

# Test Result Report

No. NB1910001

October 21, 2019

To: Raycop Japan Inc.

Measurement Certification Business, Records of the Governor of Aichi Prefecture, No. 273  
Interior-fabrics Performance Evaluation Conference Certified Agency, No. 002

**Aiken Co., Ltd. [seal]: [illegible]**

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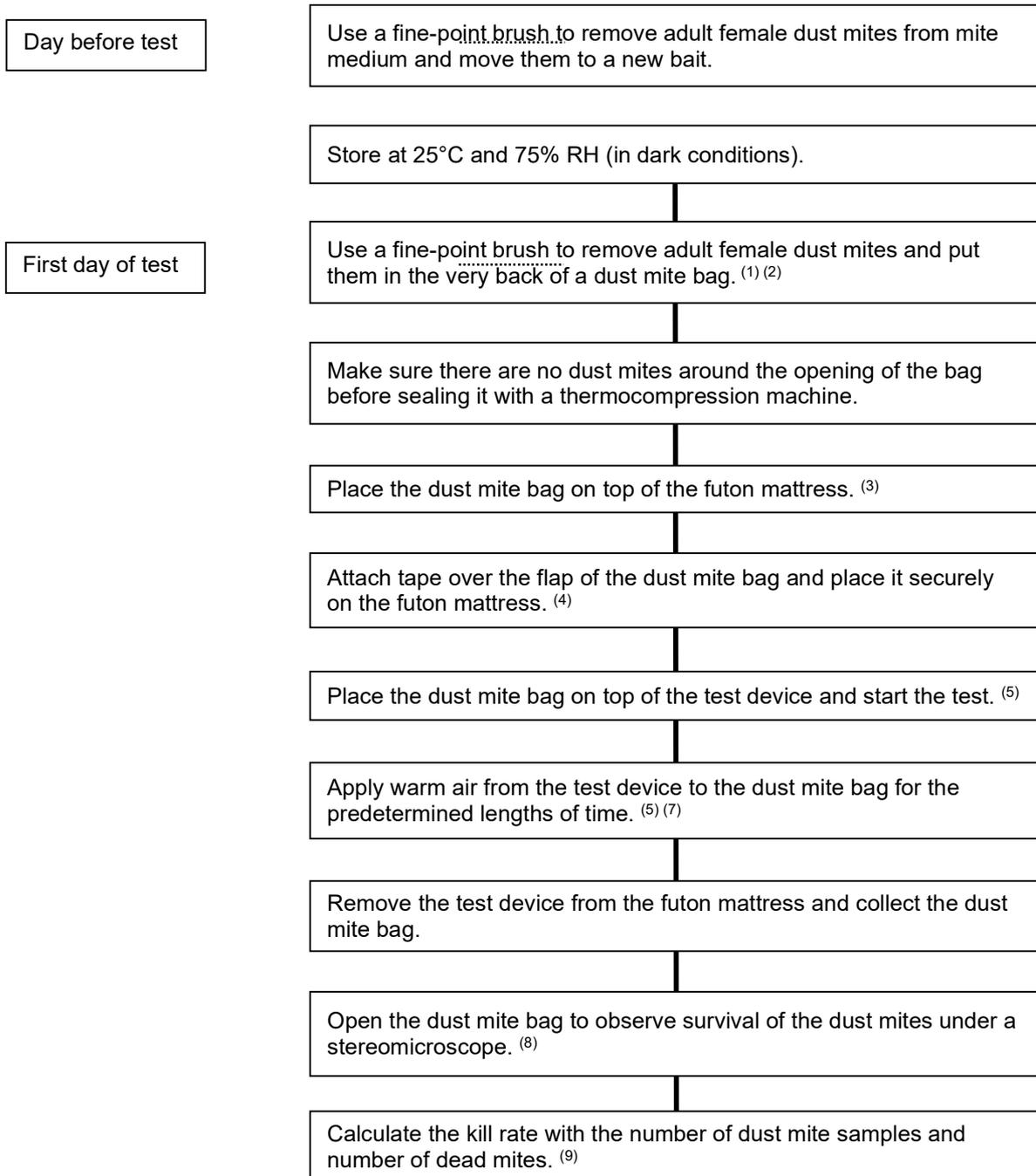
Test category	Bedding cleaner	Received by	Brought in (on October 7, 2019)
Sample (test device) name <small>(such as product name)</small>	RAYCOP RTP-100		
Test title	Acaricide test by warm air		
Tick samples	Dermatophagoides pteronyssinus Provided by Tokyo Women's Medical University		
Test materials	Futon bedding cover Number entered: 304 per inch. 100% polyester Nitori Co., Ltd. Futon mattress 100 cm x 210 cm wool blend from Nitori Co., Ltd.		
Test method	Test method of NB1805004 (May 30, 2018)		
Note: The above information is entered based on the information provided by the requester if samples are collected or brought in.			

The test results for these samples are shown below.

Duration of warm air application	Kill rate	Temperature <sup>(1)</sup>	Remarks
3 seconds	100%	74.5°C	(1) Surface temperature of futon mattress after use of device (average of n=3)
6 seconds	100%	75.4°C	
60 seconds	100%	73.3°C	
0 seconds <sup>(2)</sup> (BLANK)	0%	32.7°C	(2) Non-treated category. Placed under a non-operating test device for 60 seconds.
			(3) See appendix for test method and test results.

Test leader: Minoru Sugiura [seal]: Sugiura

## Appendix. Test Method



## Appendix. Test Method

- (1) The dust mite bags were made in advance out of fabric from a futon bedding cover. The bags were 15 cm x 30 mm and had a 5 mm flap on the top and the bottom.
- (2) Approximately 30 female adult dust mites were placed in each dust mite bag.
- (3) The air conditioner unit in the test room was turned on to stabilize the room temperature and the surface temperature of the futon mattress. At the start of the test, the room temperature and the surface temperature of the futon mattress were 33°C.
- (4) To measure the surface temperature of the futon mattress, a thermocouple was secured at the side of where the dust mite bag was placed. The device was DATA COLLECTOR AM-7002 thermocouple 529KP.
- (5) The test device was turned on for 3 minutes to warm up before it was placed on the dust mite bags.
- (6) The dust mite bags were treated with warm air for 3 seconds, 6 seconds and 60 seconds. Each test was repeated three times.
- (7) A dust mite bag was placed securely on top of the futon mattress and the test device was placed for 60 seconds without being powered on. The collected dust mite bag was deemed the "Non-treated category."
- (8) Killing rates were confirmed by poking dust mites using a needle with a handle if necessary.
- (9) Killing rates were calculated with the following formula.

$$M = d / T \times 100$$

M: Killing rate (%)

d: Number of killed dust mites (total after 3 repeated tests)

T: Number of dust mites in the sample (total after 3 repeated tests)

## Appendix. Test Results

Table 1. Acaricide by warm air treatment from the test device (RAYCOP RS3-100)

Dust mite samples: Female adult Dermatophagoides pteronyssinus

			(1)	(2)	(3)	Total	Killing rate
Treated category	3 seconds	Dust mite samples	30	31	33	94	100%
		Killed dust mites	30	31	33	94	
	6 seconds	Dust mite samples	31	33	31	95	100%
		Killed dust mites	31	33	31	95	
	60 seconds	Dust mite samples	30	34	32	96	100%
		Killed dust mites	30	34	32	96	
Non-treated category	0 seconds <sup>(1)</sup>	Dust mite samples	30	30	32	92	0%
		Killed dust mites	0	0	0	0	

(1) Placed under a non-operating test device for 60 seconds.

Table 2. Surface temperature of futon mattress after application of warm air from the test device (RAYCOP RS3-100)

	Futon mattress surface temperature (after warm air treatment) <sup>(1)</sup>			
	(1)	(2)	(3)	Average
Treated group: 3 seconds	72.1°C	74.5°C	76.8°C	74.5°C
Treated group: 6 seconds	74.3°C	76.0°C	75.8°C	75.4°C
Treated group: 60 seconds	73.7°C	74.2°C	72.0°C	73.3°C
Untreated group: 0 seconds	32.0°C	33.0°C	33.0°C	32.7°C

(1) Room temperature and futon mattress surface temperature at the beginning of the test: 33°C

End