**Adwill Testing Method**

1. **Total thickness**

   Using micrometer (1/1000mm), tape thickness shall be measured at a point 100mm from the tape edge and repeated at 200mm intervals in the mother (master) roll width direction.

   The releasing film thickness shall be subtracted from the mean values of the measured point. The result shall be regarded as the total thickness of tape.

   **JIS Z 0237**

2. **Tape strength**

   2-1. **Testing machine**

   The "Tension" or a universal tensile testing machine made by OLIENTEC Corporation or the equivalent shall be used.

   **JIS B 7721**

   2-2. **Specimen**

   Cutting shall be started 1m from the end of the tape roll in the tape machine direction and three specimens 15mm wide and 150 to 200mm long shall be prepared.

   **JIS Z 0237**

   2-3. **Testing method**
The specimen shall be left under conditions of 23±2°C and 65±5% RH for an hour or more. The specimen shall then be properly secured to the tensile test machine with a clamping interval of 100mm. The pulling speed shall be 200mm/min. The tensile loads when elongation is 25% (5%), when the specimen breaks, and the clamping interval shall be measured. The resultant values shall be the mean of the respective measurements of three specimens.

**JIS Z 0237**

2-4. Measured values

- **25% strength (kg/cm)=** Tensile load (kg) when the elongation is 25% / Width (cm)
- **Tensile strength (kg/cm²)=** Tensile rupture load (kg) / (Thickness (cm) x Width (cm))
  (Rupture stress)
- **Elongation (%)=** [(Clamping interval when the specimen breaks (mm) – Clamping interval (100mm)) / Clamping interval (100mm)] x 100

**JIS Z 0237**

3. Adhesive strength

3-1. Testing machine

- Shall comply with section 2-1

3-2. Specimen

- Similar to section 2-2, eight specimens 25mm wide and 200mm long shall be cut in the
3-3. Compressive treatment of specimen

In ambient conditions 23+/−2°C and 65+/-5% RH, the specimen shall be attached to a stainless steel plate (SUS 304, #1200 mirror finish) 75mm wide and 150mm long. The specimen shall be compressed with a rubber roller with 2kg load (Rubber hardness: 75 to 85 deg.). The stainless steel plate shall be washed using toluene solvent and dried completely prior to use.

**JIS Z 0237**

3-4. UV irradiation method

The compressed specimen shall be irradiated with UV using RAD-2000m/6 UV irradiation unit (made by LINTEC) under the conditions below.

- High pressure mercury lamp: Air cooling type 1 lamp
- Output: 60 W/cm
- Lamp irradiation time: 5 seconds
- Irradiation distance: 50 mm

**LINTEC Standard**

3-5. Measurement of adhesive strength

The specimen treated under conditions 23+/−2°C and 65+/-5% RH shall be secured to the tensile testing machine and the tape shall be peeled at a speed of 300 mm/min at 180deg. to the stainless steel plate. The strength when peeled shall be regarded as adhesive strength and given by the mean value of the four measured specimens.

Adhesive strength (before UV irradiation) shall be the value measured 20 minutes after compression.

(For adhesive strength after UV irradiation, UV ray shall be irradiated under the specified conditions 20 minutes after compression. The value measured 10 minutes after UV irradiation shall be regarded as the post irradiation adhesive strength.)

**JIS Z 0237**
4. Holding power

4-1. Testing machine

"Creep tester ND-100S" Made by Nitto Rika Industry Corporation

4-2. Specimen

Similar to section 2-2, five specimens 25mm wide and 100mm long

Shall be cut in the tape machine.

4-3. Compressive treatment of specimen
In ambient conditions 23±/-2 C and 65±/-5% RH, the specimen shall be attached to a stainless steel plate (SUS 304, #1200) 30mm wide and 100mm long (attaching area: 25X25mm). The specimen shall be compressed with a rubber roller with a 2kg load (rubber hardness: 75 to 85 deg.). The stainless steel plate shall be washed using toluene solvent and dried completely prior to use.

<table>
<thead>
<tr>
<th>4-4. Measurement of holding power</th>
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<tr>
<td>The specimen treated under conditions of 40C and the specimen shall be loaded 1kg. The time(sec.) when tape came off shall be regarded as holding power and given by the mean value of the five measured specimens. When the tape didn't come off though it was measured until 70000sec, it shall be specified the distance of the creep.</td>
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<th>5. Other test for tape properties</th>
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<tr>
<td>5-1. Ball tack</td>
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<tr>
<td>The specimen treated under condition of 23±/-2 C and 65±/-5% RH shall be placed on the end of the test slope (adhesive side up). The stainless steel ball (3/32 or 5/32 inch diameter) is rolled on the slope from 25mm height. When the stainless steel ball is</td>
</tr>
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</table>
stopped on the specimen, the distance between the ball and the end of the slope shall be regarded as ball tack value (n=5).

5-2. Picking up force

The pick up strength shall be measured by a Push-Pull Gauge after the specimen shall be prepared under the various conditions (each client's condition).

Depending on wafer condition, dicing condition, expansion, etc..