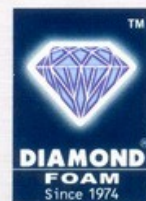


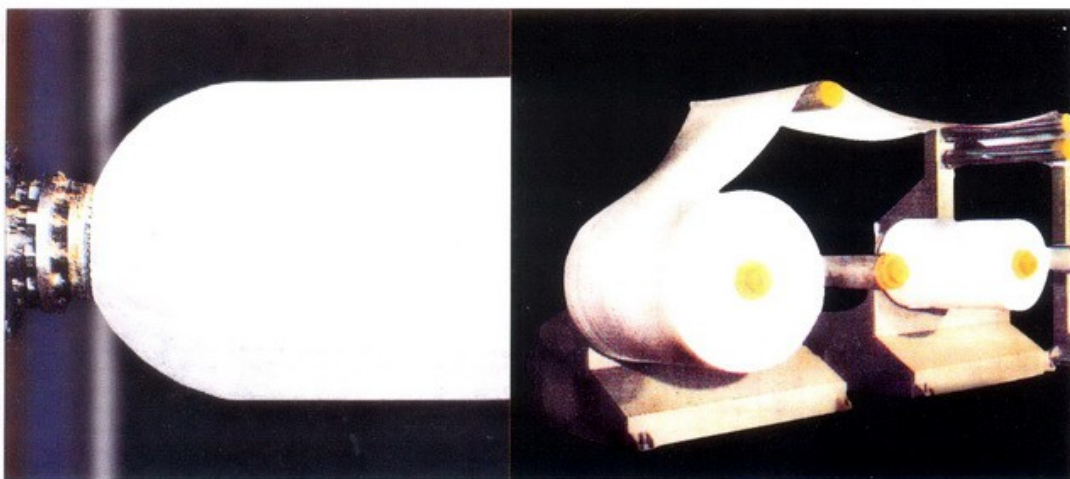
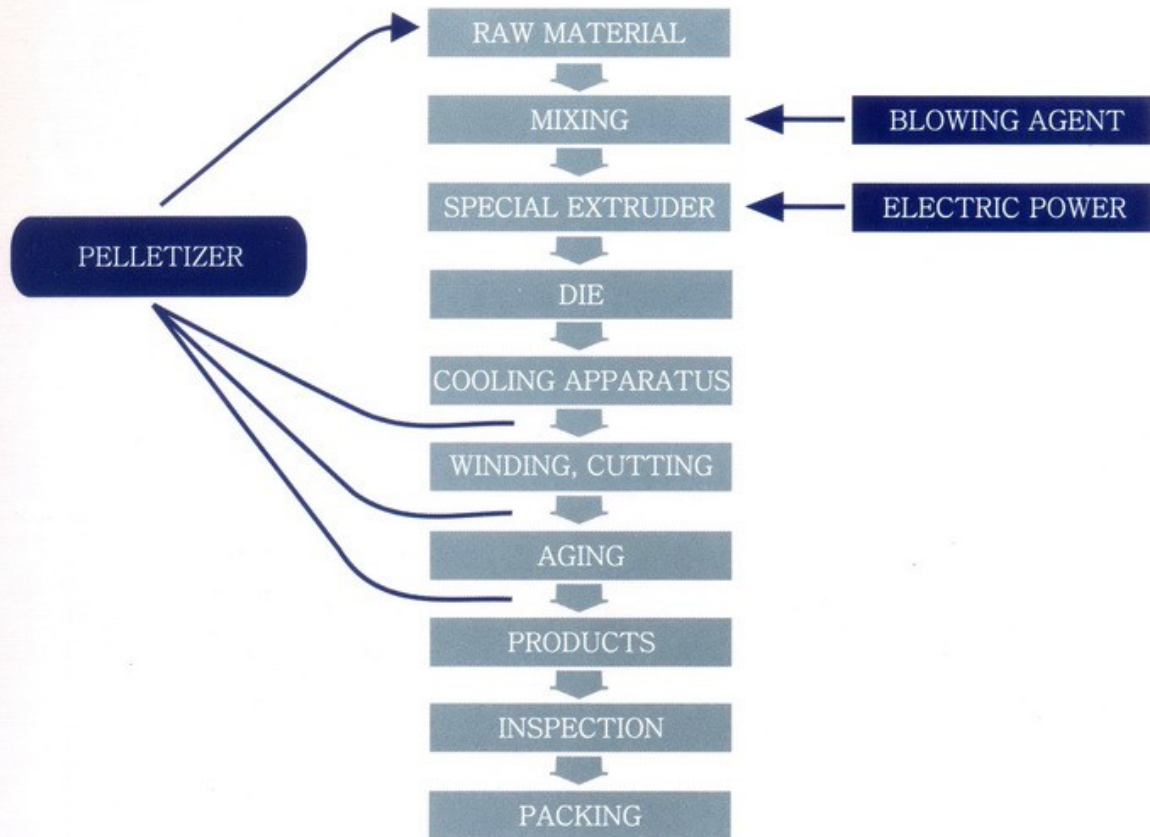


DIAMOND JUMBOLON[®]
Best Insulation Providers

From the makers of **SupremeFoam[®]**



MANUFACTURING PROCESS



DIAMOND JUMBOLON – COMPANY PROFILE

Established in 1992 the company is producing & marketing non cross linked polyethylene foam products with the brand name **DIAMOND Jumbolon-Rolls** which are used for thermal insulation, sound insulation, packing, and water proofing. Headed by a dynamic team of professionals, Diamond Jumbolon is serving the nation in energy conservation and providing cost effective, comfortable indoor environment for residential, commercial and industrial buildings. Company has a long record of customer satisfaction, a large list of installations and is also working hard to increase awareness of energy saving and human comfort through thermal insulation.

DIAMOND Jumbolon-Rolls (Environmental Policy)

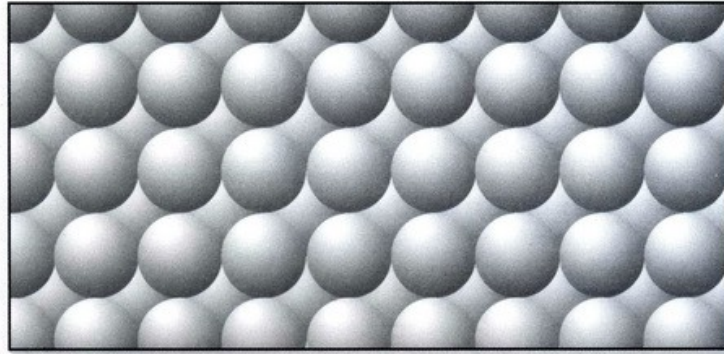
Company policy is to manufacture thermal insulation products which help save energy, while at the same time, not causing any kind of environmental pollution. It eliminates all scrap material by recycling it. All unusable scrap material is decomposed by UV influence. Diamond Jumbolon-Rolls are:

- ▶ Non toxic
- ▶ Non pollutant
- ▶ Ozone friendly

DIAMOND Jumbolon-Rolls (Application Fields)

FIELD	EXPECTED END-USAGE	TYPE OF PRODUCT
INSULATION	Roof insulation Wall insulation Shed insulation Cold storage insulation Water tank insulation Pipe insulation	Rolls Rolls Rolls Laminated Rolls Laminated Rolls Laminated Pipes
CONSTRUCTION	Water proofing Roads, Bridges & Civil works Ducting	Rolls Backer Rod Laminated Rolls
PACKING	Electrical appliances & Electronic equipment Office equipment Fruit producers (packing) Medical equipment Glassware	Rolls & Bag Rolls & Bag Net Rolls & Bag Rolls & Net
MANUFACTURING	Orthopedic beds Automobile Interior Sports and Leisure Goods Bedsheets / Upholstery	Rolls & Backer Rod Laminated Rolls Rolls & Backer Rod Backer Rod
UNDERLAY	Carpet Underlay	Rolls

DIAMOND Jumbolon-Rolls (Products)



Closed Cell Polyethylene foam is formed with innumerable cells of Polyethylene resins.

Diamond Jumbolon-Rolls with excellent results in thermal insulation, water proofing and sound proofing has been used in construction, agriculture, sports and packaging industries.

Diamond Jumbolon-Rolls have become the preferred choice of all the leading architects, HVACR and civil engineering consultants for thermal insulation of roof, walls, potable and chilled water pipe lines, etc.

Diamond Jumbolon-Rolls the proven hi-tech P.E. Thermal Insulation has achieved outstanding reputation and increasing demand from general public, industries, public and private sector organizations.

DIAMOND Jumbolon-Rolls (Features)

- ▶ Non-settling
- ▶ Unbreakable, adaptable & shock absorbing
- ▶ Excellent waterproofing & damp proofing / protector
- ▶ Outstanding effect for anti-noise devices & sound proof rooms
- ▶ Chemical resistant & non-poisonous character
- ▶ Easy handling for heat-sealing, punching, embossing, lamination & printing, etc.
- ▶ Antibacterial and antifungal

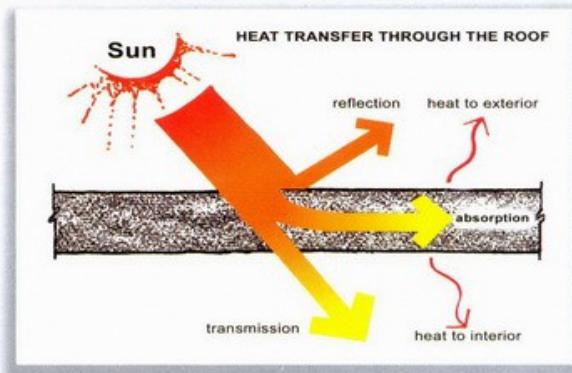
DIAMOND Jumbolon-Rolls (Physical Properties)

ITEM	UNIT	RESULT	TESTING METHOD
General			
Colour		White/any	
Cell Structure		Closed very fine	
Density	Kg/m ³	Normal 30 ± 10% Variable 25~70 ± 10%	ISO845 1988(E)
UV-Resistance		Excellent with Paint/Foil	
Odour		Nil	
Chemical Resistance		Excellent	ASTM547 BS4433
Temperature Range	°C	-80 to +85	
Flexibility		Good	BS4433
Safety			
Toxicity (Total Combustion)	%	Nontoxic	
Flammability		Self Extinguishing	ASTMD635.91 UL-94
Smoke Density		Class "A"	ASTM E-84
Economy			
Thermal Conductivity (λ)	W/mk BTU/Ft ² .Hr.°F	0.0298 0.207	ASTM C177
Water permeability		Nil	ASTM196 Pr.D
Vapour Barrier		Excellent	
Exterior Finish	Standard Optional	Smooth Aluminium Sheet Aluminium Foil PVC Sheet	

THERMAL INSULATION OF BUILDINGS

Buildings should be physically comfortable, culturally appropriate, economically sustainable, have lower environmental impact, should improve the health and well-being of the occupants and must conserve Natural resources.

Thermal performance and efficiency have been increasingly regarded as the major factor to be considered while designing buildings of any type. In extreme weather conditions, when comfort requirements are governed by cooling or heating systems, energy conservation becomes a dominant factor. Electric energy consumption for air conditioning is estimated to be, approximately 60–70% of the total supplied.



The Temperature Comparison Chart, given below, shows the difference in energy consumption between a non-insulated and a Diamond Jumbolon insulated roof. Since 70 – 75% of the heat is transmitted through the roof, therefore only roof temperatures are taken for calculations. To achieve comfortable temperature in a non-insulated room, the air conditioning unit has to start at 9:00 a.m. While in a house insulated with Diamond Jumbolon the air conditioner is started at 01:00 p.m., thus straight away saving 4 hours of operational cost. If Diamond Jumbolon Insulation is as thick as 2 inches, the use of air conditioner is reduced to only 3 hours a day. Due to its lower thermal conductivity, Diamond Jumbolon does not allow heat penetration, so you can enjoy cooling even after turning the air conditioner off for a long time.

Analysis of roof temperature and energy saved by using Diamond Jumbolon Insulation Rolls

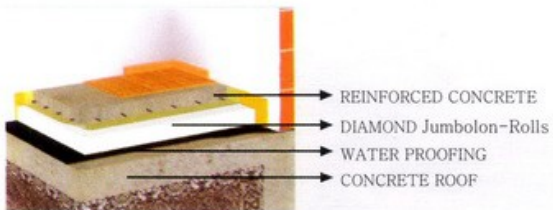
ROOF TEMPERATURE DIFFERENCE WITH & WITHOUT DIAMOND JUMBOLON-ROLLS MATERIAL

Time	5AM	6AM	7AM	8AM	9AM	10AM	11AM	12PM	1PM	2PM	3PM	4PM	5PM
Temp. above the roof	29.5° 	30.5° 	32.4° 	34.2° 	36.1° 	38.35° 	40.52° 	42.8° 	44.1° 	45.2° 	45.4° 	45.5° 	45.6°
Temp. below the roof without Insulation	26° 	27.1° 	28° 	29.3° 	30.73° 	32.3° 	34.07° 	35.9° 	37.9° 	39.7° 	41.35° 	42.1° 	42.75°
Temp. below the roof with 1" Diamond Jumbolon Insulation	26° 	26° 	26.33° 	26.66° 	27.23° 	28.01° 	28.82° 	29.8° 	30.9° 	32.14° 	33.4° 	34.61° 	35.65°
Temp. below the roof with 2" Diamond Jumbolon Insulation	26° 	26° 	26° 	26.29° 	26.67° 	27.14° 	27.71° 	28.39° 	29.2° 	30.02° 	30.93° 	31.76° 	32.63°

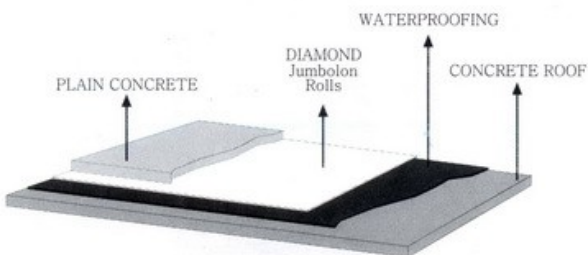
Sun
 Fan
 Airconditioner
 Airconditioner running @ Economic Level

Values Have Been Analysed From Field Data Collected From May-August Of Last 3 Years
 All temperature values are given in Degree Centigrades and may vary with geographical change.

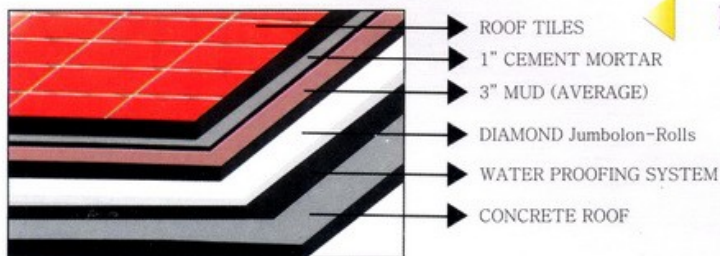
METHODS OF INSULATION



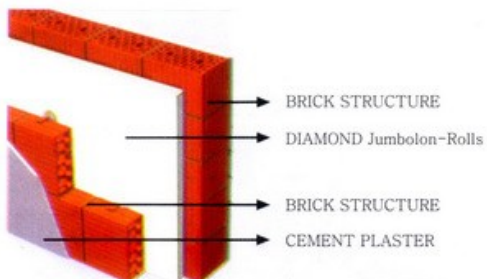
Roof insulation method 1



Roof insulation method 2



Roof insulation method 3



Wall insulation

DIAMOND Jumbolon - Backer Rod

Diamond Jumbolon backer rod consists of directly extruded Polyethylene foam of very fine closed cell structure giving best results in vast range of applications. It is supplied in cord form to be used as a back-up material for expansion joint sealants.

Advantages

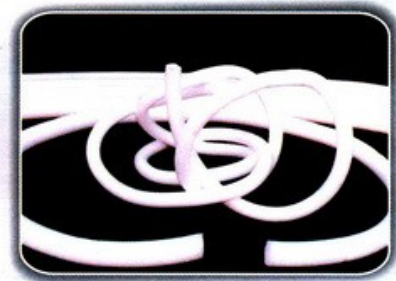
- ▶ Closed cell structure prevents water absorption
- ▶ Chemical resistant- inert to most dilute acids and alkalies, resistant to oil and hydrocarbons
- ▶ Anti-static
- ▶ Readily compressible
- ▶ Deformable- with minimum load transfer
- ▶ Easy to handle- can be cut with knife, economical in use, can go around corners due to flexibility
- ▶ Rot proof- does not disintegrate and swell

Applications

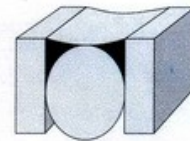
- ▶ Structure expansion joints in concrete, brick and blockwalls
- ▶ Bridge decks, airports, general construction projects
- ▶ Panel systems
- ▶ As a back-up support for sealants

Technical Data

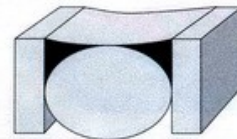
- | | |
|-------------------------|-----------------------------------|
| ▶ Tensile strength | 2.8~4.1 Kg/cm ² |
| ▶ Thermal conductivity | 0.030 KCAL/mhC |
| ▶ Operating temperature | -50°C to +75°C |
| ▶ Recovery | Average 90% at
50% compression |
| ▶ Availability | Dia 6 mm to 52 mm |
| ▶ Resiliency | 30~48 |



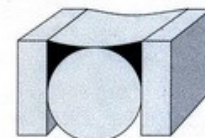
Backer Rods



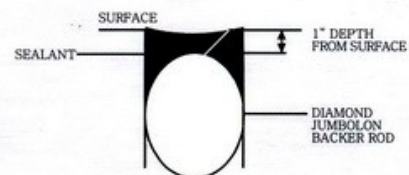
Contracted in summer



Expanded in winter



Properly fixed



DIAMOND Jumbolon-Rolls (Sound Proofing System)

Product Description

Sound insulation & Acoustic control is one of Diamond Jumbolon's excellent characteristics. Its closed cell structure suppresses excessive sound caused by machinery, heavy engines, pumps, music equipments, loudspeakers, etc. Diamond Jumbolon, ranging from 6mm - 25mm or more (depending upon sound wave length) is an effective sound absorber which outperforms any other product of its class. Its adaptability makes it the perfect choice for acoustic engineers.

Applications

- ▶ Radio & TV recording rooms
- ▶ Theaters & Cinemas etc
- ▶ Trim panel damping in aircrafts
- ▶ Ship's bulkhead
- ▶ Engine rooms
- ▶ Ordinance vehicle applications
- ▶ Defence electronics
- ▶ Electromechanical systems
- ▶ Blasting Obs. facilities
- ▶ Armoured vehicles etc
- ▶ Medical equipment installations
- ▶ ICUs
- ▶ X-Ray shielding
- ▶ Printing house for vibration & noise-impact reduction
- ▶ Creative rooms

Frequency (Hz)

Hz/Db	63	125	250	500	1000	2000	4000
Without D.Jumbolon-Rolls	64	67	71	73.5	74.5	75.5	76.3
With D.Jumbolon-Rolls	57	56	44	35	28	25	24
Absorption	11%	16%	38%	52%	62%	67%	68%

Manufacturers data



Fixing of 20mm Diamond Jumbolon-Rolls on wall.



Fixing of 1" thick Glass Wool on Diamond Jumbolon-Rolls



Final fixing of coloured cloth.

DIAMOND Jumbolon - Pipe Insulation

Technical Data

Available in inner diameter ranging from 7mm - 36mm or more as per client requirement.

▶ Flexibility	Excellent
▶ Density	32 - 35 Kg/m ³
▶ Thermal conductivity	0.030 W/mk
▶ Temperature range	-80°C to +70°C
▶ Chemical resistance	Excellent
▶ Vapour barrier	100% (Inherent in the product)
▶ Exterior finish	Standard - smooth P.E finish
▶ UV - resistance	Excellent with aluminium foil / paint
▶ Odour	Nil

Applications

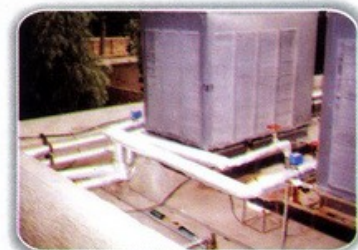
- ▶ Pipe cover for chilled water installations
- ▶ Pipe cover for heat insulation
- ▶ Split A/C system
- ▶ Central A/C System
- ▶ Cooling & freezing insulation
- ▶ Cold & hot water facilities
- ▶ Air-ducting system
- ▶ Sanitary appliances, etc
- ▶ Dew fall protection
- ▶ Economical & efficient



HVACR pipes



Pipe insulation



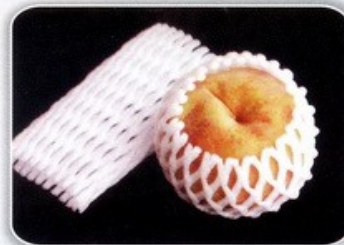
Pipe insulation at Al Hasnain Ghee Mill

DIAMOND Jumbolon -Net

Individual packing material for fruit & fragile items to keep the "freshness intact".

Specifications

- | | | |
|------------|-------------|---------------|
| Width: | Unstretched | (2 1/2)" ~ 3" |
| | Stretched | 6" ~ 12" |
| Length: | | 2 m |
| Thickness: | | 10 ~ 12 mm |



DIAMOND Jumbolon-Rolls (Other Usages)

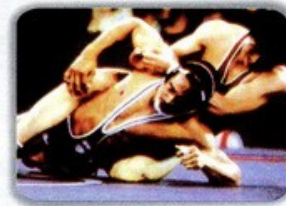
Agriculture & Fishery

- ▶ Covering of Green House
- ▶ Insulation material for cold storage, fish holds, fishing boats, etc
- ▶ Insulation and water proofing material for cattle shed, poultry shed, etc
- ▶ Floating material for fishing and marine industry



Sports, Leisure & General Goods

- ▶ Mats for judo, wrestling and other gymnastics
- ▶ Inner lining for picnic mats
- ▶ Padding for life jackets and preservers
- ▶ Padding for back pack and sports bags
- ▶ Inner lining for fences of baseball grounds and baseball gloves
- ▶ Sun-visor, headrest and trunk mats of vehicles

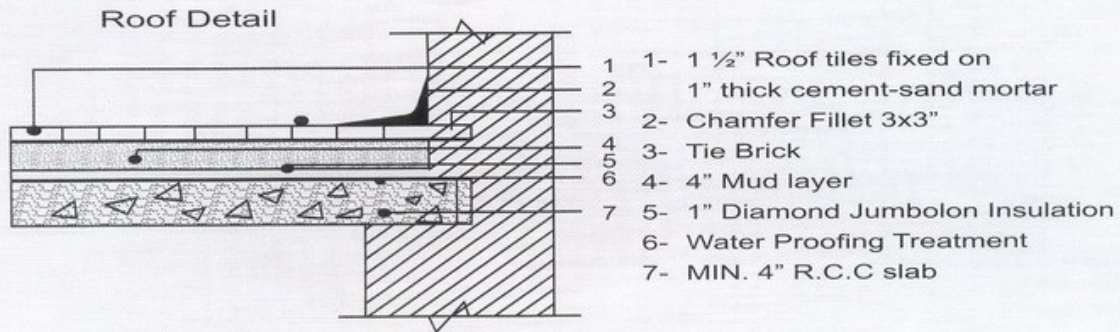


Industrial Packing

- ▶ Packing materials for electric home appliances as TV & radio sets, airconditioners, deep freezers, etc
- ▶ Anti static rolls for electronic ICs and precision equipment
- ▶ Packing materials for vitreous tiles, ceramic ware, glass ware and laboratory instruments
- ▶ Packing material for electronic and office equipment
- ▶ Packing material for musical instruments and Furniture



DIAMOND Jumbolon-Rolls (Installation Techniques)



Joining insulation rolls with jointing strip



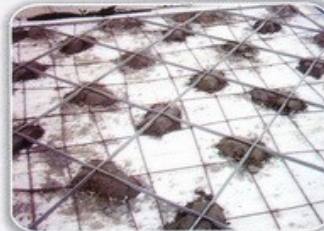
Fixing of tiles and cement mortar



Final grouted surface



Laying of plain concrete over Diamond Jumbolon-Rolls, in panels of 4' x 4' with 1/2" deep false joint



Laying of Terazo Floor over Diamond Jumbolon-Rolls, Islamabad



Laying of reinforced concrete over 2" Diamond Jumbolon-Rolls at Serena, Islamabad

DIAMOND Jumbolon-Rolls (Properties)

CELL STRUCTURE		CLOSED CELL								TEST METHOD
STANDARD THICKNESS		mm	0.5	1	2	3	4	5	20	KSM 3021
Tensile Strength	Machine Direction	Kg/cm ²	10.2 ~ 11.3	7.8 ~ 8.7	5.6 ~ 6.2	3.8 ~ 4.5	3.5 ~ 4.2	3.2 ~ 3.8	3.1 ~ 3.9	KSM 3014
	Cross Direction		3.7 ~ 4.1	2.7 ~ 3.2	2.4 ~ 2.7	2.3 ~ 2.6	2.0 ~ 2.4	2.2 ~ 2.7	2.2 ~ 2.5	
Elongation	Machine Direction	%	33 ~ 48	50 ~ 70	69 ~ 80	90 ~ 99	86 ~ 111	84 ~ 115	90 ~ 106	KSM 3014
	Cross Direction		30 ~ 45	40 ~ 50	56 ~ 63	58 ~ 65	51 ~ 62	50 ~ 65	50 ~ 70	
Tearing Strength	Machine Direction	Kg/cm	2.0 ~ 2.4	0.8 ~ 1.1	0.9 ~ 1.2	0.9 ~ 1.2	1.1 ~ 1.3	1.2 ~ 1.4	2.2 ~ 2.9	KSM 3014
	Cross Direction		4.6 ~ 5.0	1.3 ~ 2.3	1.5 ~ 1.9	1.5 ~ 1.7	1.8 ~ 2.0	1.8 ~ 2.4	1.8 ~ 1.9	
Permanent Compression Set		%	-	2.5 ~ 3.5	2.0 ~ 3.0	4.0 ~ 5.0	3.0 ~ 6.0	3.5 ~ 7.1	4.1 ~ 9.4	KSM 3014
Thermal Conductivity Kcal/m.hr°C			0.030 - 0.035	0.030 - 0.035	0.030 - 0.035	0.030 - 0.035	0.030 - 0.035	0.030 - 0.035	0.030 - 0.030	KSM 0466
Dimensional Stability Under Heat	Machine Direction	% (70°C x 22 hrs)	-	-0.5 ~ -4.5	-5.0 ~ -4.0	-4.0 ~ -2.0	-4.5 ~ -4.0	-4.5 ~ -4.2	-1 ~ +1.4	KSM 3014
	Cross Direction		-	-0.5 ~ 0	-1.0 ~ -0.5	-1.0 ~ +1.0	-0.2 ~ +0.8	+0.3 ~ +0.8	-1 ~ +1.5	
Permeability to Light rays		%	70 ~ 79	52 ~ 69	67 ~ 71	63 ~ 64	51 ~ 62	52 ~ 63		

DIAMOND Jumbolon-Rolls (Processabilities)

PROCESSING	PROCESSING MACHINERY	REMARKS
Cutting	Less than 10 mm of thickness: Scissors, blade cutter More than 10 mm of thickness: Knife for timber, hand Knife, handsaw, heat line, cutting machine	(1) The suitable line speed is 700-1, 400 m/min (2) A suitable tooth is 14 mt./inch (3) Continuous grinding is possible when bandknifing
Drilling & Grinding	Drilling & grinding machine	The processing condition will be same as timber
Die Punching	Die press	Recommendable thickness is less than 25 mm for easy working
Heat Seal	Heat sealer	It must be less than 5 mm thickness for heat sealing
Heat Bonding	Bonding & laminating machine	Surface temperature must be 140 - 170 °C for bonding P.E foam sheet can be laminated with EVA sheet, aluminium film and P.E film
Adhesion	Adhesive gun	It's adhesive by using agent of Chlorophylene system

CERTIFICATE OF INSULATION

Insulated with Diamond Jumbolon Rolls

THERMALLY COMFORTABLE & ENERGY EFFICIENT HOUSE



DIAMOND JUMBOLON®
Best Insulation Providers

*This is to certify that
House No. 82, 49th St off Kh-E-Rahal
has been insulation with
DIAMOND Jumbolon-Rolls
perfect insulation material.
This certificate is issued to Mr. Nadeem Zaffar
on the 13th day of January 2008.*

Certificate No: DJ/KHI200509006



DIAMOND JUMBOLON-Rolls:
Rolls Thickness: 25mm Thick, Area Insulated: 2100 sq. ft., Installed on: 22-10-2007



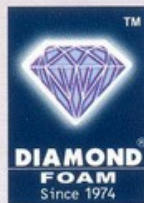
Chief Executive



Dial Toll Free: 0800 60000

From the makers of SupremeFoam®

We care for our customers



*From the makers of **SupremeFoam®***

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