ATATA®

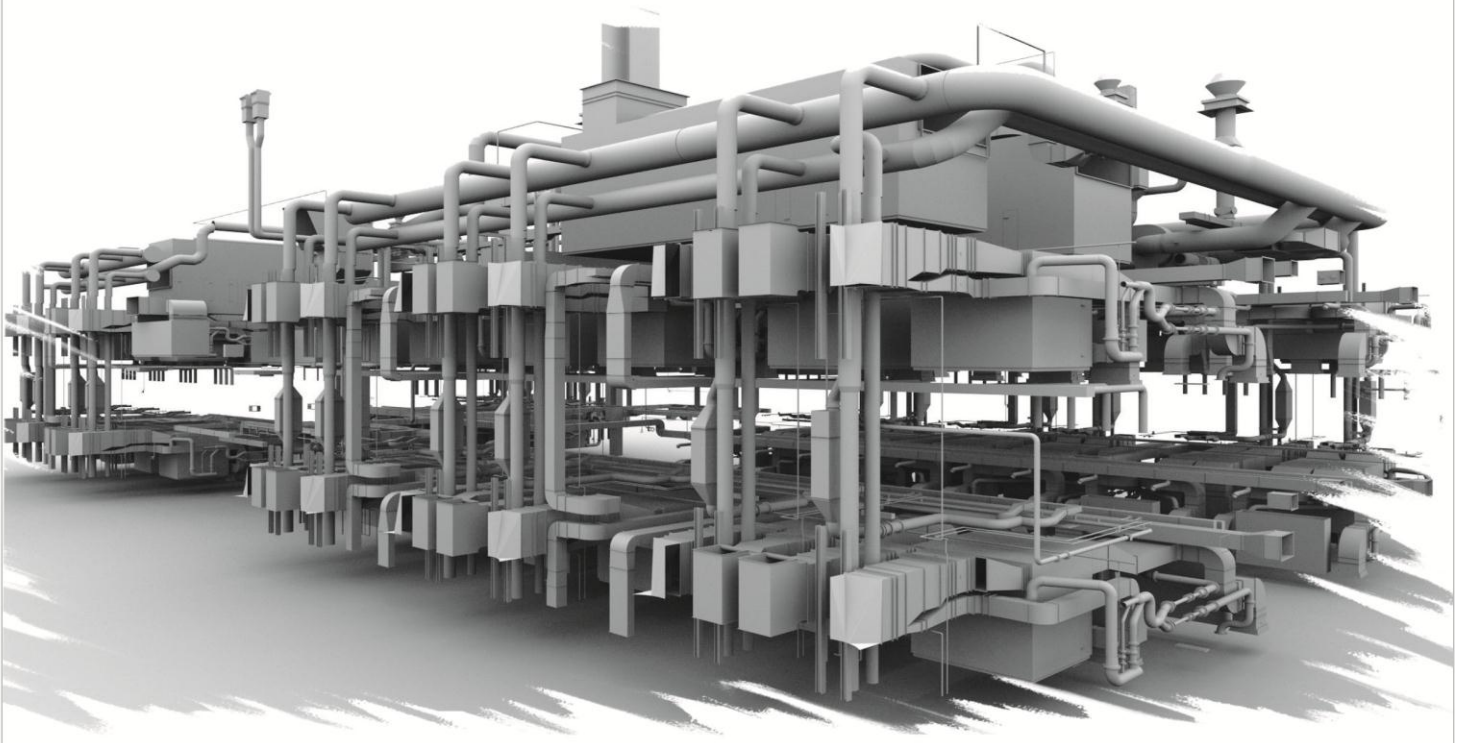
THERMAL BREAK & SOUNDPROOF

www.atata.com.vn

CATALOGUE

(FOR THEMAL BREAK & SOUNDPROOF MATERIAL)

English Ver 6/2015



High Quality

Safety & Health

Environment

THINK GREEN

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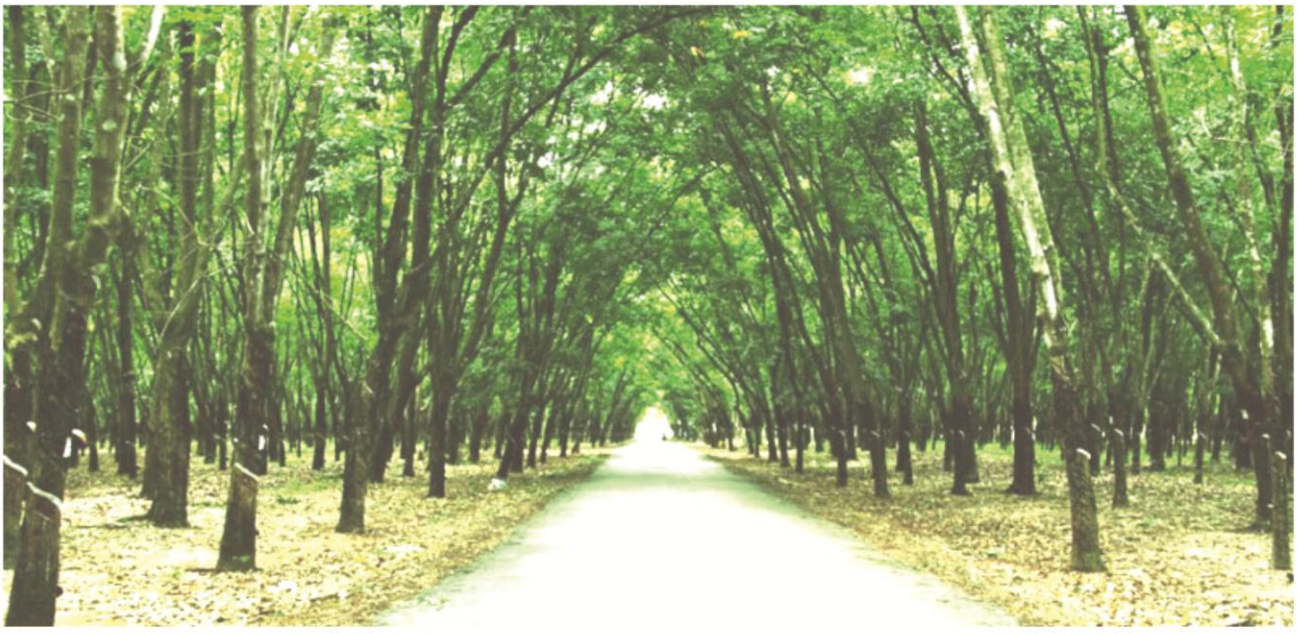


1. Introduce

ATATA Thermal Break & Soundproof Insulation has been manufactured by DETI Co,. Ltd. Our company locating on Thang Long highway which is an important transportation route of the capital connecting with arterial roads in the whole country, was officially established on 3rd May,1996, at Yen Son Industrial Park, Yen Son Town, Quoc Oai District, Ha Noi, Viet Nam where located in industrial park focused factory modern industry. We pride ourselves in presenting our customers with quality products together with prompt and reliable services.

With a commitment : ATATA thermal break & soundproof to provide highest quality product with most competitive price, friendly environment product making customer to be satisfaction and successful. ATATA Thermal Break Soundproof is the preferred NBR/PVC Insulation material for the HVAC and R industry.

Mission & Vision

Mission

- Inovation solution to achive good quality products.
Long - term cooporations with customer.

Target Outcome

Vission

- Pioneer in the field of thermal break & soudproof.
- The environment friendly products is the best choice for HVAC & R application.
-Prosperity of the community.

Core Values

As a provider of rubber foam material with applications soundproof & insulation leading to the construction industry, providing customers with innovative solutions and promptly to achieve the highest efficiency.Commit to long-term cooperation with customers, with suppliers to develop harmony of interests of the parties.

Become a pioneer in the field of thermal break and sound proof, safety and friendly with environment.
Serving the demands of human life and contributing to energy savings for human, organizations, country.
Creating value with meaningful innovation that improves quality of life, safety and prosperity of the community.

Quality Policy & Production and trading ability

Training and develop the human resources to maintain the quality of management system ISO 9001:2008, ISO 14000:2004 and strictly practice 5S system. Select stable raw materials, improve the labor skills, and control well the machine system. Therefore, make sure 100% output products meet good quality. Deliver good quality products to customer only.

The production capacity of the plant was designed to ensure sufficient for Vietnam market and 20% capacity to service for export markets. Equivalent capacity is 10.000 tons/year. Therefore, it ensures adequate distribution for northern markets, central, southern. Currently, manufactured goods are 02 main types of tubes and sheet.

» 2 . STRUCTURE ATATA THERMAL BREAK PRODUCT

ATATA THERMAL BREAK & SOUNDPROOF close cell tube and sheet insulation is a flexible and lightweight elastomeric material designed for insulating liquid and heating pipelines. The closed cell structure of ATATA provides many advantages over most rigid insulations such as:

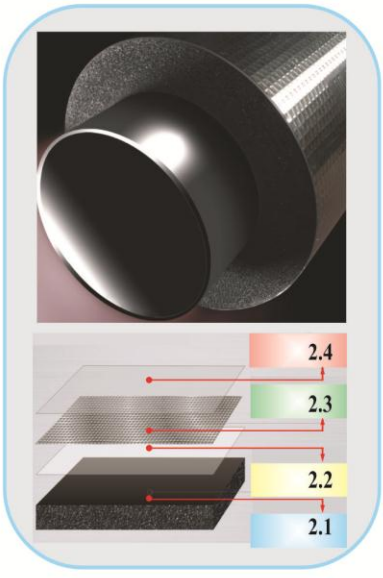
- Moisture and vapor resistance without using additional vapor barriers
- Stable thermal conductivity (K value/) throughout service life, due to its dense surface skin and closed cell characteristics
- Flexibility which makes installation work easy and neat. Outstanding ultraviolet and weather resistance.

ATATA is an ideal insulation for frost control on sub-zero piping. It prevents heat gain and condensation problems on chilled water and refrigerant pipelines, and it also prevents heat loss from hot water plumbing, liquid and dual temperature piping.

Structure ATATA Thermal Break Product (T2):

2.1 Insulation Material Layer :

ATATA thermal break and soundproof was created under the strict standards of the world offers great performance for the world insulation market.



2.2 Oil film adhesive glue layer

With technology advantages inventions of materials, this is the glue film to create sustainable linkages, stable between class insulation lay and heat-resistant aluminum outside surface layer during long-term work of the rubber foam insulation.

2.3 High Heat Resistant Glass Fiber Cloth Layer

Fiberglass cloth is heat resistant BS 476 part 6 : 1989 meet class 0 at 250°C in 20 minute to improve the performance of moisture resistant materials, the ability to help prevent fires, reduce the impact of external forces to bring to the surface clean and smooth

2.4 Aluminium Film Layer

Aluminium Film Layer has heat resistant class 0 : BS 476 part 6 : 1989 (250°C at 20 minute) to create the perfect protective coating outside, improve their resistance to UV rays, Ozone, and dirty.

No transmission

Using thermal conductivity K lower : - 20°C: 0.031 W/mK, 0°C: 0.034 W/mK, 32°C: 0.038 W/mK.

Installtion of monolithic

If internal diameter of the tube insulation from ID ø6mm ->Idø114mm, the user haven't to cutting follow length tube. ATATA insulation has been cut along the body tube or flat plate is scanned glue to combine two layer of ATATA insulation together perfectly.

No Dust and no fiber

They are made of rubber resin, ATATA thermal break & soundproof absolutely no dust and fiber, smooth easy operation are suitable for use incivil construction works, hotels, hospitals improve life enviroment quality.

Extensive fire & smoke testing

Allmost fire and smoke tests are certified by independent accredited laboratories. ATATA rubber foam has been extensively tested to major national and international standards, including : Bristish, Americal, European as UL 94 & ASTM D635, Bs476 part 7.

Higher μ value provides longer life

The metal surface covering layer of ATATA production provides a secondary moisture barrier besides the closed-cell core. It almost sliminates any penetration of water vapor, providing a very high water vapor diffusion resistance factor during its long service life.

» 3 . SPECIFICATION TECHNICAL DATA THERMAL BREAK AND SOUNDPROOF TABLE

No	Item			Standard	ATATA Rubber Foam Insulation					Lab Center
1	Cell Structure			ASTM 2856	Closed cell					VNIIC-Vietnam
2	Density (kg/m3)			ISO 854:1998	70 - 100 kg/m3					TUV - Singapore
3	Thermal Conductvity Btu.in/ft2.hr.°F (W/mK)	Mean Temperature	Kevin Temperature Cecius Temperature	ASTM C177 ASTM C518	- 4° F (- 20 °C)	32° F (0 °C)	76° F (24 °C)	90° F (32 °C)	104° F (40 °C)	VNIIC-Vietnam TUV - Singapore IBST - Vietnam
		λ- value	Btu.in/ft2.hr.°F (W/mK)		0.22 (0.032)	0.23 (0.034)	0.25 (0.037)	0.26 (0.038)	0.27 (0.039)	
4	Service Temperature			GB/T8871	- 58° F to 230° F - 50°C ⟶ 110°C					VNIIC-Vietnam
5	Coefficient Water Vapor permeability (Kg/Pa.s.m)			ASTM E96	0.16×10^{-12}					VNIIC-Vietnam
6	Moisture resistance (μ value)			DIN 52615	μ ≥ 7000 (15000)					VNIIC-Vietnam
7	Water Absorption (by volume)			ASTM D 1056	≤ 0.2 %					VNIIC-Vietnam
8	Dimension stability (%) at 105±3°C in 7 days			ASTM C534	0 - 7 %					VNIIC-Vietnam
9	Crack resistance (N/cm)			ISO 1798:1997	≥ 2.5 N/cm					VNIIC-Vietnam
10	Compression resilience ratio (Compression 50% V, 72 hrs)			ASTM D545	≥70%					VNIIC-Vietnam
11	Ozone Resistance (Ozone pressure 200 mpa 200 hrs)			ASTM D1171	No crack					VNIIC-Vietnam
12	Flammebility & Smoke			ASTM D635 UL 94	HB (swan - plant noncombustile) V-0 (fire self - extinguishing)					Exova - England
				BS476:Part 7 BS476:Part 6	Class 2 /Class 1 / Class 0					Exova - England
13	Sound reduction			AS 1054	27 Db (20mm)					VNIIC-Vietnam
14	Flexibility			ISO-178:1993	Excellent					VNIIC-Vietnam
15	Coating with release paper			TCVN 5820 : 1994	Adhesive test OK under temprature 80° C & 500 hrs					Quatest 3 - Vietnam
16	Fungi Resistance			ASTM G21	Excellent					VNIIC-Vietnam
17	UV & Weather resistance			ASTM G23/G154	Excellent					VNIIC-Vietnam
18	Mold resistance			UL 181	Excellent					VNIIC-Vietnam
19	CFC and HCFC				Excellent					VNIIC-Vietnam
20	Nitrosamine Content			US FDA BS EN 12868	No detected					VNIIC-Vietnam
21	Assess the color change			ISO 105 - A02:1993	No color change					VNIIC-Vietnam
22	Other test certificate (*)									

Features superior sound

ATATA insulation absorbs sound waves in air are excellent at frequencies cause discomfort to the user (≅0,1÷0,9;f=100÷5000Hz), while isolate destructive and very good sound transmission on the pipe system in contact with the equipment noise case, it acts as a barrier to reduce sound transmission, reducing vibration and reducing noise of equipment. ATATA insulation also can be used protection layer material inside the duct, exhaust fan, AHU machines, bins or box motor engine.

Shaped Cutting

ATATA thermal break and soundproof very easily cutting and shaping immediately at construction site aimed ensure mounting by placed fit for pipeline air conditioner system, ventilation system. ATATA thermal break and soundproof after cutting no generates small dust which this dust can influence people installation and decrease life environment quality.

Safety protection for surfaces

ATATA thermal break and soundproof material has got closed cell structure, resistance coefficient of high evaporation, low thermal conductivity, the out side surface is aluminum foil layer reinforced fire - resistance to 200^{0}C t o help protect perfectly surfaces metal and non - metallic, prevent water condensation cause the formation of " thermal bridging".

The other technical features

Beautiful external appearance: The color of the ATATA thermal break and soundproof product was designed according to customer requirements, the surface is always smooth, shiny, easy to clean.Products ATATA flexible, lightweight, minimizing the problems caused by corrosion makes installation easy, economical.

(*) Under testing process for TCVN QC-06-VVLXD by Vietnam laboratory and International laboratories center.

ATATA® THERMAL BREAK & SOUNDPROOF

4 . GUIDE TO MATCHING ATATA AND PIPE SIZE

ATATA Tube size		Steel pipes ASTM A53 & ASTM A106 & ASTM A500 & TIS 107				Copper pipes for water and gas - ASTM B88		Copper pipes for refrigeration -ASTM B280		PPR pipe DIN 8077 & DIN 8078	uPVC pipe ASTM D1785
(Mm)	(Inch)	Nor (DN)	Nor (inch)	Act (OD)	Act (OD)	Nor (DN)	Act (OD)	Nor (DN)	Act (OD)	Act (OD)	Act (OD)
6	1/4"							1/4			
9	3/8"					1/4	9,5	3/8	9,52		
13	½"					3/8	12,7	½	12,7		
16	5/8"					½	15,9	5/8	15,9		
19	3/4"					5/8	19,1	3/4	19,1	20	
22	7/8"	15	½	21,3	21,7	3/4	22,2	7/8	22,2		21
25	1"	20	3/4	26,7	27,2					25	
28	1-1/8"					1	28,6	1-1/8	28,6		27
32	1-1/4"									32	
35	1-3/8"	25	1	33,4	34	1-1/4	34,9	1-3/8	34,9		34
38	1-1/2"										
42	1-5/8"	32	1-1/4	42,2	42,7	1-1/2	41,3	1-5/8	41,3	40	42
48	1-7/8"	40	1-1/2	48,3	48,6						48
51	2"									50	
54	2-1/8"					2	54	2-1/8	54		
57	2-1/4"										
60	2-3/8"	50	2	60,3	60,5						60
64	2-1/2"									63	
67	2-5/8"					2-1/2	66,7	2-5/8	66,7		
73	2-7/8"	65	2-1/2	73	76,3						
76	3"									75	75
79	3-1/8"					3	79,4	3-1/8			
89	3-1/2"	80	3	88,9	89,1						90
102	4"	90	3-1/2	101,6	101,6					110	110
114	4-1/2"	100	4	114,3	114,3						
130	5-1/8"										
140	5-1/2"	125	5	140,3	139,8						

Notes :

1- The minimum internal diameter (ID) for ATATA Thermal Break & Soundproof are given to ensure correct fitting over pipe

2- TIS 107 outer diameter pipe sizes are equivalent to JIS 3442.

3- uPVC pipes to ASTM D1785 have the same outer diameter as steel pipes to ASTM A53.

4- Density of ATATA Thermal Break & Soundproof pipe 70 ->100 Kg/m3.

5- Tube surface is not scratched torn, blistered inside and outside of the tube

ATATA nominal ID	Tolerance above minium ID
Ø6mm - Ø28mm	up to +2.0mm
Ø32mm - Ø60mm	up to +2.5mm
Ø64mm - Ø76mm	up to +3.0mm
Ø79mm - Ø93mm	up to +3.5mm
Ø102mm - Ø140mm	up to+4.0mm

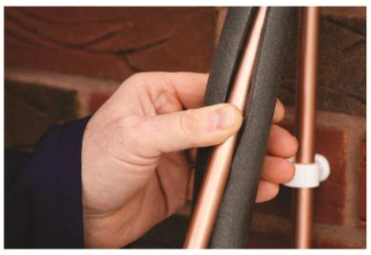
5. THE APPLICATION REALITY OF ATATA THERMAL BREAK & SOUNDPROOF

5.1 REFRIGERATION, CONDITIONING SYSTEM

Air gravure gravure system for refrigerant flow (R410A, R22 v.vv) cold temperatures from 0°C to -15 ° C from the heat (Outdoor Unit) to the cold part (Indoor Unit) to reduce the temperature of the water in the machine system or air environment brought clean fresh air especially in the hot summer day. To ensure keeping the heat on pipes, copper pipes need to be insulated from external heat.

ATATA Rubber Foam Insulation is applied for refrigerating systems not simply to control condensation problems, but also to reduce waste of energy by higher heat gain into the cooling systems of air conditional . ATATA Rubber foam insulation has been widely used in refrigerating due to the following superior characteristics :

- ♦ Closed cell structure. Non-polar polymer bases with high water and moisture resistance
- ♦ Very low water absorption.
- ♦ Low and stable thermal conductivity value.
- ♦ Comply with most international smoke and flammability standards.
- ♦ Outstanding flexibility for quick and easy installation. Gives the finished insulation a neat aesthetic appearance. No coating is needed on most indoor usage.
- ♦ Easy of installation, cutting and shaping immediately at construction site, no dust and no fiber which this dust can influence people installation and decrease life environment quality.

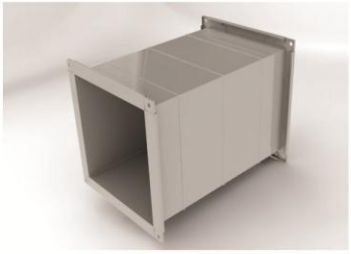


Typical for Refrigeration Systems

Recommended thickness (mm) of ATATA Rubber foam Insulation for refrigeration systems

Ambient Temperature	26°C						28°C						30°C				35°C			
Relative Humidity	65%	70%	75%	80%	85%	90%	65%	70%	75%	80%	85%	90%	75%	80%	85%	90%	75%	80%	85%	90%
Refrigeration to 0°C (For Air Conditional Wall) - R22																				
Pipe up to 35mm O.D	13	13	19	19	32	32	13	15	19	19	32	38	19	25	32	38	19	25	32	44
Pipe 42 - 60 mm O.D	13	13	19	25	32	38	15	15	19	25	32	38	19	25	32	44	25	32	38	50
Pipe 67 - 140 mm O.D	13	19	19	25	38	44	15	19	19	25	38	44	25	32	38	50	25	32	38	57
Pipe above 140 mm O.D	13	19	25	32	38	50	15	19	25	32	38	50	25	32	38	57	25	32	50	70
Refrigeration to -10°C (For VAV System) - R410A																				
Pipe up to 35mm O.D	19	19	19	19	32	38	19	19	19	25	38	44	25	32	38	50	25	32	38	57
Pipe 42 - 60 mm O.D	19	19	19	19	38	44	19	19	25	32	38	50	25	32	38	57	32	32	50	64
Pipe 67 - 140 mm O.D	19	25	19	25	44	50	19	25	32	32	50	57	32	38	50	64	32	38	50	76
Pipe above 140 mm O.D	19	25	19	25	50	57	19	25	32	38	50	64	32	38	50	76	32	44	57	88

5.2 FOR AIR DUCT SYSTEM



Air conditional duct system is a system help cool the air flow AHU(Air Handing Unit) or FCU (Fan Coil Unit) to provide location needs . To make sure you keep the heat on the way, duct should be insulation material outside. ATATA Rubber foam insulation is the optimal choice because save energy and sound-absorption, reducing noise in the system. ATATA Insulation material prominent than fibrous material the heat by the following factors :

- High elasticity and excellent flame retardant properties.
- The surface can be cleaned to help facilitate sanitation.
- Enhanced ability to fight the growth of mold , bacteria
- ATATA Rubber Insulation is good soundproof material.
- Easy Installation
- Low thermal conductivity saves energy efficiency , reduce Co2
- No fiber material helps prevent the problem of potential air quality
- Closed cell structure gives insulation vapor barrier membrane continuously
- Avoid the dangerous health, skin allergies as glass wool fibrous material causes.

Insulation is ATATA elastic rubber foam closed cell structure insulation is very efficient sustainable . This structure prevents the penetration of moisture into the interior and thus avoid changing the thermal conductivity of the product over time . This is an important benefit compared with open- structured materials and products made from fiber materials as well as materials depends on coating prevents external moisture which can be easily damaged or difficult to completely sealed.

Application ATATA rubber foam for ducting works

Thickness Recommendation for Ducting System (*)

Ambient Condition	Operating Temperature (Cool Air Temperature)						Remark
	20°C (68.0°F)	15°C (59.0°F)	13°C (55.4°F)	10°C (50°F)	7°C (50°F)	5°C (41.0°F)	
27°C (80°F), 50% RH	6mm (1/4")	10mm (3/8")	10mm (3/8")	13mm (1/2")	13mm (1/2")	15mm (5/8")	Mild Design Conditions
30°C (86.0°F), 70% RH	10mm (3/8")	10mm (3/8")	13mm (1/2")	13mm (1/2")	15mm (5/8")	15mm (5/8")	Normal Design Conditions
32°C (89.6°F), 80% RH	15mm (5/8")	19mm (3/4")	19mm (3/4")	19mm (3/4")	25mm (1")	28mm (1-1/8")	Severe Design Conditions " Like Vietnam weather "
34°C (93.2°F), 85% RH	25mm (1")	25mm (1")	25mm (1")	25mm (1")	32mm(1-1/4")	38mm (1-1/2")	"Very Severe" Design Conditions

(*) Recommended thicknesses are to be used as a guide. Results are obtained under typical conditions. ATATA insulation does not guarantee it will be prevent condensation. Other factors such as proper installation is crucial in condensation prevention. Please consult with our technical staff for more precise calculations.

5.3 CHILLER WATER COOLING SYSTEM

ATATA Rubber Foam Insulation is NBR closed cell insulation material . It is a superior insulation for cooling system that function at below ambient temperature for energy saving by retarding heat gain and also preventing condensation chiller water and refrigeration lines. ATATA insulation material also prevents the water pipes from freezing when ambient temperature is below sub-zero point. In areas with high humidity, condensation problems often occur on chiller water pipelines in central cooling systems.

ATATA Insulation Material is NBR material with fine cell structure containing dry air (mainly nitrogen gas) which is high resistant to convection heat transfer, and with thousands of cell walls acting as multi-layer water vapor barrier to retard water and moisture penetration, resulting in low and stable thermal conductivity throughout service time. ATATA insulation material has been widely used in chilled water and refrigeration systems due to the following superior characteristics:

* Complete cross-linked closed cell structure
* Great resistance to water vapor penetration and very low water absorption
*Low and very stable thermal conductivity (K Value)
* Non-polar polymer base : high water and moisture resistance




Recommended thickness (mm) for typical cold water, chilled water and refrigeration systems (*)

Ambient Temperature	26°C				28°C				30°C				35°C			
Relative Humidity	75%	80%	85%	90%	75%	80%	85%	90%	75%	80%	85%	90%	75%	80%	85%	90%
Cold Water +18°C																
Pipe up to 35mm O.D	6	10	10	19	6	10	13	19	10	10	13	19	10	13	19	25
Pipe 42 - 60 mm O.D	6	10	10	19	10	10	13	19	10	10	15	25	13	13	19	25
Pipe 64 - 140 mm O.D	10	10	13	19	10	10	19	25	10	13	19	25	13	19	25	32
Pipe above 140 mm O.D	10	10	13	25	10	10	19	25	10	13	19	32	13	19	25	38
Chilled water +5 ~ +7°C																
Pipe up to 35mm O.D	13	19	25	38	13	19	25	32	19	19	25	32	19	19	25	38
Pipe 42 - 60 mm O.D	19	19	32	50	19	19	25	38	19	19	25	38	19	25	32	38
Pipe 64 - 140 mm O.D	19	25	32	50	19	19	32	38	19	25	32	38	25	25	32	50
Pipe above 140 mm O.D	25	25	32	50	19	25	32	50	19	25	32	50	25	32	38	50

(*) Recommended thicknesses are to be used as a guide. Results are obtained under typical conditions. ATATA insulation does not guarantee it will be prevent condensation. Other factors such as proper installation is crucial in condensation prevention. Please consult with our technical staff for more precise calculations.

5.4 HOT WATER SYSTEM

NBR rubber foam insulation soundproof ATATA is very effective in reducing work against thermal hot water systems of domestic heating in hospitals, hotels, residential buildings, industrial plants, etc. . It also is used to keep the heat on the water heater systems solar energy by private family and public buildings.

For higher performance in the ability of insulation and outdoor applications, ATATA special offers UV rays and ozone, can also be used for solar hot water heating and steam temperature service applications service up to 110°C (230°F)

Closed cell structure and high elasticity gives insulation material ATATA following advantages:

- Temperature service up to 110° C (230°F) in ATATA standards.
- Outstanding UV and weather resistant when used outdoors.
- Thermal conductivity is stable throughout life services - Very low water absorption
- No need jacket is necessary even for outdoor piping, unless long term direct contract to sunlight jacketing or protective coating are recommended
- Flexibility for easy installation

There is no risk of fiber and dust during the construction and installation of special places strict requirements on hygiene. ATATA is manufactured from synthetic rubber that contains no asbestos or fiber. This is an important reason rubber foam insulation ATATA widely selected to replace glass fiber or mineral wool prone to dirt and itching when used in piping hot water and low pressure steam.

Recommend thickness (mm) of ATATA rubber foam insulation for personnel protection

(*) for hot pipe controlled temperature of surface insulation =30°C, ambient temperature = 25°C

Line Temperature	60°C (140°F)	70°C (158°F)	80°C (176°F)	90°C (194°F)	100°C (212°F)
Pipe up to 35mm OD	10mm	13mm	15mm	19mm	25mm
Pipe 42mm-60mm OD	13mm	15mm	19mm	19mm	25mm
Pipe 67mm-114mm OD	13mm	15mm	19mm	19mm	25mm
Pipe above 114mm OD	15mm	15mm	25mm	25mm	32mm

All advantages descriped above make ATATA the ideal insulation for solar heating and hot water. Stable K value and outstanding weather resistance throughout service life. ATATA is widely used in heating system to replace fiberglass.

Because of low water absorption and water vapor transmission, ATATA is widely used in heating and cooling system.

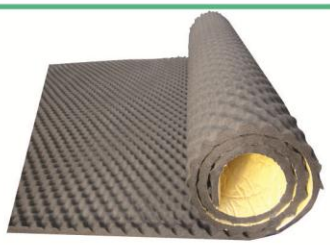
(*) Recommended thicknesses are to be used as a guide. Results are obtained under typical conditions. ATATA insulation does not guarantee it will be prevent condensation. Other factors such as proper installation is crucial in condensation prevention. Please consult with our technical staff for more precise calculations.

5.5 ATATA SOUNDPROOF MATERIAL & APPLICATION

Environmental noise, which is often defined as unwanted sound, is generated by man's activity and effects the environment in which we live. ATATA soundproof material is a versatile acoustic absorber designed for use in a variety of different acoustic applications. With high performance sound absorber which ATATA soundproof material has got making barrier transmission loss performance and vibration damping.

Delivering optimal performance at lower thickness than traditional material, ATATA soundproof material is a uniquely advanced than other acoustic insulation material. With a peak absorption frequency determined by the insulation thickness and the material density, ATATA soundproof material can be engineered to target specific problem frequencies. ATATA soundproof material has got two kind of:

- ATATA Rubber Foam Soundproof (Egg Sheet Insulation)
- ATATA PU Foam Soundproof (Egg sheet & Pyramid sheet)
- ATATA Press acoustic rubber foam (flat sheet)



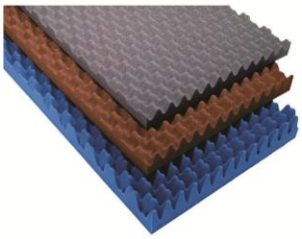
NBR Rubber Foam Soundproof

(Egg Sheet)

Close Cell Structure

Fire Self -Extinguishing, Swan Plant noncombustile

High reach to 30 dB(A) at 1000 Hz



PU Foam Soundproof

(Egg Sheet)

Open Cell Structure

Flammable

High reach to 30 dB(A) at 1000 Hz

Press Acoustic Rubber Foam

(Flat Sheet)

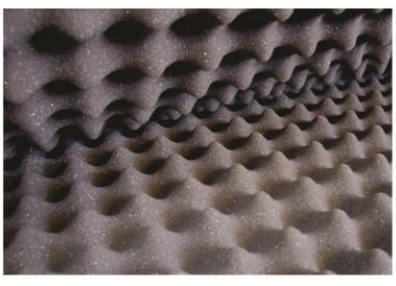
Open Cell Structure

Flammable

High reach to 40 dB(A) at 1000 Hz

ATATA soundproof material has been widely using in soundproof application such as : theater, dance hall, semilar room, attenuation sections of fans, regular, diesel, electric generator the following superior characteristics:

- High absorption coefficent sound maximum up to 0.98 , minimum insertion loss typically 8 (dBA) broadband reduction achieved with a 10mm thickness rubber foam
- Unique combination of physical properties allows absorption to be maximise at key "nuisance" frequencies.
- ATATA soundproof material may be suitable for use as an alternative to complex " foam barrier" multi-layers.
- ATATA soundproof material help reduce vibration damping, reduces structure-borne noise transmission when used as isolation pads.



Continuous Tube (Type: T1)

T- Da x bT - B - T1

Tube with aluminum layer (Type : T2)

T- Da x bT - B - T2

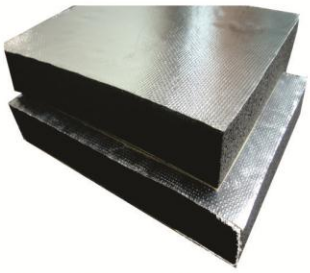
Tube cutting (Type : T3)

T- Da xbT - B - T3

THERMAL BREAK PRODUCTS

ATATA standard sheet (Type : F1)

S- Wa xbT - B - F1

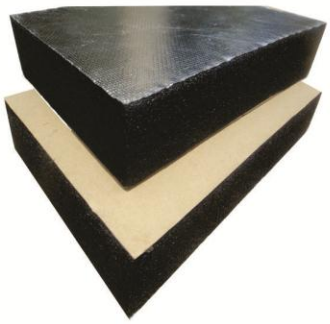


ATATA insulation with aluminum layer (Type : F2)

S- WaxbT - B - B - F2

ATATA Insulation with adhesive layer (Type : F3)

S- Wa x bT - B - F3



ATATA insulation sheet all in one (Type : F4)

S- Wa x bT - B - F4

» 6.1 TUBE TYPE

6.1.1 Tube Insulation

6.1.1.1 Continuous Tube (Type: T1)

ATATA normal tube is cylindrical tube has closed cell structure with a core inside diameter was installed that fits with system air conditioning copper pipes, metal pipes water cooling chiller, hot water PPR pipes, condensate uPVC pipes ang soundproof decorative pipe is packed in carton box very handy. This product is convenient, compact, saving the construction. ATATA Thermal Break & Soundproof insulation are widely used to saving energy, control and prevent condensation problem on chiller water pipe and refrigeration pipes . .They also efficiently reduce heat flow on the hot water plumbing, liquid heating and application soundproof.

T- Da x bT - B - T1

6.1.1.2 Tube with aluminum layer (Type : T2)

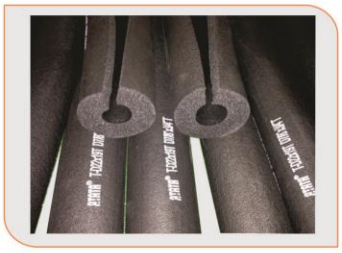
This is ATATA normal style has got aluminum foil layer thickness of about 150µm outside with high resistant 250°C, the layer ability to maximize insulation, sound insulation, increased resistance to fire.

ATATA tube with aluminum layer has high puncture and tear resistance, contains flame retardant, and can be used as an exterior facing on hot or cold insulation systems. This product also offers excellent vapour-barrier performance.

T- Da x bT - B - T2

6.1.1.3 Tube cutting (Type : T3)

Insulation is available ATATA slitting tubular pipe insulation have been cut throughout the length half pipe. This hose makes it easy construction convenient, save labor costs in the case of special need insulating pipes were installed complete.



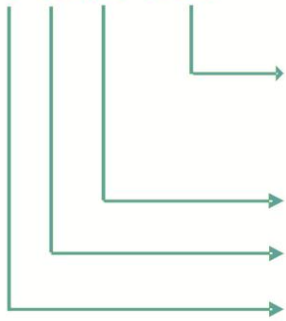
T- Da xbT - B - T3

6.1.2 Package products

- Paper carton box : Extra strength cartons can stack up to 10 layer. Provides protection and support for container shipment and warehouse storage.
- Packed products in:
  - Carton box size: 420mm x 320mm x 1880mm
  - Nilon bag: Ø450mm L1900 mm
- Length tolerance of tube in range ±3mm, thickness tolerance of tube in range ±1mm, Inside Diameter tolerance of tube in range ±1 mm

6.1.3 Customer order code for tube type

T - Da x bT - B -Tx



Tx : With x=1 or x=2, 3
With x=1 => Tx=T1 : Continous tube.
With x=2 => Tx=T2 : Tube with aluminum layer
With x=3 => Tx=T3 : Tube with cutting half

b T: Thickness Tube (mm) is 10mm to 50mm

Da: Internal Diameter Tube is Ø6mm to Ø140 mm

T: (Tube)

6.1.4 Standard Packing (Number of tubes per box)

Pipe size (ØDmm)	Pipe size (ØD inch)	ATATA code number (Quanlity : Pcs/bag nilon, 1pcs=1,83m, Length = 6 Feet Length)							
		10mm (3/8")	13mm (½")	15mm (5/8")	19mm (¾")	25mm (1")	32mm (1-¼")	38mm (1-½")	50mm (2")
6	1/4"	T-D6x10T (150)	T-D6x13T (100)	T-D6x15T (70)	T-D6x19T (50)	T-D6x25T (36)			
9	3/8"	T-D9x10T (120)	T-D9x13T (90)	T-D9x15T (60)	T-D9x19T (45)	T-D9x25T (30)			
13	1/2"	T-D13x10T (100)	T-D13x13T (75)	T-D13x15T (55)	T-D13x19T (40)	T-D13x25T (26)	T-D13x32T (22)		
16	5/8"	T-D16x10T (90)	T-D16x13T (64)	T-D16x15T (50)	T-D16x19T (36)	T-D16x25T (24)	T-D16x32T (20)	T-D16x38T (14)	
19	3/4"	T-D19x10T (75)	T-D19x13T (56)	T-D19x15T (40)	T-D19x19T (30)	T-D19x25T (22)	T-D19x32T (18)	T-D19x38T (12)	
22	7/8"	T-D22x10T (65)	T-D22x13T (48)	T-D22x15T (32)	T-D22x19T (28)	T-D22x25T (20)	T-D22x32T (16)	T-D22x38T (12)	
25	1"	T-D25x10T (60)	T-D25x13T (42)	T-D25x15T (32)	T-D25x19T (24)	T-D25x25T (18)	T-D25x32T (14)	T-D25x38T (10)	T-D25x50T (6)
28	1-1/8"	T-D28x10T (55)	T-D28x13T (36)	T-D28x15T (30)	T-D28x19T (22)	T-D28x25T (16)	T-D28x32T (12)	T-D28x38T (10)	T-D28x50T (6)
32	1-1/4"	T-D32x10T (45)	T-D32x13T (32)	T-D32x15T (26)	T-D32x19T (20)	T-D32x25T (16)	T-D32x32T (12)	T-D32x38T (9)	T-D32x50T (5)
35	1-3/8"	T-D35x10T (40)	T-D35x13T (32)	T-D35x15T (22)	T-D35x19T (18)	T-D35x25T (14)	T-D35x32T (12)	T-D35x38T (9)	T-D35x50T (5)
38	1-1/2"	T-D38x10T (34)	T-D38x13T (28)	T-D38x15T (20)	T-D38x19T (16)	T-D38x25T (12)	T-D38x32T (10)	T-D38x38T (8)	T-D38x50T (4)
42	1-5/8"	T-D42x10T (30)	T-D42x13T (25)	T-D42x15T (20)	T-D42x19T (16)	T-D42x25T (12)	T-D42x32T (9)	T-D42x38T (8)	T-D42x50T (4)
48	1-7/8"	T-D48x10T (28)	T-D48x13T (22)	T-D48x15T (18)	T-D48x19T (15)	T-D48x25T (10)	T-D48x32T (8)	T-D48x38T (6)	T-D48x50T (4)
51	2"	T-D51x10T (24)	T-D51x13T (20)	T-D51x15T (16)	T-D51x19T (12)	T-D51x25T (10)	T-D51x32T (8)	T-D51x38T (6)	T-D51x50T (4)
54	2-1/8"	T-D54x10T (22)	T-D54x13T (20)	T-D54x15T (16)	T-D54x19T (12)	T-D54x25T (10)	T-D54x32T (8)	T-D54x38T (6)	T-D54x50T (4)
57	2-1/4"	T-D57x10T (22)	T-D57x13T (20)	T-D57x15T (14)	T-D57x19T (12)	T-D57x25T (9)	T-D57x32T (6)	T-D57x38T (6)	T-D57x50T (4)
60	2-3/8"	T-D60x10T (20)	T-D60x13T (18)	T-D60x15T (14)	T-D60x19T (12)	T-D60x25T (9)	T-D60x32T (6)	T-D60x38T (6)	T-D60x50T (3)
64	2-1/2"	T-D64x10T (20)	T-D64x13T (16)	T-D64x15T (14)	T-D64x19T (10)	T-D64x25T (9)	T-D64x32T (6)	T-D64x38T (6)	T-D64x50T (3)
67	2-5/8"	T-D67x10T (18)	T-D67x13T (16)	T-D67x15T (12)	T-D67x19T (9)	T-D67x25T (8)	T-D67x32T (6)	T-D67x38T (6)	T-D67x50T (3)
73	2-7/8"	T-D73x10T (18)	T-D73x13T (16)	T-D73x15T (12)	T-D73x19T (9)	T-D73x25T (8)	T-D73x32T (5)	T-D73x38T (4)	T-D73x50T (3)
76	3"	T-D76x10T (18)	T-D76x13T (16)	T-D76x15T (12)	T-D76x19T (8)	T-D76x25T (8)	T-D76x32T (5)	T-D76x38T (4)	T-D76x50T (3)
79	3-1/8"	T-D79x10T (16)	T-D79x13T (14)	T-D79x15T (12)	T-D79x19T (8)	T-D79x25T (6)	T-D79x32T (4)	T-D79x38T (4)	T-D79x50T (3)
89	3-1/2"	T-D89x10T (16)	T-D89x13T (14)	T-D89x15T (12)	T-D89x19T (8)	T-D89x25T (6)	T-D89x32T (4)	T-D89x38T (4)	T-D89x50T (3)
102	4"	T-D102x10T (14)	T-D102x13T (12)	T-D102x15T (12)	T-D102x19T (6)	T-D102x25T (6)	T-D102x32T (3)	T-D102x38T (3)	T-D102x50T (2)
114	4-1/2"	T-D114x10T (14)	T-D114x13T (12)	T-D114x15T (12)	T-D114x19T (6)	T-D114x25T (4)	T-D114x32T (3)	T-D114x38T (3)	T-D114x50T (2)
130	5-1/8"	T-D130x10T (10)	T-D130x13T (9)	T-D130x15T (6)	T-D130x19T (6)	T-D130x25T (3)	T-D130x32T (2)	T-D130x38T (2)	T-D130x50T (2)
140	5-1/2"	T-D140x10T (10)	T-D140x13T (8)	T-D140x15T (6)	T-D140x19T (6)	T-D140x25T (3)	T-D140x32T (2)	T-D140x38T (2)	T-D140x50T (2)

» 6.2 SHEET TYPE & ROLL TYPE

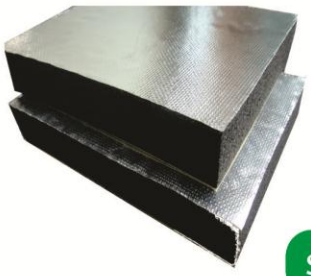
6.2.1 : Sheet type product:

6.2.1.1 : ATATA standard sheet (Type : F1)

S- Wa xbT - B - F1

ATATA Standard Sheet is Sheet type of the ATATA rubber foam, packed as a coil, for fast and economic installation in surface application of ventilation ducting, cooling water and hot water piping.

6.2.1.2 : ATATA insulation with aluminum layer (Type : F2)



S- WaxbT - B - F2

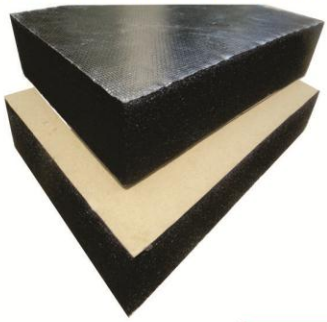
ATATA rubber foam sheet with aluminum layer is supplied with factory applied aluminum foil facing. With 150 microns foil with the strong reinforcement weave offer superior physical protection to the insulation. No additional coating or protection is required. The closed cell structure and foil facings ensure almost zero vapour permeability.

6.2.1.3 : ATATA Insulation with adhesive layer (Type : F3)

S- Wa x bT - B - F3

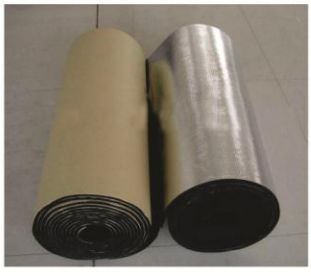
The acrylic tissue interlayer adhesive system is designed to perform in a variety of extreme conditions. The tissue interlayer system is specially developed to ensure foolproof application. It is designed to be re-positionable at the installation stage before permanently curing to the steel duct. Unlike direct coated system, this ensures proper installation without damage to the insulation caused by repeated alignment of the insulation to the duct.

6.2.1.4: ATATA insulation sheet all in one (Type : F4)



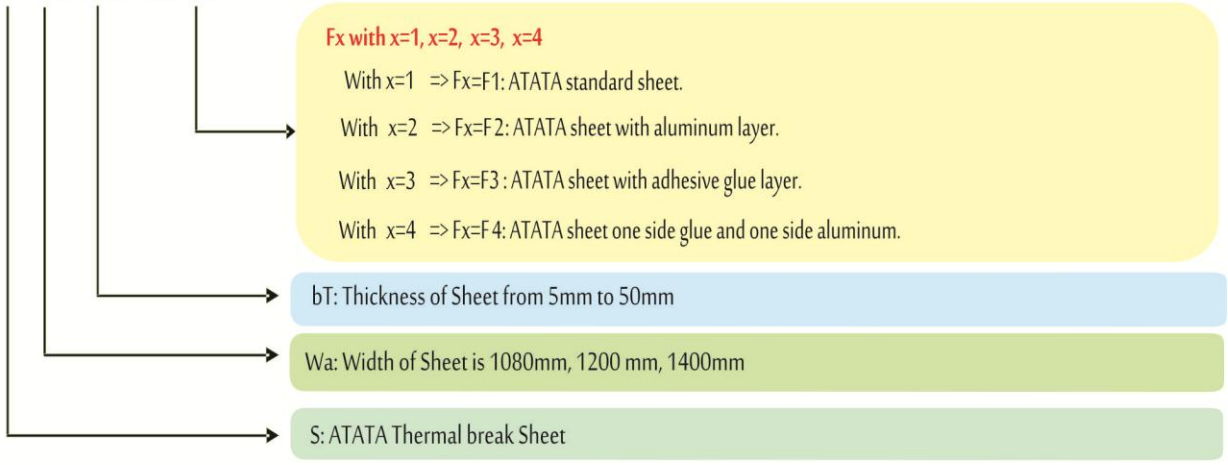
S- Wa x bT - B - F4

The ATATA"all in one" is Sheet made from physically crosslinked closed cell polyolefin foam, factory fused to a reinforced 150um aluminium foil with high resistant heat 250°C and back side with a specially developed acrylic tissue interlayer adhesive system. The ATATA "all in one" sheet enables fast and easy installation thus providing significant installation cost savings and a superior job finish.



6.2.2. Customer order code for sheet type

S - Wa x bT - B - Fx



6.2.3 Standard packing of roll type (sheet area per roll)

Width of ATATA sheet		Thickness of ATATA sheet (mm wall)							
W (mm)		10mm wall	13mm wall	15mm wall	19mm wall	25mm wall	32mm wall	38mm wall	50mm wall
		(3/8")	(1/2")	(5/8")	(3/4")	(1")	(1-1/4")	(1-1/2")	(2")
1400	Code	S-W1400x10T	S-W1400x13T	S-W1400x15T	S-W1400x19T	S-W1400x25T	S-W1400x32T	S-W1400x38T	
	Package	1.4m x 10m	1.4m x 10m	1.4m x 10m	1.4m x 10m	1.4m x 10m	1.4m x 10m	1.4m x 10m	
		14m2/roll	14m2/roll	14m2/roll	14m2/roll	14m2/roll	14m2/roll	14m2/roll	
1200	Code	S-W1200x10T	S-W1200x13T	S-W1200x15T	S-W1200x19T	S-W1200x25T	S-W1200x32T	S-W1200x38T	S-W1200x50T
	Package	1.2m x 9.14m	1.2m x 9.14m	1.2m x 9.14m	1.2m x 9.14m	1.2m x 9.14m	1.2m x 9.14m	1.2m x 9.14m	1.2m x 3m
		10.97m2/roll	10.97m2/roll	10.97m2/roll	10.97m2/roll	10.97m2/roll	10.97m2/roll	10.97m2/roll	3.6m2/roll
1080	Code	S-W1080x10T	S-W1080x13T	S-W1080x15T	S-W1080x19T	S-W1080x25T	S-W1080x32T	S-W1080x38T	S-W1080x50T
	Package	1.08m x 9.14m	1.08m x 9.14m	1.08m x 9.14m	1.08m x 9.14m	1.08m x 9.14m	1.08m x 9.14m	1.08m x 9.14m	1.08m x 3m
		9.87m2/roll	9.87m2/roll	9.87m2/roll	9.87m2/roll	9.87m2/roll	9.87m2/roll	9.87m2/roll	3.24m2/roll

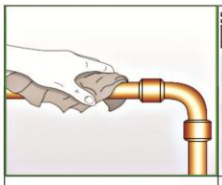
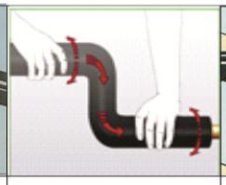
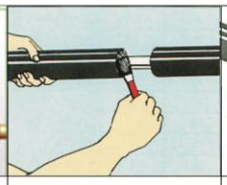
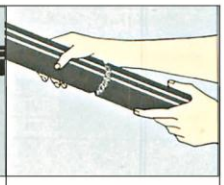
6.2.4 Standard packing of roll type is plastic bag

ATATA code number	Thickness		Size	Area/Roll	PCS Carton	Area/1Carton
	Inch	mm	m	m2		(M2/box)
S-W1200 x H1000 x 6T	1/4"	6	1.2 x 1	1.2	40	48
S-W1200 x H1000 x 10T	3/8"	10	1.2 x 1	1.2	26	31.2
S-W1200 x H1000 x 13T	1/2"	13	1.2 x 1	1.2	20	24
S-W1200 x H1000 x 15T	5/8"	15	1.2 x 1	1.2	17	20.4
S-W1200 x H1000 x 19T	3/4"	19	1.2 x 1	1.2	13	15.6
S-W1200 x H1000 x 25T	1"	25	1.2 x 1	1.2	10	12
S-W1200 x H1000 x 32T	1 1/4"	32	1.2 x 1	1.2	8	9.6
S-W1200 x H1000 x 38T	1 1/2"	38	1.2 x 1	1.2	7	8.4
S-W1200 x H1000 x 50T	1 1/2"	50	1.2 x 1	1.2	5	6

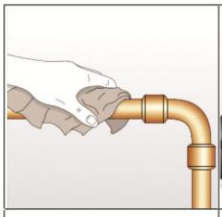
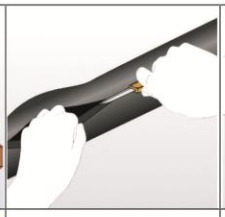
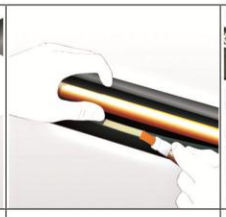
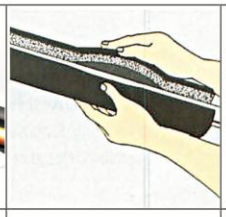
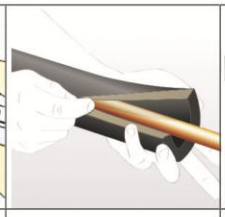
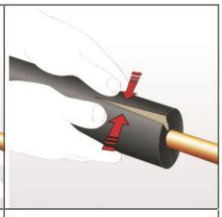
Note : Standard packing of sheet type is carton box (1210mmL x 1010 mmW x 280mmH). Size can be customized

7. INSULATION INSTALLATION METHOD

Install ATATA Thermal Break Tube Insulation ID Φ6 - Φ114

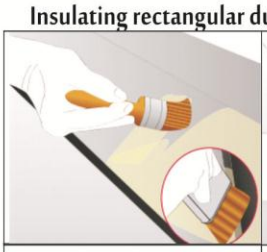
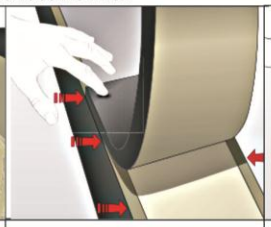
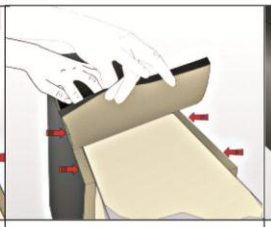
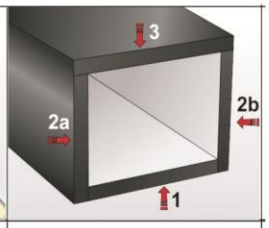
					
1.Clean all dust, oil, water from surface pipework at where ATATA rubber foam install Insulation.	2.Insert tube insulation into pipe.	3.Insert tube insulation into fittings pipe.	4. Using a circular motion , push Tube ATATA round bends . Don't push the insulation	5.Pipe and add adhesive bonding.	6.When adhesive surface dry using compress to pull joint edges with a small brush.

Install ATATA Thermal Break Tube Insulation ID > Φ114

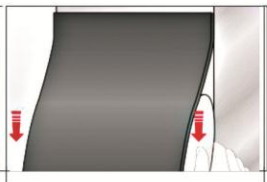
					
1.Clean all dust, oil, water from surface pipework at where ATATA rubber foam install insulation.	2.Using knife cutting follow length tube.	3.Clean and adding adhesive into tube insulation.	4.Waiting adhesive dry.	5.Press line the edges together.	6.Press from top to end of pipe.

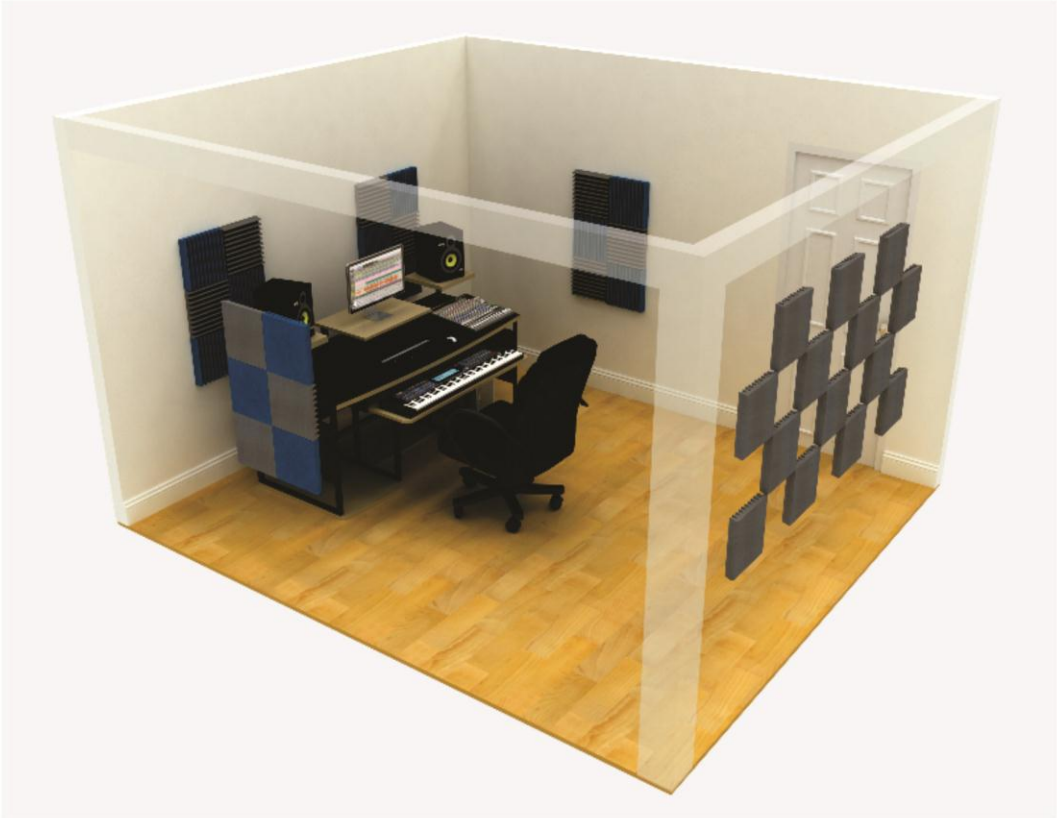
Install ATATA Thermal Break sheet insulation

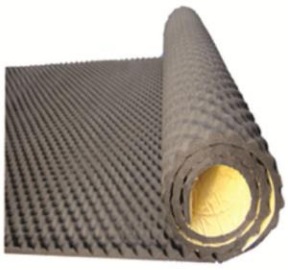
Insulating rectangular ducts with standard ATATA sheet normal

					
1. Clean all surfaces using ATATA foam rubber cleaner to remove oil, dirt ect and cut sheet to size.	2. Spread a thin film of adhesive onto the metal surface and then onto the ATATA sheet.	3. When the adhesive is tack dry place ATATA sheet in position and press firmly to achieve a good bond.	4. Continue applying adhesive to both surface, include the ATATA edge and allow to tack dry before pressing firmly into position.	5. Roll the ATATA sheet down into position along the insulated edge's from start point edge to end point edge of ducting.	

Insulating rectangular ducts with standard ATATA self adhesive sheet.

				
1. Cut ATATA sheet to size follow ducting size. Peel back release paper	2. Press firmly to activate adhesive	3. Align material and continue to correctly line up, pressing firmly whilst slowly removing release paper	4. At butt joints allow 5mm overlap for compression	5. Apply a seal application to the compressed butt joint





Rubber foam soundproof - Egg sheet

ES - Wa x bT - B - Ex

Rubber foam soundproof - Flat sheet

S - Wa x bT - B - Fx

PU foam soundproof

EP - Wa x bT - B - Px

Rubber foam soundproof - Press acoustic

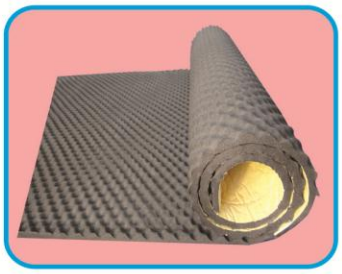
PAS - Wa x bH - xT

8. Rubber Foam soundproof

8.1 Eggsheet

ATATA Rubber Insulation is a versatile acoustic absorber designed for use in a variety of different acoustic applications. A high performance sound absorber which also offers additional transmission loss performance and both vibration damping and isolation properties.To reduce noise air from the ventilation system and air conditioning (HVAC system), ATATA soundproof material is glued to the box before and after axial fan system, making silencer box at location ducting go through wall, making soundproofing at the belows of pipe insulation, conducting target sound room (walls, ceilings, floor)

▸ Code number for ATATA rubber foam soundproof egg sheet.



ES-Wa x bT -B- Ex

Ex with x=1, x=2

With x=1 => Ex=E1: ATATA soundproof Egg Sheet normal style

With x=2 => Ex=E2 ATATA soundproof Egg sheet with adhesive glue.

bT: Thickness of Sheet from 20mm to 50mm

Wa: Width of Sheet is 1000mm, 1200 mm

ES: ATATA soundproof egg sheet.

▸ ATATA code number & product package

Thickness (mm)	Width of Sheet	Length (mm)	Area/Roll (m2)	ATATA code number
20	1200	9140	10.97	ES-W1200x20T
25	1200	9140	10.97	ES-W1200x25T
32	1100	9140	10.05	ES-W1100x32T
38	1100	9140	10.05	ES-W1100x38T
50	1100	9140	10.05	ES-W1100x50T
20	1000	1200	1.2	ES-W1000x20T
25	1000	1200	1.2	ES-W1000x25T

▸ ATATA Rubber foam application

Application: Using Rubber foam in the studio room, Karaoke room, bar, soundproof for generator..

8.2 Flat sheet

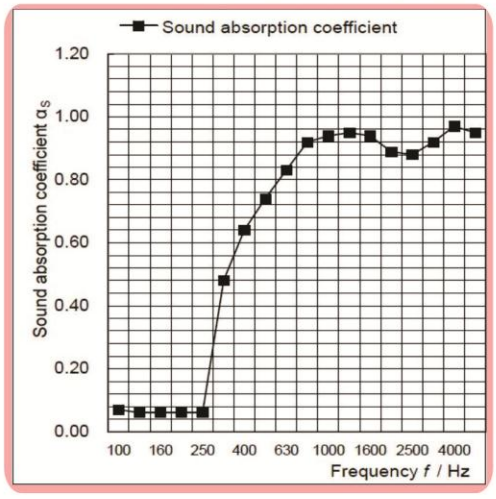
Table: Minimum Insertion Loss Request for ATATA Egg Sheet Insulation follow AS ISO 354-2006
(AS ISO 354-2006 Standard : Accoustics - Measurement of Sound absorption in a reverberation room)

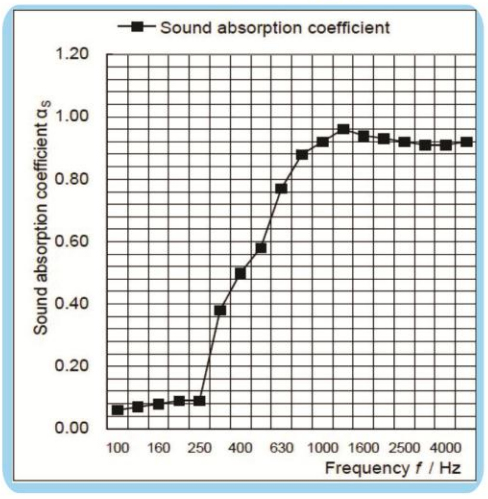
Thickness of ATATA insulation material	Octave band center frequency (Hz)													Total insertion loss (dB(A))
	100	250	400	500	800	1000	1250	1600	2000	2500	3150	4000	5000	
	Minimum Insertion loss (dB (A))													
20 mmt	1	3	4	8	12	18	20	23	27	30	32	35	38	**18**
25 mmt	1	2	4	9	14	22	24	25	30	34	35	37	42	**21**
Using	Using for AC, VAV, FCU, Diffuser Air Grill, Pump system, Pipe water cooling													

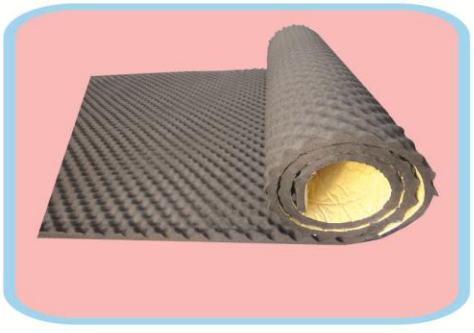
Table: Sound Absorption coefficient of ATATA Egg Sheet Insulation follow AS ISO 11654-1997
(AS ISO 11654-1997 Standard : Accoustics - Measurement Absorbers for use in building - Rating of Sound Absorption)

Thickness of ATATA insulation material	Octave band center frequency (Hz)													Average of Absorption Coefficent
	100	250	400	500	800	1000	1250	1600	2000	2500	3150	4000	5000	
	Maximum Absorption Coefficent Sound α													
20 mmt	0.06	0.09	0.50	0.58	0.88	0.92	0.96	0.94	0.93	0.92	0.91	0.91	0.92	**0.92**
25 mmt	0.07	0.09	0.68	0.82	0.93	0.95	0.96	0.95	0.93	0.92	0.92	0.91	0.91	**0.95**
Using	Using for AC, VAV, FCU, Diffuser Air Grill, Pump system, Pipe water cooling													

Table sound absorption coefficient of ATATA rubber foam soundproof - egg sheet







Egg sheet 25mm thicksness

Egg sheet 25mm thickness

Sound Absorption absorption coefficient

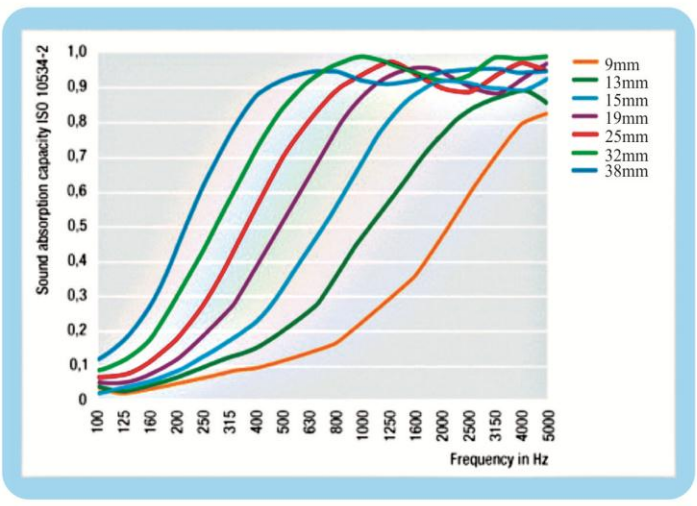
Table: Minimum Insertion Loss Request for ATATA Flat Sheet Insulation follow AS ISO 354-2006
(AS ISO 354-2006 Standard : Accoustics - Measurement of Sound absorption in a reverberation room)

Thickness of ATATA insulation material	Octave band center frequency (Hz)													Average of Absorption Coefficent
	100	250	400	500	800	1000	1250	1600	2000	2500	3150	4000	5000	
	Maximum Absorption Coefficent Sound α													
9 mmt	0.07	0.05	0.30	0.40	0.50	0.68	0.70	0.82	0.80	0.82	0.78	0.74	0.72	**0.52**
13 mmt	0.06	0.07	0.33	0.47	0.55	0.83	0.87	0.95	0.96	0.95	0.86	0.88	0.93	**0.60**
15 mmt	0.07	0.07	0.35	0.52	0.57	0.84	0.87	0.95	0.94	0.90	0.90	0.90	0.91	**0.73**
20 mmt	0.07	0.05	0.47	0.60	0.80	0.85	0.91	0.94	0.90	0.89	0.89	0.90	0.95	**0.87**
25 mmt	0.07	0.06	0.64	0.74	0.92	0.94	0.95	0.94	0.89	0.88	0.92	0.97	0.95	**0.94**
32 mmt	0.08	0.09	0.78	0.86	0.96	0.98	0.94	0.93	0.91	0.92	0.96	0.96	0.96	**0.98**
40 mmt	0.1	0.12	0.91	0.94	0.92	0.91	0.91	0.93	0.92	0.93	0.94	0.93	0.94	**0.91**
50 mmt	0.11	0.13	0.95	0.95	0.89	0.88	0.88	0.90	0.91	0.91	0.92	0.92	0.93	**0.88**
Using	Using for AC, VAV, FCU, Diffuser Air Grill, Pump system, Pipe water cooling													

Table: Sound Absorption coefficient of ATATA Flat Sheet Insulation follow AS ISO 11654-1997
(AS ISO 11654-1997 Standard : Accoustics - Measurement Absorbers for use in building - Rating of Sound Absorption)

Thickness of ATATA insulation material	Octave band center frequency (Hz)													Average of Absorption Coefficent
	100	250	400	500	800	1000	1250	1600	2000	2500	3150	4000	5000	
	Maximum Absorption Coefficent Sound α													
9 mmt	0.07	0.05	0.30	0.40	0.50	0.68	0.70	0.82	0.80	0.82	0.78	0.74	0.72	**0.52**
13 mmt	0.06	0.07	0.33	0.47	0.55	0.83	0.87	0.95	0.96	0.95	0.86	0.88	0.93	**0.60**
15 mmt	0.07	0.07	0.35	0.52	0.57	0.84	0.87	0.95	0.94	0.90	0.90	0.90	0.91	**0.73**
20 mmt	0.07	0.05	0.47	0.60	0.80	0.85	0.91	0.94	0.90	0.89	0.89	0.90	0.95	**0.87**
25 mmt	0.07	0.06	0.64	0.74	0.92	0.94	0.95	0.94	0.89	0.88	0.92	0.97	0.95	**0.94**
32 mmt	0.08	0.09	0.78	0.86	0.96	0.98	0.94	0.93	0.91	0.92	0.96	0.96	0.96	**0.98**
40 mmt	0.1	0.12	0.91	0.94	0.92	0.91	0.91	0.93	0.92	0.93	0.94	0.93	0.94	**0.91**
50 mmt	0.11	0.13	0.95	0.95	0.89	0.88	0.88	0.90	0.91	0.91	0.92	0.92	0.93	**0.88**
Using	Using for AC, VAV, FCU, Diffuser Air Grill, Pump system, Pipe water cooling													

Table sound absorption coefficient of ATATA rubber foam soundproof - flat sheet



S - W ax bT -B- Fx

9. PU Foam soundproof - Egg sheet

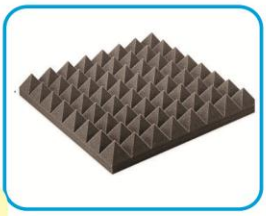
9. 1 - Egg sheet & Pyramyd sheet

ATATA Soundproofing PU Foam are manufactured from PU Polyurethane Foam material porous surface formed round egg shape, triangles shape, pyramid shape. This special foams have a lot of empty space inside this space and linked together into a network. PU Polyurethane foam sound absorption reduces the effective noise reduction and echo time reflected echoes to create a safe environment and fun. Egg foam and foam pyramid spikes ATATA excellent sound absorption in multiple frequency bands with different noise from 100 Hz to 5000 Hz.

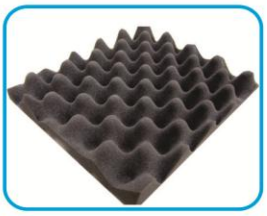
Code number for ATATA PU Foam

EP-Wa x bT - B - Px

- **Px with x=1, x=2**
  - With x=1 => Px=P1: ATATA PU Foam normal.
  - With x=2 => Ex=E2 ATATA PU Foam adhesive glue.
- bT: Thickness of Sheet from 25mm to 50mm
- Wa: Width of Sheet is 1600m
- EP: ATATA PU Foam.



PU - Pyramyd

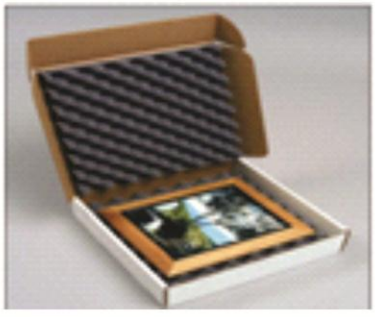


PU - Egg sheet

ATATA code number & product package

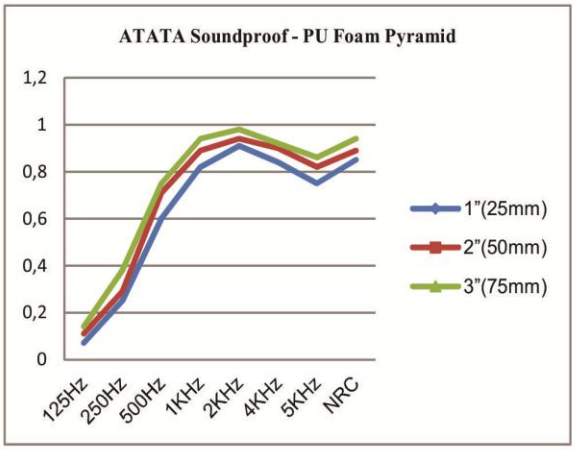
PU foam type	Thickness (mm)	Width of Sheet	Length (mm)	Area/Roll (m2)	ATATA code number
Egg sheet	25	1600	2000	3.2	EP-W1600x20T
	32	1600	2000	3.2	EP-W1600x32T
	38	1600	2000	3.2	EP-W1600x38T
	50	1600	2000	3.2	EP-W1600x50T
Pyramid	46	500	500	0,25	EP-W500 x 46T

ATATA PU foam application

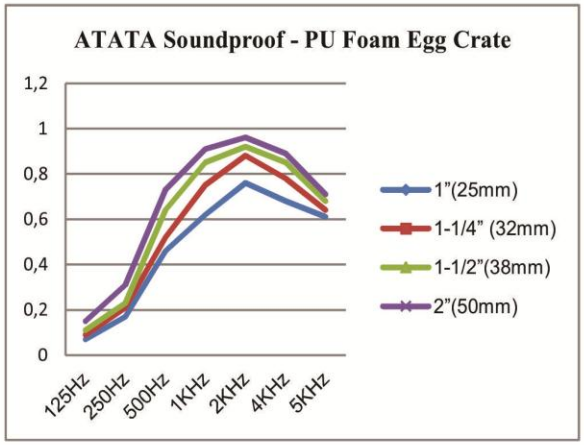


Application: Using PE foam in the box do not graphics Electric operator, studio room, Karaoke room.

Ability sound Absorption of ATATA soundproof PU Foam



The graph of the sound- absorption PU Foam pyramid sheet thickness from 1 "(25mm) -> 4" (100mm)

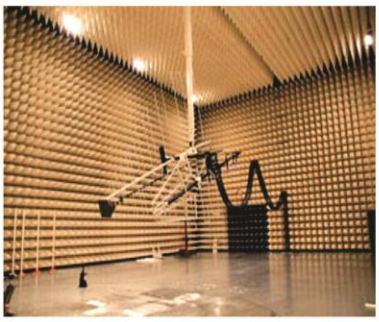


The graph of the sound- absorption PU Foam egg sheet thickness from 1 "(25mm) -> 4" (50mm)

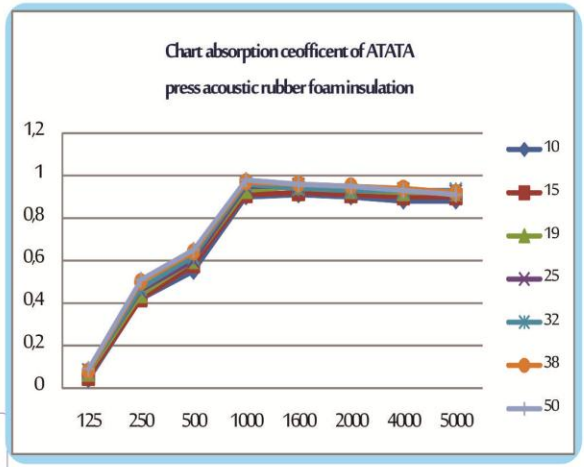
PU FOAM Egg-crate – Sound Absorption/Noise Reduction								
PER ASTM C4233-902								
	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	5KHz	NRC
1"(25mm)	0.07	0.17	0.46	0.62	0.76	0.68	0.61	0.62
1-1/4" (32mm)	0.09	0.21	0.52	0.75	0.88	0.78	0.64	0.75
1-1/2"(38mm)	0.11	0.23	0.64	0.85	0.92	0.85	0.68	0.85
2"(50mm)	0.15	0.31	0.73	0.91	0.96	0.89	0.71	0.91

PU FOAM Pyramid – Sound Absorption/Noise Reduction								
PER ASTM C423-902A								
	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	5KHz	NRC
1"(25mm)	0.07	0.25	0.60	0.82	0.91	0.84	0.75	0.85
2"(50mm)	0.11	0.29	0.71	0.89	0.94	0.9	0.82	0.89
3"(75mm)	0.14	0.32	0.75	0.94	0.98	0.92	0.86	0.94

Soudproof application



10. ATATA PRESS ACOUSTIC RUBBER FOAM INSULATION



Description :

ATATA Press Rubber foam is high performance acoustic insulating material with main material is rubber foam insulation with density 250 ~350 kg/m3. It is versatile acoustic absorber designed for use in a variety acoustic application. This high performance sound absorber which offers additional barrier (transmission lost) performance and both vibration damping properties

With design optimal performance at lower thickness than traditional materials, ATATA high performance acoustic is a uniquedadvance close cell acoustic insulation material. With a peak absorption frequency determined by the insulation thickness and the material density, ATATA high performance acoustic can be engineered to target specific problem frequencies

Acoustic Benefits :

♦ Sound absorption:

Close cell structure with complex pore geometry allows for effective absorption of air-borne sound across a broad frequency range. Unique combination of physical properties allows absorption to be maximised at key nuisance frequencies:

Aplication	Typical Reduction	Used System	Remark
Pipelines	Up to 55dB	ATATA Acoustic	
Waste water pipes	Up to 20dB	ATATA Acoustic	
Washing machine	8dB	10mm	
Vacuum cleanears	10 dB	6mm	
General Enclosures	Up to 25dB	10->25mm	
Generators	Up to 20 dB	15mm	Various European Nosie standards
Telecommunication	Up to 20Db	15mm	Noise Standard

♦ Sound Barrie Transmission Loss :

Relatively high density and high flow resistance offers benificial sound transission loss properties. May be suitable for use as an alternative to complex foam barrier multilayers

♦ Vibration Damping :

Visco elastic properties help damper or deaden resonance effects in metal panelwork which helps to reduce re-raditaion effects . Reduce structure borne noise transmission when used as isolation pads

Technical specification :

Property	Value/ Assessment	Standard
Temperature range service	-50°C -> 110°C	GB/T8871
Cell structure	Close cell	ASTM 2856
Thermal conductivity λ	0.037 W/mK	EN ISO 12667
Reaction to fire	Class V-0 / Class HB Fire self- extinguishing	UL94 ASTM D635
Density	250 ~ 320 kg/m3	ISO 854:1998
Tensile strength	=2.5 N/cm	ISO 1798:1997
Elongation	30 ~ 40%	ISO 1798:1997
Health aspects	Dust and fibre free	

Acoustic Performance of ATATA Press Acoustic Rubber foam :

Table sound absorption coefficient of ATATA press acoustic rubber foam insulation

Thickness (mm)	Octave band center frequency (Hz)								Average coefficient silencer
	125	250	500	1000	1600	2000	4000	5000	
	Maximum absorption coeffient sound α according to EN ISO 11654-1997								
10	0.04	0.42	0.55	0.90	0.91	0.90	0.88	0.88	**0.90**
15	0.05	0.42	0.58	0.91	0.92	0.91	0.90	0.90	**0.91**
19	0.07	0.44	0.60	0.93	0.95	0.93	0.92	0.92	**0.93**
25	0.08	0.46	0.60	0.95	0.95	0.93	0.93	0.92	**0.95**
32	0.08	0.47	0.62	0.96	0.94	0.93	0.93	0.93	**0.96**
38	0.08	0.50	0.64	0.97	0.96	0.95	0.94	0.92	**0.97**
50	0.09	0.51	0.65	0.98	0.96	0.95	0.93	0.91	**0.98**

Table minium insertion loss (dBA) of ATATA press acoustic rubber foam insulation

Thickness (mm)	Octave band center frequency (Hz)								Total insertion loss (dB(A))
	125	250	500	1000	1600	2000	4000	5000	
	Minimum insertion loss (dBA) according to AS ISO 354-2006								
10	1	3	6	12	17	22	31	33	**12**
13	1	3	6	14	20	25	34	36	**14**
15	1	3	7	16	21	26	36	38	**16**
19	1	4	8	20	22	28	38	40	**20**
25	1	3	9	24	26	30	39	42	**24**
32	1	3	9	25	26	32	40	42	**25**
38	1	4	10	26	27	33	41	43	**26**
50	1	4	10	28	30	34	42	45	**28**

Product Package :

Nominal density kg/m3	Thickness (mm)	Width (mm)	Length (mm)	Area (m2)/ 1sheet	Sheet/ nilon bag	Item ATATA Press Acoustic rubber foam insulation code
250~320 kg/m3	10	1500	2000	3	4	PAS - W1500 x H200 x 10T
250~320 kg/m3	13	1500	2000	3	3	PAS - W1500 x H200 x 13T
250~320 kg/m3	15	1500	2000	3	3	PAS - W1500 x H200 x 15T
250~320 kg/m3	19	1500	2000	3	2	PAS - W1500 x H200 x 19T
250~320 kg/m3	25	1500	2000	3	2	PAS - W1500 x H200 x 25T
250~320 kg/m3	32	1500	2000	3	1	PAS - W1500 x H200 x 32T
250~320 kg/m3	38	1500	2000	3	1	PAS - W1500 x H200 x 38T
250~320 kg/m3	50	1500	2000	3	1	PAS - W1500 x H200 x 50T

Typical in using :

No	Items	Area application
1	Industry	Genetator canopies, Engines, Air handling units, wall acoustics, printing and metal handling machinery, pipelines, vacuum cleaner, washing machine and general enclosures, stabilization for products
2	Transportion	Engine rooms in vehicles and vessels operator's cabin of earth moving mechinery, mobile generator vans
3	Health Care	Audiometric rooms as using for sofa chair, mattress massage
4	Commercial Buildings	Lifts, motor rooms, office partitions, floating floors,recording rooms, blowling alley, dance floors, studios, auditoriums, multiplexes and cinema halls
5	Method of Use	The sheet are cut to the required shape and carefully stuck using a suitable rubber based adhesive on a surface that must be free from oil, dirt and dust

Image application :




ATATA Thermal Break & Soundproof Test Certificate

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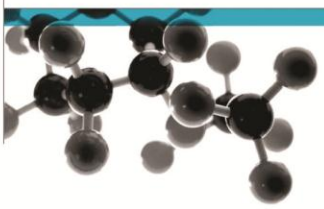
ASTM D635-10



Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

A Report To: Deti Co Ltd

Document Reference: 343856

Date: 10th September 2014

Issue No.: 1

Page 1

Testing
Advising
Assuring

UKAS TESTING 0249

Executive Summary

Objective To determine the performance of the following material when tested in accordance with ASTM D635 - 10 "Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position".

Generic Description	Product reference	Thickness	Density
Nitrile butadiene rubber and polyvinyl chloride	Unwilling to provide	13mm	85kg/m³
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Deti Co Ltd, Yen Son IZ, Quoc Oai, Ha Noi, 0084-04, Vietnam

Test Results: **When the test results are assessed using the test criteria specified in Appendix X1 of the Standard, the material, when tested at a nominal thickness of 13mm, is classified as "HB".**

Date of Test 27th August 2014

Signatories

Responsible Officer	Authorised
C. Jacques *	T. Mort *
Technical Officer	Senior Technical Officer

* For and on behalf of **Exova Warringtonfire**.

Report Issued: 10th September 2014

UKAS TESTING 0249

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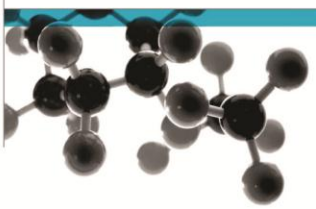
UL-94



Vertical Burning Test For Classifying Materials V-0, V-1 Or V-2

A Report To: Deti Co Ltd

Document Reference: 343776

Date: 10th September 2014

Issue: 1

Page 1

Testing
Advising
Assuring

UKAS TESTING 0249

Executive Summary

Objective To determine the performance of the following material when tested in accordance with Section 8 - "50W (20mm) Vertical Burning Test for Classifying Materials V-0, V-1 or V-2" of UL94 - 'Test for Flammability of Plastics Materials for Parts in Devices and Appliances'.

Generic Description	Product reference	Thickness	Density
Nitrile butadiene rubber and polyvinyl chloride	Unwilling to provide	13mm	85kg/m³
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Deti Co Ltd, Yen Son IZ, Quoc Oai, Ha Noi, 0084-04, Vietnam

Test Results: **When the test results are assessed using the test criteria specified in the Standard, the material, when tested at a nominal thickness of 13mm, is classified as "V-0".**

Date of Test 8th September 2014

Signatories

Responsible Officer	Authorised
C. Jacques *	T. Mort *
Technical Officer	Senior Technical Officer

* For and on behalf of **Exova Warringtonfire**.

Report Issued: 10th September 2014

UKAS TESTING 0249

ATATA Thermal Break & Soundproof Test Certificate

TEST CERTIFICATE TEST CERTIFICATE

TEST CERTIFICATE

ISO 354 and ISO 11654

Registration No.: ENC120730GZ23

Applicant	:	DETI CO., LTD
Applicant Address	:	Yen Son Industrial Zone, Yen Son Commune, Quoc Oai District, Hanoi, Vietnam
Product Designation	:	ATATA® Acoustic Flat Sheet
Thickness	:	25mm
Brand Name	:	ATATA® Thermal Break & Soundproof
Manufacturer	:	DETI CO., LTD
Manufacturer Address	:	Yen Son Industrial Zone, Yen Son Commune, Quoc Oai District, Hanoi, Vietnam
Test Methods	:	ISO 354: 2006 Acoustics - Measurement of sound absorption in a reverberation room. The absorption class was determined in conformance with ISO 11654:1997
Test Results	:	**Weighted sound absorption coefficient** **α_w = 0.94** **Sound absorption class: A**
Report No.:	:	ENC120730GZ23E1

Recognized by East Notice Certification Service Co., Ltd. in accordance with the ISO 354: 2006 Standard and ISO 11654:1997 the absorption class A. The certificate doesn't imply assessment of the production. The certificate is only applicable to the equipments described above. This certificate shall not be re-produced except in full without the written approval of East Notice Certification Service Co., Ltd.

Note: This certificate is part of the full test report(s) and should be used in connection with it.

Issue Date: Aug. 2, 2012

Ray Zhou / General Manager

East Notice Certification Service Co., Ltd.

1/F, Haohui Commercial Building, Zhuji Street, Dongpu Town, Tianhe District, Guangzhou City

Tel:+86-020-2331 4234 Fax:+86-020-8256 8534 E-mail:enc@enc-lab.com Web: www.enc-lab.com

Report No.: ENC120730GZ23E1
Page 2 of 4

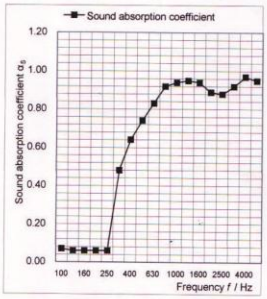
Annex1: Test results

Specimen:	ATATA® Acoustic Flat Sheet
Manufacturer:	DETI CO., LTD
Client:	DETI CO., LTD
Laboratory:	East Notice Certification Service Co., Ltd.

Thickness:	25mm	Test room volume:	155 m^3
Temperature of test room:	25 ℃	Area of room boundaries:	179 m^2
Relative humidity:	60 %	Test date:	2012-07-31
Atmospheric pressure:	101 KPa	Test file identification:	ENC120730GZ23E1-1

Third octave band results:

Frequency [Hz]	α_s 1/3 octave	α_p oktave
100	0.07	
125	0.06	0.05
160	0.06	
200	0.06	
250	0.06	0.20
315	0.48	
400	0.64	
500	0.74	0.75
630	0.83	
800	0.92	
1000	0.94	0.95
1250	0.95	
1600	0.94	
2000	0.89	0.90
2500	0.88	
3150	0.92	
4000	0.97	0.95
5000	0.95	
6300	0.94	
8000	0.92	0.90
10000	0.90	



α_s Sound absorption coefficient according to ISO 354

α_p Practical sound absorption coefficient according to ISO 11654

Weighted sound absorption coefficient α_w = 0.94, Sound absorption class: A

East Notice Certification

1/F, Haohui Commercial Building, Zhuji Street, Dongpu Town, Tianhe District, Guangzhou City

Tel:+86-020-2331 4234 Fax:+86-020-8256 8534 E-mail: enc@ enc-lab.com Http:// www.enc-lab.com

TEST CERTIFICATE TEST CERTIFICATE

TEST CERTIFICATE

ISO 354 and ISO 11654

Registration No.: ENC120730GZ20

Applicant	:	DETI CO., LTD
Applicant Address	:	Yen Son Industrial Zone, Yen Son Commune, Quoc Oai District, Hanoi, Vietnam
Product Designation	:	ATATA® Acoustic Egg Crate
Thickness	:	A: 20mm; B: 10mm
Brand Name	:	ATATA® Thermal Break & Soundproof
Manufacturer	:	DETI CO., LTD
Manufacturer Address	:	Yen Son Industrial Zone, Yen Son Commune, Quoc Oai District, Hanoi, Vietnam
Test Methods	:	ISO 354: 2006 Acoustics - Measurement of sound absorption in a reverberation room. The absorption class was determined in conformance with ISO 11654:1997
Test Results	:	**Weighted sound absorption coefficient** **α_w = 0.92** **Sound absorption class: A**
Report No.:	:	ENC120730GZ20E1

Recognized by East Notice Certification Service Co., Ltd. in accordance with the ISO 354: 2006 Standard and ISO 11654:1997 the absorption class A. The certificate doesn't imply assessment of the production. The certificate is only applicable to the equipments described above. This certificate shall not be re-produced except in full without the written approval of East Notice Certification Service Co., Ltd.

Note: This certificate is part of the full test report(s) and should be used in connection with it.

Issue Date: Aug. 2, 2012

Ray Zhou / General Manager

East Notice Certification Service Co., Ltd.

1/F, Haohui Commercial Building, Zhuji Street, Dongpu Town, Tianhe District, Guangzhou City

Tel:+86-020-2331 4234 Fax:+86-020-8256 8534 E-mail:enc@enc-lab.com Web: www.enc-lab.com

Report No.: ENC120730GZ20E1
Page 2 of 4

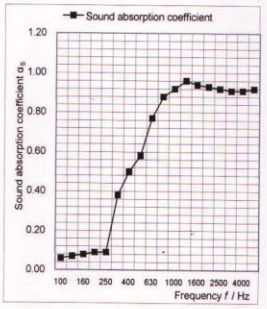
Annex1: Test results

Specimen:	ATATA® Acoustic Egg Crate
Manufacturer:	DETI CO., LTD
Client:	DETI CO., LTD
Laboratory:	East Notice Certification Service Co., Ltd.

Thickness:	A: 20mm; B: 10mm	Test room volume:	155 m^3
Temperature of test room:	25 ℃	Area of room boundaries:	179 m^2
Relative humidity:	60 %	Test date:	2012-07-31
Atmospheric pressure:	101 KPa	Test file identification:	ENC120730GZ20E1-1

Third octave band results:

Frequency [Hz]	α_s 1/3 octave	α_p oktave
100	0.06	
125	0.07	0.05
160	0.08	
200	0.09	
250	0.09	0.20
315	0.38	
400	0.50	
500	0.58	0.60
630	0.77	
800	0.88	
1000	0.92	0.90
1250	0.96	
1600	0.94	
2000	0.93	0.95
2500	0.92	
3150	0.91	
4000	0.91	0.90
5000	0.92	
6300	0.90	
8000	0.86	0.85
10000	0.81	



α_s Sound absorption coefficient according to ISO 354

α_p Practical sound absorption coefficient according to ISO 11654

Weighted sound absorption coefficient α_w = 0.92, Sound absorption class: A

East Notice Certification

1/F, Haohui Commercial Building, Zhuji Street, Dongpu Town, Tianhe District, Guangzhou City

Tel:+86-020-2331 4234 Fax:+86-020-8256 8534 E-mail: enc@ enc-lab.com Http:// www.enc-lab.com

ATATA Thermal Break & Soundproof Test Certificate

bsi.

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that: DETI CO.,LTD
Yen Son Industrial Zone, Yen Son Commune,
Quoc Oai District, Hanoi,
Vietnam

Holds Certificate Number: **FM 604459**

and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

Manufacture for thermal break & soundproof (insulation) rubber foam material.

For and on behalf of BSI:

Gary Fenton, Global Assurance Director

Originally registered: 14/10/2013 Latest Issue: 14/10/2013 Expiry Date: 13/10/2016

Page: 1 of 1

...making excellence a habit.

BỘ XÂY DỰNG
VIỆN KHOA HỌC CÔNG NGHỆ XÂY DỰNG
Ministry of Construction
Viet nam Institute for Building Science and Technology (IBST)
Trung tâm Tư vấn Xây dựng Công nghiệp & Hạ tầng
Address: 81 Tran Cung-Nghia tan - Cau giay - Ha noi Tel: 84.4.37542796 Fax: 84.4.38361197

HĐ số 52 / 2014 TVCNHT

PHIẾU KẾT QUẢ/ TEST REPORT

Công ty gửi mẫu/ Client: CÔNG TY TNHH PHÁT TRIỂN CÔNG NGHỆ TIN HỌC VÀ THƯƠNG MẠI HÒA BÌNH
Địa chỉ : Cụm công nghiệp Yên Sơn, xã Yên Sơn, Quốc Oai, Hà Nội
Điện thoại : 04.33940189 Fax: 04.33678853
Mẫu thử/ Test sample:
Vật liệu cách âm-cách nhiệt (bảo ôn) cao su xốp ATATA
Chiều dày mẫu/ sample thickness (mm): 13
Khối lượng thể tích (kg/m^3): 85
Mẫu được bảo quản trước khi thử ở điều kiện nhiệt độ (°C): 24 và độ ẩm (%): 60
Condioned before testing to constant mass at (°C): 24 °C and relative humidity (%): 60
Phương pháp thử/Test method: Phương pháp tấm nhiệt theo ISO 8302:1991
Guarded hot plate method
Nhiệt độ trong phòng thử (°C): 24 Độ ẩm tương đối (%): 60
Temperature in test rooms Relative air humidity in test rooms
Ngày thử nghiệm/ Date of Test: 29 / 8/ 2014
Thiết bị/ Test Equipment: Plate Thermal Conductivity Tester.DRX-I-PB

Chỉ tiêu/Item	Đơn vị/Unit	Kết quả/ Result	Ghi chú
Hệ số dẫn nhiệt (λ)/ Thermal conductivity (λ)	W/m.K	0.038	

Ghi chú/ Note: Kết quả chỉ có giá trị trên mẫu thử do Công ty TNHH phát triển công nghệ tin học và Thương mại Hòa Bình cung cấp.
The above result is valid for only test sample supplied by Công ty TNHH phát triển công nghệ tin học và Thương mại Hòa Bình to laboratory LAS-XD 04. The laboratory LAS-XD 04 therefore assumes no responsibility for the accuracy of information on brand name, origin of manufacture or any information supplied.

Hà Nội, ngày 3 tháng 9 năm 2014

Người thực hiện Tested by: Phạm Đức Hạnh
Phòng TN/ Laboratory LAS-XD 04 Trưởng phòng/ Head: Nguyễn Sơn Lâm
Cơ quan thực hiện Trung tâm TVXDCN & Hạ tầng Centre of Industrial and Infrastructural Engineering
K/T. GIÁM ĐỐC PHÓ GIÁM ĐỐC
ThS. Nguyễn Sơn Lâm

BM - ISO 07 (LAS-XD 04) -05

Exova Warringtonfire
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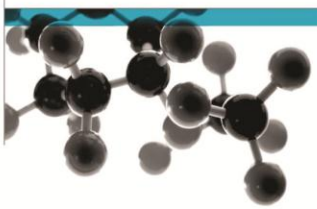
W: www.exova.com

Exova Warringtonfire

BS 476: Part 7: 1997



Method For Classification Of The Surface Spread Of Flame Of Products

A Report To: Deti Co., Ltd.

Document Reference: 338841

Date: 20th May 2014

Issue No.: 1

Page 1

Testing
Advising
Assuring

UKAS TESTING 0249

BS 476: Part 7: 1997 Exova Warringtonfire

Executive Summary

Objective To determine the surface spread of flame classification of the following product when tested in accordance with BS 476: Part 7: 1997.

Generic Description	Product reference	Thickness	Weight per unit area or density
Flame retardant grade aluminium faced rubber foam insulation	"NBR/PVC Mixed Compound Material With Aluminium Layer"	25.98mm *	2.37kg/m^2 *
Individual components used to manufacture composite:			
Aluminium	"Aluminum Layer"	150 microns	Unwilling to provide
Adhesive	"Glue"	23 microns	Not stated
Rubber foam	Unwilling to provide	25mm	85kg/m^3
***Determined by Exova Warringtonfire**			
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Deti Co., Ltd., Yen Son Industrial Park, Yen Son commune, Quoc Oai District, Ha Noi, Vietnam.

Test Results: **Class 1**

Date of Test 14th May 2014

Signatories

Responsible Officer	Authorised
C. Meachin *	S. Deeming *
Technical Officer	Operations Manager

* For and on behalf of **Exova Warringtonfire.**

Report Issued: 20th May 2014

ATATA Thermal Break & Soundproof Test Certificate

TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 3
QUATEST 3
QUALITY ASSURANCE & TESTING CENTER 3

KT3-01532HD2/2

PHIẾU KẾT QUẢ THỬ NGHIỆM
TEST REPORT

10/09/2012
Page 01/ 01

1. Tên mẫu *Name of sample* : **VẬT LIỆU BÁO ÔN CAO SU XỐP (ATATA)**
2. Số lượng mẫu *Quantity* : 01
3. Mô tả mẫu *Description* : 04 tấm vật liệu xốp mềm màu đen, kích thước khoảng (50 x 50) cm/tấm
01 flexible cellular material sheets; color: black, dimensions (50 x50) cm/sheet
4. Ngày nhận mẫu *Date of receiving* : 13/08/2012
5. Nơi gửi mẫu *Customer* : **CÔNG TY TNHH PHÁT TRIỂN CÔNG NGHỆ TIN HỌC VÀ THƯƠNG MẠI HÒA BÌNH (DETI., Co LTD)**
CỤM CN YÊN SƠN, XÃ YÊN SƠN, H. QUỐC OAI - TP HÀ NỘI
6. Điều kiện thử nghiệm *Test condition* : Nhiệt độ và độ ẩm phòng thử nghiệm: (25 ± 3)°C; (55 ± 5) % RH
Temperature and humidity at test lab:(25±3) °C;(50 ± 5) % RH
7. Thời gian thử nghiệm *Test period* : 31/08/2012 – 10/09/2012
8. Kết quả thử nghiệm *Test result* :

Tên chỉ tiêu *Characteristics*	Phương pháp thử *Test methods*	Kết quả thử nghiệm *Test results*
8.1 Độ bám dính giữa màng keo dán phủ giấy với lớp vật liệu cao su xốp (80 °C trong 500 giờ)/ *Adhesive (glue film coating with release paper/soft rubber).* %	Theo yêu cầu khách hàng/ *As customer's request*	Màng keo không bị phồng rộp ,bong tróc/ *No blistered*

TRƯỞNG PTN HÀNG TIÊU DÙNG
HEAD OF CONSUMER PRODUCTS TESTING LABORATORY

NGUYỄN PHƯỚC HẢI

PHÓ GIÁM ĐỐC
VICE DIRECTOR

TRẦN THỊ MỸ HIỀN

1. Các kết quả thử nghiệm ghi trong phiếu này chỉ có giá trị đối với mẫu do khách hàng gửi đến./ *Test results are valid for the namely submitted sample(s) only.*
2. Không được trích sao một phần phiếu kết quả thử nghiệm này nếu không có sự đồng ý bằng văn bản của Trung tâm Kỹ thuật 3. *This Test Report shall not be reproduced, except in full, without the written approval of Quatest 3.*
3. Tên mẫu, tên khách hàng được ghi theo yêu cầu của nơi gửi mẫu./ *Name of sample and customer are written as customer's request.*
4. Độ không đảm bảo đo mở rộng tiêu chuẩn tính với k = 2, mức tin cậy 95 %. Khách hàng có thể liên hệ theo địa chỉ dưới để biết thêm thông tin. *Estimated expanded uncertainty of measurement with k = 2, at 95 % confidence level. Please contact Quatest 3 at the below address for further information.*

NA: Không áp dụng. *Not applicable*

Head Office: 49 Pasteur, Q1, Hồ Chí Minh City, VIỆT NAM Tel: (84-8) 3829 4274 Fax: (84-8) 3829 3012 Website: www.quatest3.com.vn
Testing: 7 Road 1, Biên Hòa 1 Industrial Zone, Đồng Nai Tel: (84-61) 383 6212 Fax: (84-61) 383 6298 E-mail: qt-dichvutn@quatest3.com.vn

Lần sửa đổi: 0 BH9 (03/2012) M03/1 - TTTN09

VIỆN HÓA HỌC CÔNG NGHIỆP VIỆT NAM
VIETNAM INSTITUTE OF INDUSTRIAL CHEMISTRY
Vietnam Institute of Industrial Chemistry
Cơ sở 1: Số 2 - Phạm Ngũ Lão - Hà Nội - Tel: 38.253930 - Fax: 38.257383
Cơ sở 2: Cầu Diễn - Từ Liêm - Hà Nội - Tel: 37.644889 - Fax: 38372303
E-mail: khvhhcn@vnn.vn Website: www.vienhoacn.com.vn

PHIẾU KẾT QUẢ THỬ NGHIỆM
Test report

1. Tên mẫu*(name of sample)*: Vật liệu Cách Âm – Cách Nhiệt (ATATA)
2. Số lượng mẫu*(quantity)*: 01
3. Ngày nhận mẫu *(date of receiving)* : 10/07/2012
4. Đơn vị gửi mẫu *(customer)* : Công Ty TNHH Phát Triển Công Nghệ Tin Học và Thương Mại Hòa bình (DETI Co.,Ltd)
5. Kết Quả thử nghiệm *(test result)* :

STT *(Number)*	Nội dung đo *(Content measured)*	Kết quả *(Result)*	Tên tiêu chuẩn *(Standard name)*
1	Dạng cấu trúc *(cell structure)*	Ô kín *(closed cell)*	ASTM 2856

Cầu diễn, ngày 23 tháng 07 năm 2012.

VIỆN HÓA HỌC CÔNG NGHIỆP VIỆT NAM
Vietnam Institute of Industrial Chemistry (VIIC)
PHÓ VIỆN TRƯỞNG
Ths. Hoàng Anh Tuấn

GĐ TT. Vật liệu
Director
TS.Phạm Thế Trinh

Phòng Thí nghiệm TT Vật liệu
Người đo mẫu
Tester
Ks.Lê Thị Hải

Ghi chú (note):
- Kết quả này chỉ có giá trị đối với mẫu thử do khách hàng mang tới.
This test results is value only for samples taken by customer.
- Không được trích sao một phần kết quả nếu không được sự đồng ý của Viện.
This test results shall not reproduced except in full, without the weitten approved of Insititute.
- Tên mẫu, nguồn gốc mẫu và nơi sử dụng được ghi theo yêu cầu của khách hàng.
Name of sample and customer are written as cusomer's request.

TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 3
QUATEST 3
QUALITY ASSURANCE & TESTING CENTER 3

KT3-01532HD2/1

PHIẾU KẾT QUẢ THỬ NGHIỆM
TEST REPORT

27/08/2012
Page 01/ 01

1. Tên mẫu *Name of sample* : **VẬT LIỆU BÁO ÔN CAO SU XỐP (ATATA)**
2. Số lượng mẫu *Quantity* : 01
3. Mô tả mẫu *Description* : 04 tấm vật liệu xốp mềm màu đen, kích thước khoảng (50 x 50) cm/tấm
01 flexible cellular material sheets; color: black, dimensions (50 x50) cm/sheet
4. Ngày nhận mẫu *Date of receiving* : 13/08/2012
5. Nơi gửi mẫu *Customer* : **CÔNG TY TNHH PHÁT TRIỂN CÔNG NGHỆ TIN HỌC VÀ THƯƠNG MẠI HÒA BÌNH (DETI., Co LTD)**
CỤM CN YÊN SƠN, XÃ YÊN SƠN, H. QUỐC OAI - TP HÀ NỘI
6. Điều kiện thử nghiệm *Test condition* : Nhiệt độ và độ ẩm phòng thử nghiệm: (25 ± 3)°C; (55 ± 5) % RH
Temperature and humidity at test lab:(25±3) °C;(50 ± 5) % RH
7. Thời gian thử nghiệm *Test period* : 13/08/2012 – 27/08/2012
8. Kết quả thử nghiệm *Test result* :

Tên chỉ tiêu *Characteristics*	Phương pháp thử *Test methods*	Kết quả thử nghiệm *Test results*
8.1 Khối lượng riêng/ *Density*, kg/m³	ASTM D 1667 - 05	85,9
8.2 Độ co rút ở nhiệt độ (105 ± 3) °C ; thời gian 168 giờ/ *Linear shrinkage at temperature (105 ± 3) °C for 168 h*, %	Tham khảo/ *Refer to* ASTM C534 – 08 Type II	- 4,0
8.3 Thử nén / *Compression test* (50 %, 25 °C, 72 h),	Tham khảo/ *Refer to*	
• Biến dạng nén dư/ *Compression set*, %	ASTM D 1667 – 05	47,9
• Độ hồi phục/ *Recovery*, %	SUFFIX B và ASTM D 545-08	76,0
8.4 Độ hấp thụ nước (tính theo sự thay đổi khối lượng)/ *Water absorption (change in mass)*, %	Tham khảo/ *Refer to* ASTM D 1506 – 07	0,9

TRƯỞNG PTN HÀNG TIÊU DÙNG
HEAD OF CONSUMER PRODUCTS TESTING LABORATORY

NGUYỄN PHƯỚC HẢI

PHÓ GIÁM ĐỐC
VICE DIRECTOR

TRẦN THỊ MỸ HIỀN

1. Các kết quả thử nghiệm ghi trong phiếu này chỉ có giá trị đối với mẫu do khách hàng gửi đến./ *Test results are valid for the namely submitted sample(s) only.*
2. Không được trích sao một phần phiếu kết quả thử nghiệm này nếu không có sự đồng ý bằng văn bản của Trung tâm Kỹ thuật 3. *This Test Report shall not be reproduced, except in full, without the written approval of Quatest 3.*
3. Tên mẫu, tên khách hàng được ghi theo yêu cầu của nơi gửi mẫu./ *Name of sample and customer are written as customer's request.*
4. Độ không đảm bảo đo mở rộng tiêu chuẩn tính với k = 2, mức tin cậy 95 %. Khách hàng có thể liên hệ theo địa chỉ dưới để biết thêm thông tin. *Estimated expanded uncertainty of measurement with k = 2, at 95 % confidence level. Please contact Quatest 3 at the below address for further information.*

NA: Không áp dụng. *Not applicable*

Head Office: 49 Pasteur, Q1, Hồ Chí Minh City, VIỆT NAM Tel: (84-8) 3829 4274 Fax: (84-8) 3829 3012 Website: www.quatest3.com.vn
Testing: 7 Road 1, Biên Hòa 1 Industrial Zone, Đồng Nai Tel: (84-61) 383 6212 Fax: (84-61) 383 6298 E-mail: qt-dichvutn@quatest3.com.vn

Lần sửa đổi: 0 BH9 (03/2012) M03/1 - TTTN09

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VIETNAM INSTITUTE OF INDUSTRIAL CHEMISTRY
Vietnam Institute of Industrial Chemistry
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PHIẾU KẾT QUẢ THỬ NGHIỆM
Test report

1. Tên mẫu*(name of sample)*: Vật liệu Cách Âm – Cách Nhiệt (ATATA rubber foam).
2. Số lượng mẫu*(quantity)*: 01.
3. Ngày nhận mẫu *(date of receiving)* : 15/ 10/2012.
4. Đơn vị gửi mẫu *(customer)* : Công Ty TNHH Phát Triển Công Nghệ Tin Học và Thương Mại Hòa bình (DETI Co.,Ltd).
5. Kết Quả thử nghiệm *(test result)* :

STT *(Number)*	Nội dung đo *(Content measured)*		Tên tiêu chuẩn *(Standard name)*	Kết quả *(Result)*					
1	Hệ số dẫn nhiệt λ *(Thermal conductivity)*	Nhiệt độ trung bình *(Mean temperature)*	ASTM C177 JIS A1412 DIN 52613	-4° F (-20 °C)	32° F (0 °C)	76° F (24 °C)	90° F (32 °C)	104° F (40 °C)	131° F (55 °C)
		K-value Btu.in/ft2.hr.°F (W/mK)		0.22 (0.032)	0.23 (0.034)	0.26 (0.037)	0.26 (0.038)	0.27 (0.039)	0.27 (0.040)

Cầu diễn, ngày 22 tháng 10 năm 2012.

VIỆN HÓA HỌC CÔNG NGHIỆP VIỆT NAM
Vietnam Institute of Industrial Chemistry (VIIC)
PHÓ VIỆN TRƯỞNG
Ths. Hoàng Anh Tuấn

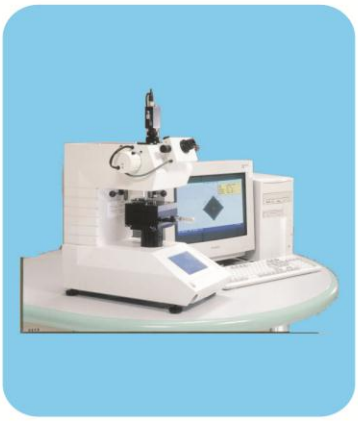
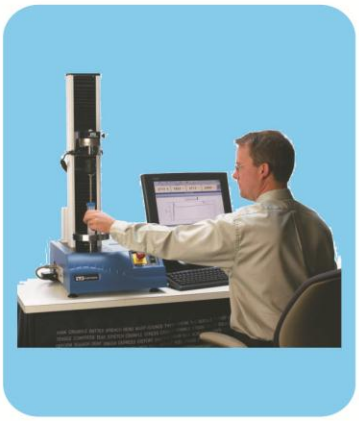
GĐ TT. Vật liệu
Director
TS.Phạm Thế Trinh

Phòng Thí nghiệm TT Vật liệu
Người đo mẫu
Tester
Ks.Lê Thị Hải

Ghi chú (note):
- Kết quả này chỉ có giá trị đối với mẫu thử do khách hàng mang tới.
This test results is value only for samples taken by customer.
- Không được trích sao một phần kết quả nếu không được sự đồng ý của Viện.
This test results shall not reproduced except in full, without the weitten approved of Insititute.
- Tên mẫu, nguồn gốc mẫu và nơi sử dụng được ghi theo yêu cầu của khách hàng.
Name of sample and customer are written as cusomer's request.

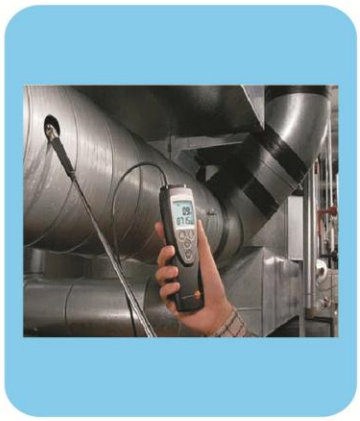
ATATA Rubber Foam Specialzed Testing Equipment Machine

Specialized testing equipment

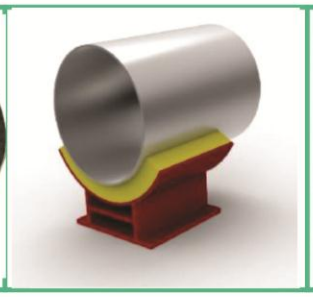




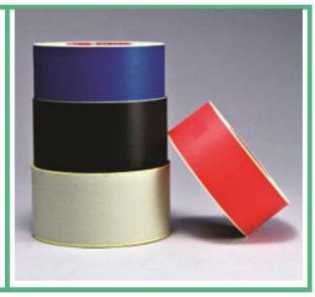



9. ATATA ACCESSORIES

Gasket Duct Tape

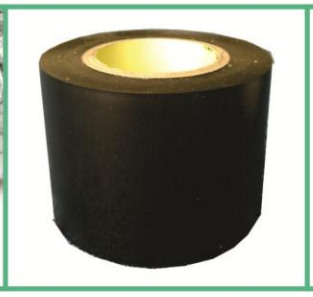


PU foam support

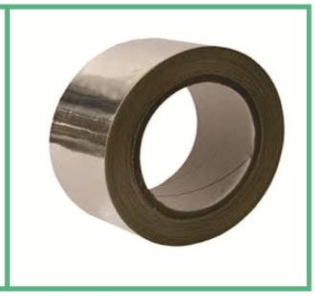


PVC duct tape

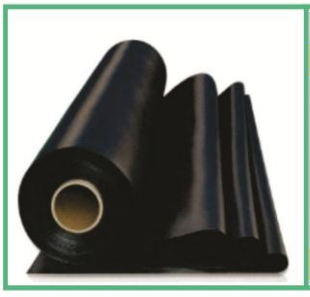
Insulation Aluminium Flexible



PVC tape



Aluminum foil tape



Vibration rubber foam harness flat sheet

Silicon 850

Magic PU Foam

Rockwool

PIR Foam support

Adhesive insulation

9.1 Gasket Duct Tape ATATA - GT

9.1. 1. Rubber foam Tape insulation ATATA - GT

Rubber foam Tape insulation GT - Wa x bT - xL

Material : Rubber foam insulation

Color : Black

Technical Specifications Rubber foam tape insulation

No	Specification	Unit	Standard Test	Result
1	Cell Structure		ASTM 2856	Closed cell
2	Density	Kg/m3	ISO 854:1998	85±5 kg/m3
3	Color			Black
4	Material			Rubber foam insulation
5	Rate Working Temperature	°C	GT/T8871	-50°C -> + 110°C
6	Heat Thermal Conductivity	W/m.k	ASTM C177 DIN 52613	0.034 W.mk (at 0°C)
7	Fire Retardance		UL 94 ASTM D635	Class V 0 Class HB
8	Tensile strength	N/cm	ISO 1798:1997	>= 2.5 N/cm
9	Under layer			Silicon coated paper
10	Adhesion at the adhesive layer	Kg		0.16~0.2kg/1 roll
11	Special of adhesive glue			Japan style No die. no dry
12	Width of gasket tape			Normal: 25mm, 35mm, 50mm,100mm, 200mm Can making follow customer request

*** Size and availability rubber foam tape:**

Width of Gasket (mm)	Length of Gasket (mm)	Thickness (mm)	ATATA code number	Package Product
25	9140	5	GT-W25x5T – 10mL	96 pcs/ 1 box
35	9140	5	GT-W35x5T – 10mL	68 pcs/ 1box
50	9140	5	GT-W50x5T – 10mL	48 pcs/ 1box
100	9140	6	GT-W100x6T – 10mL	36 pcs/ 1nilon bag
150	9140	6	GT-W150x6T – 10mL	24 pcs/1nilon bag
200	9140	6	GT-W200x6T – 10mL	18 pcs/ 1 nilon bag

9.1. 2. PE foam Tape insulation GT- PE-Wa x bT- cL

Material : PE foam insulation

Color : Gray

Technical Specifications Rubber foam tape insulation

No	Specification	Unit	Standard Test	Result
1	Cell Structure		ASTM 2856	Closed cell
2	Density	Kg/m3	ISO 854:1998	28 ~ 35Kg/m3
3	Material			PE (Polvethvlene)
4	Color			Grav
5	Rate Working Temperature	°C	GT/T8871	-20°C ~ 85°C
6	Heat Thermal Conductivity	W/m.k	ASTM C177 DIN 52613	0.033 W.mk (at 0°C)
7	Tensile strength	N/cm	ISO 1798:1997	>= 2.5 N/cm
8	Vacuum water absorption	%		Max 10%
9	Self adhesive with releasing paper application			Avaible silicon coated paper
10	Adhesion at the adhesive layer	Kg		0.16~0.2kg/1 roll
11	Special of adhesive glue			Japan style No die, no drv
12	Width of gasket tape			Normal: 30mm, 50mm, 200mm Can making follow customer request

*** Size and availability PE foam tape:**

Width Gasket (mm)	Length of Gasket (mm)	Thickness(mm)	Code number	Package Product
30	20000	5	GT-PE-W30x5Tx20L	40 pcs/1 nilon bag
30	10000	5	GT-PE-W35x5Tx10L	80 pcs/1 nilon bag
50	20000	5	GT-PE-W50x5Tx20L	30 pcs/1 nilon bag
50	10000	5	GT-PE-W50x5Tx10L	60 pcs/ 1nilon bag
200	10000	6	GT-PE-W200x6Tx 10L	15 pcs/ 1nilon bag

9.1.3. EVA foam Tape insulation GT - EVA-Wa x bT - xL

Material : Eva foam insulation (Ethylene Vinyl Acetate Insulation)

Color : Black

Eva foam is closed cell foam made from Ethylene Vinyl Acetate Insulation and blended copolymers. It has a high lever of chemical cross linking. The result is semi-rigid product with a fine uniform cell structure that is suitable for use in a wide variety of situations and appplications.

Technical Specifications EVA foam tape insulation

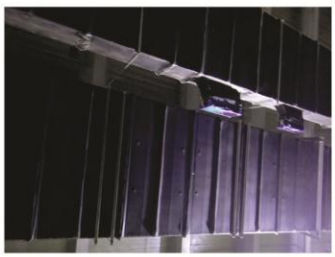
No	Specification	Unit	Standard Test	Result
1	Cell Structure		ASTM 2856	Closed cell
2	Density	Kg/m3	ISO 854:1998	60 ~ 100 Kg/m3
3	Material			EVA (Ethylene Vinyl Acetate)
4	Color			Black
5	Rate Working Temperature	°C	GT/T8871	-20°C ~ 80°C
6	Heat Thermal Conductivity	W/m.k	ASTM C177 DIN 52613	0.036 W.mk (at 0°C)
7	Tensile strength	N/cm	ISO 1798:1997	>= 4.2 N/cm
8	Vacuum water absorption	%		Max 8%
9	Self adhesive with releasing paper application			Avaible silicon coated paper
10	Adhesion at the adhesive layer	Kg		0.16~0.2kg/1 roll
11	Special of adhesive glue			Japan style No die, no dry
12	Width of gasket tape			Normal: 30mm, 50mm, 200mm Can making follow customer request

*** Size and availability EVA foam tape:**

Width Gasket (mm)	Length of Gasket (mm)	Thickness(mm)	Code number	Package Product
30	10000	5	GT-EVA-W35x5Tx10L	80 pcs/1 nilon bag
50	10000	5	GT-EVA-W50x5Tx10L	60 pcs/ 1nilon bag
200	10000	6	GT-EVA-W200x6Tx10L	15 pcs/ 1nilon bag

*** Image application:**



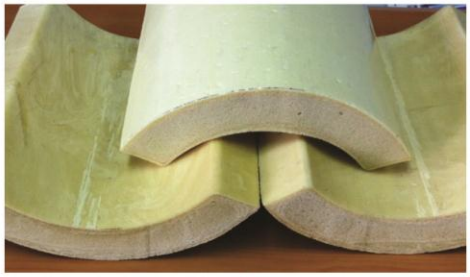
9.2 FOAM SUPPORT - PU - Da x bT - cL

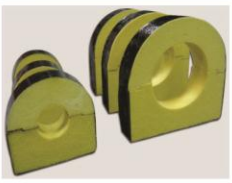
Description

ATATA PU Foam pipe support is HVAC accessories. It using support for pipe in cooling system (cold gas pipe, water chiller pipe, condensate pipe, vv..), heating system (hot water pipe, boiler pipe..). With low weight, good compressibility, waterproofing is advantages help ATATA Pu Foam support replace the wooden support which heavy weight and easy easy mold when use long times.Especially with Pu Foam bearing no physical harm when installed and use, good cohesion.

Technical Specifications

PROPERTIES	UNIT	STANDARD	INDEX
Core Density	Kg/m3	ASTM D1622	160 / 190
Compresive Strength	Mpa	ASTM D1621	2.1
Temperature Service	°C	GB/T8871	-40°C -> 190°C
Thermal Conductivity	W/mK	ASTM C518	0.0292
Water Absorption	%	ASTM D2842	0.17
Closed Cell Content	%	ASTM D2856	95
Tensile Strength	Mpa	ASTM D1623	6.69 (at 22°C) 8.73 (at -196°C)
Dimension	Diameter	mm	15A -> 500A
	Thickness	mm	25. 32. 40. 50 mm
	Width	mm	40. 50.80.100.200
(*) We can produre as per your requirement			





PU - Da x bT x cL

TABLE DIMENSION OF ATATA PU FOAM SUPPORT			
Inside Diameter (mm)		Thickness of Pu Foam Support	Length of Pu Foam Support
DN	Real size diameter	(mm)	(mm)
15A	21	25,32,40, 50	40, 50, 80, 100, 200
20A	28	25,32,40, 50	40, 50, 80, 100, 200
25A	34	25,32,40, 50	40, 50, 80, 100, 200
32A	43	25,32,40, 50	40, 50, 80, 100, 200
40A	49	25,32,40, 50	40, 50, 80, 100, 200
50A	60	25,32,40, 50	40, 50, 80, 100, 200
65A	76	25,32,40, 50	40, 50, 80, 100, 200
80A	89	25,32,40, 50	40, 50, 80, 100, 200
100A	114	40, 50	40, 50, 80, 100, 200
125A	140	40, 50	40, 50, 80, 100, 200
150A	168	50	40, 50, 80, 100, 200
200A	219	50	40, 50, 80, 100, 200
250A	273	50	40, 50, 80, 100, 200
300A	325	50	40, 50, 80, 100, 200
350A	355	50	40, 50, 80, 100, 200
400A	406	50	40, 50, 80, 100, 200
450A	458	50	40, 50, 80, 100, 200
500A	508	50	40, 50, 80, 100, 200
We can produce upon your request			

9.3 ATATA Adhesive for insulation - ATATA AD

Description

Colloid paste rubber ATATA is a colloidal liquid water, thick, viscous material made from synthetic resin is combined with solvents and other synthetic additives. Adhesive products used for surface products such as rubber, wood plastic, foocmica, leather, plywood . Line is suitable for temperature up to 220^{0}F (104^{0}C) on the application requires bonded seams and joints. When the adhesive is applied to the large flat or curved surface, it is suitable for temperatures up to 200^{0}C.

Technical Specifications

No	Standards name	Calculator name	Quality level	Method
1	Density at 250C, not less than	G/m^3	01	ASTM D 1475
2	Levels of Slovent	%	78 ÷ 80	
3	Amount of Chlooprene and co-resin	%	20 ÷ 27	ASTM D 4209
4	Brookfield viscosity at 25^{0}C	CP	30000 ÷ 35000	ASTM D 1084
5	The cost theory of colloidal	g/30,5 cm^2	40 ÷ 60	

9.4 ATATA PVC tape - ATATA - VT

Technical Data Sheet



Physical properties	Unit	Value	Remarks
Thickness PVC film	microns	130±2	
Weight	grams/m2	213±8	----------
Stretch rate	%	=150%	at 23°C
Tensile strength	kg/cm2	=120	at 23°C

9.5 ATATA Aluminum foil tape - ATATA - AT

9. 5.1: Self - Adhesive Aluminum foil tape

Application: Used for sealing joints and seams against moisture and vapor on foil jacketing, or used in refrigerators, water heaters, and gas stoves.
Width: 48mm, 50mm.
Length: 20m.

ATATA - AT - 01

Technical specifications			Physical properties		
Item	Thickness	Width	Peel ahesive	Adhesive to liner	Temperature Resistance
151	0.042 ÷0.002	15 - 2000	16 - 23N/25mm, PSTC -1	≤ 0.5N/25mm, PSTC-1	(-10 ±110 C) °
902	0.188 ÷0.002		15 -23N/25mm, PSTC -1		

9.5.2 Aluminum glass cloth tape

ATATA - AT - 02

Composition: aluminum foil fiberglass cloth, water -based acrylic adhesive, white paper liner
Application: Used for sealing joints and seams against moisture and vapor on foil jacketing, or used in referigerators, water heaters, and gas stoves.
Width: 48mm, 50mm.
Length: 20m.

Physical properties		
Peel ahesive	Adhesive to liner	Temperature Resistance
18- 23N/25mm, PSTC -1	≤ 0.5N/25mm, PSTC-1	(-10 ±110°C)

Remark :

1. *the data above are typical results and subject to change without notice*
2. *the products should be stored at room temperature and kept from wet and kept away heat source*
3. *The users should take test and do trial - application on the above products before coming into application so as to witness and ensure autablity for their special purpose and technical*

9 . 6 ATATA HIGH QUALITY PVC DUCT TAPE - ATATA KRT 01

TYPICAL PHYSICAL PROPERTIES:

Material : High-quality plasticised PVC foil in combination with an ageing stable solvent-based adhesive

Color: Black, red, green, grey, white, blue, yellow, brown, violet, green-yellow

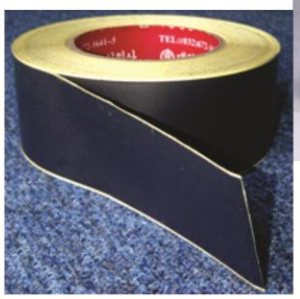
Thickness : 0.13mm

Width of tape :48mm & 75mm

Length of tape : 30m

Flammebility : Self extinguishing

APPLICATION : Tape cover for water cooling pipe and hot pipe



ATATA - KRT 01

9 . 6.1 ATATA HIGH QUALITY PVC DUCT FABRIC- ATATA KRF 02

TYPICAL PHYSICAL PROPERTIES:

Material : PVC

Thickness : 0.18mm

Width of tape : 100mm

Length of tape : 15m

Flammebility : Self extinguishing

APPLICATION : Tape cover for insulation material of water cooling pipe and hot pipe.

ATATA - KRF 02

9 .6.2 ATATA HIGH QUALITY PVC DUCT FABRIC- ATATA KRF 03

TYPICAL PHYSICAL PROPERTIES:

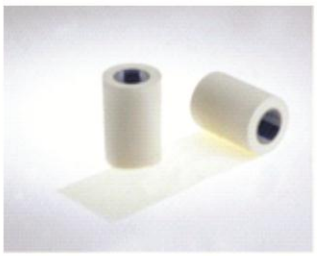
Material : PVC

Thickness : 0.125mm

Width of tape : 75mm / 80mm

Length of tape : 15m ~ 50m

APPLICATION : Tape cover for insulation material of cawater cooling pipe and hot pipe



ATATA - KRF 03

9.6.3 ATATA HIGH QUALITY PVC DUCT FABRIC- ATATA KRF 04

TYPICAL PHYSICAL PROPERTIES:

Material : PVC

Thickness : 0.125mm

Width of tape : 80mm

Length of tape : 15m ~ 50m

APPLICATION : Tape cover for insulation material of copper pipe

ATATA - KRF 04

9.7 ATATA Insulation Aluminium Flexible - ATATA FA

ATATA non-insulation aluminium flexible air ducts is made of laminated foil with strong helix steel wire. ATATA non-insulation aluminium flexible air ducts are specifically produced for low and medium pressure heating cooling ventilation exhaust and air conditioning systems

Airtight ATATA non-insulated aluminium flexible air ducts are produced from multi layer aluminium strengthened with high tension hard steel spring wire.

ATATA non-insulated aluminium flexible air ducts have high elasticity and flexibility. They can be easily fitted to circular, oval or rectangular connectors

The fire resistance of ATATA non-insulated aluminium flexible air ducts has been tested and certified by various international bodies. In case of fire no toxic or poisonous gases are released.

TECHNICAL PROPERTIES

Construction	Non – insulated Aluminium	Insulated Aluminium
Glass wool thickness	Nil	25mm – 50mm
Glass wool Density		16kg/m3 ~ 32 kg/m3
Available Diameters	75mm ~ 1200mm(3.5" -48")	75mm ~ 1200mm(3.5" -48")
Temperature Range	-30°C/ + 140°C	-30°C/ + 140°C
Air velocity	30m/s (Max)	30m/s (Max)
Operating Pressure	2500 Pa (Max)	2500 Pa (Max)
Standard Length	8m	8m
Packing	Carton Box, Nilon Box	Carton Box, Nilon Box
Fire Resistance	Non-Flammable	Non-Flammable
Code	**ATATA – AT – 01**	**ATATA – AT – 02**

ATATA - AT - 01

ATATA - AT - 02

PROPERTIES & ADVANTAGES

ALUMINIUM LAMINATED BODY Fire resistant 100% Non-flammable Impermeable to UV rays 98% reflective Resistant to chemicals Maintenance free	**FLEXIBLE & SEAMLESS CONSTRUCTION** Easy storage Easily transported Low installation cost High resistance to wear and tear Airtight Low energy consumption Low operational and maintenance costs
HIGH TENSION STEEL WIRE Highly durable Highly resistant to deformation Easily installed GLASS WOOL INSULATION Heat resistant (Certified) Minimal energy loss	**ALUMINIUM LAMINATED OUTER JACKET** Fire resistant (Certified) High resistance to wear and tear Impermeable to UV rays Highly resistant to UV rays 98% reflective Resistant to chemicals

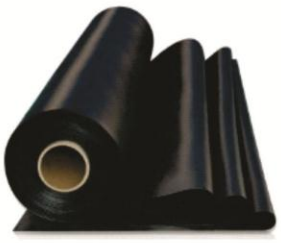
9.8 VIBRATION RUBBER HARNESS PLAT SHEET - CODE : VRH - Wa x bT x cL

Introduce:

ATATA vibration rubber harness plat sheet is product with high density, smooth surface, high hardness, good strength compared to other types of rubber.

Rubber special classification:

- Thickness : Rubber plate thickness 5mm, 10mm, 13mm, 15mm, 20mm, 25mm (thickness tolerance: ± 1mm)
- Width: 400mm -> 600mm (width tolerance: ± 2cm), Length: According to customer requirements (length tolerance: ± 5cm)
- Mechanical properties: rubber bearing, rubber anti-vibration, shock ..
- Material : NBR (Butadiene Rubber Nitried)



Specification of ATATA vibration rubber harness sheet

No	Specification	Unit	Standard Test	Parameter
1	Color	Table color	ISO 105-A02:1993	Black
2	Surface			Smooth
3	Thickness	mm		3mm ~ 25mm
4	Density	g/cm3	ASTM D1622	1.35 g/cm3 ~ 2.0 g/cm3
5	Hardness	HB	TCVN 1595-1 2007	7 ~ 20 HB
6	Pressure	Mpa	ASTM D1621	1.3 Mpa ~ 6.0Mpa
7	Tensile strength	Mpa	ASTM D1622	2 Mpa ~ 3Mpa
8	Elongation	%	TCVN 4509:2006	200% ~ 300%
9	Temperature Service	°C	GB/T8871	-30 °C ~ +80 °C

Dimension & selection by loads :

Type	Capacity		Deflection (mm)	Dimension (mm)		
	Recommend (Kg/cm2)	Max (Kg/cm2)		A(mm)	B(mm)	C(mm)
NRP-600x600x10	3.0	4.0	3	600	600	10
NRP-600x600x12	3.5	5.0	3	600	600	12
NRP-600x600x15	3.7	5.5	3	600	600	15
NRP-600x600x20	4.0	6.0	3	600	600	20
NSP-600x600x50	6.0	7.5	10	600	600	50

Application:

- Special rubber is used widely in industry, chemicals, healthcare and consumer products.
- In the industrial sector, special rubber pads used primarily for Statistics machine vibration.
- In mining, special rubber used to protect piping and equipment from friction and shock.
- In civil: used for flooring, anti-vibration, soundproof.

9.9 Fire - proof silicone sealant

9.9.1 N850 Fire-proof Silicone Sealant

Typical use range

N850 Fire-proof Silicone Sealant is a one-component, neutral cure silicone sealant. It is formulated specially for fire-proof conditions needed places with all kinds of coated metals, glass, coated glass, ceramic tile, brick, concrete. It has good elasticity and movement capacity. It has good adhesion to all kinds of stones, ceramic and cement elements, metal, aluminum, without primer needed. It does not flow or tag during use because of good thixotropy. It has excellent fire resistance property. It can be used in a wide temperature range and has good properties of anti-aging, anti-UV and anti-ultimate temperature changes (-50ºC -> 150ºC).N850 Fire-proof Silicone Sealant has satisfy the standard : ASTM C639-5, ASTM D412, ASTM C733

a. Classification :

Characteristics	High modulus Non – corrosive
Can be used with	Glass-Marble-Mortar-Metal-Suspension construction
Colors	White, Gray, Black
Packaging	Plastic Bottle 300ml, 24 cartridges/ carton 590ml, 20 sausages/ carton 190L/ drum See more information in surface of bottle
In dry condition <27ºC	Guarantee working 12 mounths

b .Characteristics :

Curing system	Oxime
Fluidity	Non-Sagging
High Temperature service	50ºC -> 150ºC
Tack free time at 23ºC	1.4
Durometer hardness (JIS tupe A)	40
Tensile strength (Mpa)	1.25 Mpa (ASTM D412)
Elongation at break	300%

9.9.2 Magic PU Foam

Typical use range

Magic Pu Foam is polyurethan foam for sealing openings, guarantees cracks or opening to be tightly sealed vibration and noise from the outside.It using below:

1) installation of door or window: to fill the gap between door/window and wall, to seal, to fix and bond.
2) Sound insulation: to fill the gaps of sound lab/broadcasting studio.
3) Ordinary maintenance: repair of holes, gaps, wall bricks, ground tiles and floor; the sound insulation, thermal insulation, heat preservation and padding in automobile industry.
4) Waterproof and leaks caulking: the mend of tap water pipeline/sewer.
5) Packing: conveniently and promptly pack the things which are precious and fragile, saving time, anti-seismic and resisting compression.
6) Advertisement model: the making of model, sand table and so on; the mend of display boards.
7) Gardening landscaping: apply to ikebana and landscaping, portable and artistic.

Characteristics:

Magic Pu Foam saving material (1 Pre-foam(Pre-foamed products can save 30% than the post-foamed products). One bottle of this foam can fill 3.5-> 4 standard windows. Magic Pu foam has got high expansion. Little shrinkage, excellent flexibility and non-deforming.High close cell content, strong adhesive force; waterproofing and thermal insulated. The foam has good tensile strength and strong adhesive force. Thus it makes the fixation between frame and wall very firm. The foam is very stable, ensuring a smooth open/close for the window & door. Make the installation more convenient and prompt; save labor cost. Two types (gun type and straw type) meet your different needs.

Application temperature:

Temperature of can : +5℃ ~+ 35℃

Optimal application temperature: +18℃ ~+ 25℃

Typical use range




Technical Data sheet Magic Polyurethan Foam

Series		A	B
Application		External heat insulation	General
Color		Light yellow	Light yellow
Composition		1 component	1 component
CFC content		No	No
HCFC content		No	No
Cell type		Close type	Close type
Basic component		Polyurethan pre-polymer	Polyurethan pre-polymer
Density	Kg/m3 - g/l	20~25	17~22
Expansion		low	High
Tack free	Min	8~10	8~10
Cuttable (20mm diam)	Min	30	30
Processing temperature	°C	+5 °C ~+35 °C	+5 °C ~+35 °C
Optimum temperature	°C	+18 °C ~ +25 °C	+18 °C ~ +25 °C
Lowest processing temperature	°C	+5 °C	+5 °C
Lowest can temperature	°C	+10 °C	+10 °C
Temperature resistance range	°C	-40 °C ~ +110 °C	-40 °C ~ +110 °C
Thermal conductivity(Heat transmitting index)	mW/m*K	<30	<30
Fire class according to DIN 4102-1		B3	B3
Fire Class according to EN 13501		F	F
Adhesiveness		>140	>120
Compressive strength	kPa	>30 (10%)	>30 (10%)
Dimensional stability	%	+/- 0.5	+/- 0.8
Water permeability		No	No
Erosion		No	No
Shrink		No	No
Post expansion		No	No
Toxicity after cured		No	No
Extended shelf life (18-22°C keep upright)	months	18	18

*** Remark :**

The directives contained in this document are the result of our experiments and of our experience and of our experience and have been submitted in good faith. Because of the diversity of the materials and substrates and the great number of possible applications which are out of our control, we cannot accept any responsibility for result obtained. In every case, it is recommended to carry out preliminary experiments. Meanwhile, we preserve the right of changing the physical and chemical properties due to technical development

9.10 ATATA Rockwool - ATATA RW

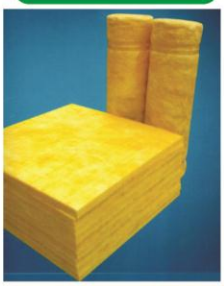
ATATA Rocwool material supply is made from basalt rock and limestone processed in cupola furnace and pendulum systems at an extremely high melting point of approximately over 1300 degree celsius.

ATATA Rocwool material supply offers functional solution : Thermal-Acoustic-Fire Insulation excellently meeting all the Vietnamese and international standards of building ATATA Rocwool material supply depending on thickness and density to insulate thermal surface up to 850°C in accordance with ASTM C411, absolutely free of CFCs, HCFC and asbestos.

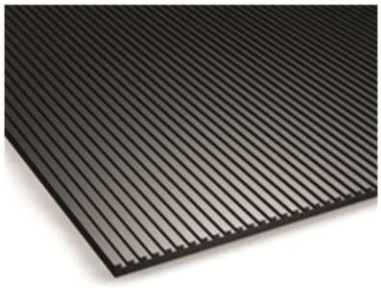
Rockwool insulation using as soundproof and fire protection material in the fields of petrochemical, industrial construction & decoration, HVAC .vv…Especially ATATA mineral rockwool has got good absorption coefficent sound, this product can be used for installation on walls, pipes effectively reduce negative. Specifications of ATATA mineral wool products test by quality control center on Vietnam and foreign as Lab TUV, SGS, Vina Control.

TECHNICAL DATA OF ATATA ROCKWOOL	
Temperature service(°C)	0°C -> 650 °C (ASTM C411-05)
Thermal conductivity (W/mK)	0.03584 W/mK (ASTM C518-04)
Fire Performance	Non-Combustible (BS476-04, ASTM E 136)
Surface	Bare, Aluminium foil, Wire mesh
ATATA Mineral rockwool sheet	
Density	60 -> 120 kg/m3
Surface	Bare, Aluminium foil, Wire mesh
Blanket Type size	W600mm x L1200mm x 50mm
Roll Type size	W600mm x L5000mm x 50mm
ATATA Mineral rockwool pipe	
Density	120 -> 130 kg/m3
Surface	Bare, Aluminium foil
Pipe Size	15A -> 300 A
Thickness Pipe size	25, 40, 50, 80, 100 mm
Length Pipe	1000mm

ATATA - AT - RW



9 .11 ATATA super anit-vibration rubber sheet (Rubber pads)



ATATA super anti-vibration rubber sheet (call short is rubber pad) is anti-vibration product making from high rubber quality elastomer and have got stiffening slit trench system. It is a specially compounded anti-vibration matting being used in machinery which generate vibrations in the high frequency range (including industrial fans and motors requiring secure attachments to the foundation). Rubber pads are designed for 3.0 or 7.5 kg/cm2 maximum loading. Rubber pads is material anti-oil and water resistance and to provide long life expectancy.

ATATA Rubber pads has got 2 model : NRP, NSP. This product can be used to isolate noise, shock and high frequency vibration produced by mechanical, industrial or process equipment located on grade or in other non critical areas. Rubber pads using for generators, air compressors, water chillers and air handing units

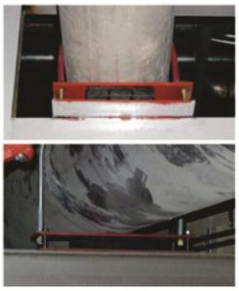
❖ Specification of rubber pads:

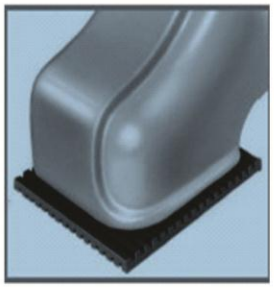
No	Specification	Unit	Standard Test	Parameter
1	Color	Color	ISO 105-A02:1993	Black
2	Surface			Smooth
3	Thickness	mm		10mm ~ 50mm
4	Density	g/cm3	ASTM D1622	1.4 g/cm3 ~ 2.0 g/cm3
5	Hardness	HB	TCVN 1595-1 2007	Approx 40 Shore A
6	Pressure	Mpa	ASTM D1621	Max 7Mpa
7	Elongation at break	%	TCVN 4509:2006	Max 250%
8	Temperature Service	°C	GB/T8871	-10 °C ~ +70 °C
9	Max pressure	Kg/cm2		Max 3 Kg/cm2

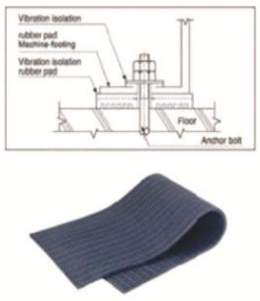
❖ Dimension & selection by loads :

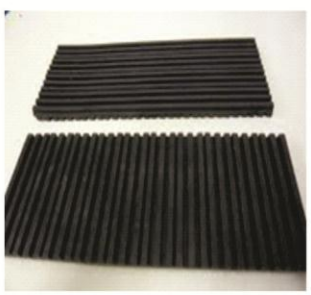
Type	Capacity		Deflection (mm)	Dimension (mm)		
	Recommend (Kg/cm2)	Max (Kg/cm2)		A(mm)	B(mm)	C(mm)
NRP-600x600x10	3.0	4.0	3	600	600	10
NRP-600x600x12	3.5	5.0	3	600	600	12
NRP-600x600x15	3.7	5.5	3	600	600	15
NRP-600x600x20	4.0	6.0	3	600	600	20
NSP-600x600x50	6.0	7.5	10	600	600	50

❖ Application of rubber vibration:



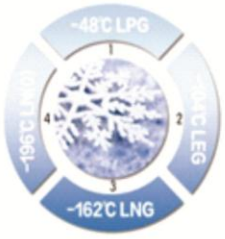






9.12 PIR Foam:



ATATA PIR pipe foam (Polyisocyanurate pipe foam) insulation is new professional cryogenic insulation material with high technology using so much in oil and petro factory manufacture. With quality manager system ISO 9001:2008 and 5S standards of production. We are committed supply to maket PIR pipe foam insulation with high quality and good price for user

PIR better than common polyurethane foam both in physical properties and fireproof performance, especially on cold insulation effects and fire retarding performance. PIR can be used in adiabatic demand of pipelines and equipment within -196ºC -> +150ºC, it also provides the best efficient and stable cold insulation effects for Liquefied Nitrogen (LN, -196ºC), Liquefied Natural Gas (LNG, -162ºC), Liquefied Ethylene (LEG, -104ºC). PIR fipe foam insulation which our supply is using origin material foam famous company from American, Japan, Malaysia ,Korea, Thailand, Singapore v.v.

The study evaluated the degree to which toxic product were released looking at toxicity time release profiles and lethality of doses released in a range of flaming non flaming and poorly ventilated fires and concluded that PIR generally released a considerably higher level of toxic products than the other insulating material studied (PIR > PUR > EPS > PHF , glass and stone wools also studied).

PIR pipe foam insulation with trade mark "ATATA thermal break and soundproof insulation" has uniform foam cell, low thermal conductivity thermal insulation performance is good, flame retardant performance is good low temperature no shrinking crack etc . Widely used in the process of all kinds of insulation work such as building external wall, cold storage, tanks, large pipe etc...

❖ Product Advantages :

1. *Thermosetting material with high level of combustion retarding, meeting B2 (according to DIN 4102 norm, Euroclass BS2D0, DIN 4102 fireproof grade of the international standard*
2. *Low thermal conductivity excellent cold insulation effects with temperature ranging from - 196ºC -> +150ºC,*
3. *It features fluorin free, environment friendly anti corrosive anti mold and etc*
4. *High mechanical strength dimensional stability and durable life.*
5. *PIR pipe foam insulation advance various thicknesses for cold insulation requirement*




❖ Typical Specification of PIR:

Discription	Unit	Standard Test Method	Result	Remark
Resistance to Fire		Euro class BS2D0 DIN 4102	Class B2	
Molded density	Kg/m3		50 Kg/m3	
Closed cells Content	%	ASTM D1622	'> 92 %	
Initial Thermal conductivity (at 23°C)	W/mK		0.024 (at + 23 °C)	
Compressive strength (perpendicular to the main plane of the panel)	kPa		170	
Dimensional stability (linear changes) 24 hours at -25°C	%		Max 1%	
Dimensional stability (linear changes) 24 hours at 70°C	%		Max 1%	
The proposed service temp			-196°C -> 150°C	

❖ Production Procedure :

Option 1 :

Import Material → Using ATATA machine at ATATA workshop → Final precast produce

Option 2 :

Import Material → Using ATATA machine at construction site → Direct casting on site

❖ Factory capacity and application for PIR pipe foam insulation:

10. THE TYPICAL PROJECT

LOTTE CENTER HANOI

Times City - Ha Noi

Royal City - Ha Noi

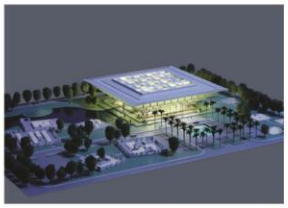
Vincom Ba Trieu Center - Ha Noi

Foreign Ministry Headquarters

Parliament House

Noi Bai International Airport

Huu Nghi Hospital - Ha Noi



Ha Noi Musium

Dong Nai Hospital

Samsung Electronic Factory - Bac Ninh

Samsung Electronic Factory - Thai Nguyen

Bridgestone Factory - Hai Phong

Hansol Electronics Thai Nguyen

LG Factory - Hai Phong

Hau Giang Pharmacy - Hau Giang

Meiko Electric Vietnam - Ha Noi

Vincom Center Long Bien - Ha Noi

Fomosa Ha Tinh - Ha Tinh

Sing Mark Hospital

(*) The reference of project list will be update frequently

High Quality Safety & Health Environment

For the health and enviroment

All ATATA insulation products has good thermal insulation properties, superior sound insulation. Products with closed cell structure does not transmission characteristics, lightweight and highly resilient which design for the water cooling and heater piping system bring high-performance, safety for health, friendly for good environment , the product are manufacturing to adapt for "GREEN-EARTH" protection idea.

TUBE INSULATION

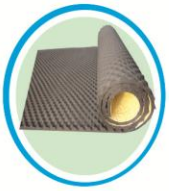
T-Da x bT-M-T1

Applications: Insulate for air conditioner copper pipe, chiller pipe, hot water pipe (D <D114mm).

TUBE INSULATION WITH ALUMINUM LAYER

T-Da x bT-M-T2

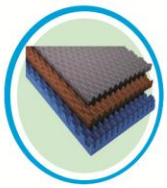
Applications: Insulate for air conditioner copper pipe, chiller pipe, hot water pipe (D <D114mm).



SOUNDPROOF INSULATION EGG-SHEET (CLOSE CELLS)

ES- Wa x bT-M-Ex

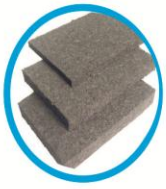
Applications:Insulation,soundproof, sound absorption box, karaoke bar silencer.



SOUNDPROOF PU FOAM (OPEN CELLS)

EP- Wa x bT-M-Px

Applications: Soundproof, sound absorption box, karaoke bar.



PRESS ACOUSTIC RUBBER FOAM

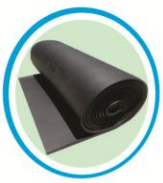
PAS - Wa x Hb - Tx

Application : Soundproof, sound absorption box, sofar chair, floatting floor..

NEUTRAL CURE SILICONE SEALEANT

N310, N850, Magic Pu Foam

Application : Thermal break for hight force loading possition such as: bracket, support, wall...



SHEET INSULATION

S- Wa x bT-M-F1

Applications: Insulate for cold & hot pipes (D> D114 mm), air duct, roof insulation.

SHEET INSULATION WITH ALUMINUM LAYER

S- Wa x bT-M-F2

Applications: Insulate for cold & hot pipes (D> D114 mm), air duct, roof insulation.

SHEET INSULATION WITH STICKER LAYER

S- Wa x bT-M-F3

Applications: Insulate for for cold & hot pipes (D> D114 mm), air duct, roof insulation.

SHEET INSULATION WITH STICKER & ALUMINUM LAYER

S- Wa x bT-M-F4

Applications: Insulate for cold & hot pipes (D> D114 mm), air duct, roof insulation.

PU FOAM SUPPORT

FS - Wa x bT - M

Applications: Insulate for two difference temperature zone (chiller, stream pipe).

GASKET DUCT TAPE

GT- Wa x bT-M-Gx

Applications: sealing duct joints completely eliminate the risk of air leakage through joints.

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