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] 2-710 Amakoda, Moriyama-ku, Nagoya Phone: (052) 771-2717 Postal code: 463-0037

Test category	Bedding cleaner	Received by	Brought in (on October 7, 2019)	
Sample (test	RAYCOP RTP-100	-		
device) name (such as product name)				
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: 3	04 per inch. 100% polyester	
		Nitori Co., Ltd.		
	Futon mattress	100 cm x 210 cm v	vool 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 (1)	Remarks
3 seconds	100%	74.5°C	(1) Surface temperature of
6 seconds	nds 100% 75.4°C		futon mattress after use of
60 seconds	100%	73.3°C	device (average of n=3) (2) Non-treated category.
0 seconds (2)	onds ⁽²⁾ 0% 32.7°C		Placed under a non-
(BLANK)			operating test device for 60
			seconds.
			(3) See appendix for test
			method and test results.

Test leader: Minoru Sugiura [seal]: Sugiura

Appendix. Test Method

Use a fine-point brush to remove adult female dust mites from mite Day before test medium and move them to a new bait. Store at 25°C and 75% RH (in dark conditions). Use a fine-point brush to remove adult female dust mites and put First day of test them in the very back of a dust mite bag. (1) (2) Make sure there are no dust mites around the opening of the bag before sealing it with a thermocompression machine. Place the dust mite bag on top of the futon mattress. (3) Attach tape over the flap of the dust mite bag and place it securely on the futon mattress. (4) Place the dust mite bag on top of the test device and start the test. (5) Apply warm air from the test device to the dust mite bag for the predetermined lengths of time. (5)(7) Remove the test device from the futon mattress and collect the dust mite bag. Open the dust mite bag to observe survival of the dust mites under a stereomicroscope. (8) Calculate the kill rate with the number of dust mite samples and number of dead mites. (9)

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
	3 seconds	Dust mite samples	30	31	33	94	100%
Jou		Killed dust mites	30	31	33	94	100%
Treated category	6 seconds	Dust mite samples	31	33	31	95	100%
		Killed dust mites	31	33	31	95	
eate	60 seconds	Dust mite samples	30	34	32	96	1000/
Ĕ		Killed dust mites	30	34	32	96	100%
Non- treated category	0 seconds (1)	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) (1)			
	(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