SKYTOP
Architectural Fabrics for Permanent Membrane Structures
What is Fluoropolymer Membrane

Types of Membrane Structures

**Framed Membrane Structure**
Types of framed structures that are composed of frames formed into three-dimensional shapes such as mountain-shapes, arch-shapes, etc. and membrane materials covering those frames as roofs and walls.

**Suspension Membrane Structure**
Types of structures that use suspending membrane materials as their main structural elements.

**Air-supported Structure**
Types of Structures that are supported by air fed into space totally covered with membrane materials.
Pioneer of the Membrane Structure era of Japan.

Since our foundation as a manufacturer of all kinds of fluoroplastic products, we have always made great effort to develop new products and novel technologies. Above all, our fabric products, fluoroplastic coated glass cloths, are evaluated as top products worldwide in both quality and the scale of production. We developed permanent architectural membrane materials for roofs, SKYTOP products, for the first time in our country by capitalizing on the manufacturing technologies of these fabric products. The full-fledged membrane structure age in our country began with our SKYTOP products. The safety and functionality of SKYTOP Architectural Membranes have been verified by a long history of successful projects in many countries.

Advantages of Membrane Structures

**Saving of Energy Cost**
SKYTOP products have the high reflectivity and low absorption rate of sunlight as well as small heat capacity. So, the influx of solar energy into the inside of buildings is held low.

**Comfortable Space Filled with Natural Light**
The sunlight through SKYTOP changes into naturally diffused light with faint shadows, so that you can see things in their original colors that they have outdoors. In addition, since SKYTOP let in enough amount of light to grow plants indoors, comfortable spaces with outdoor feelings can be obtained.

**Flexible Design Spreading Image**
Since membrane structures generally cover large space with membrane materials without using internal support elements, flexible design and versatile space utilization are realized.

**Everlastingly Clean Appearance**
Thanks to the anti-stick property and water repellency of fluoroplastics, dust and smudge piled up on the SKYTOP surface are washed away every time it rains. As a result, the SKYTOP surface is kept clean and white.
**Characteristics**

**Incombustibility**
SKYTOP products, which are composed of incombustible polytetrafluoroethylene resins and glass cloths properties have excellent incombustibility.

**Toughness**
In general, as the diameter of the fiber filament decreases, its tensile strength per unit area increases and its diameter of loop decreases. Since SKYTOP uses B filaments that are currently the finest glass fiber filament in the world, the sufficient strength and safety of membrane structures are ensured when the structures are composed of SKYTOP products.

**Solar Transmission**
SKYTOP is translucent, so that sufficient natural light to grow plants can be obtained inside the structures. Since the light through SKYTOP changes into naturally diffused light with faint shadows, inner space with soft feelings can also be created.

**Thermal Properties**
The original white color of SKYTOP reflects most of the solar energy, so, the influx of heat into the building is minimized. In addition, the adoption of the double-layer membrane structures, which use inner membrane materials, further improves the thermal insulation effect under air-conditioning.

**Weatherability**
As SKYTOP is fully coated with polytetrafluoroethylene resins, it is unaffected by ultraviolet light and airborne pollutants. Therefore, it is capable of maintaining the function and safety as a roof material for a long period.

**Self-cleaning Property**
The dust and airborne pollutants that are deposited on the SKYTOP surface are washed away every time it rains, so that the SKYTOP surface is kept clean everlastingly without any special cleaning.

**Sound Absorption Property**
Since Interior membrane materials have moderate flexibility and air permeability, they give excellent sound absorption property to the membrane structures. The adoption of them as inner membranes of double-layer membrane structures will enhance acoustic effects inside the structures.

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**Main Grades of SKYTOP**

- **FGT-1000**
  - For large-scale Structures
- **FGT-800**
  - For large-scale or Medium-scale Structures
- **FGT-600**
  - For Small-scale or Medium-scale Structures

**Interior Materials**

- **FGT-250 Series**
  - **FGT-250**
    - Standard Type
  - **FGT-250B**
    - High Translucency Type
  - **FGT-250A**
    - Airtight Type
  - **FGT-250D**
    - Semi High Translucency Type

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**The Structure of SKYTOP**
(Cross-sectional view)
### Structural Materials

<table>
<thead>
<tr>
<th>Items</th>
<th>Unit</th>
<th>FGT-1000</th>
<th>FGT-800</th>
<th>FGT-600</th>
<th>Test Method</th>
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<tr>
<td>Thickness (nominal)</td>
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<td>Tensile Strength (minimum)</td>
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<td>Warp</td>
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<td>2350</td>
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<tr>
<td>Tensile Strength (minimum)</td>
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<tr>
<td>Warp</td>
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<td>7000</td>
<td>5800</td>
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<td>6000</td>
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<tr>
<td>Warp</td>
<td>N</td>
<td>360</td>
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<td>200</td>
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<td>400</td>
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<tr>
<td>Tear resistance (minimum)</td>
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<tr>
<td>Warp</td>
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Nemical value of the table is a Standard value.

### Interior Materials

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<tr>
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<td>Warp</td>
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<td>18</td>
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<tr>
<td>Solar Reflectance after bleaching (nominal)</td>
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<td>78</td>
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<tr>
<td>Air Permeability (nominal)</td>
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Nemical value of the table is a Standard value.

### Obtained Certifications

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<th>FGT-1000</th>
<th>FGT-800</th>
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<td>Burning characteristics</td>
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<td>Smoke density</td>
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<td>Non-combustibility of substrates</td>
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<td>Class B1</td>
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</table>

*For other grades, please contact us.*
SKYTOP
Architectural Membrane Structures

- Shizuoka Ecopa Stadium
  Location: Shizuoka

- Komachi Stadium
  Location: Akita

- Tokyo Dome
  Location: Tokyo

- Shellcom Sendai
  Location: Miyagi

- Kawachi Sports Park Indoor Pool
  Location: Tochigi

- Nagasaki Prefectural Sport Stadium
  Location: Nagasaki

- Nelson Mandela Bay Stadium
  Location: Republic of South Africa

- Jeju World Cup Stadium
  Location: Korea

- Kokura Racecourse
  Location: Fukuoka

- Yas Marina Circuit
  Location: Abu Dhabi
Yamaguchi Prefectural Kirara Park
Location: Yamaguchi

Gotemba Fuji Exchange Facility
Location: Shizuoka

Inzai Elementary School
Location: Chiba

Motosumiyosi Station
Location: Kanagawa

Hakata Station
Location: Fukuoka

Inazawa Station
Location: Aichi

Shanghai Pudong International Airport
Location: China

Cottbus Tower
Location: Germany

Inazawa Station
Location: Aichi

Koriyama Station Taxi Stand
Location: Fukushima

Kanaya Kindergarten
Location: Fukushima

Hokkaido Technical College
Location: Hokkaido

Hakata Station
Location: Fukuoka

Pompidou Centre Metz
Location: France

Koriyama Station Taxi Stand
Location: Fukushima

Shanghai Pudong International Airport
Location: China

Pompidou Centre Metz
Location: France
Warnings

● Do not use in applications in contact with the human body such as medical care, etc.
● Dispose products in compliance with the related laws and regulations and absolutely do not incinerate them.
● Do not use the product higher than the maximum continuous service temperature.
● Carefully read the catalog, product safety data sheet (MSDS), and fluoroplastic instruction manual in order to maintain functions essential to products and use products safely.

ISO 9001 and 14001 registration
We have been registered / certified to ISO 9001 and ISO 14001 with respect to the following the scope of registration.
The Scope of the Registration
Design & Development, Production for all products, such as, the Products contained fluorocarbon plastics, the Fabrics coated with fluorocarbon resin, the Products coated with Silicone, the Products contained Biodegradable resin.

Website address: http://www.chukoh.com/