SEKISUI | FOAM INTERNATIONAL
Global Foam Solutions

Physically Cross-linked Polyolefin Foam

SOFTLON®

Foam : any number of light cellular solids made by creating bubbles of gas in a material



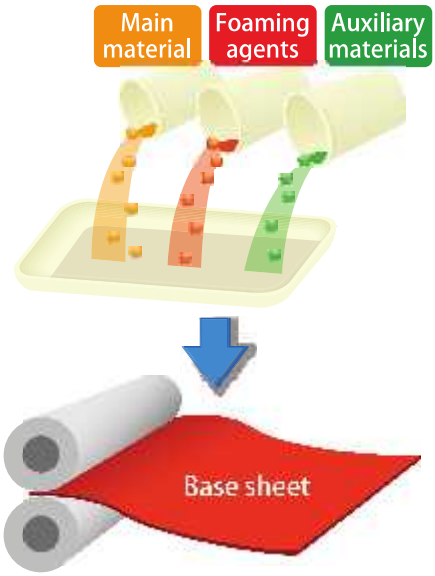
How SOFTLON is made

SOFTLON was created using new cross-linki
following decades of Sekisui Chemical's prop

Extrusion

Extruding Polyolefin

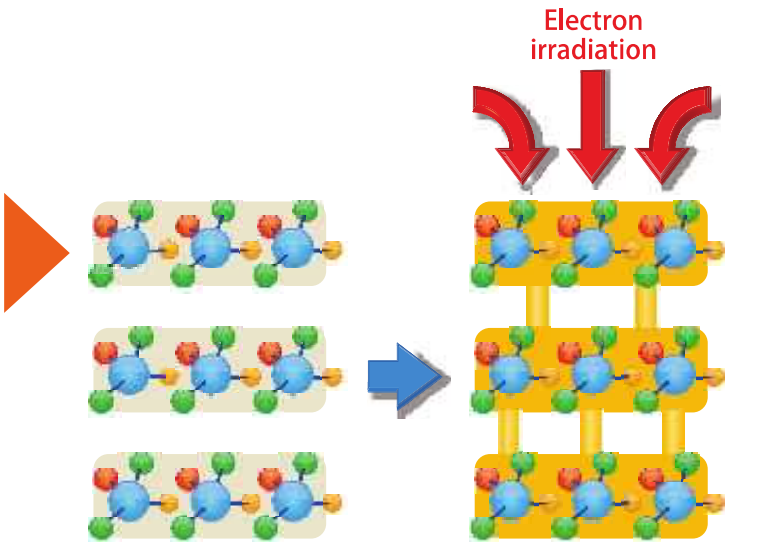
Polyolefin resin is mixed with foaming agents and auxiliary materials, and formed through extrusion. Our high-precision extrusion technique is the basis for our products' fine thickness tolerance.



Cross-linking

Physically Cross-linking

Polyolefin is physically cross-linked with electron beams to cross-link the molecules. This electron irradiation technique is a unique technology in the field of applied industrial radiation, winning the Award of the Society of Polymer Science Japan.



SEKISUI-SOFTLON is a material invented to include air bubbles into polyolefin.

History of Sekisui's Foam Business

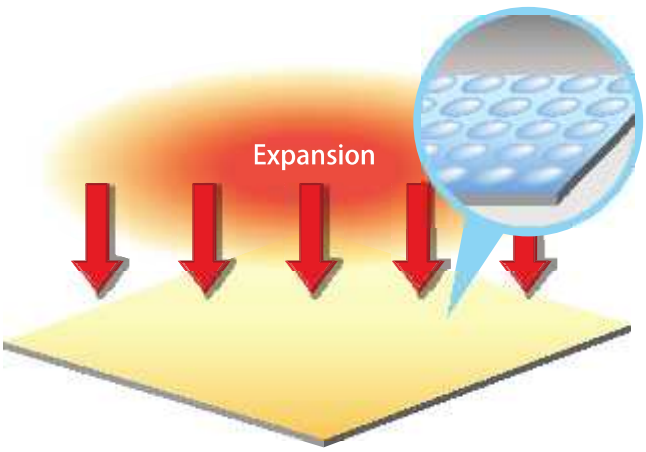
1964	SEKISUI-SOFTLON is developed at the R&D center
1967	Foam Promotion Division is established; Production of SEKISUI-SOFTLON starts at Musashi Plant
1969	VOLTEK Inc. (now SEKISUI VOLTEK) is founded
1973	ALVEO AG (now SEKISUI ALVEO) is founded
1977	PILON PTY.LTD. (now SEKISUI PILON) is founded
1996	Thai Sekisui Foam Co., Ltd. is founded
2002	Capital participation in Shanghai Holy Co., Ltd. in China (51%)
2003	Capital participation in Young Bo Chemical Co., Ltd. in South Korea (51%)
2006	Construction of Langfang Plant of Young Bo Chemical is completed
2009	Sekisui Alveo acquires Polymer-Tec GmbH
2010	Shanghai Sekisui-Holy Plastics Co., Ltd. is liquidated
2010	Polymer-Tec changes its business name to SEKISUI ALVEO BS

ing technology developed by Sekisui Chemical. The manufacturing technology was invented
prietary research. Polyolefin foam is commercialised as SOFTLON through the following processes.

Foaming

Foaming

Foamed polyolefin expands from 5 to 40 times its original volume. The fine closed-cells are resistant to water and chemicals This supports the stable, superior quality of SOFTLON.



Winding

Winding into sheets

SOFTLON is a soft and continuous sheet-type product. SOFTLON allows for flexible fabrication, such as lamination and moulding.

Product Concept of SOFTLON

1 Polyolefin Material

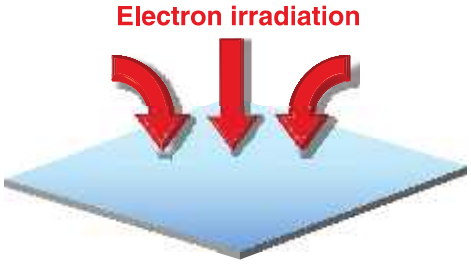
Chemical-resistant | Heat-moldable

SOFTLON features the properties exclusive to polyolefin materials.
The chemical resistance of SOFTLON allows it to be used in products that require durability, such as residential insulation and automotive interiors.
In addition, it can be easily fabricated due to its heat-mouldable property, ideal for lamination, vacuum forming and heat press moulding.

2 Cross-linking

Heat-resistant | Smooth surface

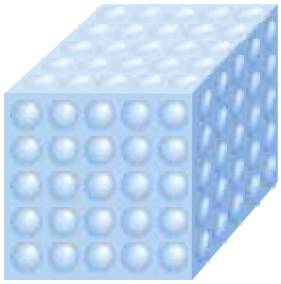
Sekisui Chemical's exclusive electron irradiation technique results in superior and discrete crosslinking. This gives SOFTLON a fine cell structure, better heat resistance and a smooth surface.



3 Foam Structure (Closed-cell)

Light weight | Flexible | Heat-insulating

SOFTLON consists of fine closed-cell foam. Lightweight and flexible properties are realised by foaming polyolefin to 5 to 40 times its original volume.
As a characteristic of the closed-cell structure, SOFTLON is well suited for products that demand heat insulation and waterproofing.



FAQs

About SOFTLON

Q1. Does SOFTLON use any environmentally harmful substances?

A. The main raw material of SOFTLON is polyolefin resin, which is environmentally friendly. No prohibited materials are used in SOFTLON.
Common uses of SOFTLON include cap seals, developmental toys, and parts for medical equipment.

Q2. What is the difference between closed cells and open cells?

A. Unlike open cells, in a closed-cell structure, each air bubble is formed independent of each other. SOFTLON does not absorb water, has good thermal insulation properties and excellent cushioning characteristics.

Q3. What is the difference between electron cross-linking and chemical cross-linking?

A. Products that are cross-linked using electron irradiation have a smooth, flat skin layer compared to chemically cross-linked products. Electron cross-linked products also have smaller, more even cell sizes.

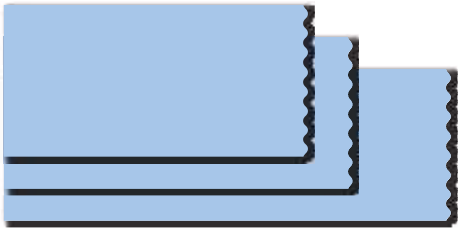
Q4. Are there any other products made from raw materials other than polyolefin?

A. Sekisui Chemical also offers a lineup of products that use special types of elastomer and/or rubber as the main material. These products perform special functions, such as vibration suppression and fluid seals.

SOFTLON can be fabricated into various shapes and sizes

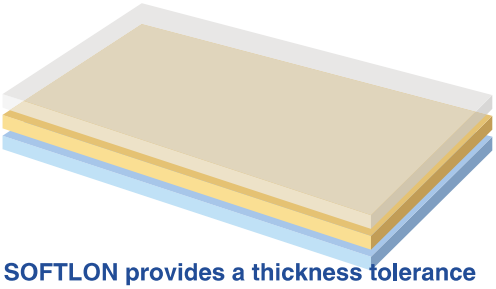
SEKISUI-SOFTLON

Cutting



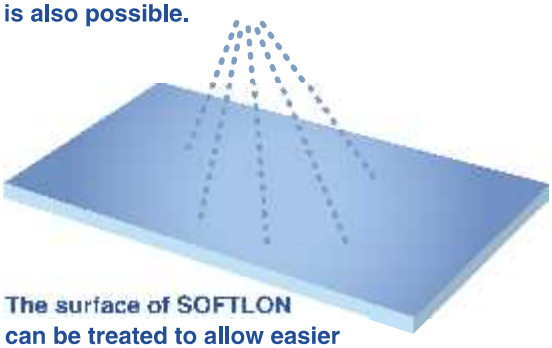
SOFTLON is easy to cut due to its softness.

Lamination
(For increasing thickness, bonding with other products, etc.)



SOFTLON provides a thickness tolerance only available with Sekisui's exclusive foams. Bonding with films and nonwoven fabrics is also possible.

Surface modification
(Corona treatment)



The surface of SOFTLON can be treated to allow easier application of adhesives.

Skiving

SOFTLON can be skived from its standard thickness.

Other processing methods are also possible. Please consult our sales representative for more information.

FAQs

About Processing

Q1. What are the other possible processing techniques?
A. Slitting, texturing (embossing, engraving), routing and moulding are possible.

Q2. What is the suitable grade for thermoforming?
A. As moulding grades, there are SOFTLON SP, SOFTLON IF, and SOFTLON NF.

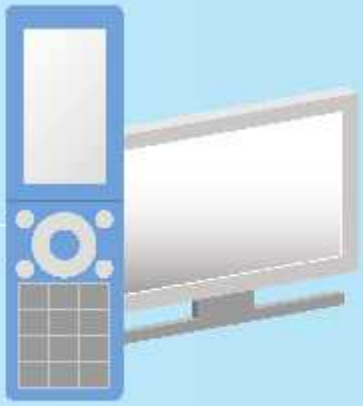
Q3. What thermoforming processes are possible?
A. Vacuum forming and heat press moulding are possible. Other heat moulding techniques include tubing, in which SOFTLON is moulded into a tube, and embossing on the surface.

Q4. What kinds of lamination are possible?
A. Any flexible material can be laminated to SOFTLON foam. For example: films, weaves, fabrics, foils or adhesives.

SOFTLON is offered in a product range suitable for various ind

Tape base / Seal material

Double-adhesive foam tape base,
Mobile phone gasket,
LCD television gasket, Cap seal, etc.



SOFTLON ES series
[Thin & High-Precision / High-Strength & Flexible]
- SOFTLON IF
- SOFTLON ES

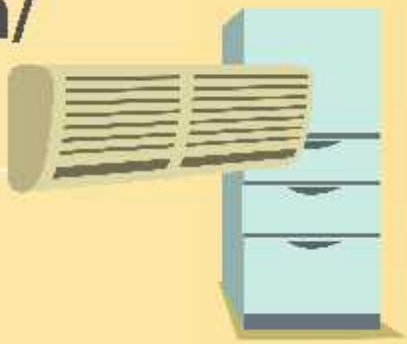
Automotive vehicle

Molded door surface lining,
Formed instrument panel lining,
Formed roof-back duct,
Rear light water seal, etc.

SOFTLON SP series
[Heat-Resistant, High-Strength / For vacuum or stamping forming]
- SOFTLON SP-VS
- SOFTLON SP-LPM

Heat insulation/ Industrial use

OEM , AC Manufacturing
Foam tapes



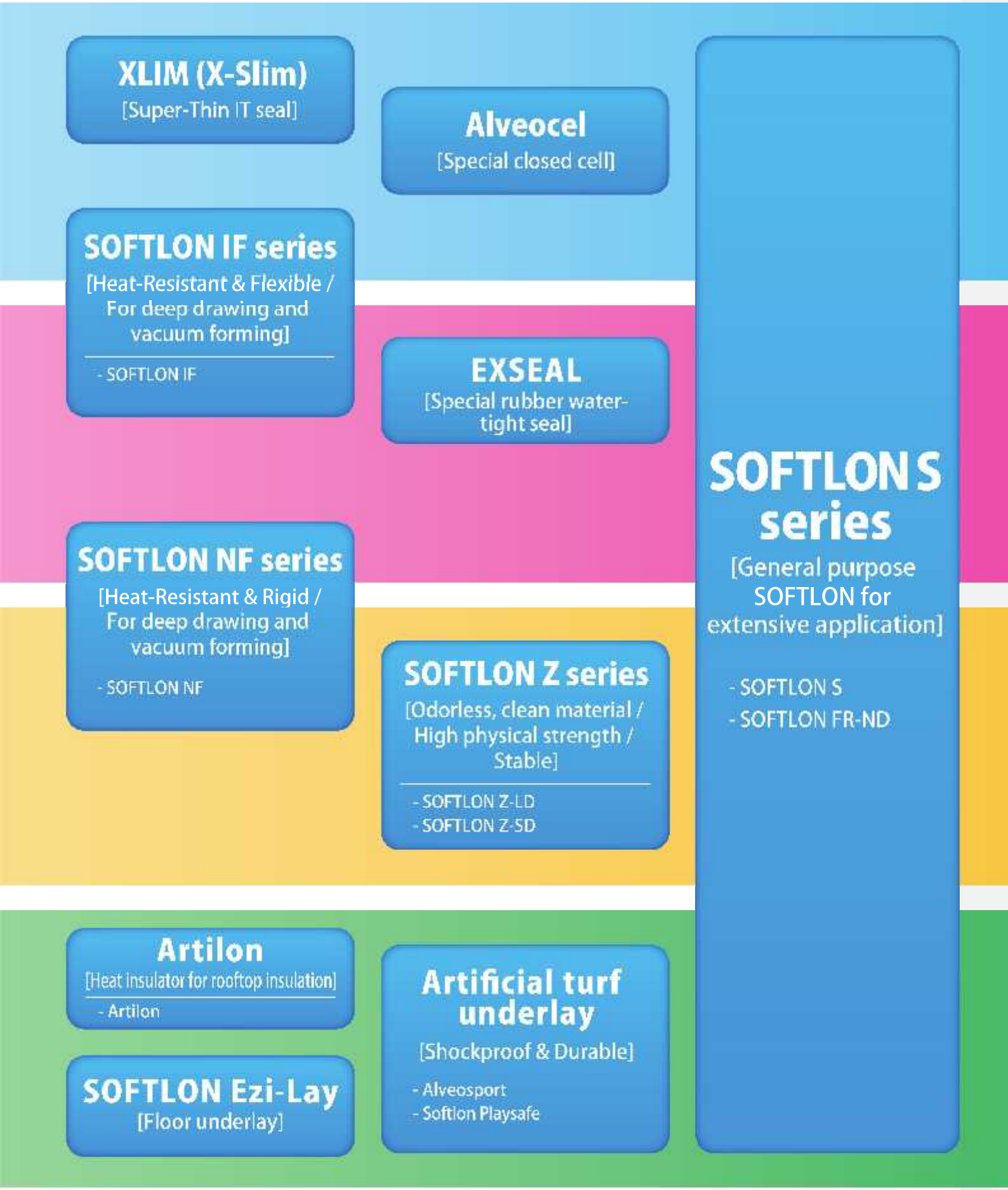
SOFTLON FRND/FR
[Fire retardant to UL94-HF1]

Housing / Construction materials

Heat insulator for metal roof,
Rooftop waterproof material,
Housing joint filler, Floor underlay,
Artificial turf underlay, etc.

Heat insulator for long metal folded-plate roof
[Roof lining]
- SOFTLON SK

dustries and applications



SOFTLON can be used in many and varying applications

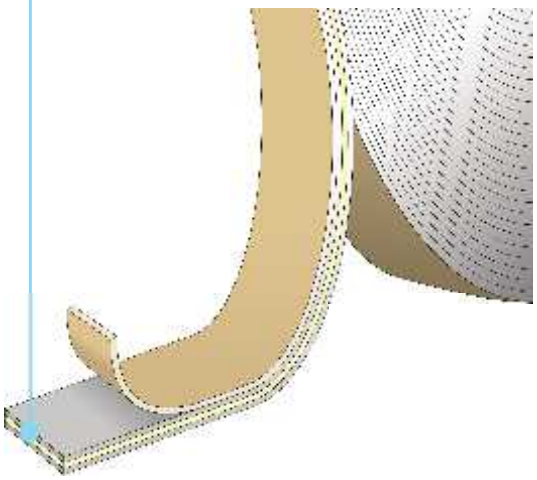
For tape bases & seals

Use 1 Double-adhesive foam tape base

SOFTLON S

SOFTLON S is a new type of foam that realises both thinness and flexibility.
Used as tape base, this series can contribute to the creation of thinner, higher-performance products and new fields.

Product name	Specifications
SOFTLON S	Thickness: 1 mm - 1.5 mm



Use 2 Cap seal

SOFTLON S, ALVEOCEL

SOFTLON S (5/10 Foam) complies with the standards provided in the Voluntary Regulations on Synthetic Resin Food Container and Packaging issued by Japan Hygienic Olefin and Styrene Plastics Association.

Product name	Specifications
SOFTLON S	Thickness: 1.5 mm - 2mm
ALVEOCEL	

Use 3 Medical Pads

SOFTLON ES

SOFTLON ES lineup is a polyethylene/EVA copolymer foam that features excellent flexibility. This allows medical pads to fit perfectly on any uneven surface.

Product name	Specifications
SOFTLON ES ES 1501.5	1.5 mm x 1000 mm

Use 4 IT seal

XLIM (X-slim)

This high-performance foam enables household appliances, including mobile phones, digital cameras, video cameras, and TV, to be made more compact as well as ensuring that the products are both water and dustproof.

Product name	Product name
XLIM	Thickness: 0.1~2 mm

For automotive vehicles

Use 1 Formed door surface lining

SOFTLON SP

This polypropylene-based foam has superior heat resistance and is customised to provide great vacuum and stamp formability.

Product name	Specifications
SOFTLON SP-VS	Thickness: 1 mm - 3 mm

Use 2 Formed roof-back duct

SOFTLON-PLUS (SOFTLON + Sheet)

SOFTLON-PLUS is significantly lighter when compared to blow-moulded products. It also features good heat insulation and formability.
Please contact us for the foam's seat combination and other specifications.

Product name	Specifications
SOFTLON SP-FR #2505+PP	Thickness: 5 mm

Use 3 Formed instrument panel surface lining

SOFTLON SP

SOFTLON SP offers grades particularly suitable for moulding edge parts for instrument panels into sharp contours.

Product name	Specifications
SOFTLON SP-VS #15025	Thickness: 2.5 mm

Use 4 Rear light water seal

EXSEAL

The fusion of Sekisui-exclusive foam technology and adhesive control technology creates this watertight seal that provides both low rebound and the ability to stop water.

Product name	Specifications
EXSEAL	Thickness: 3 mm, 4 mm, 5mm

SOFTLON has numerous applications and uses

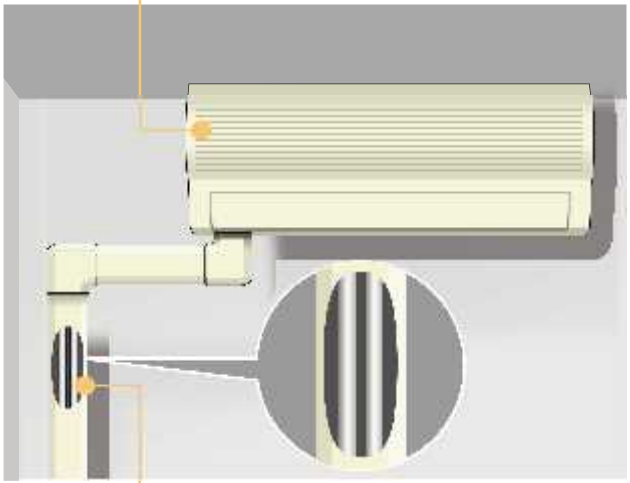
For heat insulation & industrial use

Use 1 Heat insulator in air conditioning system

SOFTLON FR-ND

SOFTLON FR-ND is flame retardant without using PBDE or PBB, materials prohibited by the Restriction of Hazardous Substances (RoHS) Directives.

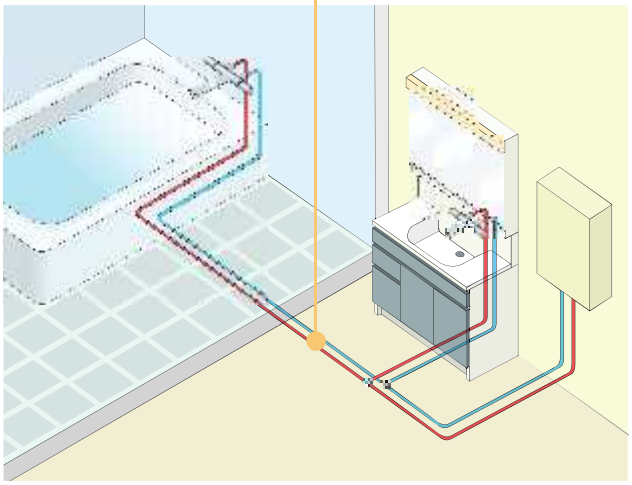
Product name	Specifications
SOFTLON FR-ND	Thickness: 2 mm - 10 mm



Use 2 Heat insulator coating resin tubes

SOFTLON PE laminated product

This heat-insulated tube is produced by heat-laminating SOFTLON with PE films (blue and red) and subsequent embossing and tubing. Weatherproofing is also available.
Please contact us for specifications.



Use 3 Heat insulated tubes for air conditioner units

SOFTLON NF

SOFTLON NF offers good heat formability. It can be made into tubes or deep-drawn through vacuum forming. Designs and patterns can be clearly embossed. Superb heat-resistance and mechanical strength.

Product name	Specifications
SOFTLON NF	Thickness: 2 mm - 10 mm Width: 1,000 mm Length: 200 m

Use 4 Anti-static buffer

SOFTLON Z

SOFTLON Z is produced through physical foaming by nitrogen impregnation. LD30SD is our customers' preferred conductive buffer for use in electronic parts where static electricity and outgassing need to be avoided.

Product name	Specifications
SOFTLON Z-LD30SD	Thickness: 35 mm Width: 1,000 mm Length: 1,900 mm