

Appendix 4

Revision of the JIS for Performance Testing of Electric Vacuum Cleaners

— To ensure appropriate measurement of suction power sustainability and dust collection efficiency —

Regarding suction power sustainability and dust collection efficiency, which are generally accepted as indicators of the performance of electric vacuum cleaners, METI revised the JIS, including adding measuring methods to JIS C9108, which stipulates the performance and electrical safety of electric vacuum cleaners.

1. Objective and background of the revision for the standard

Performance and electrical safety of electric vacuum cleaners (hereinafter simply referred to as "vacuum cleaners") are defined in JIS C9108 (Electric vacuum cleaners). However, regarding suction power sustainability * and dust collection efficiency,** which are generally accepted as indicators of the performance of vacuum cleaners in recent years, measurement methods are not specified and each manufacturer makes independent calculations based on voluntary standards established by the Manufacturers' Association.

Therefore, in order to allow consumers who intend to purchase a vacuum cleaner to compare the performance of different manufacturers' products, METI revised JIS C9108 to add uniform measurement methods for suction power sustainability and dust collection efficiency.

Additionally, METI also reviewed the method of measurement for suction power,*** which was already specified in JIS C9108, in light of the recent performance improvement of vacuum cleaners.

*: Suction power sustainability - Indicator of the amount of suction power is consistent when using a vacuum cleaner until the dust case becomes full from the time when it was empty

** : Dust collection efficiency - Indicator of the amount of dust that a vacuum cleaner collects under predetermined conditions

***: Suction power - Indicator of the amount of air that a vacuum cleaner sucks in and its suction power

2. Key points of the revised standards

(1) Measurement method for suction power sustainability (Annex D (reference))

In order to make the indicator reflect the actual living environment in Japan, dust samples collected from 30 general households in Japan (120 samples in total) were analyzed to obtain composition ratios of cotton waste (long-staple), human hair, sand (particle dust), etc. Tests were then performed with dust samples simulating such ratios and used as the basis for JIS. The revised standards introduce a new reference method for measuring suction power sustainability based on the initial air volume before vacuuming test dust and the air volume after vacuuming to the point where the waste collected requires disposal, or until a lamp warns that the dust case is full.

Additionally, regarding the "test sand" mentioned in "Annex C (Reference) Measurement Method for Performance on Carpet," METI also reviewed the composition thereof based on a similar analysis of household dust.

(2) Measurement method for dust collection efficiency (Annex E (reference))

Referring to 5.11 of IEC 60312-1: 2010 (measurements of the performance of dry vacuum cleaners for household use), the revised standards introduce a new reference method of measuring dust collection efficiency based on the results of measuring the number of minute dust particles sucked into and discharged from a vacuum cleaner when having it vacuum air with test dust (dust for measuring dust collection efficiency as specified in ISO 12103-1) present at a concentration of 0.1 g/m³.

(3) Measurement method for suction power (Annex A (provision))

In order to enhance the reproducibility of measurement results, the measurement method was revised to ensure that measurement conditions are to be adjusted to a specified room temperature and air density and that the vacuum-measuring device to be used for testing can measure high-strength vacuums.

(4) Conformity with other related laws and regulations

Tests concerning electric leads and wiring were also added to ensure conformity with technological standards stipulated in the Electrical Appliances and Materials Safety Act, which regulates vacuum cleaners.

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Division in charge

International Electrotechnology Standardization Division, Industrial Science and Technology

Policy and Environment Bureau

[Informative]

Example of current indications in a vacuum cleaner catalog

Model	XX-XXX-XXX
Type	Cyclonic Technology
Suction power	420W - 50W
Noise level	54dB - 49dB
Input power	950W - 190W
Dimension(L×W×H)	330×240×290mm
Body weight	3.6kg
Suction power sustainability (*in accordance with a voluntary standard established by the Manufacturers' Association)	99% or more
Head	Motorized Auto Drive Head
Dust collection efficiency (measured by third party authority in accordance with IEC 60312-1:2010)	99.999% (AC dust 0.3 - 10µm)
accessories	Crevasse nozzle