Catpad™ & Cat-tape™
Silicone Adhesive Sheets for Protecting Outdoor Tanks
Against Rainwater Penetration at the Annular Plate/Base Plate Interface
Catpad™ HNS-200

Introducing a silicone adhesive sheet that is easy to work with and provides reliable protection for preventing penetration of rainwater into outdoor storage tanks.

Our silicone adhesive sheets “Catpad HNS-200” were developed for application at the bottom of outdoor storage tanks to prevent infiltration of rainwater. They can be used for waterproofing and rustproofing the bottom plates of these tanks (United States Patent No: US 9,611,614 B2 Waterproofing Method for Outdoor Tank). This product conforms to the “Guidelines for measures for preventing infiltration of rainwater (25 Dec. 1979)” issued by the Fire and Disaster Management Agency of Japan.

Sheets are adhesive backed, which makes the work of the application more efficient!

Just press down onto the application surface, and the silicone gel adhesive will stick like gum.

**HNS-200 Features**

- **Adhesive Strength**: Adhesion test/Lap shear test/Crack-bridging test/Adhesion strength test
- **Reliability**: Weathering test/Outdoor exposure test/Salt exposure test/Chemical resistance test/Fatigue endurance test/Dielectric strength test
- **Flame resistance**: Flame resistance test/Fire resistance test
- **Cuttable**: Sheets are easy to cut on site to fit the shape of the surface being waterproofed.

**Contents**

- **Catpad**
  - Features
  - Adhesive Strength
  - Reliability
  - Flame resistance
  - Cat-tape
  - Catpad construction guide
  - Actual Example of Application
  - Handling Precautions

**Safety-Environmental properties**

- Made of silicone, so the product is highly safe and gentle to the environment.

- **Heat and cold resistant**: Sheets provide consistent performance over a wide temperature range. (−40°C to +180°C)
- **Durable and weather resistant**: Sheets are made of silicone material which is highly durable and weather resistant.
- **Waterproof**: Sheets stay airtight and waterproof over prolonged use.
- **Adhesive**: Sheets adhere well to metal, concrete and most other materials.
- **Non-corrosive**: Sheets will not cause corrosion of deterioration of metal or concrete.
- **Flame resistance**: No spread of combustion or carbonization even after being placed in direct flame of flare for 5 min.
- **Cuttable**: Sheets are easy to cut on site to fit the shape of the surface being waterproofed.
Packaging/Standard Size

Catpad

- Sheet type
  - W300 mm × L1,000 mm
  - W400mm × L1,000mm
  (Package: 10 sheets)

- Roll type
  - W50 mm × L3,000 mm (Package: 20 rolls)
  - W100 mm × L3,000 mm (Package: 10 rolls)
  - Useful if Catpad has to be applied up sides of tank.

Catpad-cloth

- Sheet type
  - W400 mm × L1,000 mm
  (Package: 10 sheets)

Structure

Catpad Cross-section (thickness: 1.8 mm)
- Base layer (silicone rubber) t: 0.8 mm
- Adhesive layer (silicone gel) t: 1.0 mm
- Separator

Catpad-cloth Cross-section (thickness: 1.5 mm)
- Base layer (Glass fiber-reinforced transparent silicone rubber sheet) t: 0.5 mm
- Adhesive layer (silicone gel) t: 1.0 mm
- Separator

General properties

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Catpad HNS-200</th>
<th>Catpad-cloth HNS-200B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features</td>
<td>General type</td>
<td>Glass fiber-reinforced type</td>
</tr>
<tr>
<td>Appearance</td>
<td>Gray</td>
<td>White transparent</td>
</tr>
<tr>
<td>Reinforcing layer</td>
<td>Non</td>
<td>Glass cloth</td>
</tr>
<tr>
<td>Standard size mm</td>
<td>Sheet type: 300 × 1,000</td>
<td>400 × 1,000</td>
</tr>
<tr>
<td>Roll type</td>
<td>50 × 3,000</td>
<td>100 × 3,000</td>
</tr>
<tr>
<td>Thickness mm</td>
<td>1.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Adhesive</td>
<td>Self-sticking</td>
<td>Self-sticking</td>
</tr>
<tr>
<td>Hardness Durometer A</td>
<td>70 (Adhesive part: Asker CSR2 &lt; 15)</td>
<td>70 (Adhesive part: Asker CSR2 &lt; 15)</td>
</tr>
<tr>
<td>Tensile strength MPa</td>
<td>8</td>
<td>70</td>
</tr>
<tr>
<td>Tear strength kN/m</td>
<td>22</td>
<td>250</td>
</tr>
<tr>
<td>Elongation at break %</td>
<td>400</td>
<td>2</td>
</tr>
<tr>
<td>Use temperatures °C</td>
<td>-40 - 180</td>
<td>-40 - 180</td>
</tr>
<tr>
<td>Dielectric breakdown voltage kV</td>
<td>30&lt;</td>
<td>20&lt;</td>
</tr>
<tr>
<td>Flame resistance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Low-molecular-weight siloxane %</td>
<td>0.64(Σ D3-D10)</td>
<td>0.64(Σ D3-D10)</td>
</tr>
</tbody>
</table>

(Not specified values)
Adhesive Strength

Adhesion test  Powerful adhesion to a variety of materials.

■ Test results
Adhesive sheet adhered firmly to all substrates used in the trial. In addition, adhesion increased a week later.

![Graph showing adhesion strength over time](image)

<table>
<thead>
<tr>
<th>Surface</th>
<th>Ra (µm)</th>
<th>Roughness of degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon steel plate</td>
<td>0.29</td>
<td>Small</td>
</tr>
<tr>
<td>Epoxy paint</td>
<td>0.40</td>
<td>Small</td>
</tr>
<tr>
<td>Stainless steel (surface-treated)</td>
<td>0.49</td>
<td>Small</td>
</tr>
<tr>
<td>FRP</td>
<td>0.50</td>
<td>Medium</td>
</tr>
<tr>
<td>Mortar</td>
<td>NA</td>
<td>Large</td>
</tr>
<tr>
<td>Asphalt</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

- Will not develop adhesion if water is squirting or seeping continuously from the adherend.
- Be sure the adherend is sufficiently dry before applying Catpad.

Test conditions
- Test pieces: Catpad HNS-200 W25 mm × L200 mm
- Substrates: Carbon steel plate, Epoxy paint, Stainless steel (surface-treated), FRP, Mortar, Asphalt
- Test method:
  - For Catpad: It adheres to each surface and is measured with the Autograph Testing Device which is made by Shimadzu Corp. after resting indoors for 20 minutes and outdoors for a week. (Test speed: 300 mm/min)
  - For Catpad-cloth: A Catpad or Catpad-cloth sample was applied to two hemi-sections of mortar, then lap shear adhesive strength was measured using an Autograph (mfd. by Shimadzu Corp.), starting from a zero-span condition. (Test speed: 50 mm/min)

Lap shear test  Able to accommodate significant movement.

■ Test results

**Catpad**

<table>
<thead>
<tr>
<th>Application surface</th>
<th>Time</th>
<th>Maximum test force N/40 mm</th>
<th>Displacement mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortar</td>
<td>After 20 min.</td>
<td>30.2</td>
<td>42.6</td>
</tr>
<tr>
<td></td>
<td>After 4 days</td>
<td>73.4</td>
<td>85.6</td>
</tr>
</tbody>
</table>

- Displacement value is that recorded at the point of maximum test force.

**Catpad-cloth**

<table>
<thead>
<tr>
<th>Application surface</th>
<th>Time</th>
<th>Maximum test force N/40 mm</th>
<th>Displacement mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortar</td>
<td>After 20 min.</td>
<td>84.0</td>
<td>53.0</td>
</tr>
<tr>
<td></td>
<td>After 4 days</td>
<td>92.0</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td>After 8 days</td>
<td>88.0</td>
<td>56.0</td>
</tr>
</tbody>
</table>

- Displacement value is that recorded at the point of maximum test force.

Test conditions
- Test pieces: Catpad HNS-200 and Catpad-cloth HNS-200B W40 mm × L60 mm
- Substrates: JIS mortar
- Test method:
  - A Catpad or Catpad-cloth sample was applied to two hemi-sections of mortar, then lap shear adhesive strength was measured using an Autograph (mfd. by Shimadzu Corp.), starting from a zero-span condition. (Test speed: 50 mm/min)
**Crack-bridging test**  Excellent crack-bridging performance.

- **Test results**
  Catpad and Catpad-cloth separated from the mortar without breaking.

### Displacement at time that maximum tensile strength was recorded

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Test pieces</th>
<th>Catpad</th>
<th>Catpad-cloth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single sheet applied</td>
<td>mm</td>
<td>40.77</td>
<td>49.85</td>
</tr>
<tr>
<td>Overlapping sheets</td>
<td>mm</td>
<td>55.55</td>
<td>44.66</td>
</tr>
</tbody>
</table>

(Not specified values)

- **Test conditions**
  - Test pieces  Catpad HNS-200 and Catpad-cloth HNS-200B
  - Substrates  Mortar based on JSCE-K 532-2013
  - Test method JSCE-K 532-2013
  Two cut mortar test pieces are butted together so there is zero span between them, then a Catpad or Catpad-cloth sample is applied to form a bridge across the surfaces. The mortar test pieces are then pulled apart horizontally at 5 mm/min, and the product is checked for breakage or separation.
  - Test body  Japan Paint Inspection and testing Association (JPIA)

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**Adhesion strength test**  Powerful adhesion even in the perpendicular direction.

- **Test results**
  The products showed excellent adhesive strength.

### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test pieces</th>
<th>Catpad</th>
<th>Catpad-cloth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion N/mm²</td>
<td></td>
<td>0.10</td>
<td>0.09</td>
</tr>
<tr>
<td>Maximum tensile load N</td>
<td></td>
<td>155</td>
<td>148</td>
</tr>
<tr>
<td>Breakage point</td>
<td></td>
<td>Broke at interface between substrate and adhesive layer</td>
<td>Cohesive failure in adhesive layer</td>
</tr>
</tbody>
</table>

(Not specified values)

- **Test conditions**
  - Test pieces  Catpad HNS-200 and Catpad-cloth HNS-200B
  - Substrates  JSCE-K 531-2013
  - Test method JSCE-K 531-2013
  A jig is fixed to the back of a Catpad or Catpad-cloth sample that is stuck to a mortar test piece. The jig is pulled up vertically at 1,500–2,000 N/min, and the maximum tensile load and adhesive strength are determined. The points of breakage and conditions of the product are also examined.
  - Test body  Japan Paint Inspection and testing Association (JPIA)
Reliability

Weathering test  Product remains elastic and in good condition even after equivalent of 17 years’ exposure.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Time</th>
<th>Initial</th>
<th>1,750 h (equivalent to 6 years)</th>
<th>5,000 h (equivalent to 17 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength N/mm²</td>
<td>8.0</td>
<td>9.7</td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td>Elongation at break %</td>
<td>400</td>
<td>350</td>
<td>280</td>
<td></td>
</tr>
<tr>
<td>Adhesion N/50 mm</td>
<td>8.2</td>
<td>10.5</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>Thickness mm</td>
<td>1.79</td>
<td>1.73</td>
<td>1.74</td>
<td></td>
</tr>
</tbody>
</table>

(Not specified values)

Test conditions
- Test pieces: Catpad HNS-200 W50 mm × L150 mm
- Substrates: Stainless steel (SUS-304)
- Test method: Place Catpad on stainless steel plate and seal the outer edges. Measured after 1,750 hours (equivalent to 6 years) and 5,000 hours (equivalent to 17 years)

Outdoor exposure test  Helps to prevent rust.

Test results
There was no damage to the sheet surface. It remained in good condition. Elongation at break decreased after 5,000 hours, however adhesion improved.

Test conditions
- Test pieces: Catpad HNS-200 100 mm square
- Substrates: Iron plate (SPCC)
- Test method: Place Catpad by hand in iron plate center, and leave for 6 months outdoor.

Salt exposure test  Product helps prevent rust caused by exposure to sea water.

Test results
Even after being left exposed for two years, the area where Catpad was applied showed no rust, whereas rust did occur around the Catpad sample.

Test conditions
- Test pieces: Catpad HNS-200 W100 mm × L100 mm
- Substrates: Iron plate (SPCC)
- Test location: Kashima, Ibaraki Prefecture
- Test method: Catpad samples were applied by hand in the center of steel plates, which were hung from a wharf just above the waterline and left for a period of two years.
Water/Saltwater/Alkali/Acid resistance tests
Almost no change in performance was observed.

Test results
There were slight changes in hardness and tensile strength, but changes in weight were minimal, and almost no absorption was observed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Initial</th>
<th>Water</th>
<th>5% salt water</th>
<th>5% caustic soda</th>
<th>12% hydrochloric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>—</td>
<td>No change</td>
<td>No change</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Change in hardness</td>
<td>Point</td>
<td>-7</td>
<td>-7</td>
<td>-15</td>
<td>-6</td>
</tr>
<tr>
<td>Change in tensile strength</td>
<td>%</td>
<td>8.0 MPa</td>
<td>+7</td>
<td>+10</td>
<td>-19</td>
</tr>
<tr>
<td>Weight change</td>
<td>%</td>
<td>—</td>
<td>±0</td>
<td>+0.5</td>
<td>-0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+0.5</td>
</tr>
</tbody>
</table>

Test conditions
- **Test pieces**: Catpad HNS-200 based on JIS K 6249
- **Test method**: Samples of the base material of Catpad were immersed for 1 week in water, 5% salt water, 5% caustic soda, and 12% sulfuric acid. The samples were then removed and their physical properties were tested within 15 minutes of removal, in accordance with JIS-K 6249.

Fatigue endurance test
Stands up to vibration over long periods.

Test results
Product showed exceptional fatigue resistance, with no failure or slippage over 20,000,000 cycles.

Test conditions
- **Test pieces**: Catpad HNS-200 and Catpad-cloth HNS-200B
  - W20 mm × L60 mm
- **Substrates**: JIS mortar
- **Test method**: A JIS mortar test piece (W50 mm × L150 mm, T10 mm) is cut in half longitudinally, then Catpad or Catpad-cloth is applied such that it bridges the two pieces. Samples were placed on a fatigue endurance tester and the two blocks were pulled apart from a zero-span position to create a 1.5 mm gap from top to bottom. The blocks were then moved 1.0 mm up and down from the starting point (amplitude: 2.0 mm) at a frequency of 10 Hz for 20 million cycles, and the samples were checked for fatigue failure, slippage, and separation.

Dielectric strength test
Product shows excellent dielectric properties and is electrically stable.

Test results

<table>
<thead>
<tr>
<th>Test pieces</th>
<th>Dielectric breakdown voltage kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catpad</td>
<td>33.6</td>
</tr>
<tr>
<td>Catpad-cloth</td>
<td>26.1</td>
</tr>
</tbody>
</table>

Test conditions
- **Test pieces**: Catpad HNS-200 or Catpad-cloth HNS-200B
  - (100 mm square)
- **Test method**: (1) A Catpad or Catpad-cloth sample is stuck to an aluminum sheet.
  (2) The sheet is sandwiched between two electrodes (High voltage side: 20 mm (DIA) ball electrode; Low voltage side: aluminum plate electrode). The sample is placed in insulating oil, and the voltage is increased at a rate of 2.0 kV/sec (AC 50 Hz) to determine the applied voltage at which dielectric breakdown occurs.
- **Test body**: Analysis Center, Hitachi Chemical Techno Service Co., LTD.
Flame resistance test  Combustion does not spread even when product is in direct contact with the flame of a flare.

Test progression and results

Flare ignition
The flare is ignited and the flame is pressed against the sheet.

After 2 minutes
The sheet burns where it is in contact with the flare, but combustion has not spread even after 2 minutes.

After 4 minutes
There is deformation of the sheet near the part that is in contact with the flare, but combustion has not spread even after 4 minutes.

After 5 minutes 40 seconds
Flare stops burning.

Appearance of sample after completion of flame resistance test

The product shows exceptional fire resistance.

Test conditions
- Test pieces: Catpad-cloth HNS-200 W900 mm × L600 mm
- Test method: NEXCO test method
  1. Tested in accordance with test method 738-2011 (Spread of combustion of tunnel retention materials).
  2. Heating time is 10 minutes, and the gas used is LPG.

Fire resistance test  The product shows exceptional fire resistance.

Test progression and results

Before ignition

Right after start of combustion

After 7 minutes

After combustion ends

The area in direct contact with the flame has been incinerated, but combustion did not spread. This is evidence of the product's exceptional flame resistance.

Test conditions
- Test pieces: Catpad HNS-200 W300 mm × L500 mm
- Test method
  1. Two test blocks (W360 mm × H600 mm, T50 mm) are positioned side by side and separated by a 50 mm gap.
  2. The mortar surface is painted with a urethane paint.
  3. Catpad is applied so as to bridge the gap between the blocks, and the edges are sealed with Sealant Master 300-G.
  4. The flare is ignited, and the flame is brought in contact with the sample where it spans the gap.
  5. The condition of the sample is observed for the 5 minutes (approx.) it takes for the flare to burn out.

Appearance of sample after completion of flame resistance test

Front  Back (magnified)
Cat-tape™
Silicone adhesive tape for finishing of edges and overlapping sections of Catpad sheets.

Cat-tape cures and bonds in 24 hours after application, and bonds strongly to both Catpad sheets and mortar foundation surfaces.
Can also be used to fill gaps, due to its putty-like consistency.
Less waste, which is better for the environment.

Packaging/Standard product size

● Packaging
10 bags per package
(Each roll comes in an aluminum moisture-proof pack)

● Standard product size
Cat-tape
W25 mm × L3,000 mm
Comes with a pink separator film on one side. Pull off the separator film after applying the product to the substrate.

General properties

● Before curing (consistency of silicone putty)

<table>
<thead>
<tr>
<th>Color</th>
<th>Separator film</th>
<th>Pink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape</td>
<td>Light gray</td>
<td></td>
</tr>
</tbody>
</table>

● After curing (silicone rubber)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Conditions</th>
<th>Curing time</th>
<th>Measured value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness</td>
<td>23°C/50%RH</td>
<td>8 days</td>
<td>45</td>
<td>JIS K 6249, A type</td>
</tr>
<tr>
<td>Physical properties</td>
<td></td>
<td></td>
<td>5.4 MPa</td>
<td>JIS K 6249</td>
</tr>
<tr>
<td>Tensile strength</td>
<td></td>
<td></td>
<td>730%</td>
<td>JIS K 6249</td>
</tr>
<tr>
<td>Elongation</td>
<td></td>
<td></td>
<td>16 kN/m</td>
<td>JIS K 6249, Angle type</td>
</tr>
<tr>
<td>Shear strength</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On mortar</td>
<td>23°C/50%RH</td>
<td>8 days</td>
<td>22 N</td>
<td>Pulled off in 180° direction, tape width: 10 mm</td>
</tr>
<tr>
<td>Adhesion</td>
<td></td>
<td></td>
<td>17 N</td>
<td>Pulled off in 180° direction, tape width: 10 mm</td>
</tr>
<tr>
<td>On Catpad</td>
<td>23°C/50%RH</td>
<td>8 days</td>
<td>47 N</td>
<td>Pulled off in 180° direction, tape width: 10 mm</td>
</tr>
<tr>
<td>On Cat-tape</td>
<td>23°C/50%RH</td>
<td>12 days</td>
<td>65 N</td>
<td>Pulled off in 180° direction, tape width: 10 mm</td>
</tr>
<tr>
<td>(Not specified values)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Construction example using Cat-tape

- Sealing of overlapping sheets of Catpad on outdoor tanks

Shin-Etsu Silicone S COAT-57 has been used to eliminate low spots.

- Waterproofing of the bases of anchor bolt shafts & tops of boxes around outdoor tanks.

Advantage: Cat-tape is easier to work with than silicone sealants, and creates a finished look.

- Adhesion and sealing of joints between sheets applied to walls of underground water tanks for firefighting.

Advantage: Sealing of edges of sheets and butt joints between sheets is easy, and construction took less time.

- Bonding and sealing of edges of Catpad sheets applied to metal cover around bottom of outdoor tank to prevent corrosion.

Advantage: Construction of a large outdoor tank (diameter: 60 m) took less time.
Catpad construction guide

Sectional diagram of standard construction scheme

■ If covering the level surface of the foundation only:

■ If covering a portion of the tank wall:

Silicone Sponge is set:
It is useful to use that using Silicone Sponge® back-up and Sealant Master 300-G instead of mortar to fill the gaps between the annular plate and the base plate. In this case, all materials are made of silicone rubber, so that annular plate movements can be absorbed by soft materials.

For Silicone Sponge, please contact our sales division.

Potential problems with Catpad after construction

Wrinkles
Because Catpad is a thin, high-strength rubber sheet, tank movement after construction may cause bulging or wrinkles in some spots. This does not, however, affect the product's ability to prevent infiltration of rainwater.

Pulling up around the outside edges
On fragile asphalt foundations, if the outer edges of Catpad sheets are sealed, the force of the sheets’ being pulled toward the inner side may cause cracking of the foundation at the edges. If this occurs, the outermost edges should be left unsealed. Catpad accommodates movement in the sideways direction (See Lap shear adhesive strength on p.4).

Test results
Silicone sponge samples were subjected to different sets of conditions for 1,000 hours, then removed from the chamber. After 30 minutes, the weight changes of the samples were measured.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Change in weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>at room temperature water</td>
<td>&lt; ±1%</td>
</tr>
<tr>
<td>at 50°C water</td>
<td>&lt; ±1%</td>
</tr>
<tr>
<td>at 85°C and 85% humidity</td>
<td>&lt; ±1%</td>
</tr>
</tbody>
</table>

The silicone sponge material is a closed-cell foam, so it absorbs almost no water.
Construction examples

Catpad used in construction of 60 m diameter tank  Shintech Louisiana, LLC (USA)

Actual “Catpad” Application  Slope created using silicone sponge backup and Sealant Master 300-G
(See Construction Guide on p.11)

Finished view after construction

Foundation is mortar, so edges have been sealed using Sealant Master 300-G.
Catpad and Sealant Master 300-G used on a mortar foundation for smaller tanks.

The height of the sealant at the outer edge is low, to prevent water from pooling on top of the Catpad sheets.

Catpad applied such that it covers part of the tank wall.

Installation in which the outer edge is left unsealed.
Catpad, Catpad-cloth and Cat-tape used to protect metal cover against corrosion.

Installation in which Catpad partly covers the wall of the foundation for a small tank.

Catpad remains flexible even at below-freezing temperatures.
Uses that do not involve tanks

**Repair of a concrete drainageway inside a plant building.**
This was done to prevent pollutants from leaking into the ground, aimed at compliance with the revised Water Pollution Prevention Act (enacted in 2015).

**Repair of flat roof to stop leaks.**

**Catpad used to prevent leaks on a different type of roof.**

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Handling precautions

1. **It is necessary to refer to the construction guide.**
2. If it's cold and the separator film is hard to remove, warming up the product can help.
3. Take care to prevent contact with solvent and oils, as these substances may degrade the physical properties of the sheets.
4. If sheets tear or come up after construction, these sections can be repaired
   using Catpad and Cat-tape or Catpad and Sealant Master 300-G.
5. After application, do not place heavy or sharp objects on top of the sheets.
   After construction, the sheet should not be subjected to strong impacts or walked on.
6. Take care to apply silicone sealant correctly. If the sheets are not bonded properly with silicone sealant, water can get in.
7. After construction, bulges may occur because of air trapped between the sheet and the foundation below.
8. This product is not a low-molecular-weight siloxane reduction type. Do not use it for electronic applications.
9. **Do not place this product directly in contact with food and beverage.**
10. After removal, the product can be disposed of with regular waste materials. (Product turns to SiO2 when burned.)
12. Please read the Safety Data Sheet (SDS) before use. SDS can be obtained from our Sales Department.
Silicone Division Sales and Marketing Department

6-1, Otemachi 2-chome, Chiyoda-ku, Tokyo, Japan
Phone : +81-(0)3-3246-5101 Fax : +81-(0)3-3246-5364

Shin-Etsu Silicones of America, Inc.
1150 Damar Drive, Akron, OH 44305, U.S.A.
Phone : +1-330-630-9860 Fax : +1-330-630-9855

Shin-Etsu Silicone Taiwan Co., Ltd.
Hung Kuo Bldg. 11F-D, No. 167, Tun Hua N. Rd., Taipei, 10549 Taiwan, R.O.C.
Phone : +886-(0)2-2715-0055 Fax : +886-(0)2-2715-0066

Shin-Etsu Silicone Korea Co., Ltd.
GT Tower 15F, 411, Seocho-daero, Seocho-gu, Seoul 06615, Korea
Phone : +82-(0)2-590-2500 Fax : +82-(0)2-590-2501

Shin-Etsu Silicone Korea Co., Ltd.
4 Shenton Way, #10-03/06, SGX Centre II, Singapore 068807
Phone : +65-6743-7277 Fax : +65-6743-7477

Shin-Etsu Silicones India Pvt. Ltd.
Flat No.712, 7th Floor, 24 Ashoka Estate, Barakhamba Road, New Delhi 110001, India
Phone : +91-11-43623081 Fax : +91-11-43623084

Shin-Etsu Silicones (Thailand) Ltd.
7th Floor, Harindhorn Tower, 54 North Sathorn Road, Bangkok 10500, Thailand
Phone : +66-(0)2-632-2941 Fax : +66-(0)2-632-2945

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Users are solely responsible for making preliminary tests to determine the suitability of products for their intended use. Statements concerning possible or suggested uses made herein may not be relied upon, or be construed, as a guaranty of no patent infringement.

The silicone products described herein have been designed, manufactured and developed solely for general industrial use only; such silicone products are not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of the silicone products described herein for any application, to make preliminary tests, and to confirm the safety of such products for their use.

Users must never use the silicone products described herein for the purpose of implantation into the human body and/or injection into humans.

Shin-Etsu Silicones are based on the following registered international quality and environmental management standards.

Gunma Complex
ISO 9001 ISO 14001 (JCQA-0004 JCQA-E-0002)

Naoetsu Plant
ISO 9001 ISO 14001 (JCQA-0018 JCQA-E-0064)

Takefu Plant
ISO 9001 ISO 14001 (JCQA-0419 JCQA-E-0428)

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