

RF ABSORBING MATERIAL

MICROWAVE INSTRUMENTATION

EuroMC HPP · HPT · HPF · HPFT · HPE · HPS · HPW

2024 – Version 31/01/24

EuroMC
Votre partenaire Technique en CEM

IMO
INSTRUMENTATION MICRO-ONDE

EUROMC · I.M.O

Company profile

Specialist in EMC (Electromagnetic Compatibility), EuroMC is located in Stains (93), on the northern side of Paris. The vocation of EuroMC is to promote and commercialise a complete range of products and services in the EMC field.

In January 2003, EuroMC took over I.M.O Company (Instrumentation Micro Onde), which was established in 1980. For more than 40 years, I.M.O has been producing absorbing material for industrial applications, with a frequency range from 30 MHz to 40 GHz.

With our large range of high-performance electromagnetic absorbers, EuroMC can answer all kinds of requests from the EMC market.

1980
I.M.O established

2003
Taken over by EuroMC

2012
Production moved to Brebières

30 MHz – 40 GHz
Frequency range

In 2012, IMO transferred its production site from Corbehem to Brebières.

CURRENT FACTORY LOCATION

6, Chemin de la Ventelle
62117 Brebières

The aim of this transfer is to modernise the production factory and increase the production capacity.



Production unit (Brebières)

COMPANY PROFILE

Production



HPT absorbers before painting



HPT absorbers

REFERENCES

Main references

Anechoic chambers

France

DEFENCE

THOMSON CSF AIRSYS
DASSAULT ELECTRONIQUE
DASSAULT AVIATION
CENTRE D'ESSAIS EN VOL
CENTRE D'ESSAIS DES LANDES
CENTRE D'ETUDES DE GRAMAT
ONERA
COMMISSARIAT A L'ENERGIE ATOMIQUE
MATRA
BASTIDE ELECTRONIQUE
INSTITUT DE SAINT LOUIS
ENSTA
AEROSPATIALE
EUROCOPTER
DCN
ATELIER DE L'INDUSTRIE DE L'ARMEMENT

TELECOMMUNICATIONS

ALCATEL
CNET (France Télécom)
RADIO FREQUENCY SYSTEMS (CGTI)
TRT
HYPTRA
AMP C3C
TDF
CS TELECOM
COMECA COMPOSANTS
BOUYGUES TELECOM

RESEARCH / EDUCATION

CNRS
IRESTE
ECOLE CENTRALE DE LYON
ECOLE DES MINES DE DOUAI
FAC. DES SCIENCES GRENOBLE
FAC. DES SCIENCES LIMOGES
ESIM
FAC. DES SCIENCES BORDEAUX
SERVICE DE SANTE DES ARMEES
CEMAGREF
INRIA

INDUSTRY

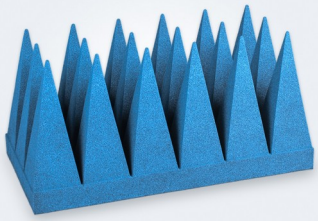
CENTRALP AUTOMATISME
AEMC MESURES
TECHNOMED INTERNATIONAL
EMITECH
SEMAP
GEMPLUS
GENERAL ELECTRIC
HAZTEC
GERAL
SFIM INDUSTRIES
THOMSON L2R
TALCO ALARME
PRANA
CGA
ATMH
ELECTRONICS SYSTEMS
MITSUBISHI ELECTRIC
SCHNEIDER AUTOMATION
EDF GDF RESEARCH CENTER
MERLIN GERIN
RECIF SA
TRW
ASCOM
MAGNETI MARELLI
PEUGEOT CITROEN
MAG
AIR PRECISION
SAGEM
ASTRIUM

International

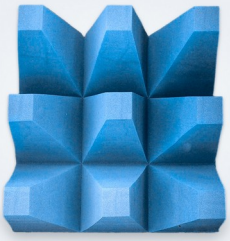
TELINDUS BELGIUM
MEDICINE UNIVERSITY ULM
AIR FORCE BELGIUM
COMTEST ITALIA
TESEO TORINO IT
CIM D'OR BARCELONA SP
AMELEC MADRID SP
SINGAPORE AIR LINES
STANDARD TESTING CENTER HONG KONG
ADT CORPORATION TAIWAN
ANCO ATHENA
SISGRETION TAIWAN
UNIVERSITY OF BOLOGNA IT
SIEMENS AG BERLIN
SOLIANI ITALIA
NUCLEAR INSTITUTE YAVNE ISRAEL
RAFAEL SYSTEMS DIVISION HAIFA ISRAEL
EPICOM RATIGEN GERMANY
SY CORPORATION KOREA
APLUS TECH KOREA
FRANKONIA GERMANY

EUROMC

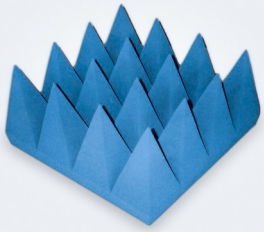
Product range



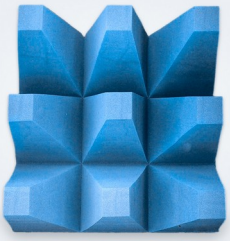
EuroMC HPP
Microwave Pyramidal Absorber
→ page 7



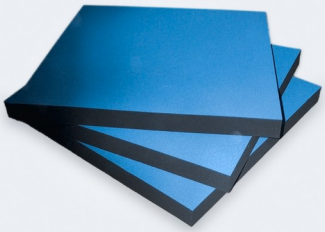
EuroMC HPT
EMC Truncated Pyramidal Absorber
→ page 9



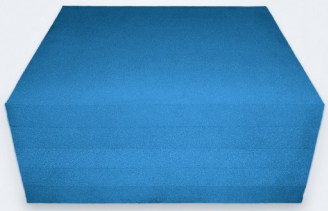
EuroMC HPF
EMC Hybrid Pyramidal Absorber
→ page 11



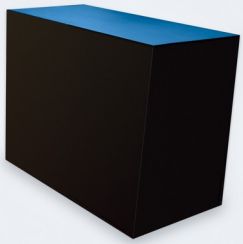
EuroMC HPFT
EMC Hybrid Truncated Pyramidal Absorber
→ page 13



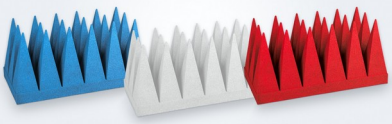
EuroMC HPE
Flat Absorber
→ page 15



EuroMC HPS
Flat Laminate Absorber
→ page 17



EuroMC HPW
Walkable Absorber
→ page 19

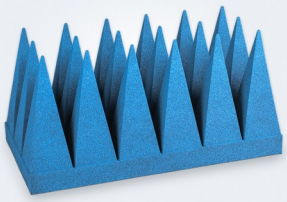


Colours
Colour range and plasticised paint (option)
→ page 6

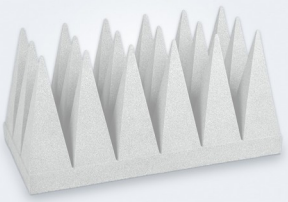
EUROMC

Colours & plasticised paint

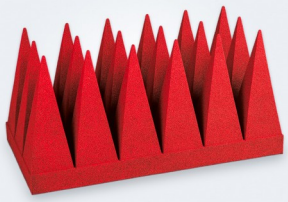
EuroMC absorbers are painted blue as standard. They are also available in a range of colours, to match the look of your chamber or your corporate identity, and can receive a plasticised paint finish as an option.



Blue
RAL 5012

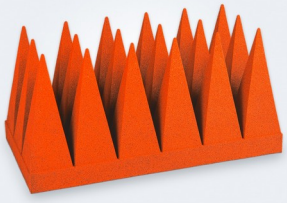


White

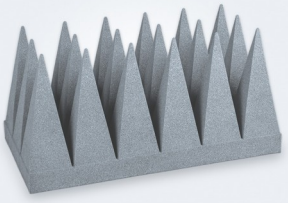


Red

Blue, white, red: a French company, with absorbers made in France (Brebières).



Orange
RAL 2017



Light grey
RAL 7001



Dark grey
RAL 7021

PLASTICISED PAINT – OPTIONAL

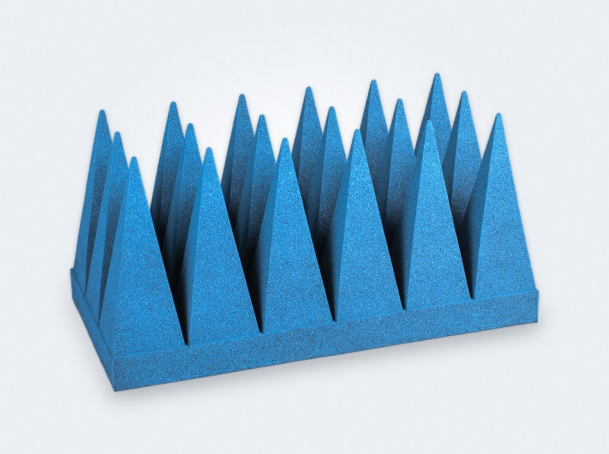
Plasticised paint is an option, not a requirement. Its benefit:

- it is electromagnetically transparent,
- so it does not interfere with the fields once the absorbers are installed,
- which is useful for certain applications, such as anechoic chambers.

Colours shown are indicative – please refer to the RAL colour chart for the exact shade. Other colours on special order.

EuroMC **HPP**

Microwave Pyramidal Absorber



DESCRIPTION

EuroMC HPP is an ultra-broadband absorber, which has been specially designed for microwave applications.

The EuroMC HPP absorbing materials are based upon a conventional pyramid having a square base with a uniform base thickness, tapered to a point.

An impregnation procedure has been established to ensure that complete impregnation with both the dielectric lossy material and the fire-retardant chemicals is achieved.

APPLICATIONS

- Radar Cross Section measurement (R.C.S)
- Antenna pattern measurement
- Telecom / wireless
- Satellite
- Automotive
- Military

INSTALLATION

- IMOPRENE 45 glue
- IMOFIX Velcro system

CHARACTERISTICS

Material	Carbon-loaded polyurethane foam
Standard colour	Blue
Service temperature	90 °C
Power handling	0.2 W/cm²
Fire retardant standards	NRL 8093, Tests 1, 2 & NF EN ISO 11925-2
Physical specifications	Specified in Table 1
Base dimensions	610 × 610 mm
Reflectivity	Specified in Table 2

TABLE 1

Physical specifications of HPP Series absorber

EuroMC HPP Series	Total height	Base height	Pyramid height	Pyramids per block	Nominal weight
HPP 10	115 mm	25 mm	90 mm	256	0.9 kg
HPP 20	200 mm	40 mm	160 mm	81	1.6 kg
HPP 30	300 mm	50 mm	250 mm	36	2.3 kg
HPP 40	455 mm	75 mm	380 mm	16	3.4 kg
HPP 60	660 mm	100 mm	560 mm	9	4.8 kg
HPP 90	905 mm	150 mm	764 mm	4	6.5 kg
HPP 115	1150 mm	200 mm	950 mm	4	8.3 kg

TABLE 2

Typical reflectivity (dB) at normal incidence

Type	Frequency (GHz)										
	0.08	0.10	0.30	0.50	1.0	3.0	6.0	10	18	24	40
HPP 10	–	–	–	–	–	−30	−36	−42	−50	−50	−50
HPP 20	–	–	–	–	−30	−38	−45	−50	−50	−50	−50
HPP 30	–	–	–	−25	−35	−40	−45	−50	−50	−50	−50
HPP 40	–	–	–	−30	−38	−42	−47	−50	−50	−50	−50
HPP 60	−7	−11	−25	−35	−40	−45	−50	−50	−50	−50	−50
HPP 90	−9	−15	−30	−37	−42	−50	−50	−50	−50	−50	−50
HPP 115	−12	−18	−35	−40	−45	−50	−50	−50	−50	−50	−50

– : not specified.

Options

Paint

All absorbers are painted blue unless otherwise specified.
On special order, other colours are available.

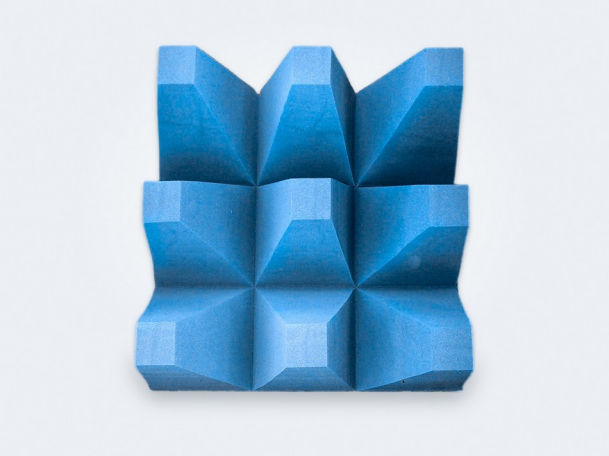
→ See the colour range, page 6

Environment

The material is designed for indoor use only.

EuroMC **HPT**

EMC Truncated Pyramidal Absorber



DESCRIPTION

The EuroMC HPT series is an ultra-broadband absorber, which has been specially designed to meet and exceed IEC 61000-4-3, MIL STD 462D and SAE performance requirements.

This solid truncated pyramidal absorber may also be used for microwave measurements, where high levels of absorption are not required in the 20 → 40 GHz range.

For antenna characterization chambers, EuroMC HPT are definitely the best solution in view of their highest performance in the microwave range.

APPLICATIONS

- Electromagnetic Compatibility measurements
- Microwave measurements
- Automotive
- Military

INSTALLATION

- IMOPRENE 45 glue
- IMOFIX Velcro system

CHARACTERISTICS

Material	Carbon-loaded polyurethane foam
Standard colour	Blue
Service temperature	90 °C
Power handling	0.2 W/cm²
Fire retardant standards	NRL 8093, Tests 1, 2 & NF EN ISO 11925-2
Physical specifications	Specified in Table 1
Base dimensions	610 × 610 mm
Reflectivity	Specified in Table 2

TABLE 1

Physical specifications of HPT Series absorber

HPT grade	Total thickness	Base height	Pyramid height	Pyramids per block	Nominal weight
HPT 32	320 mm	74 mm	246 mm	16	3.6 kg
HPT 50	510 mm	100 mm	410 mm	9	4.7 kg
HPT 70	700 mm	150 mm	550 mm	4	6.7 kg

TABLE 2

Reflectivity in dB of HPT Series absorbers at normal incidence

HPT grade	Frequency (GHz)						
	0.08	0.1	0.3	0.5	1	5	10
HPT 32	–	−4	−21	−30	−34	−35	<−40
HPT 50	−7	−10	−26	−32	−35	−38	<−40
HPT 70	−13	−17	−29	−37	−40	<−40	<−40

– : not specified.

Options

Paint

All absorbers are painted blue unless otherwise specified.
On special order, other colours are available.

→ See the colour range, page 6

Environment

The material is designed for indoor use only.

EuroMC **HPF**

EMC Hybrid Pyramidal Absorber



DESCRIPTION

EuroMC HPF is a pyramidal, carbon-loaded foam absorber, matched to a thin ferrite base.

This pyramidal part of the so-called hybrid absorber is designed to optimise the poor reflectivity in the GHz range.

Thanks to a special chemical formulation, this pyramidally shaped resistive top part also achieves a very high level of absorption in the lowest frequency range.

APPLICATIONS

- Electromagnetic Compatibility measurements
- Microwave measurements
- Automotive
- Military

INSTALLATION

- IMOPRENE 45 glue
- IMOFIX Velcro system

CHARACTERISTICS

Material	Carbon-loaded polyurethane foam
Standard colour	Blue
Service temperature	90 °C
Power handling	0.2 W/cm²
Fire retardant standards	NRL 8093, Tests 1, 2 & NF EN ISO 11925-2
Physical specifications	Specified in Table 1
Base dimensions	610 × 610 mm
Reflectivity	Specified in Table 2

TABLE 1

Physical specifications of HPF Series absorber

EuroMC HPF Series	Total thickness	Base height	Pyramid height	Pyramids per block	Nominal weight
HPF 20	200 mm	40 mm	160 mm	81	1.4 kg
HPF 30	300 mm	50 mm	250 mm	36	2.2 kg
HPF 40	455 mm	75 mm	380 mm	16	3.1 kg
HPF 60	660 mm	100 mm	560 mm	9	5.2 kg

TABLE 2

Reflectivity (with 6.5 mm ferrite tiles) in dB at frequency (GHz)

HPF Series	Frequency (GHz)					
	0.03	0.1	0.3	1	3	10 and above
HPF 20	−10	−13	−14	−9	−10	−15
HPF 30	−12	−15	−16	−11	−12	−17
HPF 40	−15	−18	−20	−14	−13	−18
HPF 60	−18	−22	−23	−19	−20	−30

Options

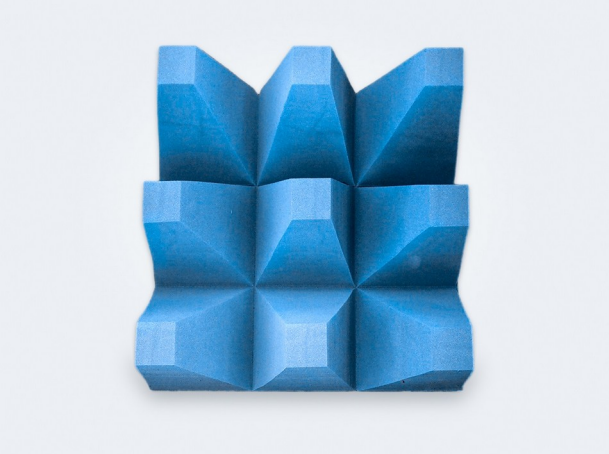
Paint

All absorbers are painted blue unless otherwise specified.
On special order, other colours are available.

→ See the colour range, page 6

EuroMC **HPFT**

EMC Hybrid Truncated Pyramidal Absorber



DESCRIPTION

The EuroMC HPFT series is a truncated pyramidal, carbon-loaded foam absorber, designed to work with a thin ferrite under the base.

This pyramidal part of the so-called hybrid absorber is designed to optimise the poor reflectivity of ferrite in the GHz range. Owing to a special chemical formulation, this pyramidally shaped resistive top part achieves very high levels of absorption in the upper frequency range without destroying the ferrite reflectivity in the lowest frequency range.

APPLICATIONS

- EMC test chambers:
  - Models HPFT 32 and 45 are used in fully compliant 3 m chambers.
  - Models HPFT 77 and 90 are used specially for fully compliant 5 m and 10 m chambers.

INSTALLATION

- IMOPRENE 45 glue
- IMOFIX Velcro system

CHARACTERISTICS

Material	Carbon-loaded polyurethane foam
Standard colour	Blue
Service temperature	90 °C
Power handling	0.2 W/cm²
Fire retardant standards	NRL 8093, Tests 1, 2 & NF EN ISO 11925-2
Physical specifications	Specified in Table 1
Base dimensions	610 × 610 mm
Reflectivity	Specified in Table 2

TABLE 1

Physical specifications of HPFT Series absorber

HPFT grade	Total thickness	Base height	Pyramid height	Pyramids per block	Nominal weight
HPFT 32	320 mm	74 mm	246 mm	16	2.2 kg
HPFT 45	450 mm	113 mm	337 mm	9	3.1 kg
HPFT 77	770 mm	90 mm	680 mm	4	5.9 kg
HPFT 90	914 mm	150 mm	764 mm	4	7.5 kg

TABLE 2

Reflectivity in dB at normal incidence

HPFT grade	Frequency (GHz)								
	0.03	0.1	0.3	0.5	1	3	6	10	18
HPFT 32	−12	−24	−18	−21	−17	−15	−17	−21	−31
HPFT 45	−14	−24	−25	−23	−20	−19	−25	−30	−42
HPFT 77	−16	−25	−25	−25	−22	−24	−32	−40	<−45
HPFT 90	−18	−25	−30	−25	−27	−32	−40	<−45	<−45

Options

Paint

All absorbers are painted blue unless otherwise specified.
On special order, other colours are available.

→ See the colour range, page 6

Environment

The material is designed for indoor use only.

EuroMC **HPE**

Flat Absorber



DESCRIPTION

EuroMC HPE is a flat single-layer absorber specially designed for microwave applications. This absorber has been developed to be installed in the corners of anechoic chambers instead of cut pyramidal absorbers. HPE absorbers guarantee the same overall performance when lining the corners of anechoic chambers and microwave facilities.

APPLICATIONS

- Lining the corners of semi-anechoic and anechoic chambers

INSTALLATION

- IMOPRENE 45 glue
- IMOFIX Velcro system

CHARACTERISTICS

Material	Carbon-loaded polyurethane foam
Standard colour	Blue
Service temperature	90 °C
Power handling	0.2 W/cm²
Fire retardant standards	NRL 8093, Tests 1, 2 & NF EN ISO 11925-2
Physical specifications	Specified in Table 1
Base dimensions	610 × 610 mm

TABLE 1

Physical specifications of HPE Series absorber

EuroMC HPE Series	Total thickness	Dimensions	Nominal weight
HPE 20	20 mm	610 × 610 mm	350 g
HPE 25	25 mm	610 × 610 mm	450 g
HPE 50	50 mm	610 × 610 mm	900 g
HPE 100	100 mm	610 × 610 mm	1.8 kg

Options

Paint

All absorbers are painted blue unless otherwise specified.
On special order, other colours are available.

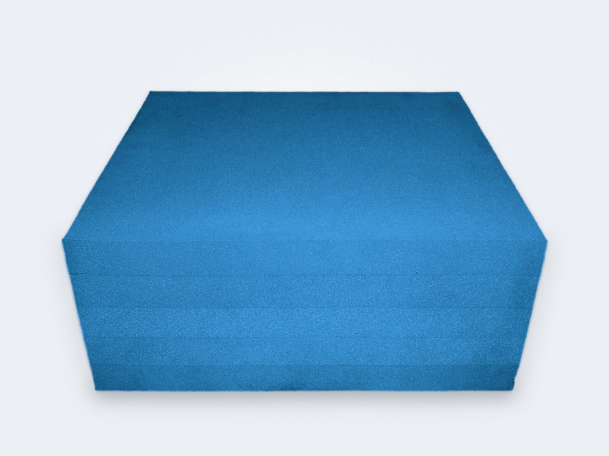
→ See the colour range, page 6

Environment

The material is designed for indoor use only.

EuroMC **HPS**

Flat Laminate Absorber



DESCRIPTION

EuroMC HPS is a multi-layer flat absorber composed of a few layers of polyurethane foam impregnated with a graduated density of carbon.

This impregnation gradient across the layers produces impedance matching between the air and the metal barrier.

APPLICATIONS

- Compact anechoic chambers
- Corner lining of very high-performance anechoic chambers
- RCS reduction on military targets
- Antenna side lobe reduction

INSTALLATION

- IMOPRENE 45 glue
- IMOFIX Velcro system

CHARACTERISTICS

Material	Carbon-loaded polyurethane foam
Standard colour	Blue
Service temperature	90 °C
Power handling	0.2 W/cm²
Fire retardant standards	NRL 8093, Tests 1, 2 & NF EN ISO 11925-2
Physical specifications	Specified in Table 1
Base dimensions	610 × 610 mm

TABLE 1

Physical specifications of HPS Series absorber

EuroMC HPS Series	Total thickness	Dimensions	Nominal weight
HPS 80	80 mm	610 × 610 mm	1.3 kg
HPS 100	100 mm	610 × 610 mm	2.0 kg
HPS 125	125 mm	610 × 610 mm	2.35 kg
HPS 250	250 mm	610 × 610 mm	4.7 kg

Minimum use frequency

EuroMC HPS Series	Minimum use frequency
HPS 80	1 GHz
HPS 100	0.8 GHz
HPS 125	0.5 GHz
HPS 250	0.2 GHz

Options

Paint

All absorbers are painted blue unless otherwise specified.
On special order, other colours are available.

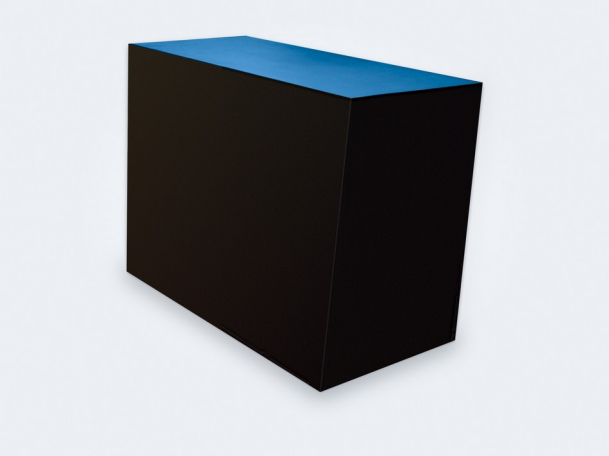
→ See the colour range, page 6

Environment

The material is designed for indoor use only.

EuroMC **HPW**

Walkable Absorber



DESCRIPTION

HPW is made of HPP pyramidal absorbers placed in a box that is resistant and transparent to electromagnetic waves.

EuroMC HPP is an ultra-broadband absorber, which has been specially designed for microwave applications.

The EuroMC HPP absorbing materials are based upon a conventional pyramid having a square base with a uniform base thickness, tapered to a point. This pyramidal absorber is included in a wooden box.

An impregnation procedure has been established to ensure that complete impregnation with both the dielectric lossy material and the fire-retardant chemicals is achieved.

APPLICATIONS

- Radar Cross Section measurement (R.C.S)
- Antenna pattern measurement
- Telecom / wireless
- Satellite
- Automotive
- Military

INSTALLATION

- To be put on the floor

CHARACTERISTICS

Material	Wooden box including HPP absorbers
Load resistance	150 kg/m²
Standard colour	Blue on the top, black on the sides
Service temperature	50 °C
Power handling	0.2 W/cm²
Physical specifications	Specified in Table 1
Base dimensions	1220 × 610 mm, or 610 × 610 mm
Reflectivity	Specified in Table 2

TABLE 1

Physical specifications of HPW absorbers

EuroMC HPW Series	Height	Length	Width	Weight
HPW 10	125 mm	1220 mm	610 mm	10 kg
HPW 20	210 mm	1220 mm	610 mm	13 kg
HPW 30	310 mm	1220 mm	610 mm	13 kg
HPW 40	455 mm	1220 mm	610 mm	20 kg
HPW 60	660 mm	1220 mm	610 mm	35 kg

TABLE 2

Typical reflectivity (dB) at normal incidence

Type	Frequency (GHz)									
	0.10	0.30	0.50	1.0	3.0	6.0	10	18	24	40
HPW 10	–	–	–	−20	−25	−30	−40	−45	−45	−40
HPW 20	–	–	−17	−27	−35	−43	−45	−45	−45	−40
HPW 30	–	−13	−20	−33	−38	−42	−45	−45	−45	−40
HPW 40	−7	−18	−24	−38	−40	−45	−45	−45	−45	−40
HPW 60	−8	−20	−28	−40	−45	−45	−45	−45	−45	−40

– : not specified. These data are provided for informational purposes.

Options

Paint

Sides of absorber: black colour.
Top of absorber: blue colour.
On special order, other colours are available.

→ See the colour range, page 6

Environment

The material is designed for indoor use only.

EuroMC
Votre partenaire Technique en CEM

IMO
INSTRUMENTATION MICRO-ONDE

RF ABSORBING MATERIAL · MICROWAVE INSTRUMENTATION

EuroMC Head Office

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