Technical Specifications

Promaguard SFP Panels

PROMAGUARD® is an extremely light weight structural fire protection and thermal insulation for use in aluminum, steel, GRP, and wood vessels of all sizes. The proprietary technology used in the construction of PROMAGUARD® achieves the same ratings of traditional materials with reduced volume if insulation saving both weight and space.

PROMAGUARD® is a last generation material by Promat for thermal insulation and passive fire protection, developed with a microporous grains technology and the use – in its formulation – of patented molecules called Promaxon . Thanks to its exclusive mineral and not fibrous composition, PROMAGUARD® grants advantages and technical characteristics that make it safe and unique for fire protection and efficient thermal insulation on ships, yachts, trains, plants for alternative energies, saving weight and reducing thickness by up to 4 times, if compared to traditional materials and solutions.

In particular, in the marine market, PROMAGUARD® is the most technologically advanced and successful solution, thanks to certifications issued by Naval Registers, for passive fire protection of decks and bulkheads in aluminum, steel GRP and wood.

Characteristics

- Extremely light weight
- High insulatory values in relation to thickness
- Non-fibrous
- Nontoxic
- Not a hazardous material
- Flexible

Advantages

- Achieves A, B, & C ratings lower weights than traditional materials.
- Reduce thickness of SFP treatments by as much as 75%.
- Easy to install
- Certificates from all major classification societies
- Flexible

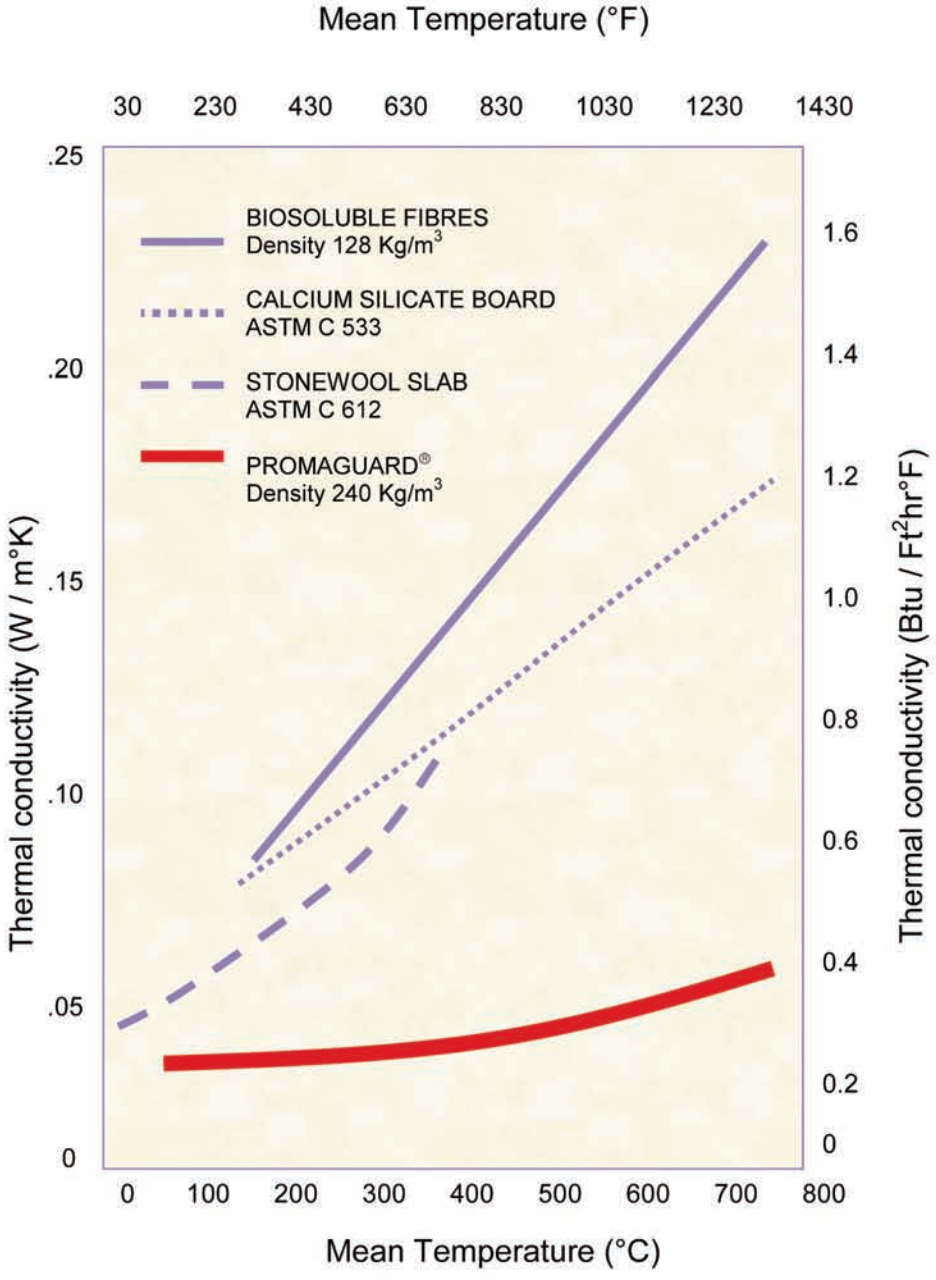
SOUNDOWN
FOR PEACE AND QUIET

Thermal characteristics

PROMAGUARD® has the lowest thermal conductivity values, if compared with the most qualified traditional products available on the market, which do not grant the same insulation level as to heat radiations. See chart herebelow.

The chart shows that PROMAGUARD® in thickness 10mm produces (in relation with density and temperature) a reduction in the irradiated heat and an insulation that would be achieved by 50mm of good quality fibrous material.

Hence, PROMAGUARD®, with a weight of 2,4 Kg/m^2 for 10mm thickness, can grant the best performances and can achieve A60 Class fire protection.



Promat

Technical data sheet - PROMAGUARD®

Preliminary – April 2011

High performance acoustic, thermal and fire insulation

Technical characteristics

Aspect:	Flexible mat composed of microporous molecules in white glass cloth, sewed by means of Kevlar threads (picture page 1)		
Temperature classification of the main components:			
	Microporous core	°C	1000
	Glass cloth	°C	650
	Kevlar thread	°C	400
Nominal density (microporous core)		Kg /m^3	240 ± 10%
Glass cloth weight		gr / m^2	210
Weight/thickness reduction (mean temperature)		%	< 2 % at 900°C
Specific heat		K j / kg K	1.05
Thermal conductivity in relation to temperature:			
	200°C	W /m°K	0.022 ÷ 0.025
	400°C	W /m°K	0.028 ÷ 0.033
	600°C	W /m°K	0.035 ÷ 0.039
	800°C	W /m°K	0.041 ÷ 0.045
Composition (microporous core)			
	SiC	%	10 ÷ 20
	SiO_2	%	70 ÷ 90
	CaO	%	2 ÷ 5
Combustibility			Non combustible

Standard dimensions

Length (mm)	Width (mm)	Thickness (mm)
1200	600	6 – 10 - 15

Tolerances:

Thickness:	+ 1mm
Length and width:	+ 3mm

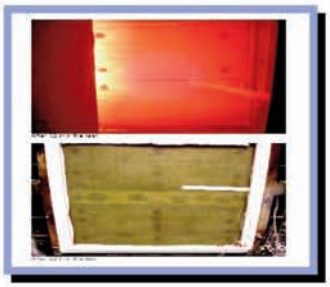
Workability

PROMAGUARD® can be easily cut with manual cutters and installed onto the surfaces to be insulated by metallic pins.
When PROMAGUARD® panel is cut, the edge must be sealed by gluing glass cloth on it. All these items – upon request – can be supplied by Promat.

Fire tests

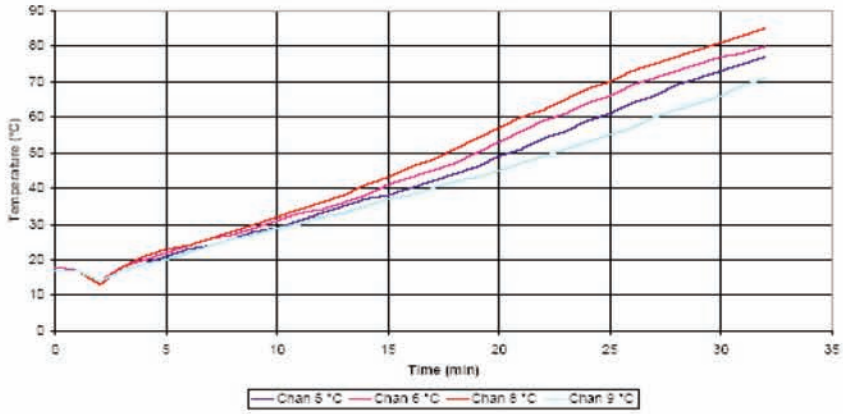
PROMAGUARD® has been tested for more than 3 months in our laboratories (Tisselt - Belgium) giving very positive results, that have then been acknowledged by primary Naval Registers such as RINA, LAPI and MCA:

Steel deck and bulkhead:	**A30 - A60**
Aluminium deck and bulkhead (fire on one or both sides):	**A30 - A60**
Sandwich and laminated GRP deck and bulkhead:	**B15 - A30 - A60**
Wooden bulkhead (fire on one or both sides):	**A60**



PROMAGUARD® has M.E.D. & USCG Non Combustible Certification

Fig 2: Temp Hot Face GRP



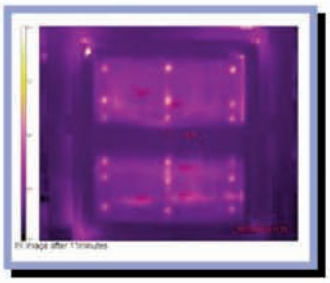
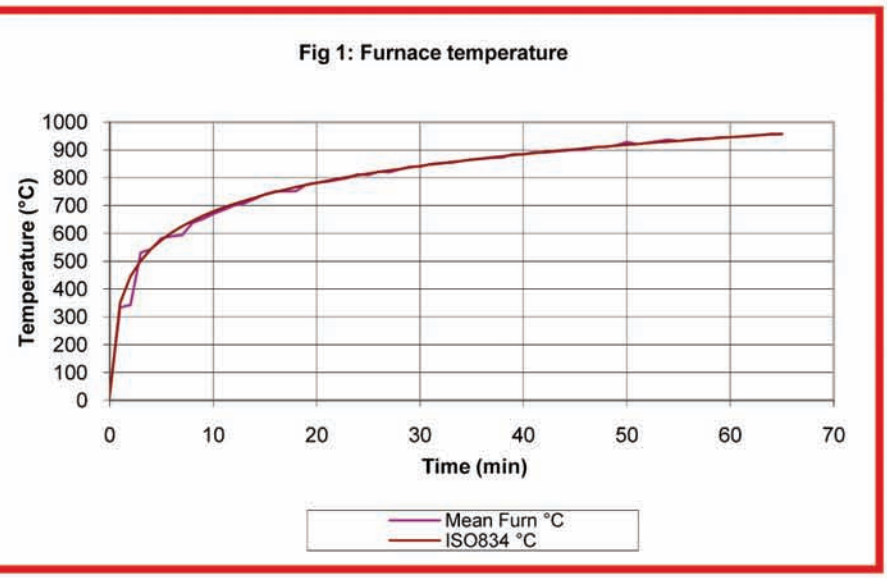
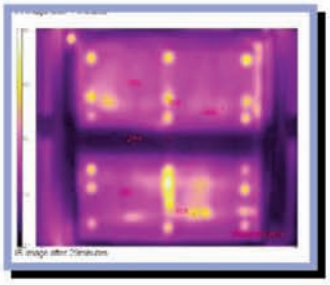


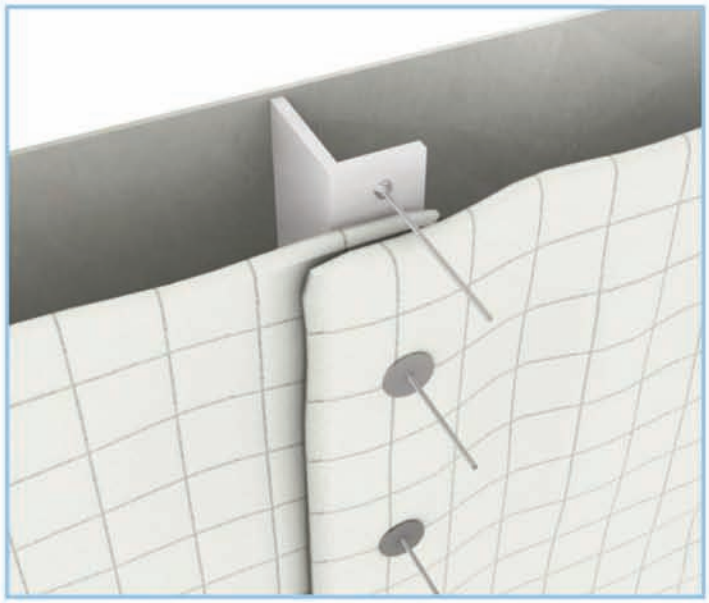
Fig 1: Furnace temperature





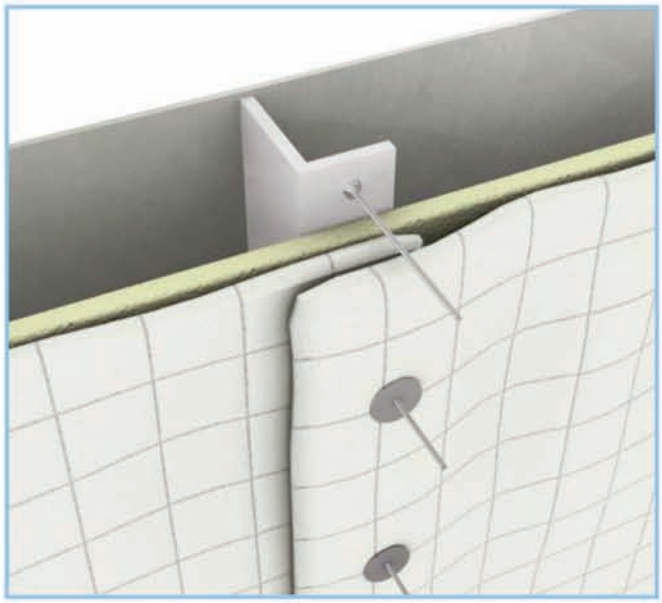
A Class certifications on steel

Steel Deck– A-60 Class



PROMAGUARD® th. 10mm + glass cloth 220gr/m^2
Air gap solution

Steel Bulkhead – A-60 Class



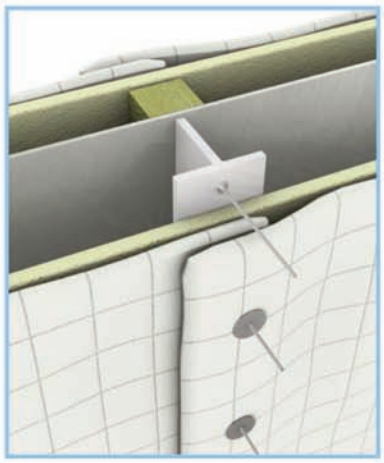
PROMAGLAF®WB th. 10mm + PROMAGUARD® th. 10mm + glass cloth 220gr/m^2
Air gap solution

Steel Bulkhead –A-30 Class

PROMAGUARD® th. 6mm on stiffeners + PROMAGUARD® th. 10mm on steel plate
+ glass cloth 220gr/m^2 - Contact solution

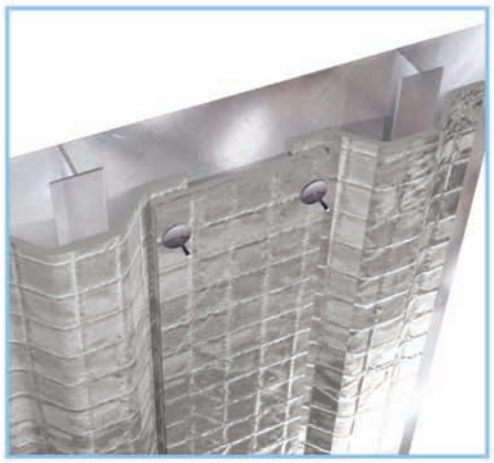
A Class certifications on aluminium

Aluminium bulkhead – A-60 – fire on both sides



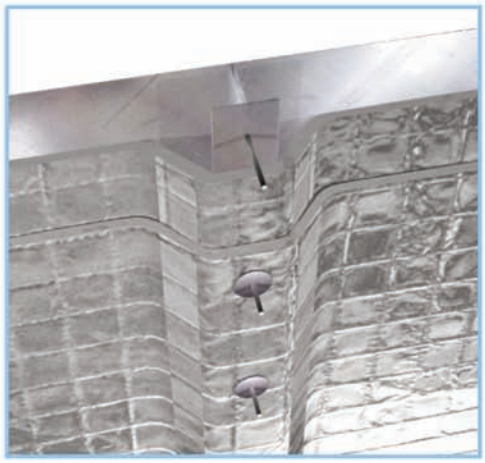
PROMAGLAF®WB th. 20mm + PROMAGUARD® th. 10mm + glass cloth 220gr/m²
On both sides – Air gap solution

Aluminium bulkhead –A-30 Class restricted



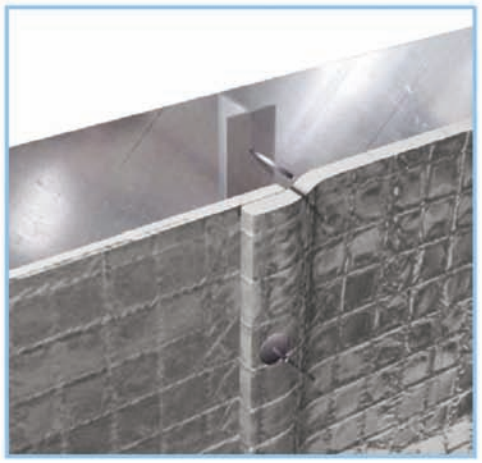
PROMAGUARD® th. 10mm on stiffeners + PROMAGUARD® th. 15mm on steel plate
Panels coated with aluminium foil
Contact solution

Aluminium Bulkhead – A-60 Class restricted



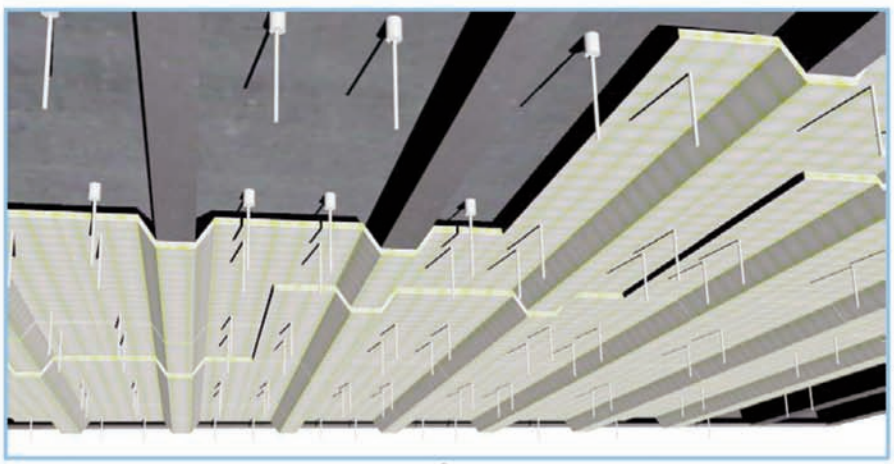
PROMAGUARD® with alufoil th. 10mm + 10mm
Contact solution

Aluminium Deck & Bulkhead – A-60 Class restricted



PROMAGUARD® with alufoil th. 15mm
50mm air gap solution

Ponte in Alluminio – Classe A-60 restricted



PROMAGUARD® sp. 10mm + 10mm
Contact solution – butt-joint / not overlapped slabs

A and B Class certifications on GRP

Laminated GRP – B-15 Class

PROMAGUARD® with alufoil th. 10mm + 10mm
MCA approved
Contact solution

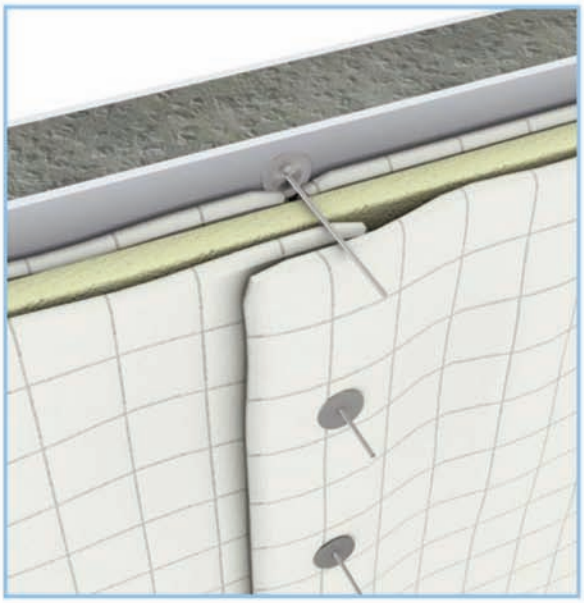
Laminated GRP – B-15 Class

PROMAGLAF® WB th. 15mm + PROMAGUARD® th. 10mm
MCA approved
Contact solution

Laminated GRP – A-60 Class

PROMAGUARD® th. 10mm + PROMAGLAF® WB th. 20mm
+ PROMAGUARD® th. 10mm – MCA Approved
Contact solution

Sandwich GRP – B-15 Class



PROMAGUARD® th. 10mm + PROMAGLAF® WB th. 15mm
+ PROMAGUARD® th. 10mm – MCA approved
Contact solution

A-Class certification on wood

Wood Bulkhead – A-60 Class

HPL laminate + Okumé th. 4mm + cork panel th. 10mm +
PROMAGUARD® th. 10mm +
Cork panel th. 10mm + Okumé th. 4mm + HPL laminate

Incombustibility certifications PROMAGUARD® and PROMAGUARD® Alu

warrington certification

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
CERTIFICATE OF TYPE APPROVAL

Certificate Number: 164.109/1121/WCL MEDO308TE

Applicant:- Microtherm N.V.
Address:- Industriepark-Noord 1, 9100 Sint-Niklaas, Belgium

Manufacturer:- Microtherm N.V.
Industriepark-Noord 1, 9100 Sint-Niklaas, Belgium

Annex A1 Item No and Item Designation: A.1/3.13- Non Combustible Materials

This is to certify that the applicant has submitted details of an insulation product known and designated as:-

Promaguard Panel

having the technical specification given in the schedule of equipment on this certificate which has been tested and complies with the recommended criteria given in the following methods, published by the International Maritime Organisation, and which are contained in the relevant parts of the International Code for Application of Fire Test Procedures (FTP Code) namely:-

IMO Resolution MSC.61(67) Annex 1, Part 1
IMO MSC Circ 1120

This certificate is issued on behalf of the Maritime and Coastguard Agency (MCA). The system complies with the relevant international testing standards under which legislation (The Merchant Shipping Marine Equipment) Regulations 1999 and also the Marine Equipment Directive 96/98 amended by Directive 98/85, Directive 2001/53, Directive 2002/75 and Directive 2008/67) the certificate is issued.

C Hughes
Manager
Warrington Certification Limited
Holmesfield Road
Warrington WA1 2DS

Date of Issue: 24th January 2011
This certificate is valid until 23rd January 2016

This certificate is not valid for equipment, the design or manufacture of which, has been varied or modified from the specimens tested.

mca Maritime and Coastguard Agency

LAPI

Notification N°0987 — MED annex A.1 Item: A.1/3.13 — Certificate N°0987/MED-B/308

MRA Mutual Recognition Agreement on Marine Equipment EC-US

EC TYPE-EXAMINATION CERTIFICATE
(Module B)

Application OF

Council Directive 96/98/EC of 20 December 1996 on Marine Equipment (MED) as modified by Commission Directives 98/85/EC, 2001/53/EC and as amended by Commission Directive 2002/75/EC and 2008/67/EC last amendment by DIRECTIVE 2008/26/EC of 4th April 2008

Certificate N° 0987/ MED-B/308

This Certificate consists of 2 pages
This is to certify that the product

PROMAGUARD® ALU
(Thickness 4 to 15 mm)
MED annex A.1 item: A.1/3.13
Product type:
NON-COMBUSTIBLE MATERIALS
Sponsor:
Promat Research and Technology Centre NV
Biermotstraat, 24 – B-2830 Tisselt – Belgium
Manufacturer:
Promat S.p.A.
Corso Paganini, 30/3 - 16125 GENOVA (GE) - ITALY

Complies with the requirements in the following Regulations/Standards:
Annex B, Module B in the above Directive and as applicable:

1. Reg. II-2/3.1, reg. 4/3, Reg. II-2/3.33, reg. 4/7
2. Reg. III-2/3.1, Res. IMO MSC.36 (63) 7.1.4 (Code HSC 1994); Reg. II-2/3.33, Res. IMO MSC 97 (73) 7.2.3 (Code HSC 2000)
3. Res. IMO A.799 (19) Res. IMO MSC.61 (67) Annex 1 Part 1.

This product has been assigned a U.S. Coast Guard Module B number N° 164.109/EC/0987/MED308 to note type approval to Module B only as it pertains to obtaining US Coast Guard approval as allowed by the "Agreement between the European Community for Marine Equipment" signed February 27th, 2004.

Further details of the product and conditions for certification are given overleaf

Porto, 15/10/2010 — The Certification Manager Dr. Marcello Bartoni — The Technical Director

This certificate is valid until: 14/10/2015

Page 1/2

A-Class certification on wood

Wood Bulkhead – A-60 Class

HPL laminate + Okumé th. 4mm + cork panel th. 10mm +
PROMAGUARD® th. 10mm +
Cork panel th. 10mm + Okumé th. 4mm + HPL laminate

Incombustibility certifications PROMAGUARD® and PROMAGUARD® Alu

warrington certification

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
CERTIFICATE OF TYPE APPROVAL

Certificate Number: 164.109/1121/WCL MED0308TE

Applicant:- Microtherm N.V. Manufacturer:- Microtherm N.V.
Address:- Industriepark-Noord 1, 9100 Sint-Niklaas, Belgium (both)

Annex A1 Item No and Item Designation: A.1/3.13- Non Combustible Materials

This is to certify that the applicant has submitted details of an insulation product known and designated as:-

Promaguard Panel

having the technical specification given in the schedule of equipment on this certificate which has been tested and complies with the recommended criteria given in the following methods, published by the International Maritime Organisation, and which are contained in the relevant parts of the International Code for Application of Fire Test Procedures (FTP Code) namely:-

IMO Resolution MSC.61(67) Annex 1, Part 1
IMO MSC Circ 1120

This certificate is issued on behalf of the Maritime and Coastguard Agency (MCA). The system complies with the relevant international testing standards under which legislation (The Merchant Shipping Marine Equipment) Regulations 1999 and also the Marine Equipment Directive 96/98 amended by Directive 98/85, Directive 2001/53, Directive 2002/75 and Directive 2008/67) the certificate is issued.

C Hughes
Manager
Warrington Certification Limited
Homesfield Road
Warrington WA1 2DS

Date of Issue: 24th January 2011
This certificate is valid until 23rd January 2016

This certificate is not valid for equipment, the design or manufacture of which, has been varied or modified from the specimens tested.

mca Maritime and Coastguard Agency

LAPI

Notification N°0987

MED annex A.1 item: A.1/3.13
Certificate N°0987/MED-B/308

MEA Mutual Recognition Agreement on Marine Equipment EC-US

EC TYPE-EXAMINATION CERTIFICATE
(Module B)

Application of:

Council Directive 96/98/EC of 20 December 1996 on Marine Equipment (MED) as modified by Commission Directives 98/85/EC, 2001/53/EC as) as amended by Commission Directive 2002/75/EC and 2008/67/EC last amendment by DIRECTIVE 2009/26/EC of 6th April 2009

Certificate N° 0987/ MED-B/308

This Certificate consists of 2 pages

This is to certify that the product:

PROMAGUARD® ALU

(Thickness 6 to 15 mm)

MED annex A.1 item: A.1/3.13

Product type:

NON-COMBUSTIBLE MATERIALS

Sponsor:

Promat Research and Technology Centre NV
Bormstraat, 24 – B-2830 Tisselt – Belgium

Manufacturer:

Promat S.p.A.
Corso Paganini, 99/3 - 16125 GENOVA (GE) - ITALY

Complies with the requirements in the following Regulations/Standards:
Annex B, Module B in the above Directive and as applicable:

1. Reg. II-2/3.1, reg. 6/3, Reg. II-2/3.33, reg. 9/7
2. Reg. II-2/3.1, Res. IMO MSC.98 (73) 7.1.4 (Code HSC 1994); Reg. II-2/3.33, Res. IMO MSC.97 (73) 7.2.3 (Code HSC 2000)
3. Res. IMO A.799 (19) Res. IMO MSC.61 (67) Annex 1 Part 1

This product has been assigned a U.S. Coast Guard Module B number N° 164.109/1/C0997/MED308 to note type approval to Module B only as it pertains to obtaining US Coast Guard approval as allowed by the "Agreement between the European Community for Marine Equipment" signed February 27th, 2004.

Further details of the product and conditions for certification are given overleaf

Prato, 15/10/2010 — The Certification Manager Dr. Marzia Barbini — The Technical Director

This certificate is valid until 14/10/2015

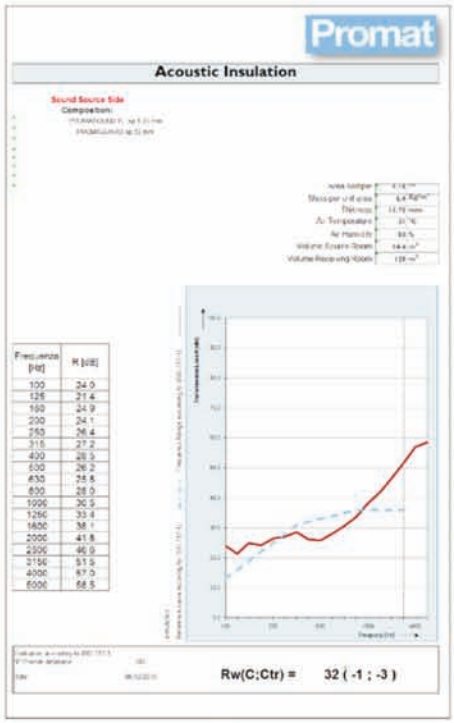
Page 1/2

High performance acoustic, thermal and fire insulation

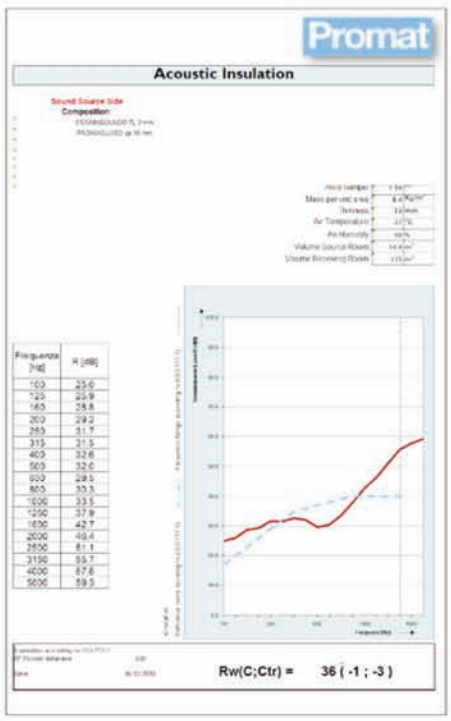
Acoustic Insulation

PROMAGUARD® with PROMASOUND® TL represent SYNTHESIS®, the ideal "synthesis" of fire and acoustic insulation. Other even better performances for specific fire protection solutions will be available or studied upon request, depending with the specific interventions required.

Insulation by PROMAGUARD® thickn. 10mm with PROMASOUND® TL thickn. 1,75mm (total 11,75mm)

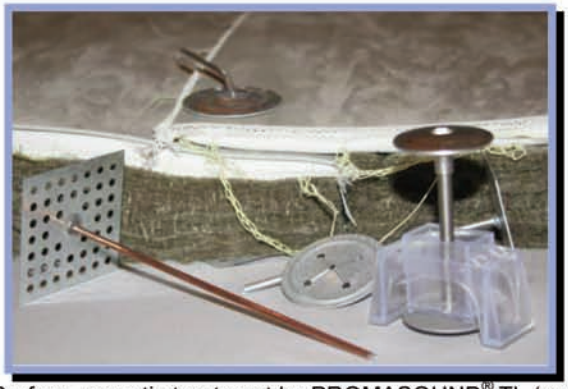


Insulation by PROMAGUARD® thickn. 10mm with PROMASOUND® TL thickn. 3mm (total 13mm)



SYNTHESIS®: PROMAGUARD® thickn. 10mm with PROMASOUND® TL thickn. 1,75 or 3mm

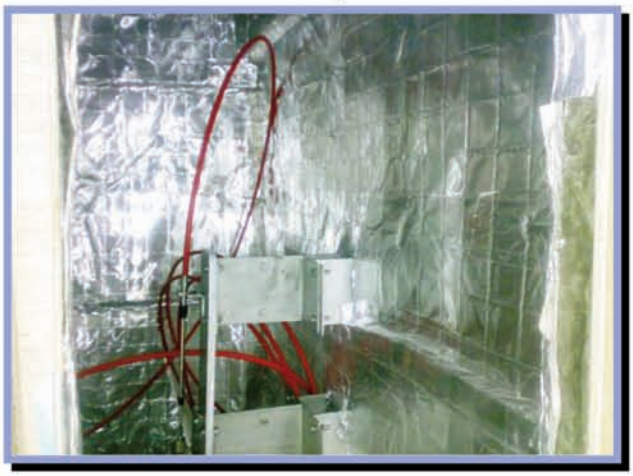
SYNTHESIS®
The acoustic and fire protection solution



- ✓ Surface acoustic treatment by PROMASOUND® TL (several solutions with different weights available).
- ✓ Fire protection by one or more layers of PROMAGUARD® (coated or not with Aluminium foil).
- ✓ Thermal treatment under PROMAGUARD® by PROMAGLAF® WB with different finishes and thicknesses, for a complete insulation system.
- ✓ The installation of SYNTHESIS® can be done with metallic pins glued or welded onto the surface that must be insulated

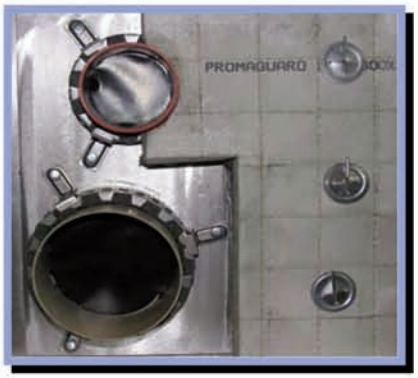
Typical applications - examples

Air duct in engine room



Deck or Bulkhead insulated by SYNTHESIS®

A60 plastic penetrations
on bulkhead by UNICOLLAR®



Facing treatment of PROMAGUARD® with Aluminium foil

Engine room on yacht – insulated by PROMAGUARD®

16 Broadway
Salem, MA 01970
1-800-359-1036
www.SOUNDOWN.com

SOUNDOWN
FOR PEACE AND QUIET

3005 S.W. 2nd Ave. #102
Fort Lauderdale, FL 33315
1-954-761-9188
sales@soundown.com