Double-coated adhesive tape

No.5000ND

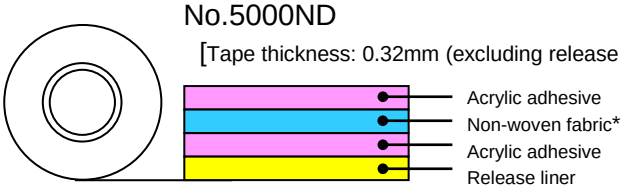
Outline

No. 5000ND is a double-coated adhesive tape consisting of acrylic adhesive that is applicable to a wide variety of substrates. Thickness of No.5000ND is much higher than current products, so No. 5000ND has high adhesion property even though a light load application to several substrate including rough face substrate. In addition to these properties, because the substrate of No.5000ND is a strong non-woven fabric, you can easily release it with little tape residue, reworking several materials on constructing process.

Structure

No.5000ND

[Tape thickness: 0.32mm (excluding release liner)]



* "Non-woven fabric" is classified under a law called Customs Act of Fixed Rate Chapter 48 "Paper and paperboard; articles of paper pulp, of paper or of paperboard".

Features

- high adhesion property even though a light load application to several substrate including rough face
- Leaves minimal adhesive residue; can be re-worked.
- Offers wide range of usage and service temperatures as well as superior repulsion properties.
- 10 restricted substances by RoHS are not contained.

Applications

- Bonding of metal plates, plastic plates and foam
- Bonding of cushioning and sealing materials in:
  Printers, Copiers, Televisions, Other office equipment and home appliances.
- Applications requiring re-peeling

Sizes

Tape thickness (mm)	Width (mm)	Length (M)
0.32	5 - 1, 200	50

For details contact the department in charge of the product in question.

Properties

- Re-peeling properties

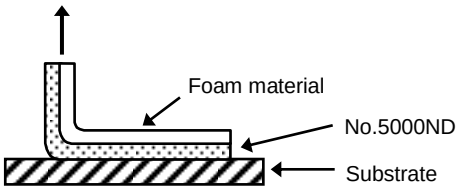
Substrate	No.5000ND	
	Peeling properties	Adhesive residue
Stainless steel plate	○	○
Aluminum plate	○	○
PCABS plate	○	○
ABS plate	○	○

Peeling properties
○: Peels without tearing
×: Tears when peeled

Adhesive residue
○: No adhesive residue
△: Some adhesive residue
×: Large amount of adhesive residue

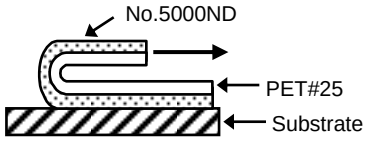
[Peeling properties test method]

Lining material: 5-mm thick urethane foam
Tape width: 3 mm
Curing condition: 60degreeC/90%RH x 15 days
Peeling speed: 300 mm/min
Peeling angle: 90 degree



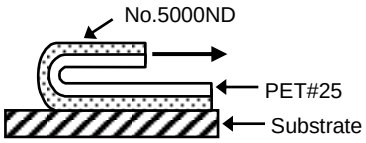
[Adhesive residue test method]

Tape area: 20 mm
Lining material: PET #25
Curing condition: 60degreeC/90%RH x 15 days
Peeling speed: 300 mm/min
Peeling angle: 180 degree



- 180 degree peeling adhesive strength for each substrate

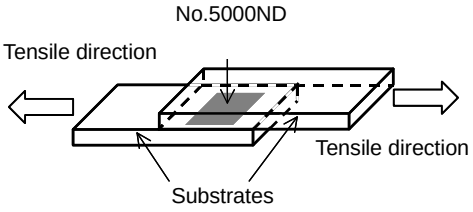
Substrate	No.5000ND
Stainless steel plate	17.0
Aluminum plate	17.0
Polypropylene plate	14.5
ABS plate	15.5
Acrylic plate	16.0
PCABS plate	15.5
Polystyrene plate	16.0
Polycarbonate plate	17.0
PET plate	17.0
Glass plate	17.0
HIPS plate	17.0
Foam (ester)	15.0
Foam (ether)	10.0



(Unit: N/20mm)
Sample width: 20 mm
Backing material: PET#25
Application condition:
1 pass back and forth with a 2kg roller
Bonding temperature: 23degreeC/50%RH
Curing condition: 23degreeC/50%RH x 30 min
Peeling speed: 300 mm/min
Peeling angle: 180degree
Measurement temperature: 23degreeC/50%RH

- Shearing adhesive strength for each substrate

Substrate	No.5000ND
Stainless steel plate	400
Aluminum plate	400
Polypropylene plate	400
ABS plate	400
Acrylic plate	400
PCABS plate	400
Polystyrene plate	400
Polycarbonate plate	400
PET plate	400
Glass plate	350



(Unit: N/20mmx20mm)
Sample: 20mm x 20mm
Pressure condition: 49N load x 10 sec
Bonding temperature: 23degreeC/50%RH
Curing condition: 23degreeC/50%RH x 30 min
Measurement condition: 23degreeC/50% RH
Peeling speed: 50 mm/min

- 180 degree peeling adhesive strength for each temperature

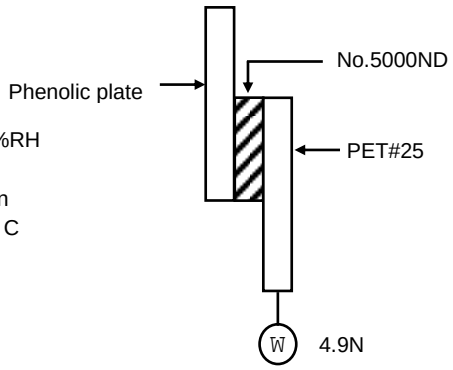
Substrate	Temperature	No.5000ND
Stainless steel plate	0degreeC	20.0
	23degreeC	17.0
	40degreeC	15.0
	60degreeC	14.0
	80degreeC	13.0

(Unit: N/20mm)
Substrate: Stainless steel plate
Sample width: 20 mm
Backing material: PET#25
Application condition:
1 pass back and forth with a 2 kg roller
Bonding temperature: 23degreeC/50%RH
Curing condition:
Measurement temperature x 30 min
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature:
0, 23, 40, 60, 80 degree C

- Holding power

Temperature	No.5000ND
23degreeC	1.0

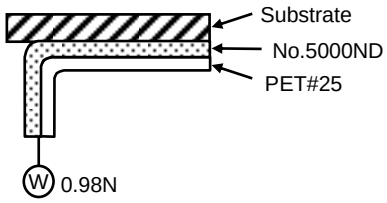
(Unit: mm/hr)
Substrate: Phenolic plate
Bonding temperature: 23degreeC/50%RH
Curing condition:
Measurement temperature x 30min
Measurement temperature: 23degree C
Application area: 20mm x 10mm
Load: 4.9N(500g)
Loading time: 1 hr



- Static load peeling

Substrate	No.5000ND
Stainless steel plate	1.5
Polypropylene plate	1.5
ABS plate	1.5
Polystyrene plate	2.0

(Unit: mm)
Sample width: 20 mm
Backing material: PET#25
Application condition:
1 pass back and forth with a 2 kg roller
Bonding temperature: 23degree C/50%RH
Curing condition: 23degree C/50%RH x 24 hrs
Measurement temperature: 23degreeC/50%RH
Loading time: 24 hrs



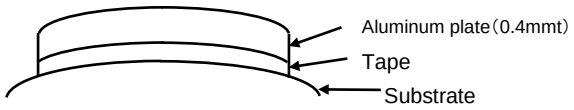
- Tape strength

No.5000ND	
MD	17.5
TD	17.5

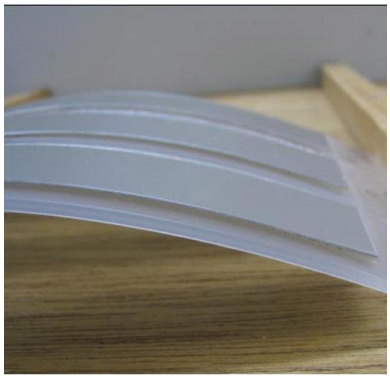
(Unit: N/10mm)
Tape width: 10mm
Peeling speed: 100 mm/min
Tape length: 100mm
Measurement temperature: 23degreeC / 50%RH

- Repulsion test

Substrate	No.5000ND
Polypropylene plate	<1.0
ABS plate	<1.0
Polystyrene plate	<1.0



(Unit：mm/72Hr)
Tape area：20mm x 180mm
Substrate size：30mm x 200mm
Condition：Winding substrate with tape within190mm length
Method：Measuring distance between tape and substrate
on edge position after 70degreeCx72Hrs

Polypropylene plate	ABS plate	Polystyrene plate
		

- 180 degree peeling strength

  -Curing under each environment after application (Durability)

Conditions		No.5000ND
Initial (23degreeC/50%RH x 30 min)		17.0
- 30 degree C x 30 days		20.0
80 degree C	1 day	27.0
	7 days	29.0
	14 days	31.0
	30 days	33.0
40 degree C /92%RH	14 days	23.0
	30 days	24.0
60 degree C /90%RH	14 days	24.0
	30 days	25.0
Heat shock [100 cycles]*1		35.0
Heat cycle [100 cycles]*2		20.0

(Unit: N/20mm)
Substrate: Stainless steel plate
Sample width: 20mm
Backing material: PET#25
Application condition:
1 pass back and forth with a 2 kg roller
Bonding temperature: 23degree C/50%RH
Curing condition: See the left table
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature: 23degreeC/50%RH

*1: Heat shock condition
[-40degreeC x 30min⇔90degreeC x 30min]
x 100cycles
*2: Heat cycle condition
[-20degreeC x 6hrs=>(1hr)=>
60degreeC/95%RH x 6hrs=>(1hr) =>] x 100 cycles

- 180 degree peeling strength - Aging after application

Aging after application	No.5000ND
1 min later	15.0
30 min (Initial) later	17.0
24 hr later	18.0
48 hrs later	20.0
72 hrs later	20.5
168 hrs later	21.5

(Unit: N/20mm)
Substrate: Stainless steel plate
Sample width: 20mm
Backing material: PET#25
Application condition:
1 pass back and forth with a 2 kg roller
Bonding temperature: 23degreeC/50%RH
Curing condition: 23degreeC/50%RH x
1min, 30min, 24hr, 48hrs, 72hrs, 168hrs
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature: 23degreeC/50%RH

- 180° peeling strength for each application pressure

Application	No.5000ND
0.1 kg roller	16.5
0.5 kg roller	16.7
2 kg roller	17.0
5 kg roller	18.0

(Unit: N/20mm)
Substrate: Stainless steel plate
Backing material: PET#25
Application condition:
1 pass back and forth with a 0.1 kg, 0.5 kg,
2 kg, 5 kg roller,
Bonding temperature: 23degreeC/50%RH
Curing condition: 23degreeC/50%RH x 30 min
Peeling speed: 300 mm/min
Peeling angle: 180degree
Measurement temperature: 23degreeC/50%RH

Precautions when using

- Remove all oil, moisture and dirt from the surface of the substrate before applying.
- Since the tape is pressure-sensitive adhesive, be sure to apply enough pressure with a roller or press when applying. Otherwise it might be affected to its properties and appearance.
- The tape may not adhere well to extremely uneven or distorted surfaces. Enough Leveling off the surface should be required before applying.
- It takes certain time to get full adhesive strength after applying, keep away the tape from any stress for a several hours after applying.

Precautions when storing

- Please be sure to keep the tape in its box when not using.
- Please keep in a cool and dark place away from direct sunlight.

Safety precautions

⚠ WARNING

- Make sure the product is suitable for the application (objective and conditions) before attempting to use. The tape may come off depending on the substrate to which it is applied or conditions under which it is applied.
- Use in combination with another method of joining if there is possibility of an accident.

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