

26 March 2012

Amanda Stevens  
US Environmental Protection Agency  
Energy Star Appliance Program

Dear Ms Stevens,

On behalf of Fisher & Paykel Appliances Ltd, I would like to offer the following comments on the ENERGY STAR Draft 1 Test Method for Determining Residential Dishwasher Cleaning Performance.

Fisher & Paykel Appliances is a New Zealand based company which manufactures dishwashers, washing machines, refrigerators, ovens and cook tops. These products are exported globally and can be found in the USA, Asia, Europe, and Oceanic countries.

Fisher & Paykel supports the use of a cleanability measure that is linked with energy and water usage. However the test method should not exceed consumer usage and performance metric must be reasonable otherwise excess use of natural resources will be used to achieve the Energy Star. In other words - the test method should not exceed what a consumer at home would use otherwise a dishwasher will need to use extra energy and water to remove the soils at the cost of energy and water especially if the consumer at would not apply this much soil normally. The dishwasher must still attain a certain level of performance which is reasonable and consumer would be happy with.

Comments on this draft are as follows:

#### **Section 4 Test Setup**

We agree with the test conditions that have been proposed ie the same as the DOE test lighting conditions and water hardness between 0-85ppm

#### **Water Hardness**

Line 56

I do not believe that water hardness will affect water and energy usage however it will effect wash performance but there should be a tolerance of 0 -85ppm for the wash ability similar to that in AHAM standard DW 1-1992

#### **Reference Dishwasher**

Line 57

The IEC uses the reference machine for five wash & dry tests on the UUT machine and then use statistics to ensure confidence of results. While the reference machine will help reduce variability in test results it will add cost and extra time to the tests.

#### **Preconditioning runs**

To use the last preconditioning run for detergent measurements can lead to circumvention.

If a machine runs clean - more water could be placed in the 1<sup>st</sup> and 2<sup>nd</sup> fills so that maximum quantities of water are used to maximise detergent usage

It should be up to the manufacture's discretion as to what detergent is required to achieve performance. But there should be a maximum amount of detergent allowed.

#### **Non soil sensing dishwashers**

In a non soil sensing dishwasher – the dishwasher would go through a prescribed wash profile ie set times, set temperatures etc. It would make more sense to run only one wash programme maybe Normal rather than the other 2 cycles heavy or light ie the one that a customer would most often. As the non soil sensing dishwasher cannot sense heavy – med – light loads, its seems unreasonable when comparing this type of machine to a soil sensing dishwasher to expect the same type of wash results.

Using different soils should not alter the wash programme in any way.

### **Loading Pattern**

It must be up to the manufacturer's discretion how the dishes are loaded. In some situations it may be necessary to have empty spaces between items

### **Rinse aid**

Rinse aid is an integral part of wash performance without it leads to streaking, soils redepositing back onto the dishes, cutlery and glasses. Without rinse aid it would have a detrimental effect on wash performance and it would increase the dry time of the dishes before grading of the dish load can start. AHAM uses rinse aid in its testing.

### **Scoring**

We would recommend scoring of flatware as it is an integral part of the wash test.

We would support the use of the IEC scoring method 0-5 as it is simpler to understand and less chance of it being subject to evaluator interpretation. It is an easier process for a third party lab to use and understand compared to the AHAM method.

### **Performance metric (PM)**

Without having done any testing, it is hard to see if this metric is satisfactory or not. However does this performance metric need to be so complicated? What is the proposed PM value?

In our lab we test to the IEC, AS/NZ2007.1 and AHAM. We have found that the AHAM standard is the hardest to reproduce results. We feel this is due to lack of use of the reference machine and also because the detergents are not standardised. The detergents used are commercially available products which are subject to product improvement if a standardised detergent was used it would eliminate one of the variables. The use of a reference machine is an extra burden to the labs both in cost and work load, however the results are much better and it eliminates any lab variability.

The draft is still very light on details and it would need some form of testing before this could possibly come into force.

Kind regards  
Brenda Gin

**Brenda Gin**

Senior Product Evaluator – Dishwashers