

**IWSFG Template for reviewer comments and IWSFG secretariat observation**

Document reviewed: **PAS 3**

Due date:2017//

1 Te=Technical, Ge=General, Ed=Editorial

Initial	Starting Line Number (e.g. 17)	Ending Line Number (e.g. 23)	Clause/Subclause (e.g. 3.1)	Type of comment <sup>1</sup>	Comments	Proposed change	Observation of the secretariat
NP	Various places throughout document			Ge	The word " specification" is not appropriate here. As specification means "a detailed description of the design and materials used to make something." These test methods should be presented as guidelines. Does IWSFG intend to provide design parameters for flushable products?	Recommend changing the "specification" to "guideline" throughout all relevant documents.	
NP	15	23	Foreword	Ge	Who are the consensus members? And how are these test methods and pass/fail criteria are designed? What was the protocol that was followed to get global consensus on these documents?	Clarify the section by adding members of the consensus and basis for how the test methods and criteria for flushable product designed. Explain the protocol or program that was followed for global alignment of all wastewater services.	
NP	24		Foreword	Ge	In the foreword 4th paragraph, it states that "the task of the group was to prepare standards reflecting the above purpose." It does not state that this group accomplished that goal. Did they?	Please clarify.	
NP	26	28	Foreword	Ge	What is the authority of Wastewater services to expect the manufacturers and distributors of the products to act in a socially responsible and environmentally sustainable manner?	Please clarify.	

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NP	104	107	1	Te	"This document provides a description of the test method and threshold criteria for determining if a product will disintegrate sufficiently to be compatible with wastewater transport systems." This sentence creates a misunderstanding that <b>only</b> rapid disintegration is required to be compatible with wastewater transport systems. But the other documents also talks about; 1. Environmental and public health protection; 2. Toilet and drain line clearance; 4. Settling; and 5. Biodisintegration criteria as critical.	Recommend to change this sentence to "This document provides a description of the test method and threshold criteria for determining if a product will disintegrate."	
NP	109	112	2	Te	The agitation levels would vary within the system from time to time. What is the study that was used to determine the Reynolds number here?	Please explain how Reynolds number of 20000 correlate agitation in the drain line immediately after flushing.	

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NP	111	112	2	Te	<p>How does 4 l, 16 rpm simulate Re=20,000? The flow is</p> <ul style="list-style-type: none"> <li>• laminar when <math>Re &lt; 2300</math></li> <li>• transient when <math>2300 &lt; Re &lt; 4000</math></li> <li>• turbulent when <math>4000 &lt; Re</math></li> </ul> <p>Based on our calculations, Reynolds number for 8 in pipe is around 48000 and for 4 in pipe is around 93000. As the water temperature increases or decrease these numbers will change. Also in the wastewater system, since it is not pure water as it has other effluents in it and this changes the viscosity of the water and velocity and it will change the calculation of the Reynolds number. So it would appear that the system is more dynamic than 20000. What were the conditions in the system while calculating the chosen Reynolds number?</p>	<p>Please reference studies or articles in the document to show these calculations and conditions in the waster water system.</p>	

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NP	114	117	3	Te	There are other products in the market that is used for toilet bowl cleaning or bathroom cleaning and they might not get contaminated with human excreta. Does IWSFG not consider these products?	Please clarify.	
NP	134	136	6	Te	See comments for 111-112.	Please clarify.	
NP	188	194	8.3.1	Ge	It was mentioned in PAS1 between 147-150 that the document does not cover toilet paper. What does dry tissue stand for? Is it toilet paper or facial tissue made with wet strength agents?	Please clarify if dry tissues is toilet paper or other types of tissue. And please clarify if this method is designed for toilet paper or not.	
NP	193	194	8.3.1	Te	Is it one or two sheets? It says one or two sheets depending on the dimensions in the previous paragraph.	Please clarify and correct.	
NP	197	198	8.3.1	Te	What are other products? If it is anything that can potentially flushed, what can those products be?	Please include examples or a list. Hygiene products, house cleaning products, personal cleaning products, etc.?	

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NP	207	215	9.1	Te	The explanation for storage of the samples are very vague. Number 2 and number 3 points both talk about hard plastic containers but tells a different storage procedure. Overall, the procedure does not talk about how long these samples can be stored before the next set of testing. It might be more controllable if a new package is open for each set of testing. What does secure laboratory cabinets mean? with locks or specially conditioned?	Please clarify the procedure and add using new package for each set of testing if there will be a stop between the test sets.	
NP	223	226	10.1	Te	How does 4 l, 16 rpm, 30 min and 25 mm hole sieve replicate the transportation conditions in the wastewater system? How does the previous conditions change to these new conditions? What is the rationale behind choosing 16 rpm over 13 rpm and GD3 conditions? 13 rpm to 16 rpm 120 minutes to 30 minutes 6 mm sieve to 25 mm sieve Is there any data or collection studies that shows GD3 complaint flushable wipes create clogs and blockages in the systems?	Please show data or reference studies that proves these conditions replicates what commonly exists in wastewater systems. Please reference a study or data that shows these new parameters will create improvements in wastewater clogs and blockages.	

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NP	261		10.3	Te	What is left and right angle on the slosh box? Is it when you look from the front of the box or side of the box?	Please clarify.	
NP	284	288	10.4	Te	The hole size is extremely large to create a repeatable test method. Did IWSFG do any studies to confirm that the results will not change from lab to lab or person to person? Was a validation procedure followed to confirm that this part of the test is repeatable? This could generate a lot of variability in the test results. Is the test method repeatable?	Please explain if a validation procedure is followed for this part of the test.	
NP	303	307	10.6	Te	What does total dry mass equal to? Is it one article or total of 5 articles? There is contradictory descriptions.	Please clarify.	
NP	310	315	11	Te	What is the pass/fail criteria? Is it the percentage of pass through the sieve or pictures or both? If it also includes pictures, what is the criteria for pictures? It is not defined here. Also do we use individual test values to calculate the dry mass pass through the sieve and add all 5 together and get the average value for final result for pass/fail?	Please clarify.	

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NP	329	335	12	Te	The explanation here is confusing as it does not explain clearly that if it is being talked about one article of total of 5 articles. Is it one article passing/failing the test or total of 5 articles or average of 5?	Please clarify.	
NP	342	343	13	Te	How should the necessary adjustments be made? Is there a procedure to follow? Is it explained by manufacturer of the equipment for those listed in this document? Is calibrating the oscillation every 30 days enough for any frequency of use? Is +/- 0.5 degree within the capability of the equipment that are referenced in this document? Is this capability confirmed with the supplier of these equipment and can it be found in their official tech specs? Current equipment capability of the slosh boxes are not capable of generating a -/+ ½ or ¼ degree accuracy when they oscillate. They are not made this sophisticated so a new design should be recommended in the test method.	Please explain and add necessary language. Please clarify if this restriction impacted test accuracy and reproducibility.	
NP	399		Annex 2	Ge	If this test is designed for multiple products, shouldn't it say as an example if a wipe is tested?	This section should say wipe being used as an example. Otherwise it is narrowing the scope of the document.	

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NP	399		Annex 2	Te	"Wipe at the end of the pipe - Remove the wipe and hold the wipe wet for 30 minutes before it is put in the slosh box." What is the purpose of keeping the wipe for 30 minutes before the slosh box? How was it determined that 30 min is necessary? And if it is, why is it 30 min? Why can't we test the wipe immediately? Similar comment was made in Draft 1 and was not given an explanation on reasoning for waiting.	Please explain.	
NP	399		Annex 2.3, 4	Te	Confusing statements. Do we hold the wipe wet? Where and how? Do we keep in water or take it out of water and put it in an empty container?	Please clarify.	
NP	401	404	Annex 3	Te	since a digital level needs to be used for calibration of the slosh box, do we need to use a calibrated digital level as well? Is there a calibration method for digital level that is used in the industry?	Please explain.	

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NP	401	404	4	Te	This is a very subjective method as the continuous oscillation makes it very hard to read the values while the table is all the way to the left or right (as stated in the calibration method), this might create some variability on this calibration measurement from person to person. Is this method validated?	Please show validation data and clarify.	
NP	467		A.5.2	Te	Should there be also rinsing sieve in this list?	Please add.	
NP	574		Annex 8	Te	Percentage remaining on the sieve cannot be 84.9% if we compare to the pictures on page 30. Also how can it be pass if this is only 1 of 5 of the tests? And if it is a pass, was the pass/fail criteria 95% or more?	Please explain and correct.	
NP	576		A.8.2	Te	Confusing test values versus picture of end result for Brand X wipe. If a wipe is broken to this extend, does it still have a negative impact to the wastewater infrastructure? Is there any studies done to prove this?	Please justify these results causing a negative impact to the wastewater infrastructure.	

