3M Industrial Tape & Specialty Division

Technical data sheet

BETA TAPE
#4474,#4475

GENERAL INFORMATION

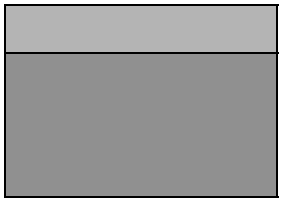
Beta tape has been developed by the technology of the Acrylic Foam tape which had been used on car interior and exterior parts attachment for more than ten years, #4474 and #4475 are the new double face acrylic sealing tapes which have much superior initial adhesion, heat resistance and durability compared to a conventional butyl sealing tape.

FEATURES

a) Shows a high initial adhesion.
b) Can be applied to a complicated 3-dimensional surface.
c) Provides a superior sealing performance to rough surfaces because of enough flexibility and individual foam construction.
d) Excels in extreme weather, heat and solvent resistance.
e) Doesn't soil the tape applied surface because it is made of a high molecular weight acrylic material and doesn't dissolve with water or a solvent.

CONFIGURATION

Paper liner
Pressure sensitive
Acrylic adhesive
(Individual foam)



Tape No	#4474	#4475
Color	Black	
Thichness	1.0mm	2.0mm
Roll Tape Width	10, 15, 20, 300mm	
Roll Tape Length	20m	10m

USAGE

Sealing or Bonding support usage for the weather-strip, several interior parts pad or sponge, etc.

TEST METHODS

1) Thickness : Measured by a dial thickness gauge (In accordance with JIS 20237)

2) 180 peel strength : Peel of tape in 180 direction and measure the adhesion to the substrates with a tensile strength test machine after the exposure in the following conditions.

* Tape size	: 10mm width
* Rolling pressure	: 2kg roller one-way
* Peeling speed	: 50mm/min

a) Initial state : 23 C x 20min
b) Normal state : 23 C x 24hrs
c) At high temperature : b -> at 80 C
d) Heat aging : b -> at 80 C x 336hrs -> b
e) Warm water immersion : b -> 40 C water x 336hrs -> b
f) Wax- remover immersion : b -> wax-remover x 1hr -> b

3) 90 peel strength : Peel off tape in 90 direction and measure the adhesion to the painted steel with a tensile strength test machine at 5, 23, and 40 C after 30 seconds of the tape lamination.

* Tape size	: 10mm width
* Rolling pressure	: 2kg roller one-way
* Peeling speed	: 300mm/min

4) Static shear holding power : Apply a tape with the K520 primer to an EPDM rubber surface after a cloth wiping with Toluene. Apply this to a painted steel and exposure at 23 C for 24hrs. Hand a specified weight to the test piece in the heat chamber and check if the weight drops after 24hrs.

* Tape size	: 10mm x 25mm
* Rolling pressure	: 2kg roller one-way

Notices

* The data cited in the tables is the actual test data, and not a guaranteed number. Please test to see if it can work well for the application considered before using.
* To keep the superior, please store the BETA Tape under the room temperature and humidity conditions.

TEST RESULTS

A) 180 Peeling strength (N/10mm (kgf/10mm))

Items	Substrates	#4474	#4475	Butyl Tape
Thickness(mm)	0	1	2	1
Initial State	Painted steel	10.8(1.1)	11.8(1.2)	7.8(0.8)
	EPDM	9.8(1.0)	11.8(1.2)	5.9(0.6)
	PVC	12.7(1.3)	12.7(1.3)	4.9(0.5)
	PP	8.8(0.9)	9.8(1.0)	5.9(0.6)
	Acrylic resin	12.7(1.3)	12.7(1.3)	6.8(0.7)
Normal State	Painted steel	11.8(1.2)	11.8(1.2)	7.8(0.8)
	EPDM	10.8(1.1)	11.8(1.2)	5.9(0.6)
	PVC	12.7(1.3)	13.7(1.4)	7.8(0.8)
	PP	9.8(1.0)	10.8(1.1)	7.8(0.8)
	Acrylic resin	12.7(1.3)	12.7(1.3)	7.8(0.8)
At high temperature	Painted steel	5.9(0.6)	5.9(0.6)	0.4(0.04)
	EPDM	5.9(0.6)	5.9(0.6)	0.5(0.05)
	PVC	3.9(0.4)	4.9(0.5)	0.6(0.06)
	PP	2.9(0.3)	2.9(0.3)	0.7(0.07)
	Acrylic resin	2.0(0.2)	2.0(0.2)	0.8(0.08)
Heat aging	Painted steel	12.7(1.3)	15.7(1.6)	9.8(1.0)
	EPDM	10.8(1.1)	12.7(1.3)	5.9(0.6)
Warm water Immersion	Painted steel	12.7(1.3)	13.7(1.4)	10.8(1.1)
	EPDM	10.8(1.1)	11.8(1.2)	5.9(0.6)
Wax-remover Immersion	Painted steel	10.8(1.1)	11.8(1.2)	6.8(0.7)
	EPDM	9.8(1.0)	10.8(1.1)	4.9(0.5)

* K520 primer is applied to the EPDM surface.

B) 90 Peeling strength to Painted steel (N/10mm (kgf/10mm))

Items	Substrates	#4474	#4475	Butyl Tape
Initial State	5 C	10.8(1.1)	11.8(1.2)	4.9(0.5)
	23 C	9.8(1.0)	11.8(1.2)	7.8(0.8)
	40 C	12.7(1.3)	12.7(1.3)	7.8(0.8)

C) Static shear holding power (g/10mm x 25mm)

Temperature	#4474	#4475	Butyl tape
23 C	400	500	100
40 C	300	400	50
60 C	200	300	10
80 C	100	100	0