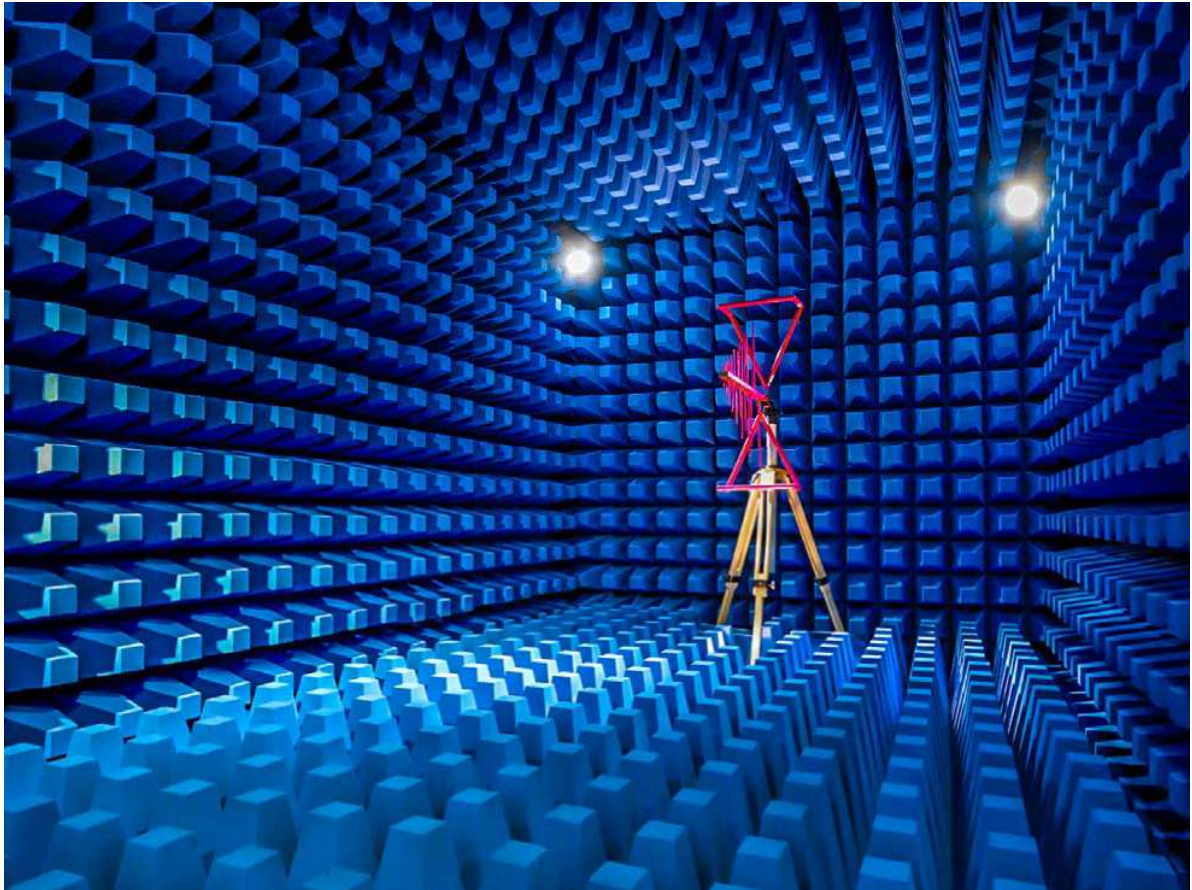


## RF ABSORBING MATERIAL



## MICROWAVE INSTRUMENTATION

2016



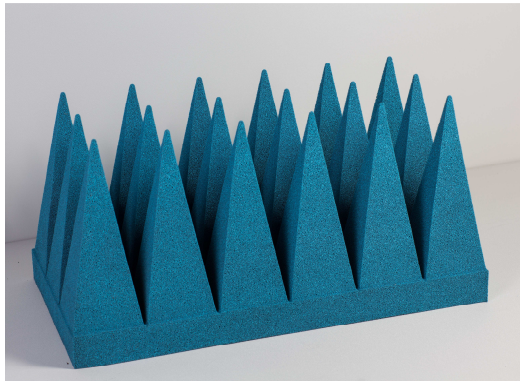
*HPT Absorbers before painting*



*HPT Absorbers*

## RANGE OF PRODUCTS

- **IMOCELL HPP**  
*Microwave Pyramidal Absorber*
- **IMOCELL HPT**  
*EMC Truncated Pyramidal Absorber*
- **IMOCELL HPF**  
*EMC Hybrid Pyramidal Absorber*
- **IMOCELL HPFT**  
*EMC Hybrid Truncated Pyramidal Absorber*
- **IMOCELL HPE**  
*Flat Absorber*
- **IMOCELL HPS**  
*Flat Laminate Absorber*



## **IMOCELL HPP**

Microwave Pyramidal Absorber

### ***Designation***

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

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

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

### **Application**

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

### ***Installation***

- IMOPRENE 107 Glue
- IMOFIX Velcro system

### **Characteristics**

Material	Carbon loaded polyurethane foam
Standard Colour	Blue
Service temperature	120° C
Power handling	0,2W/cm <sup>2</sup>
Fire retardant standards	NRL 8093, Tests 1,2 & 3 (USA) NF P92-501
Physical specifications	Specified in <i>Table 1</i>
Base dimensions	610 x 610 mm
Reflectivity	Specified in <i>Table 2</i>

## Physical Specifications of HPP Serie Absorber

IMOCELL HPP Serie	Total Height	Base Height	Pyramid Height	Pyramids per Block	Nominal Weight
HPP 8	90 mm	13 mm	77 mm	256	0,86 Kg
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 1

## Typical reflectivity (dB) at normal incidence

TYPE	FREQUENCY in GHz										
	0.08	0.10	0.30	0.50	1.0	3.0	6.0	10	18	24	40
HPP 8						27	33	39	45	50	50
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

Table 2

## Options

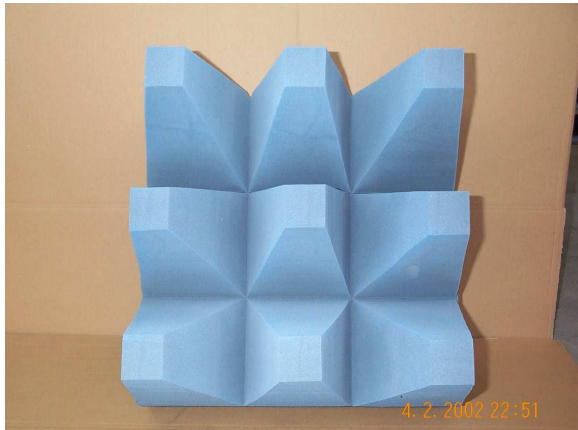
Paint

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

Environment

The material is designed for indoor use only. For outdoor use, a similar material, IMOCELL HPO is available.





## IMOCELL HPT

EMC Truncated Pyramidal Absorber

### ***Designation***

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

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

For antenna characterization chambers, IMOCELL HPT are definitively the best solution in view of the highest performances in microwave range.

### **Application**

- Electromagnetic Compatibility measurements
- Microwave measurements
- Automotive
- Military

### ***Installation***

- IMOPRENE 107 Glue
- IMOFIX Velcro system

### **Characteristics**

Material	Carbon loaded polyurethane foam
Standard Colour	Blue
Service temperature	120° C
Power handling	0,2W/cm <sup>2</sup>
Fire retardant standards	NRL 8093, Tests 1,2 & 3 (USA) NF P92-501
Physical specifications	Specified in <i>Table 1</i>
Base dimensions	610 x 610 mm
Reflectivity	Specified in <i>Table 2</i>

## Physical Specifications of HPT Serie 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 1

## Absorption in dB of HPT Serie Absorbers at normal incidence Frequency (MHz)

HPT Grade	80	100	300	500	1000	5000	10000
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

Table 2

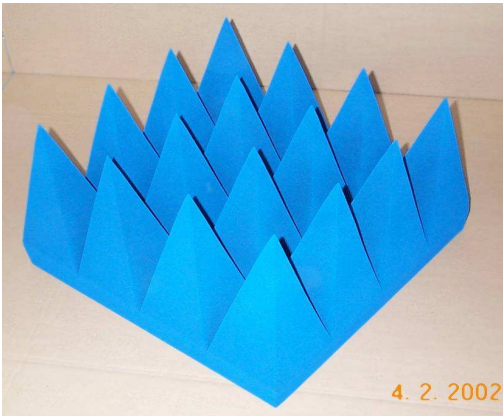
## Options

Paint

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

Environment

The material is designed for indoor use only. For outdoor use, a similar material, IMOCELL HPO is available.



## **IMOCELL HPF**

EMC Hybrid Pyramidal Absorber

### ***Designation***

IMOCELL HPF is a foam pyramidal, carbon loaded 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, anyway, achieves very high level of absorption in the lowest frequency range.

### **Application**

- Electromagnetic Compatibility Measurements
- Microwave measurements
- Automotive
- Military

### ***Installation***

- IMOPRENE 107 Glue
- IMOFIX Velcro system

### **Characteristics**

Material	Carbon loaded polyurethane foam
Standard Colour	Blue
Service temperature	120° C
Power handling	0,2W/cm <sup>2</sup>
Fire retardant standards	NRL 8093, Tests 1,2 & 3 (USA) NF P92-501
Physical specifications	Specified in <i>Table 1</i>
Base dimensions	610 x 610 mm
Reflectivity	Specified in <i>Table 2</i>



## Physical Specifications of HPF Serie Absorber

IMOCELL HPF Serie	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 1

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

HPF Serie	0.03	0.1	0.3	1	3	10 and upper
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

Table 2

## Options

Paint

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



## **IMOCELL HPFT**

EMC Hybrid Truncated Pyramidal Absorber

### ***Designation***

IMOCELL HPFT serie is a foam pyramidal truncated, carbon loaded 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 in the GHz range of ferrite. 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 lowest frequency range.

### **Application**

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

### ***Installation***

- IMOPRENE 107 Glue
- IMOFIX Velcro system

### **Characteristics**

Material	Carbon loaded polyurethane foam
Standard Colour	Blue
Service temperature	120° C
Power handling	0,2W/cm <sup>2</sup>
Fire retardant standards	NRL 8093, Tests 1,2 & 3 (USA) NF P92-501
Physical specifications	Specified in <i>Table 1</i>
Base dimensions	610 x 610 mm
Reflectivity	Specified in <i>Table 2</i>

## Physical Specifications of HPFT Serie 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 1

## Reflectivity in dB at normal incidence

### Frequency (GHz)

HPFT Grade	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

Table 2

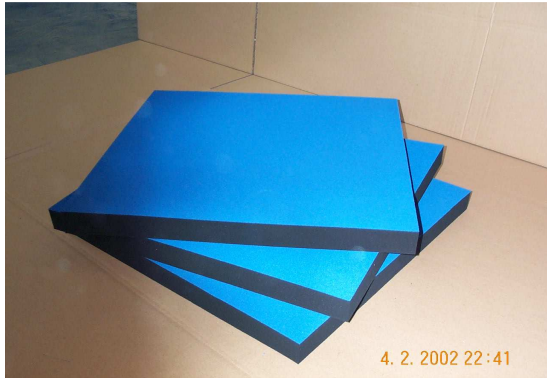
## Options

Paint

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

Environment

The material is designed for indoor use only. For outdoor use a similar material, IMOCELL HPO is available.



## **IMOCELL HPE**

Flat Absorber

### ***Designation***

IMOCELL HPE is a flat mono layer absorber specially designed for microwave applications. This absorber has been developed to be installed in corners of anechoic chambers instead of cutted pyramidal absorber. HPE absorber warranty the same global performances lining of the corners of anechoic chambers and microwave facilities.

### **Application**

- Lining corners semi-anechoic and anechoic chambers

### ***Installation***

- IMOPRENE 107 Glue
- IMOFIX Velcro system

### **Characteristics**

Material	Carbon loaded polyurethane foam
Standard Colour	Blue
Service temperature	120° C
Power handling	0,2W/cm <sup>2</sup>
Fire retardant standards	NRL 8093, Tests 1,2 & 3 (USA) NF P92-501
Physical specifications	Specified in <i>Table 1</i>
Base dimensions	610 x 610 mm

## Physical Specifications of HPE Serie Absorber

IMOCELL HPE Serie	Total Thickness	Dimensions	Nominal Weight
HPE 18	18 mm	610 x 610 mm	320 gr
HPE 50	50 mm	610 x 610 mm	900 gr
HPE 100	100 mm	610 x 610 mm	1.800 kg

Table 1

## Options

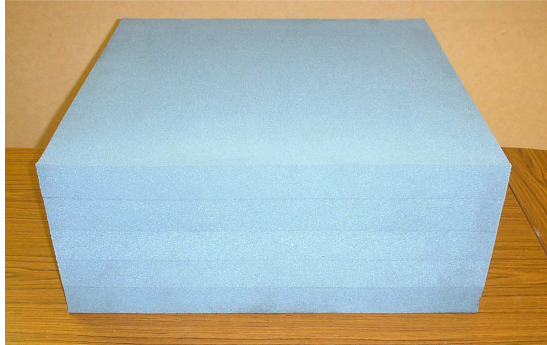
Paint

All absorber is painted blue unless otherwise specified  
On special order, other colours are available

Environment

The material is designed for indoor use only. For outdoor use, a similar material, IMOCELL HPO is available.





## IMOCELL HPS

Flat Laminate Absorber

### ***Designation***

IMOCELL HPS is a multi layer flat absorber composed of few layers of polyurethane foam impregnated with graduated density of carbon. This impregnation gradient of layers produce matching impedance within air and metal barrier.

### ***Application***

- Compact anechoic chambers
- Angle lining of very high performance anechoic chambers
- RCS reduction on military targets
- Antennae side lobes reduction

### ***Installation***

- IMOPRENE 107 Glue
- IMOFIX Velcro system

### ***Characteristics***

Material	Carbon loaded polyurethane foam
Standard Colour	Blue
Service temperature	120° C
Power handling	0,2W/cm <sup>2</sup>
Fire retardant standards	NRL 8093, Tests 1,2 & 3 (USA) NF P92-501
Physical specifications	Specified in <i>Table 1</i>
Base dimensions	610 x 610 mm

## Physical Specifications of HPS Serie Absorber

IMOCELL HPS Serie	Total Thickness	Dimensions	Nominal Weight
HPS 16	16 mm	610 x 610 mm	370 gr
HPS 24	24 mm	610 x 610 mm	510 gr
HPS 36	36 mm	610 x 610 mm	870 gr
HPS 80	80 mm	610 x 610 mm	1.300 kg
HPS 100	100 mm	610 x 610 mm	2.000 kg
HPS 125	125 mm	610 x 610 mm	2.350 kg
HPS 250	250 mm	610 x 610 mm	4.700 kg

Table 1

IMOCELL HPS Serie	Minimum use Frequency
HPS 16	15 GHz
HPS 24	8 GHz
HPS 36	3 GHz
HPS 80	1 GHz
HPS 100	0.8 GHz
HPS 125	0.5 GHz
HPS 250	0.2 GHz

## Options

Paint

All absorber is painted blue unless otherwise specified  
On special order, other colours are available

Environment

The material is designed for indoor use only. For outdoor use, a similar material, IMOCELL HPO is available.