Multi-purpose materials with environment-friendly, lightweight and durability

Plastic corrugated board

SUNPLY®

Thick plastic corrugated board

SUMIPANEL®

Polypropylene expanded foamed board

SUMICELLER®

Product Catalog

Leading company of plastic corrugated boards
Sumika Plastech Co., Ltd.

Lightweight, durable, hygienic materials for many purpose and application

The polypropylene plastic corrugated boards Sunply®, Sumipanel® and the polypropylene expanded foamed board Sumiceller® have features with lightweight and stiffness that combine recycling with reuse. Sumika Plastech Co.,Ltd. continue developing distinguished high performance products on the basis of its outstanding plastics resin engineering technology to meet the needs of the time

Hollow structured board

SUNPLY®

Sunply® has featured with hollow structure that enable many users to meet many requests . The single layer type have a wade range of thickness between 1.5 and 7 mm lineups. The multilayer type consist of two different materials in three layers, offering multiple functions with its characteristics. Sunply® is mainly used as a replacement for cardboard boxes and deviders for packaging applications. Thus, the raw materials are suited for processing of packaging or many applications . Also, all materials keep laws and regulations with environment-friendly. As the high performance products, we can offer the valuable products on the basis of multi-layered process. Besides, you can choose the laminated products and line shaped for transversal direction by heated pressured process.

SUMIPANEL®

Sumipanel® is a thick and parallel hollow structured board between 9 and 15 mm. It has basically the same appearance as Sunply® except that the liners on the surface and ribs (central pillars) are thicker and higher rigidity.

A standard type made solely of PP, and a higher rigidity type, strengthened is talc, are available.

Sumipanel® is suited for a replacement from wooden materials, such as plywood, paper materials and reinforced cardboards etc, for eliminating paper and wood debris.

Grade Lineup

Page 4
- ●Standard/ HP
- ●Conductive/ HD

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- ●Environmental measure/ HG (Sunply® Bio-eco)
- ●Durable anti-static/ SF (Sunply® Clean)
- ●Multilayered conductive/ SD

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- ●High rigidity /WT

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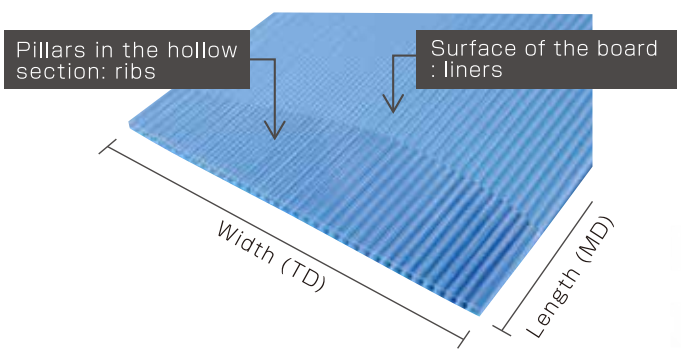
- ●Transparent/ TS (Sunply® Clear)
- ●Rule lined shape by heat press/ HK, HS (Sunply® Netsu-Kei)
- ●Lamination with foamed soft sheet/ HF (Sunply® F)



Polypropylene expanded foamed board

SUMICELLER®

Sumiceller® is a low expandedfoamed polypropylene board with a expansion ratio up to 3 times. Sumiceller® has featured with a smooth surface by a closed-cell structure. It does not absorb water inside of products and has excellent chemical resistance. Besides the standard type, the multilayered types is line-uped, which has featured with two different materials such as durable anti-static, anti-bacterial on both surface.

Specifications

Page 8

- ●Standard products/1.3 - 3 times(Expanded foam ratio)
- ●Floor protection/ Sumiceller® Hard
- ●Woody pattern color/ WL (Sumiceller® Wood-Like)

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- ●Durable anti-static/ ST
- ●Anti-bacterial type/ KT
- ●Soft foamed sheet lamination/ Sumiceller® Yawara

Other related products

Adhesive tape

Acrylic adhesive tape
●Cut Ace® ●Cut Cloth®

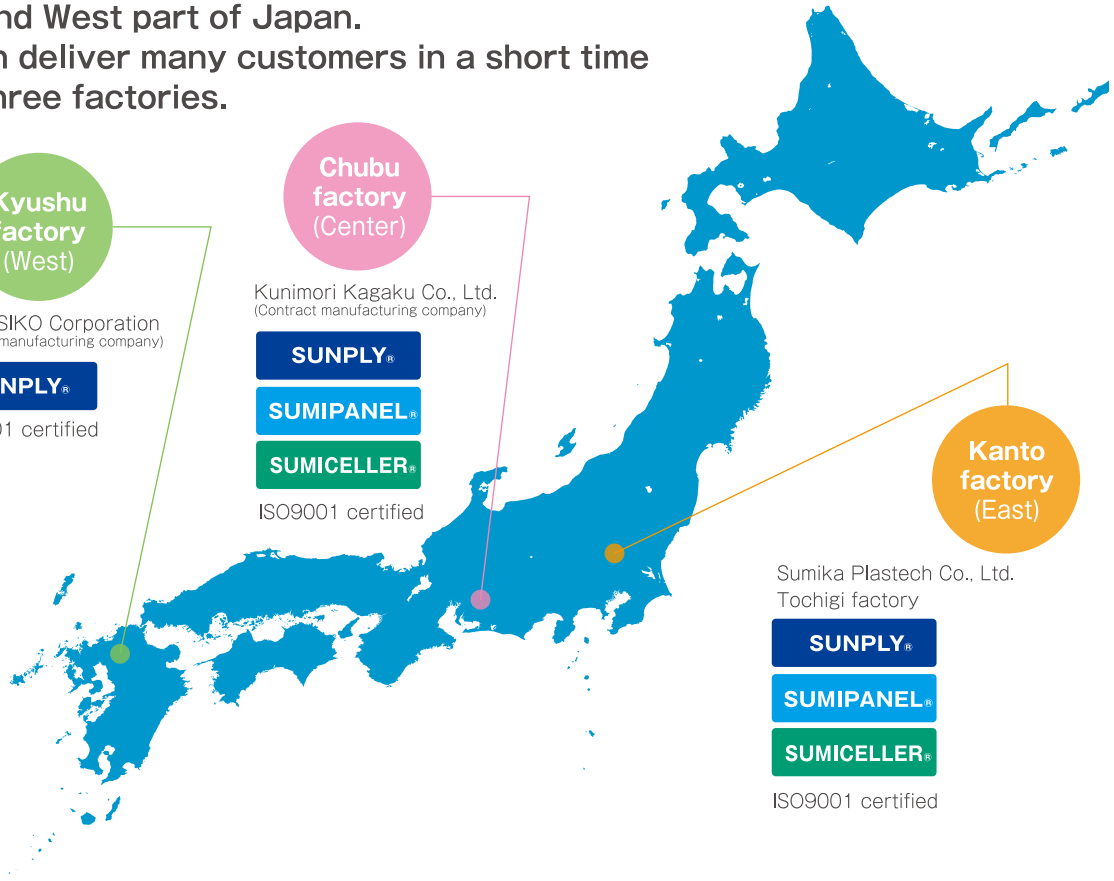
No scissors or cutters are needed.

The tapes has line-uped with a wide range purpose from general to special applications such as industrial materials, housing and construction, agriculture-related, etc.

Please contact our Adhesive products Dept. about detail products information

Manufacturing Bases

**We have three manufacturing bases in the Center, East and West part of Japan.
We can deliver many customers in a short time from three factories.**



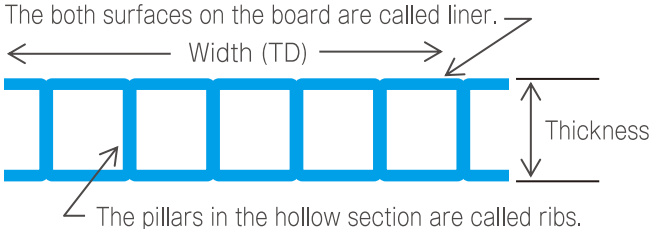
Standard products/ HP

〈 Features 〉

○Hollow structure board made of polypropylene.
○Basically 11 colors are available.
(Depending on thickness and weights, color line-ups are changed)
○The characteristic lightweight can be used for a wide range of applications by processing or board.
○All of grades has anti-static and weather resistant treatments.
* These features are not durable.
○As all of grades has corona treatment, it is suitable for using by printing and laminating process.

Structure

The both surfaces on the board are called liner.



Applications

- ●Industrial packaging material (packing, dividers, pads)
- ●Protection and cushioning material for packaging
- ●Board behind showcases in store and supermarket
- ●Print signs (for construction sites, sign boards, etc.)
- ●Protection board for construction and housing site etc.

			Standard colors						Special colors					Maximum width size (mm)	Maximum length size (mm)
Grade	Thickness (mm)	Unit weight g/m²	Natural	White	Light green	Light blue	Gray	Black	Dark blue	Yellow	Orange	Red	Beige		
HP 15025	1.5	250	●											1350	2200
HP 20030	2.0	300	●												
HP 25030	2.5	300	●											1820	
HP 25070		700	●											1350	
HP 30040	3.0	400	●											1820	
HP 30050		500	●	●	●	●	●	●		●			●		
HP 30090		900	●											1350	
HP 40060	4.0	600	●	●	●	●	●	●	●	●	●	●		1820	
HP 40070		700	●	●	●	●	●	●	●	●	●		●		
HP 50080	5.0	800	●	●	●	●	●	●	●	●	●		●		
HP 50100		1000	●	●	●	●	●	●	●	●	●	●	●		
HP 50120		1,200	●	●	●	●	●								
HP 60160	6.0	1,600	●	●											
HP 70170	7.0	1,700	●	●											

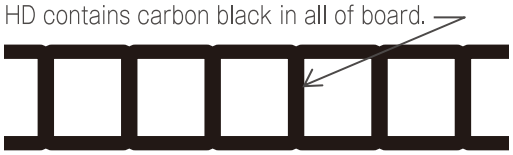
Conductive product/ HD

〈 Features 〉

○Products has features of hollow structure and conductive effect made by polypropylene and carbon.
○Static electricity discharges along with liner and rib.
Surface resistivity: 10^6 Ω/□or less
(Volume resistivity: 10^6 /Ω·cm or less)
○HD reduces dust by conductive effect.

Structure

HD contains carbon black in all of board.



Static electricity discharges along each surfaces through ribs

Applications

- ●Dividers and pads for mainly electronic industries.
- ●Protection and cushioning material for electronic parts
- ●Partitions and dividers in areas where dust is not prohibited and limited.

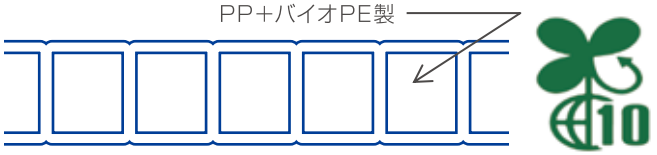
Grade	Thickness (mm)	Unit weight g/m²	Black	Maximum width size (mm)	Maximum length size (mm)
HD 30050	3.0	500	●	1820	2200
HD 40060	4.0	600	●		
HD 50090	5.0	900	●		

Environment-friendly products/ HG Sunply® Bio-eco

〈 Features 〉

○HG uses special raw materials which is made of plant origin on only both surfaces.
○HG can reduce the emission of CO_2 by 6.2% compared with standard grade.
○Multi layered sheets for only both surfaces.

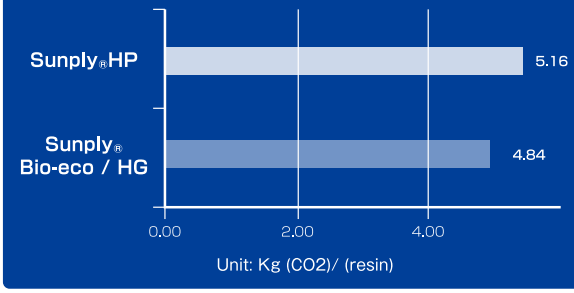
Structure



Grade	Thickness (mm)	Unit weight g/m²	Natural	Maximum width size (mm)	Maximum length size (mm)
HG50100—BM10	5.0	1,000	●	1350	2200

●Fixed size 1350mm (Width) x 2000 mm (Length)

The total CO_2 emissions from manufacturing, transportation, and processing generated by Sunply®.



Reference Material: Cited from the 6th Japan LCA Academic Presentation Summary (March 2011) and trial calculations made with our company's product conditions.

Applications

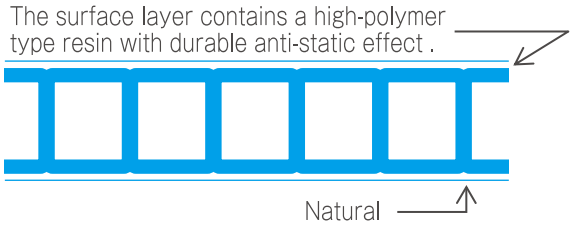
●Industrial packaging material for an environmental measure (containers, dividers)
●Partition board

Durable anti-static products/ SF Sunply® Clean

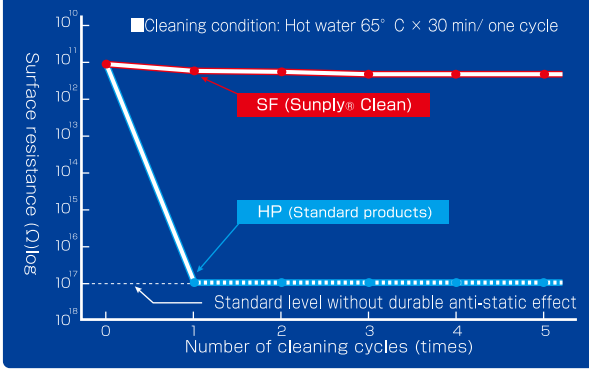
〈 Features 〉

○Durable anti-static resin is extruded on both surfaces by the multilayered process.
○Available to choose 6 colors.
○The anti-static effect keeps long time with almost the same when using the first time , even after washing with water.
Surface resistance rate: 10^{10} - 10^{13} Ω/□

Structure



Correlation between the anti-statistic performance and cleaning.



(Based on our company's measurement values)

Applications

●Packaging material for foods and pharmaceuticals industries (containers, dividers, pads)
●Packaging material for valued products or parts (containers, dividers, pads)
●Partitions and dividers in the areas where dust and contamination is not allowed or limited.

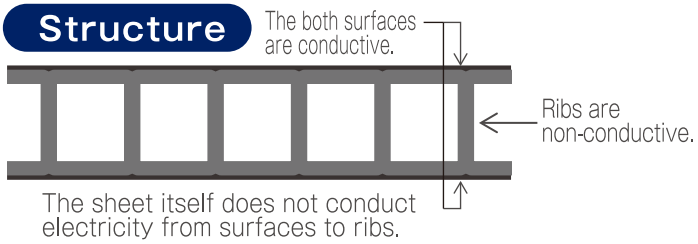
Grade	Thickness (mm)	Unit weight g/m²	Natural	White	Light green	Light blue	Gray	Black	Maximum width size (mm)	Maximum length size (mm)
SF 30050	3.0	500	●	●	●	●	●	●	1820	2200
SF 40070	4.0	700	●	●	●	●	●	●		
SF 50080	5.0	800	●	●	●	●	●	●		
SF 50100		1,000	●	●	●	●	●	●		

Multilayer conductive products/ SD

〈 Features 〉

○Contains carbon black only in the both surfaces by the multilayered process. However, ribs in hollow sections are non-conductive. (Surface resistance rate: 10^6 Ω/□ or less)
○Suitable for using containers and partitions when conductivity is not required for all the layers.

Structure



Grade	Thickness (mm)	Unit weight g/m²	Black	Maximum width size (mm)	Maximum length size (mm)
SD 30050	3.0	500	●	1820	2200
SD 40060	4.0	600	●		
SD 50090	5.0	900	●		

Transparent products/ TS Sunply® Clear

⟨ Features ⟩

○Transparent Sunply® is made of Styrene base resin.
○Suitable for checking contents in containers as well as for lighting
* Thermal welding process is not available. to laminate with other polypropylene made products. Instead, it can use an adhesive agent or screw products to another products.

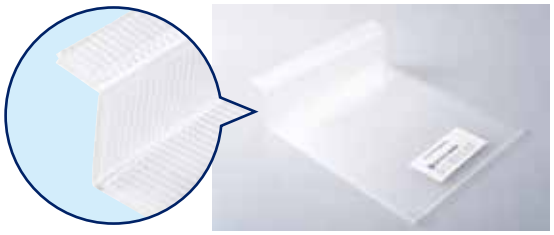
Applications

- ●Side board of C-type containers
- ●Lid of C-type containers
- ●Side board of cargo cart
- ●Lighting board

Structure

Styrene base material

Grade	Thickness (mm)	Unit weight g/m²	Clear	Fixed width size (mm)	Fixed length size (mm)	Packing unit
TS 50100	5.0	1,000	●	910	1,820	4
				1,250	2,000	



Heated rule products/ HK, HS Sunply® Netsu-Kei

⟨ Features ⟩

○Ruled by heat process
○Made by polypropylene resin that is the same as the standard products/ HP.
○The product has good cushioning characteristics due to its closing air in the hollow section with interval of 35 mm.
○Suitable for wrapping or cushioning pads of rolls , coils and corner as well as for protecting floors

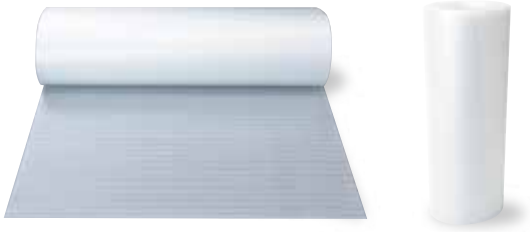
Structure

Applications

- ●Protection boards for rolled parts (Mainly metal tubes etc.)
- ●Protection boards for floor and wall
- ●Protection boards for moving
- ●Cover board for reels or spools

HK=Rolled without paper spool type

Grade	Thickness (mm)	Unit weight g/m²	Rolled products			Board products		
			Natural	Maximum width size (mm)	Fixed length size(mm)	Natural	Maximum width size (mm)	Fixed length size(mm)
HK 15025	1.5	250	●	1,310	50,000	●	1,350	2,200
HK 30040	3.0	400	●		25,000	●		
HK 40060	4.0	600	●			●		
HK 50100	5.0	1,000	●		15,000	●		



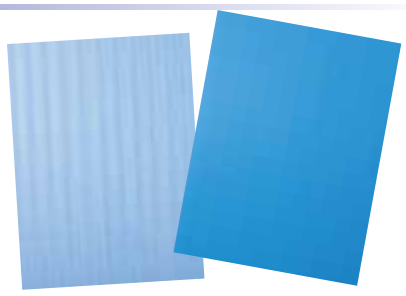
HS=Rolled with paper spool type

Grade	Thickness (mm)	Unit weight g/m²	Rolled products		
			Natural	Maximum width size (mm)	Fixed length size(mm)
HS 15025	1.5	250	●	1,100	50,000
HS 30040	3.0	400	●		25,000
HS 40060	4.0	600	●		
HS 50100	5.0	1,000	●		15,000

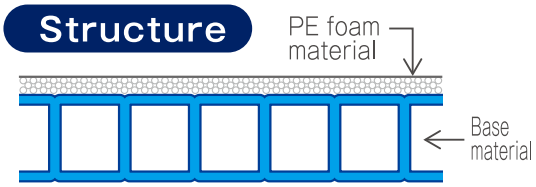
Cushioned products by-laminated with PE foam / HF Sunply® F

⟨ Features ⟩

○HF has a cushion performance by which is laminated with high ratio-foamed PE materials for only one side of the Sunply® HP. (Total thickness is 3.5 mm, thickness, included with the 1 mm thickness PE foam materials on the one side)
○Suitable for protection or cushion toward walls, floors, and furniture.



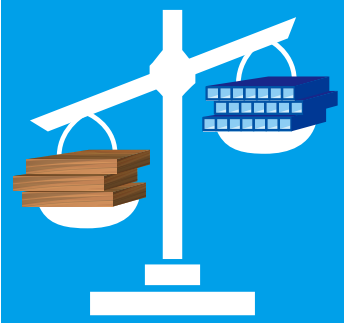
Structure



Grade	Thickness (mm)	Unit weight g/m²	Natural	Light blue	Fixed width size (mm)	Fixed length size (mm)	Packing unit
HF 25030	約3.5	300	●	●	910	1,820	10

* The density describes only base material weight.

Advantages of Sumipanel®



1.Lightweight!

The hollow structure makes it lighter than any woods board such as veneer, plywood, and paper , also available for reducing the weight of the products.

2.Stiffness!

Products has stiffness for handling medium weight parts. Depending on application, you can choose appropriate grade from Products line. The WN grade is suitable for application with flexibility and impact resistance are required. The WT grade is suitable for stronger situation.

* Please trial and check your usage before using the product.

3.Clealiness!

The products is not corroded by , water. It also lessen the dust, such as paper mills and wood chips etc.. You can use more safety and clean condition by fulfilling by sealing on edges.

* Please note that the condition under direct sunlight may the product and decrease the durability due to heat and ultraviolet.

Standard product/ WN

〈 Features 〉

○Hollow thickness board made of polypropylene.
○Available to choose two colors, white and gray.
○Available to bend by heat process, enables a variety of application with this products.
○The corona treatment, improves printability and lamination with other materials.

Structure

Core is a hollow structure by polypropylene-made board, same as the standard grade of Sunply®.

Grade	Thickness (mm)	Unit weight g/m²	White	Gray	Maximum width size (mm)	Maximum length size (mm)
WN 09180	9	1,800	●	●	1,300	2,200
WN 09200		2,000	●	●		
WN 12250	12	2,500	●	●		
WN 12450		4,500	●	●		
WN 15330	15	3,300	●	●		

Rigid type / WT

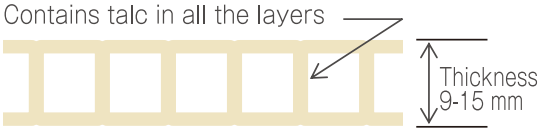
〈 Features 〉

○Combination of Talc and Polypropylene for rigidity performance.
○Available to choose two colors, natural and gray.
○Available for sealing edge process and bending by heat process as well as the standard type / WN.
○The corona treatment, improves printability and lamination with other materials.

Grade	Thickness (mm)	Unit weight g/m²	Natural	Gray	Maximum width size (mm)	Fixed length size (mm)
WT 09300	9	3,000	●	●	1,300	2,200
WT 12450	12	4,500	●	●		
WT 15550	15	5,500	●	●	1,200	

Structure

Contains talc in all the layers



Application of Sumipanel®

●The side , bottom and lid panel in a medium or large sized container for medium weight parts.
●Lid board on the top and dividers on the pallet
●Pallets for production lines
●Shelf panel for showcases and storage cabinets
●Materials for spindle and pillow block toward scrolled products such as films or steel wires (side panel)
●Core material for flip open doors of trucks
●Protection boards in cargo container
●Walls, dividers and side panels in cattle shed for pig or chicken (dividers)
●Signboards

Standard products / Expanded foamed ratio 1.3 - 3.0 times

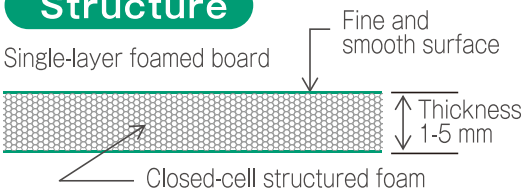
⟨ Features ⟩

○Closed-cell structure foamed board, made of polypropylene.
○Smooth surface and flexibility compared to Sunply®.
○Easy to process such as cutting, printing, die, heat bending etc. Available to use hygienically by avoiding water, particle and dust inside of board as the products is not hollow structure like Sunply.
○Suitable to apply containers and boxes for food and pharmaceutical industries which have severe limitation for dusts and contaminations.
○Enhance printability and adhesion performance through the corona treatment

Applications

- Industrial packaging material (Container and box , dividers, pads)
- Protection board for packaging
- Protection board for transporting glass panels
- Divider (pad) for an insulation material
- Signboard
- Core material for tatami
- Construction material
- Spacer Board for can, bin bottle etc. in packing.

Structure



Grade	Expanded foamed ratio	Thickness (mm)	Unit weight g/m²	Natural	Light blue	Standard width size (mm)	Standard length size (mm)
1310 070	1.3	1	700	●	●	1350	2000
3030 090	3.0	3	900	●	●	1250	
3040 120		4	1,200	●	●		
3050 150		5	1,500	●	●		

Note) Anti-static treatment is not applied in the products.
(The level of the surface resistance rate is $10^{17}\Omega/\square$ or more)

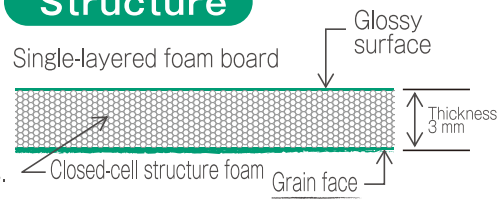
Certified by the Food Sanitation Act and the related regulations
(Based on official notice of Ministry of Health and Welfare Notification No. 370)

Floor protection board/ Sumiceller® Hard

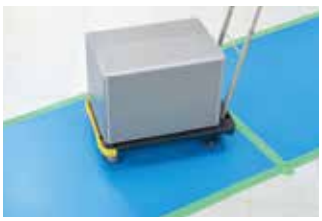
⟨ Features ⟩

○Closed-cell structure foamed board made of polypropylene.
○Outstanding stiffness and bending performance compared to the standard Sumiceller®. Suitable for floor protection.
○Suitable to replace wood-based products. Lightweight and excellent in water and chemical resistance.

Structure



Note) Anti-static treatment is not applied in the products.
(The level of surface resistance rate is $10^{17}\Omega/\square$ or more)



Grade	Expanded foamed ratio	Thickness (mm)	Unit weight g/m²	Light blue	Standard width size (mm)	Standard length size (mm)	Packing unit
1430 193	1.4	3.0	1,930	●	900	1800	5

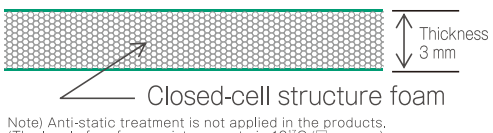
* To be on sale by fixed sizes bases.

The Wood-grain type Sumiceller® (Wood-like) / WL

⟨ Features ⟩

○Closed-cell structure foamed board made of polypropylene.
○Wood-grain pattern Sumiceller®.

Structure



Note) Anti-static treatment is not applied in the products.
(The level of surface resistance rate is $10^{17}\Omega/\square$or more)

Grade	Expanded foamed ratio	Thickness (mm)	Unit weight g/m²	Brownish black (black)	Reddish brown (brown)	Green	Antique white (white)	Standard width size (mm)	Standard length size (mm)
3030 090WL	3.0	3.0	900	●	●	●	●	1000	2000

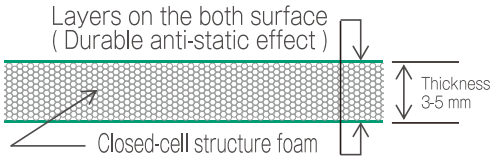
* To be on sale by fixed sizes bases.

Durable anti-static products/ ST

〈 Features 〉

○Durable anti-static resin extrudes from both surfaces by the multilayered process .
○Suitable to apply containers and boxes for food and pharmaceutical industries which have severe limitation for dusts and contaminations.
Surface resistance rate: 10^{11} - 10^{13} Ω/□ or less

Structure



Applications

●Industrial packaging material (Container and box , dividers, pads)
●Packaging material mainly for food and pharmaceutical industries
●Packaging material for electronics and Liquid Crystal Display parts.

Grade	Expanded foamed ratio	Thickness (mm)	Unit weight g/m²	Light blue	Gray	Standard width size (mm)	Standard length size (mm)
3030 090 ST	3.0	3	900	●		1250	2000
3040 120 ST		4	1,200	●	●		
3050 150 ST		5	1,500	●			

Certified by the Food Sanitation Act and the related regulations
(Based on official notice of Ministry of Health and Welfare Notification No. 370)

Antibacterial type/ KT

〈 Features 〉

○Multilayered closed-cell structure foam board based on ST grade.
○KT also add the durable anti-static effect.

Grade	Expanded foamed ratio	Thickness (mm)	Unit weight g/m²	Light blue	Standard width size (mm)	Standard length size (mm)	Packing unit
3030 102 KT	3.0	3	1,020	●	1250	2000	3
3040 132 KT	3.0	4	1,320	●	1250	2000	3

* To be on sale by fixed sizes bases.

Certified by the Food Sanitation Act and the related regulations
(Based on official notice of Ministry of Health and Welfare Notification No. 370)

SIAA ISO22196 for KOHKIN

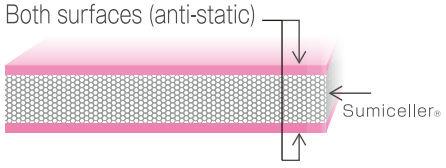
* Refer to page 11 for the explanation of the mark.

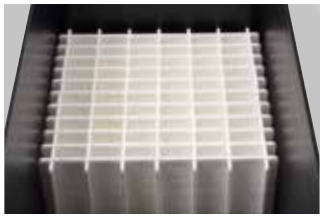
Lamination with PE foam products / Yawara

〈 Features 〉

○Soft cushioned board with a higher shock-absorbing material (high-foam PE sheet) is laminated on the both sides of the standard grade. (Thickness of 3mm grade and , Thickness of PE foam material approximately 1 mm).
○Anti-static treatment is treated with both surfaces for the white and pink colors products.For the Yawara Pink, a durable anti-static performance is provided to the polyethylene foam. For the Yawara White, the polyethylene film on the surface provides an anti-static performance.
○Available to use products without difference of direction. A smooth surface for any direction.

Structure





Grade		Total thickness (mm)	Unit weight g/m²	White	Pink	Standard width size (mm)	Standard length size (mm)	Packing unit
Yawara-white	4230 064	4.5	640	●		1000	1500	10
Yawara-pink	4030 068	4.5	680		●			

* The density g/m² of the base material. * To be on sale by fixed size bases.

Typical Mechanical and physical properties of Sunply®

*These properties are representative and not guaranteed .

Item			SI unit	Measuring condition	Standard grades								
					HP15025	HP20030	HP25030	HP25070	HP30040	HP30050	HP30090	HP40060	HP40070
Thickness			mm	Company's test method	1.5	2.0	2.5	2.5	3.0	3.0	3.0	4.0	4.0
Unit weight			g/m^2	Company's test method	250	300	300	700	400	500	900	600	700
Apparent density			kg/m^3	Company's test method	167	150	120	280	133	167	290	150	175
End crash		MD	N	50 mm interval	21.1	29.7	29.7	136.4	48.2	63.0	133.0	98.2	127.0
		TD	N		0.72	1.3	1.3	24.2	2.7	6.0	29.8	8.8	11.1
Flat crash		—	MPa	50 mm angle	0.20	0.22	0.22	1.53	0.21	0.30	0.80	0.39	0.45
Bending by 50 mm span	Elasticity	MD	N／cm	Based on JIS-K7171 test method Bending speed 10mm/min	8.3	11.2	11.2	29.4	28.8	36.2	66.9	62.8	89.1
		TD	N／cm		0.78	1.2	1.2	13.7	2.7	6.0	29.8	8.6	12.9
	Strength	MD	N		2.9	3.9	3.9	10.8	7.3	9.6	20.4	15.7	22.4
		TD	N		0.33	0.46	0.46	5.3	1.4	2.5	9.6	3.6	6.0
Bending by 100 mm span	Elasticity	MD	N／cm	Based on JIS-K7171 test method Bending speed 10mm/min	0.65	0.94	0.94	5.4	3.8	4.5	9.6	9.9	14.4
		TD	N／cm		0.35	0.47	0.47	3.5	0.91	1.6	6.1	2.3	3.6
	Strength	MD	N		1.0	1.4	1.4	5.7	2.9	3.9	9.1	7.1	10.2
		TD	N		0.18	0.23	0.23	3.5	0.50	1.0	7.0	2.0	3.1
Du Pont/ Impact strength		23℃	N･cm	JIS-K7211 Impact core 1/2inch φ	1471	392	221	275	66	105	371	198	247
		-10℃	N･cm		1471	186	50	251	24	46	253	84	109

Item			SI unit	Measuring condition	Standard grades					Clear	Bio-eco
					HP50080	HP50100	HP50120	HP60160	HP70170	TS50100	HG50100
Thickness			mm	Company's test method	5.0	5.0	5.0	6.0	7.0	5.0	5.0
Unit weight			g/m^2	Company's test method	800	1,000	1,200	1,600	1,700	1,000	1,000
Apparent density			kg/m^3	Company's test method	160	200	240	267	243	200	200
End crash		MD	N	50 mm interval	157.2	205.9	274.6	410.0	437.0		
		TD	N		13.3	31.0	39.0	56.8	61.6		
Flat crash		—	MPa	50 mm angle	0.49	0.68	0.86	1.11	1.14		0.63
Bending by 50 mm span	Elasticity	MD	N／cm	Based on JIS-K7171 test method Bending speed 10mm/min	121.3	147.5	219.7	416.4	477.4	140	
		TD	N／cm		18.5	27.5	37.1	57.0	61.8	9	
	Strength	MD	N		30.5	36.4	49.4	77.2	84.1		
		TD	N		9.2	12.4	16.8	26.3	28.6		
Bending by 100 mm span	Elasticity	MD	N／cm	Based on JIS-K7171 test method Bending speed 10mm/min	20.1	30.5	35.0	68.7	84.7		31
		TD	N／cm		5.1	8.3	14.5	22.4	22.7		8
	Strength	MD	N		13.8	19.5	26.5	41.5	45.3		21
		TD	N		4.6	8.7	11.9	18.9	20.7		8
Du Pont/ Impact strength		23℃	N･cm	JIS-K7211 Impact core 1/2inch φ	293	364	389	296	370	803	
		-10℃	N･cm		136	192	246	242	270		

Item			SI unit	Measuring condition	Persistent anti-static				Conductive			Multilayer conductive		
					SF30050	SF40070	SF50080	SF50100	HD30050	HD40060	HD50090	SD30050	SD40060	SD50090
Thickness			mm	Company's test method	3.0	4.0	5.0	5.0	3.0	4.0	5.0	3.0	4.0	5.0
Unit weight			g/m^2	Company's test method	500	700	800	1,000	500	600	900	500	600	900
Apparent density			kg/m^3	Company's test method	167	175	160	200	167	150	180	167	150	180
End crash		MD	N	50 mm interval	42.9	113.4	141.4	188.2	50.9	78.6	140.1	50.9	78.6	140.1
		TD	N		1.1	9.1	12.3	17.6	4.70	7.4	13.4	4.7	7.4	13.4
Flat crash		—	MPa	50 mm angle	0.16	0.30	0.37	0.51	0.69	0.49	0.7	0.53	0.27	0.14
Bending by 50 mm span	Elasticity	MD	N／cm	Based on JIS-K7171 test method Bending speed 10mm/min	27.3	91.7	123.9	188.3	34.0	60.3	139.1	34.0	60.3	139.1
		TD	N／cm		2.2	7.9	10.7	16.4	5.31	7.2	12.7	5.3	7.2	12.7
	Strength	MD	N		5.9	16.9	22.4	33.4	8.5	11.2	19.1	8.5	11.2	19.1
		TD	N		1.2	4.4	6.0	9.3	2.24	3.13	5.8	2.24	3.1	5.8
Bending by 100 mm span	Elasticity	MD	N／cm	Based on JIS-K7171 test method Bending speed 10mm/min	4.3	14.2	19.2	29.1	5.40	9.82	23.1	5.40	9.8	23.1
		TD	N／cm		0.58	2.8	3.9	6.2	1.26	2.16	4.9	1.26	2.2	4.86
	Strength	MD	N		2.9	9.0	12.0	18.1	4.2	5.9	11.2	4.2	5.9	11.2
		TD	N		0.35	2.8	4.0	6.4	0.90	1.68	4.0	0.90	1.7	4.02
Du Pont/ Impact strength		23℃	N･cm	JIS-K7211 Impact core 1/2inch φ	90	121	136	166	132	199	349	408	488	666
		-10℃	N･cm		33	46	52	65	48	104	231	177	227	336

Electric properties of Sunply®

Grade	HP	SF	HD	SD	DK
	Standard grades	Persistent anti-static	Conductive	Multi-layer conductive	Electrostatic diffusion
Added function	Contains (Low-molecular) surfactant.	Contains a high-polymer anti-static material only in the both surfaces.	Contains carbon black in all the layers.	Contains carbon black in the surface layer.	High-polymer anti-static material and carbon black
Surface resistance rate (Ω／□)	$10^{11\sim13}$	$10^{10\sim13}$	10^{6} or less	10^{6} or less	$10^{8\sim10}$
Volume resistivity (Ω･cm)			10^{6} or less		$10^{7\sim9}$
Surface resistance between points (RP) (Ω)					$1\times10^{6}\sim1\times10^{7}$ (RCJ standards)
Features	Depending on rinsing, etc. anti-static treatment will lose its function. (Untreated products 10^{17} - 10^{20})	The anti-static function maintains long term.	Conductive properties are effect for all layers in products.	Conductive properties are effect only for both surfaces.	DK covers the middle range area between the conductive and the anti-static .

Sunply® DK (Electrical diffusion properties products)

Sunply® DK is the advanced products with static electricity diffusion which has covered middle range area between the conductive and the anti-static. The static charge decay properties are compliant with the MIL and EIA standards (electronic packaging standards) Products is based on the regulation and the standard of static charge decay properties which are established by MIL and EIA.

Typical Mechanical and physical properties of Sumipanel®

*These properties are representative and not guaranteed .

Item			SI unit	Measuring condition	Standard grades					High rigidity		
					WN09180	WN09200	WN12250	WN12450	WN15330	WT09300	WT12450	WT15550
Thickness			mm	Company's test method	9.0	9.0	12	12	15	9.0	12	15
Unit weight			g/m^2	Company's test method	1800	2000	2500	4500	3300	3000	4500	5500
Apparent density			kg/m^3	Company's test method	200	222	208	375	220	333	375	367
End crash		MD	N	50mm span 50mm 10mm/min	330	427	668	1723	1054	924	1671	2220
		TD	N		67	78	106	569	151	208	592	868
Flat crash		—	MPa	50mmangle 10mm/min	1.69	1.65	1.55	7.25	1.39	3.79	4.54	5.21
Bending	Elasticity	MD	N／cm	Based on JIS-K7171 test method 50mmwidth Bending speed 10mm/min Span interval 100mm	98	154	273	584	422	335	1241	2000
		TD	N／cm		28	32	41	257	55	98	276	404
	Strength	MD	N		58	72	105	237	158	91	241	366
		TD	N		19	23	31	132	41	41	96	129
Du Pont/ Impact strength		23℃	N･cm	Based on JIS-K7211 test method Impact core1/2inch φ	489	713	1188	2346	1779	494	593	677
		-10℃	N･cm		481	581	795	1283	1060	193	290	367

Typical Mechanical and physical properties of Sumiceller®

*These properties are representative and not guaranteed .

Item			SI unit	Measuring condition	Standard grades				Durable anti-static products (ST)			Hard	Yawara-white	Yawara-pink
					1310 070	3030 090	3040 120	3050 150	3030ST	3040ST	3050ST	1430 193	4230 064	4030 068
Thickness			mm	Company's test method	1.0	3.0	4.0	5.0	3.0	4.0	5.0	3.0	約4.5	約4.5
Unit weight			g/m^2	Company's test method	700	900	1200	1500	900	1200	1500	1930	730	735
Apparent density			kg/m^3	Company's test method	700	300	300	300	300	300	300	643	162	163
Bending in 50 mm span	Elasticity	MD	N／cm	Based on JIS-K7171 test method Bending speed 10mm/min	5.8	41.1	97.0	153.0	46.4	99.3	152.2	73.4	25.7	25.2
		TD	N／cm		4.5	22.5	72.9	123.3	23.4	57.0	90.7	64.8	13.3	13.7
	Strength	MD	N		4.0	13.4	24.2	35.0	15.0	24.3	33.6	20.2	11.6	11.8
		TD	N		3.3	8.2	19.6	31.1	8.3	15.3	22.3	18.8	7.0	6.5
Bending in 100 mm span	Elasticity	MD	N／cm		0.5	4.7	12.8	20.9	5.3	13.1	20.8	11.0	3.6	4.5
		TD	N／cm		0.5	2.6	9.2	15.8	2.8	7.2	11.6	10.0	1.9	2.0
	Strength (yield point)	MD	N		1.0	5.4	10.6	15.8	6.1	10.7	15.2	12.6	4.3	5.3
		TD	N		1.0	3.1	8.1	13.2	3.2	6.3	9.5	11.9	2.2	2.4
Du Pont/ Impact strength		23℃	N･cm	Base on JIS-K7211 test method Impact core 1/2inch φ	236	190	351	512	192	244	296	231	157	191
		-10℃			65	132	208	266	62	129	181	116	108	121

Note) Mechanical and physical properties of Sumiceller KT (antimicrobial) are the same as those of Sumiceller ST. Mechanical, and the physical properties of Sumiceller WL (Wood-Like) are also same as those of Sumiceller (standard type).

Antibacterial property of Sumiceller®KT

Test results of JISZ2801 (It supposed to be effective when the antimicrobial activity ratio is 2.0 or more)

●Comparison data between Sumiceller®ST (Non antibacterial products) and Sumiceller® KT

*These properties are representative and not guaranteed .

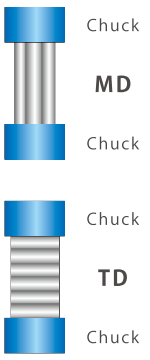
Test specimen	Staphylococcus aureus		Escherichia coli	
	Average viable bacteria count	Antibacterial activity value	Average viable bacteria count	Antibacterial activity value
Sumiceller®ST	5.30		6.09	
Sumiceller®KT (Antibacterial type)	<-0.2	5.5	<-0.2	6.2

●Sumiceller®KT is a registered products of the Society of Industrial Technology for Antimicrobial Articles (SIAA) certification.
The SIAA mark is a certification for an antimicrobial products that meet the three criteria of the antimicrobial property, safety, and appropriate labeling.

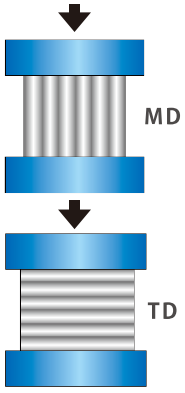
(Reference) Detail Test method of mechanical and physical properties

Sunply® / Sumipanel®

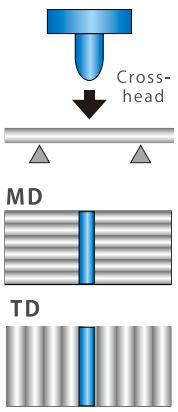
Tensile



Compression



Bending



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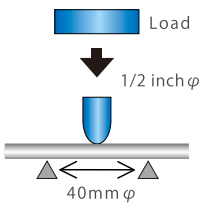
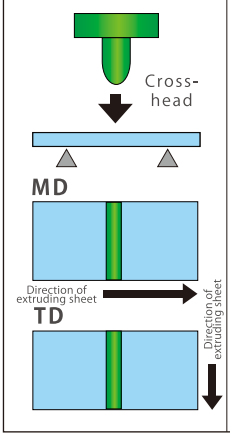
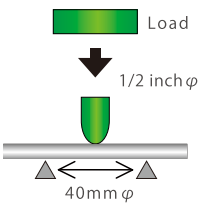


Sumiceller®

Bending



Impact



Please read the following precautions before using the product.

Handling precautions of Sunply®, Sumipanel®, and Sumiceller®

- Sunply®, Sumipanel®, and Sumiceller® are made of polypropylene (PP) resin.
- Please refer to the separately prepared safety data sheets (SDSs) when using Sunply®, Sumipanel®, and Sumiceller®.
- The products have smooth and slippery surfaces. Ensure that the packing is securely packed. Watch your step carefully when walking or working on the product surface. Pay attention, especially when any fluid such as water or oil has adhered to the surface of the products. This may cause accidents.
- Please pay attention carefully with your hand or finger when handling the products.
- Please be careful not to cut your skin. when using a knife or the like to cut the products.
- The physical performance of the products will become embrittlement when exposed to direct sunlight for a long time.
- Please use the products at room temperature.
- The products may have a risk of ignition when exposed to heat at approximately 400 ℃. Please pay attention while handling the products in the vicinity of sparks or other fire sources.
(The products are designated as flammables under the Japanese Fire Service Act.)
- In the case of an ignition, cut off from the fire sources and extinguish the fire with a fire-extinguishing agent. (Fire-extinguishing agents: fire foam, dry chemicals, carbon dioxide, plenty of water)
- Please do not drop or deliberately exert excessive impact on the products during loading and unloading to prevent them from bending, cracking, or chipping.
- Properly dispose of products in accordance with the laws concerning industrial waste management, or entrust the disposal to a waste disposal specialist.

End

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The contents of this catalog are as of April 2020