead, wall, ceiling, floor covering
- Approved for use as an interior finish in U.S. Flag and SOLAS vessels (USCG letter ref. 16714/164.112/GEN Corr.014-1082)
- Self-extinguishing
- Resistant to water, oil and natural weather conditions
- Available in various barrier weights and roll sizes





NOISE CURTAIN

WAVEBAR® NC

Wavebar® NC are modular high-performance, composite acoustic curtains designed to reduce noise transmission between adjoining areas. It was developed to meet market requirements for a more flexible, economical and versatile solution than rigid enclosures on construction and industrial sites.

The composite is constructed using a single or multiple layers of flexible, tough, mass loaded vinyl noise barrier Wavebar®, and a layer of sewn or quilted absorbing material to create a high performance acoustic curtain. The absorbing layer is offered in a choice of varying materials including polyester fibre, glass wool and high temperature ceramic fibres.

Wavebar NC combines the superior transmission loss performance of the barrier layer and the excellent absorption properties of the absorbing layer to optimise noise reduction.

The high strength of Wavebar provides the versatility to hang or drape in long lengths. The curtains can be secured with eyelets and heavy duty grommets to an engineered self-supporting, metal frame and track curtain system. Using hook and loop seals between curtains further allow for easy accessibility to the enclosure.

Clear view windows and panels or automated access doors can be easily incorporated within Pyrotek's 'Noise Curtain' systems.

The product is easily cut and fabricated into various shapes to suit any design or area.



NOISE SOLUTIONS



VIBRATION DAMPING

DECIDAMP® SP150

Decidamp® SP150 is a fast drying, water based viscoelastic vibration damping compound. Decidamp's advanced formula was developed for acoustic improvement of marine, rail carriages, vehicle chassis and other structures that are exposed to vibrations and impact.

Decidamp is a non-toxic structural damping material that is suitable for exterior and interior use. Being a thixotropic compound, the material is easy to apply by simply spraying, rolling or trowelling onto surfaces of the substrate. Once dry, the cured film is UV, water and chip resistant and exhibits low combustibility.

Decidamp has exceptional fire properties and complies with international fire codes for marine, rail carriages and the building industry. Tested to IMO FTP Annex 1 Part 5, Decidamp SP150 carries EC Type Certification (MED B and D) and has achieved the highest fire rating - Class 0 required by British standards.

Decidamp SP150 is an extensional damping compound that is applied to effectively treat such structures by reducing impact-generated noises and resonant vibration at its source. Decidamp's viscous and elastic properties effectively absorb and dissipate vibrational energy from the flexural stress of the base structure.

DECIDAMP® DC30

Decidamp® DC30 is a two-component polyurethane based damping paste, which works best in a constrained layer configuration, (sandwich system) where maximum advantage can be taken of its excellent viscoelastic damping properties. This in turn results in substantial reductions in structure-radiated air-borne sound.

It performs well over a wide temperature and frequency range, enabling it to be used in a multitude of applications especially in marine environments.

Decidamp DC30 is applied to a metal or plastic counter plate which is then bonded to the surface that needs to be treated. During curing, it will bond to both the counter plate and surface substrate creating an excellent damping medium.

It's corrosion resistant, highly thixotropic and is able to be used on horizontal and vertical surfaces without slumping.





DECIDAMP® CLD

Decidamp® CLD is a constrained layer, viscoelastic damping material, designed to reduce structural vibration and sound transmission within light gauge materials. CLD was developed to meet market noise reduction requirements in the automotive, marine, industrial and OEM markets.

The product achieves the highest fire ratings complying with International Marine Organisation standards for low spread of flame, as well as British standards, achieving Class '0'.

Lightweight panel constructions such as sheet metal (steel, alloy, tin etc.) and rigid plastics (FRP etc.) easily transmit noise when affected by natural resonance from vibration energies.

By applying CLD to rigid lightweight structures, the natural frequency of the vibrating surface is changed, lowering radiated noise (vibration), and increasing the transmission loss of the product.



DECIDAMP® SLC

Decidamp® SLC is a two-component, polyurethane based, vibration damping compound used in flooring applications. It was developed to meet market requirements to reduce structural noise and vibration in the marine and offshore industries.

It is viscoelastic, lightweight and predominantly used as a primary deck layer or a sub-layer to receive a variety of floor coverings. Its inherent self-levelling properties are highly suited to levelling uneven floor surfaces e.g. warped metal plates, or providing a seamless flat working surface. Its unique properties reduce structural vibration in flooring applications when installed as a constrained layer between two rigid surfaces. It isolates and insulates floor coverings, thereby reducing noise transfer from structural vibration, footfall or impact noise to noise-sensitive areas under decks.

The constrained layer system formed by the use of Decidamp SLC dampens structure-borne noise from machine rooms housing engines, generators, compressors and other mechanical components that are common acoustic challenges on offshore platforms, maritime vessels and industrial structures.





SPECIALTY SERVICES

STRUCTURAL FIRE PROTECTION

Pyrotek also offers structural fire protection products that can be tailored to suit any application. Whether it be weight, thickness, ease of insulation or Acoustic and Thermal performance, we have a solution to meet your needs.

ULTIMATE U SeaProtect

ULTIMATE combines peak performance in fire protection and thermal insulation with an extremely lightweight, flexible product. It provides additional acoustic insulation while being faster and more efficient to install than traditional methods. It is marine certified (type approval) for use on steel, aluminium and composite/glass constructions.

PROMAGUARD®/ PROMAGLAF®

Promaguard and Promaglaf are high-performance acoustic, thermal and fire insulation for the marine market. Promaguard is a light weight non-combustible material that offers a passive fire protection system for ships and yachts. Promaglaf is a flexible stone wool needled felt with excellent tear resistant properties suitable for marine applications.

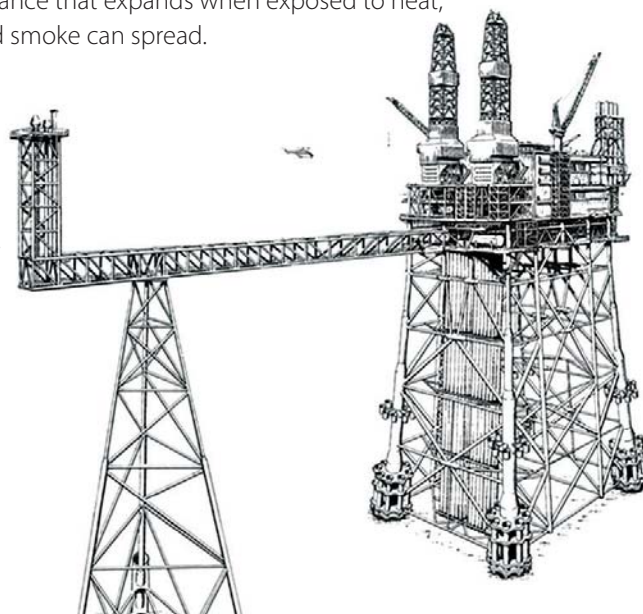
DRAUGHT STOPS

It is a requirement of IMO/SOLAS that "air spaces enclosed behind ceilings, panelling or linings shall be divided by close-fitting draught stops spaced no more than 14m apart." Draught stop vertical barriers are used to stop the spread of fire and smoke throughout the void spaces between the ceiling and deckhead, underfloor voids and spaces behind panelling systems.

BULKHEAD PENETRATION SEALS

Collars

For items such as pipes that penetrate through fire rated bulkheads and deckheads, systems must be put into place to stop the spread of flame and smoke through these openings. With this unique, patented system the pipe is collared in an intumescent substance that expands when exposed to heat, sealing the opening before fire and smoke can spread.





Mastic/Silicone Sealants

For sealing small gaps, small holes or other small penetrations an intumescent mastic or fire-rated silicone based product can be used to maintain the bulkheads fire rating.

Penetrations

Insulation standards for class BHD's partitions, lining and ceilings are to be maintained at the boundaries of the panels and ceilings, where they are penetrated by fittings, pipes, trunks etc. to be of satisfaction of the surveyor.

CUSTOM FABRICATED PRODUCTS

Pyrotek® has the ability to custom design flexible high temperature covers for an array of applications, such as removable exhaust jackets, flexible expansion joints and valve covers. Our skilled engineering team can design flexible, removable covers for cryogenic applications -40°C to as high as 1400°C.

ENGINEERING

Material Take Off

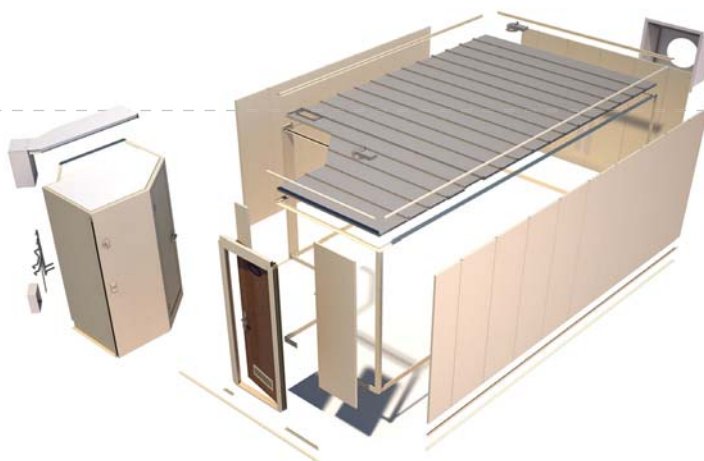
If requested, Pyrotek can also produce a personalised material take-off sheet determining the correct quantities needed for your project. The MTO will be generated by analysis of engineering drawings provided by the shipyard. General Arrangement MTO are then presented to the shipyard showing the complete quantity requirements, itemised costing, along with weight analysis of proposed solutions.

CAD Drawings

Engineering drawings can be included with personalised installation instructions and drawings to help aid in a speedy installation and minimise confusion as to how the system should be installed.

Prefabricated / Modular Cabins

If so required, prefabricated, tailor made cabins and wet units can be made to order. All pieces are prearranged, marked and shipped with an overhead installation drawing. Wall panels, ceilings and doors give the advantage of time effective installation as no cutting required on site and a speedy simple installation follows.



OTHER PYROTEK PRODUCTS



Decidamp® Tile

Decidamp® Tile is a unique product, engineered to reduce vibration in thick panel constructions and is formulated using new generation polymer compounds to provide exceptional performance.

The vibration energy in the structure is absorbed within the tile, therefore reducing structural and airborne noise.



Sorbermel®

Sorbermel® is an open-cell flexible melamine foam that displays excellent fire resistance over traditional polyurethane foams. Tested to IMO FTP Annex 1 Part 5, the melamine resin-based foam carries EC Type Certification (MED B) and demonstrates excellent resistance to hydrolysis and combustion.

At 11 kg/m³, Sorbermel offers significant weight savings over traditional insulation. It is offered in a range of surface finishes dependent on application.

visit our website:
pyroteknc.com





MORE INFORMATION

For more information relating to the products above or any other marine products please contact

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PYROTEK WORLDWIDE LOCATIONS

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CANADA
CHINA
CZECH REPUBLIC
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TAIWAN
THAILAND
TURKEY
UNITED ARAB EMIRATES
UNITED KINGDOM
UNITED STATES OF AMERICA
VIETNAM

pyroteknc.com



Product Specifications, Testing And Certification

We have tested our products to a range of marine specifications to enable them to be used in surveyed vessels or specific certification.

For product specific details, Technical Data Sheets can be found on our website - pyroteknc.com

Information can be requested through our 'Contact us' page.

Pyrotek endorse forest sustainability and the preservation of natural environment. We procure the highest quality materials from suppliers who hold FSC (Forest Stewardship Council) Certification and PEFC (Programme for the Endorsement of Forestry Certification) amongst other certification programmes.

Caveats: Specifications are subject to change without notice. The data in this document are typical of average values based on tests by independent laboratories or by the manufacturer and are indicative only. Materials must be tested under intended service conditions to determine their suitability for purpose. The conclusions drawn from acoustic test results are as interpreted by qualified independent testing authorities. Nothing here releases the purchaser/user from responsibility to determine the suitability of the product for their project needs. Always seek the opinion of your acoustic or mechanical engineer on data presented by the manufacturer. Due to the wide variety of individual projects, Pyrotek is not responsible for differing outcomes from using their products. Pyrotek disclaims any liability for damages or consequential loss as a result of reliance solely on the information presented. No warranty is made that the use of this information or of the products, processes or equipment to which this Information Page refers will not infringe any third party's patents or rights.

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