



**Product Introduction**

**iAMPS & Hz Product Overview**

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**FOF Gasket**

**Product Application**

**New Products**



# **Product Introduction**

# Types of Conductive Gasket



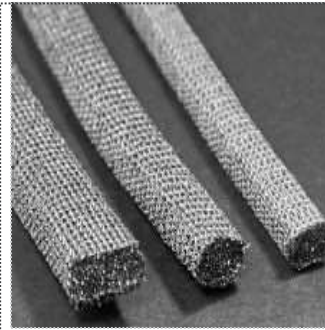
## The Conductive Rubber

Silicone rubber is filled with 70~80% metal particles, including silver powder, copper powder, aluminum powder and copper powder with plated silver, aluminum powder with plated silver. This material keeps some good properties of silicone rubber and has good conductivity.



## Two-layer Conductive Rubber

It is made up of two layers of rubber. The inner layer is common silicone rubber and the outside layer is conductive rubber. It overcomes the shortcoming of poor elasticity. Its principles are somewhat like wire mesh with rubber core.



## Mental Mesh

They are made of beryllium copper wire, Monel wire or stainless steel wire, with shape like shielded cables. But its weaving method is different from the shielding cable layer, which is made of multiple wires, while this shielding pad is made of one. In order to enhance the properties of metal mesh, rubber cores are sometimes injected into mesh pipe.



## Mental Shrapnel

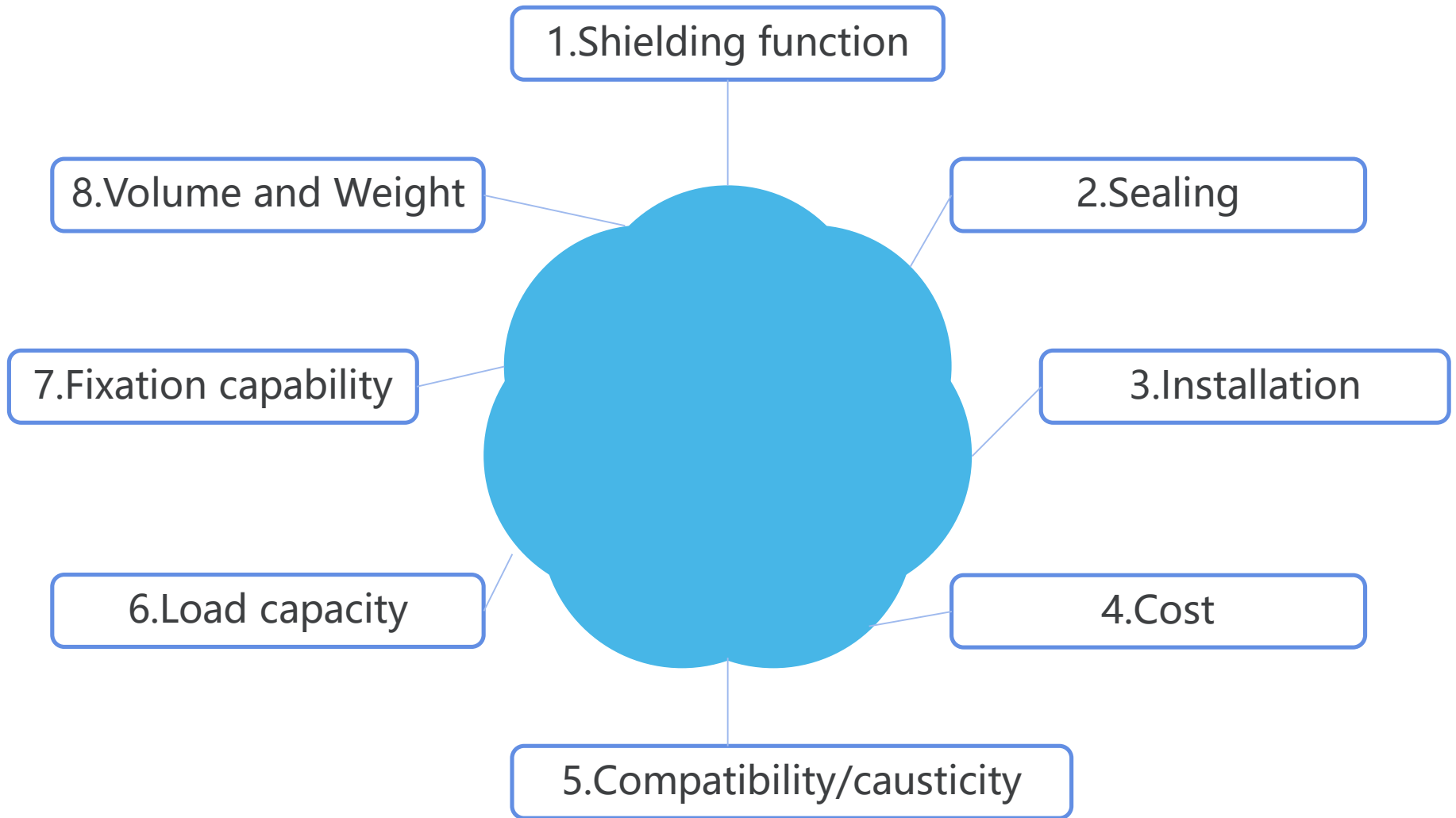
The shrapnel made of beryllium copper and stainless steel has good elasticity and Electrical conductivity.



## XYZ Axis Conductive Foam

XYZ axis conductive foam has upper and lower polyester fiber cloth bonded PU foam with copper-nickel plating, so it has the overall X, Y, Z axis conductivity.

# Consideration of Conductive Gasket



# Invention of Conductive Gasket



It originates from the English word "Gasket" and became popular for the shielding technology.

**Origin and Popularity**

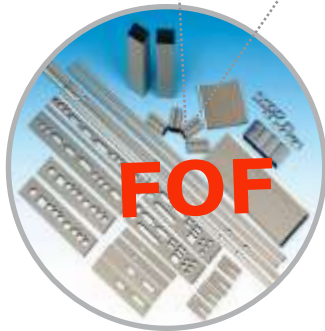
**Filling Gap**

The critical point of shielding is to fill the gap between shields to make it a conductor. The conductive gasket is a great choice.



**Application**

With the development of civil products and the implementation of a certification system, the fabric over foam (FOF) has been invented and used.



**FOF**

It was initially used in high-tech fields such as spaceflight. It was sealed, waterproof, and dustproof. It was mainly used in the form of conductive rubber at the time, followed by beryllium copper shrapnel, spiral tube, and wire mesh strip.

# comparison of conductive Gasket

## Conductive Elastomer(Conductive silicone rubber)

### advantages

Environmental sealing and electro magnetic sealing, High efficiency in high frequency, low price of mould and high price of product.

### disadvantages :

Need high pressure and high price

### application

**condition :** In some place with environmental sealing and high performance of shielding.

## Double-layer Conductive Rubber

### advantage

Good elasticity and high price of mould, permission of sealing environment

### disadvantages :

The surface layer is thin and much possible to drop

### application

**condition :** in some place with environmental sealing and high performance of shielding.

## Mental Mesh

### advantages :

Low price and arrasion resistance

### disadvantages :

Frequency Over 1 GHz can not be allowed

### application

**condition :** EMI frequency should be below to 1GHz

## Mental Sharpnel

### advantages :

Good shielding performance and wide range of sliding contact deformation.

### disadvantages :

high price without environmental sealing performance

### application

**condition :** In the place with requirements of sliding contact and high performance of shielding.

## Conductive Fabric Gasket

### advantages :

Soft with small pressure, low price and application in a relatively wide range of frequency.

### disadvantages :

being easy to damage in humid and hot enviroment.

### application

**condition :** In the place which can not provide big pressure



# **iAMPS & Hz Product Overview**

# iAMPS & Hz Product Overview

## Conductive Gasket



Grey FOF Gasket



Black conductive fabric over Foam



Ripstop conductive fabric over foam



Aluminum foil FOF Gasket



Mesh conductive fabric over foam

# Professional automation production line

## Features

- 1.The product can be tailored;
- 2.Product thickness : 0.3mm~50 ( mm ) ;
- 3.Product width : 1.5mm~120 ( mm ) ;
- 4.The efficiency of rotational molding is 0~15 times than traditional die-cutting by independent R&D;
- 5Automatic molding , gum application and slicing are intergrated;
- 6.Diverse shape of product are allowed.



# Production Process of Conductive Foam



Material staging



Molding



Gum application



Repasting



Slicing



Die-cutting

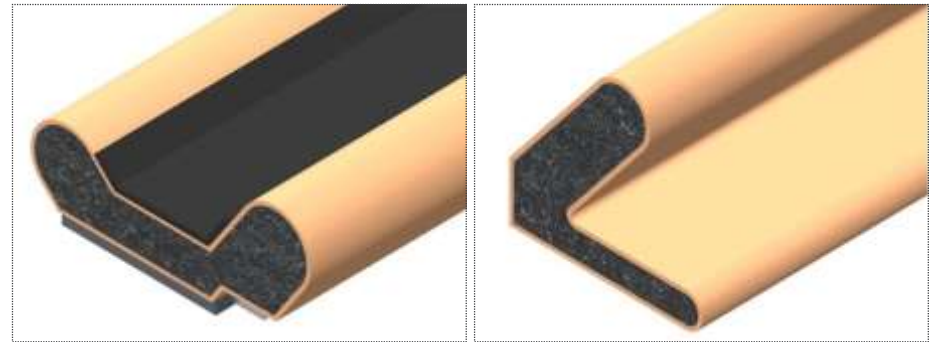
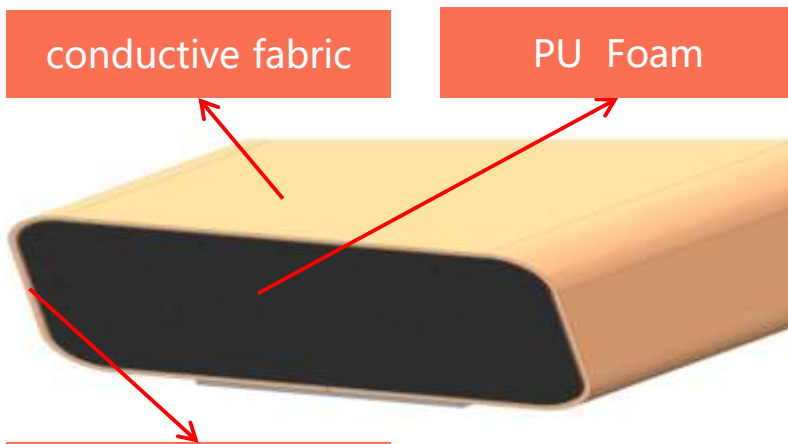


Inspecting

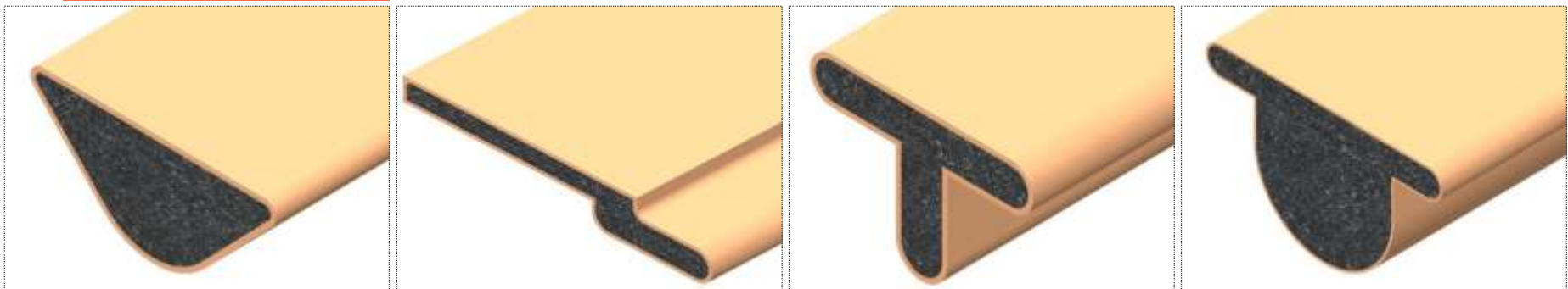
# Conductive Cushion Forming process

Two common forming process and product structure:

A: wrapping forming, with hot melting gum membrane



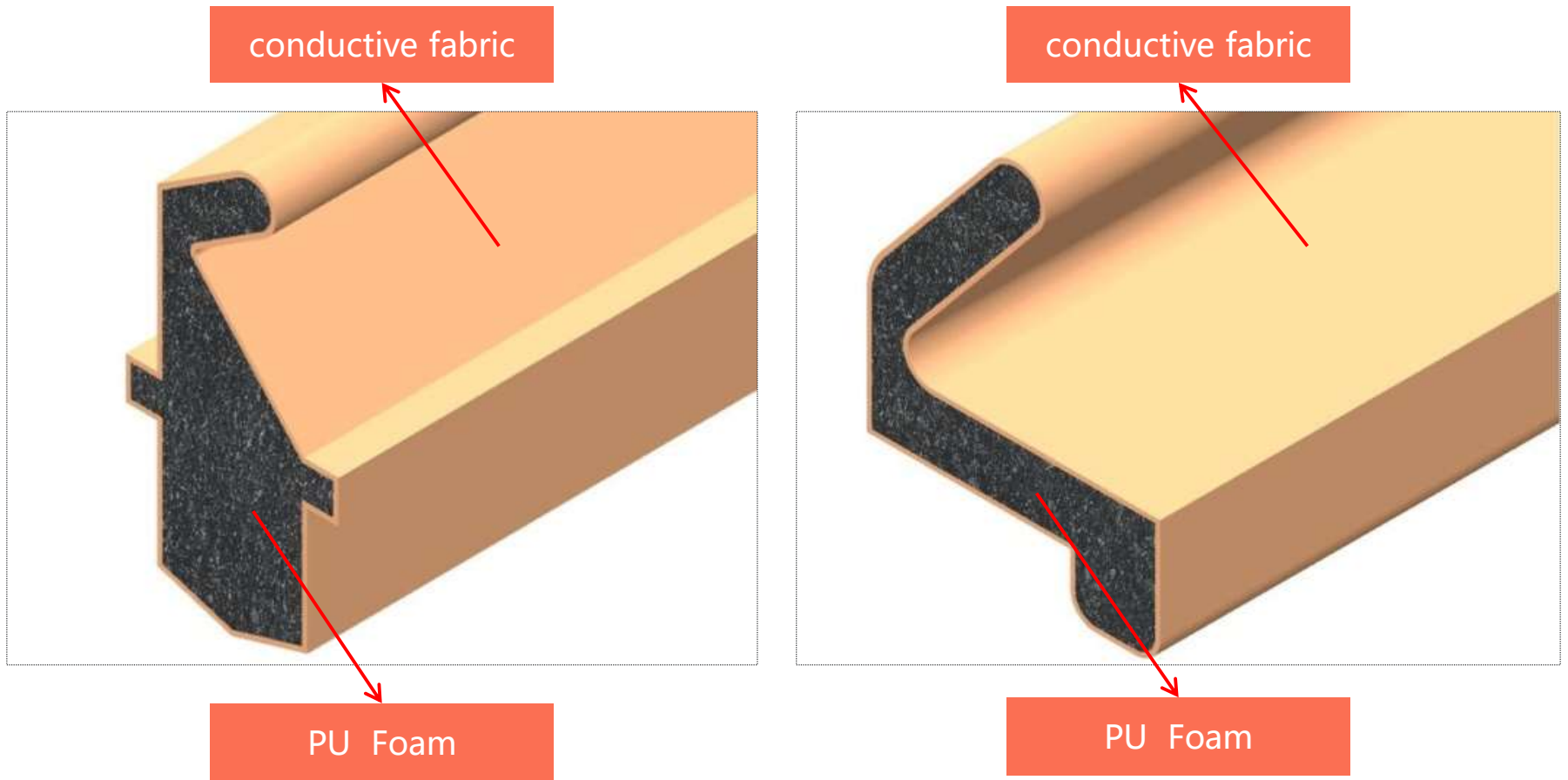
Hot melt adhesive



# Conductive Cushion Forming process

Two common forming process and product structure:

B: inner foaming, without hot melting gum membrane





# **iAMPS & Hz Product Test**

# Parameters tests



## Surface Resistance

- ☛ tester : DC low resistance tester
- ☛ tester
- ☛ timing: feed, process and shipment
- ☛ test frequency: each production batch.



## Square resistance

- ☛ tester: square resistance tester
- ☛ timing: feed, process and shipment
- ☛ test frequency: each production batch.



## Vertical Resistance

- ☛ tester : DC low resistance tester, tester
- ☛ timing: feed, process and shipment
- ☛ test frequency: each production batch.



## compression resistance

- ☛ tester: compression tester, direct flow and low resistance tester,
- ☛ timing: feed, process and shipment
- ☛ test frequency: when needed



## Shielding Effectiveness

- ☛ tester : spectrum analyzer E4447A, signal generator
- ☛ timing: feed, process and shipment
- ☛ test frequency: when needed



## Permanent Deformation

- ☛ tester : electric thermostat oven, compression tool
- ☛ timing: feed, process and shipment
- ☛ test frequency: when needed

# Reliability test

order	item	Condition	standard	times
1	High temperature test	155°C , 16h ,	GB/T 2423.2-2008	annually
2	Low temperature test	-20°C , 72h ,	GB/T 2423.1-2008	annually
3	Constant temperature and humid test	85°C , 85%RH , 72h ,	GB/T 2423.3-2006	annually
4	Humid impulse resistance test	-40~75°C , 72h , 60min/round ,	GB/T 2423.22-2012	annually
5	Salt mist test	moderate salt mist test,NaCl concentration 5% , salt water temperature 35°C , lab temperature 35°C , barrel temperature 47°C ,	ASTM B 117-2011	annually
6	Flame retardant	flame retardant tester	UL94	every set of raw material
7	Environment protection	EDX-720 tesster	SJ/T 11365-2006	twice a day (finished product)

# Test on Relation between resilience ratio after compression and resistance

Constant temperature test :  
 60°CX500hr,1000 hr ;  
 50% compression ,  
 test after being placed at room temperature for 24h

sample size	test time	value 1	value2	value3	value4	value5	average	resilience ratio after compression
150*10*1	0hr	1.062	1.046	1.036	1.010	1.046	1.040	-
	500hr	0.944	0.930	0.983	0.932	0.914	0.941	9.56
	1000hr	0.927	0.879	0.893	0.915	0.888	0.900	13.42



# Teat on relation between resilience ratio after compression and resistance (focusing on size but neglecting elasticity is a mistake)

temperature impact

test :

-20°CX3hr , 60°CX3hr ,

temperature transfer

time:2hr , total

time:1000hr ;

50%compression , test

after being placed at

room temperature for

24h

Size of sample	test time	value <sub>1</sub>	value <sub>2</sub>	value3	value4	value5	average	
150*10*1	0h	1.071	1.018	1.049	1.040	1.082	1.052	-
	500h	1.024	1.000	1.000	1.010	1.006	1.008	4.18
	1000h	0.979	1.002	0.979	0.969	0.988	0.983	6.52



# Test on Relation between resilience ratio after compression and resistance

focusing on size but neglecting elasticity is a mistake.

moisture resistance test :  
40°CX90%RHX1000hr ;  
50%compression ,  
test after being placed  
at room temperature for  
24h

Size of sample	test time	value 1	value 2	value 3	value 4	value 5	value 6	resilience ratio after compression
150*10* 1	0h	1.021	1.080	1.016	1.034	1.082	1.047	-
	500h	0.981	1.020	0.978	0.981	1.010	0.994	5.03
	1000 h	0.973	0.967	0.987	0.979	0.981	0.977	6.60



# Test on Relation between resilience ratio after compression and resistance

focusing on size but neglecting elasticity is a mistake.

salt mist test :

5%、35°C、pH7.0、  
8hrs praying , being  
placed at constant  
temperature for 16hr ,  
50%compression ; test  
after being placed at  
room temperature for  
24h

sample size	test time	value 1	value2	value 3	value 4	value5	average	resilienc e ratio after compre ssion
150*10 *1	befor e test	1.071	1.018	1.049	1.040	1.082	1.052	1.39
	after test	1.041	1.046	1.051	1.035	1.014	1.037	



# Contact resistance after tests in different environments

focusing on size but neglecting elasticity is a mistake.

Duration	0hr	500hr	1000hr
constant temperature test	0.00156	0.00364	0.0045
temperature impact test	0.00159	0.00194	0.0044
moisture resistance test	0.00160	0.00232	0.0045
salt mist test	0.00159	0.04154	/

