

## Recommended method for rework

- ① Use of peeling agent (solvent)
- ② Use of rework equipment
- ③ Use of warming appliances
  - Hot plate etc.
  - Hair dryer

## Rework Recommended Condition Verification Method

Objective: Verification of effects by warming effect and peeling agent

- ① Put it on a PC / tape / glass with a size of 4 cm x 6 cm.
- ② Press back and forth twice with a 2 kg roll.
- ③ Leave to alcohol (95 vol%) and each temperature condition.
- ④

Remove from the temperature atmosphere (10 seconds) Set as shown in Fig.1 to the instrument.

Measure the peeling load at a pulling rate of 50 mm / min.

- ⑤

Calculate the reparability improvement ratio of each temperature condition and normal temperature (25 °C) from the above test method.

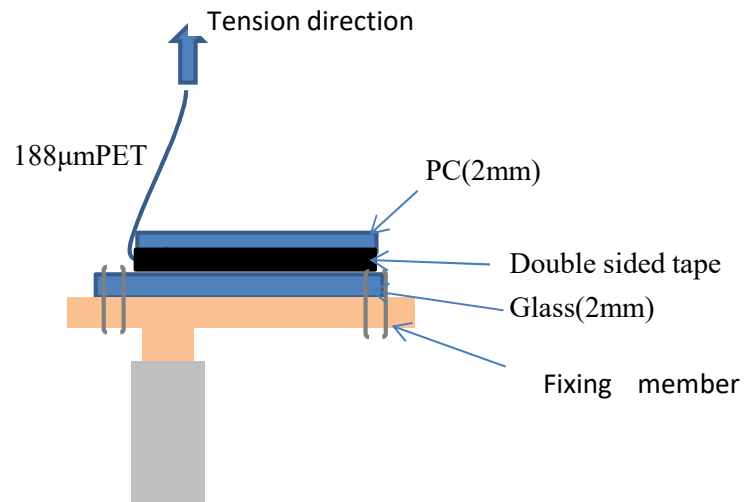


Fig.1 Peeling tool

# Test result

## Effect by temperature condition

Temperature condition	N	Peeling force(N)	Improvement rate(%)
-10°C	1	49.7	18.3
	2	41.0	32.6
	3	42.2	30.6
	Ave.	44.3	27.1
25°C	1	54.5	0.0
	2	66.5	
	3	63.8	
	Ave.	61.6	
40°C	1	41.8	31.3
	2	40.8	32.9
	3	42.3	30.4
	Ave.	41.6	31.5
60°C	1	34.5	43.3
	2	32.0	47.4
	3	35.2	42.1
	Ave.	33.9	44.2

## Effect by peeling agent

Peeling agent	N	Peeling force(N)	Improvement rate(%)
Blank	1	54.5	0.0
	2	66.5	
	3	61.5	
	Ave.	60.8	
Alcohol	1	21.9	64.0
	2	24.0	60.5
	3	23.4	61.5
	Ave.	23.1	62.0
Hyper	1	42.6	29.9
	2	47.4	22.0
	3	45.6	25.0
	Ave.	45.2	25.7

Reworkability tends to improve by peeling off with alcohol in a high temperature atmosphere.

# Test result

## Contact time: 20 seconds

The test result is load [N]

Body temperature (20 seconds)	N	Alcohol temperature (20 seconds)		Improvement rate(%)	
		25°C	60°C	25°C	60°C
25°C	1	21.9	28.3	64.0	53.5
	2	24.0	33.9	60.5	44.2
	3	23.5	27.1	61.3	55.4
	ave	23.1	29.8	62.0	51.0
60°C	1	37.8	45.0	37.8	26.0
	2	50.4	39.0	17.1	35.9
	3	42.3	41.1	30.4	32.4
	ave	43.5	41.7	28.5	31.4

## Contact time: 50 seconds

The test result is load [N]

Body temperature (20 seconds)	N	Alcohol temperature (20 seconds)		Improvement rate(%)	
		25°C	60°C	25°C	60°C
25°C	1	29.1	22.8	52.1	62.5
	2	36.0	27.9	40.8	54.1
	3	26.5	27.2	56.4	55.3
	ave	30.5	26.0	49.8	57.3
60°C	1	9.7	7.6	84.0	87.5
	2	11.0	9.3	81.9	84.7
	3	9.9	8.4	83.7	86.2
	ave	10.2	8.4	83.2	86.1

- It is better to have longer contact time.
- Contact time is more effective than temperature.

## Contribution rate of each condition on rework

### ➤Factor

- ① Peeling agent
- ② Alcohol temperature
- ③ Alcohol contact time
- ④ main body temperature

### ➤Contribution rate [%]

**Peeling agent: alcohol temperature: contact time: main body temperature**  
**= 49.8 : 16.6 : 31.7 : 16.7**

### ➤Conclusion

It is most effective to lengthen the contact time using a peeling agent.

## Recommended rework conditions

### 《Rework conditions》

1. Use it for rework by warming alcohol (95 vol%) or Hyper Clean (Olympus Corporation) at 60°C x 50 seconds.
2. It is recommended to rework by warming the rework body under an atmosphere of 60°C x 50 seconds.

### 《How to remove glue after reworking》

1. Use it for rework by warming alcohol (95 vol%) or Hyper Clean (Olympus Corporation) at 60°C x 50 seconds.
2. It is recommended to rework by warming the rework body under an atmosphere of 60°C x 50 seconds.



# Rework tool example

## Rework tool details

Material: Nylon

Blade: Fluorine coating ABS

