



September 1, 2017

To whom it may concern:

Thank you for providing the opportunity to provide comments on the proposed IWSFG flushability guideline documents. This response is being submitted on behalf of Nice-Pak Products, Inc., Nice-Pak International, Ltd. and Professional Disposables International, Inc. ("PDI"). The comments that Nice-Pak/PDI are providing are in no way exhaustive, nor should they be considered an endorsement of the proposed guidelines or participation by Nice-Pak/PDI in the creation of the IWSFG guidelines.

In addition to the responses provided to each individual proposed guideline, Nice-Pak/PDI has the following general comments:

1. These guidelines are "toilet paper standards", yet not all toilet paper currently on the market could pass these guidelines. Does IWSFG intend to require all toilet paper products that cannot pass the guidelines to include "Do Not Flush" instructions on the packaging?
2. Nice -Pak/PDI's comments focused on the technical issues and do not include feedback on typographical or grammatical errors in the documents.
3. The guidelines should make clear that these are only recommendations on flushability testing provided by IWSFG, without collaboration from product manufacturers or industry groups.
4. The language in the methods should avoid any mandatory language like must or shall. If IWSFG have developed these documents as standards, please provide the validation, verification, repeatability and reproducibility data relied upon for each method, similar to what would be produced by any standards organization, such as ASTM, ISO, ANSI or BSI.
5. The guideline documents do not address the fact that many of the items found in collection studies impacting wastewater systems are not, in fact, products that are labeled as flushable wipes. Many of the flushable products on the market today, however, would not pass the proposed methods. Eliminating the currently available flushable products will only create a bigger problem for wastewater as consumers will substitute a non-flushable product for the same purpose.
6. There are no references in the methods to any studies that are designed to assess the impact of flushable or non-flushable products on wastewater systems. Any information that can clarify the impact on wastewater systems would be helpful.

We look forward to reviewing further development of these guidelines.

Sincerely,

Kim Babusik  
Vice President, Customer Technical Support  
Nice-Pak Products, Inc.

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Header, 2, 7, Foreword 2 <sup>nd</sup> para graph, Foreword 4th para graph, Foreword 5 <sup>th</sup> para graph, 114, 115, 121, 124, 125, 129, 135, 138, 160, 165, 167, 193, 195, 199, 203, 214, 219 (3x), 231, 234, 237, 257	Standard	Title	Ge	The term “standard” is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term “standard” should be replaced with “guideline” throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	107-110			Ge	Please provide basis for these statements.	Include references.	

<sup>1</sup> Adapted from the ISO/IEC Commenting template. <sup>2</sup> Te = Technical, Ge = General, Ed=Editorial

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	117-122	Purpose		Ge	Although document states “purpose is to not ban the production and/or use of these products,” it has been stated by Cynthia Finley and others that there are no flushable products on market that would meet this “standard.” There is evidence that many toilet papers would not meet this standard. However, recent evidence including the NYC 2016 forensic collection study, the Perry settlement and very recent work in UK clearly show flushable wipes are not source of clogs.	Please clarify.	
NP	134-135	Third party certifier		Ge	Potential third party certifiers need to be defined. Who selects them, who certifies them, who certifies the test methods defined here.	Please provide additional, specific information regarding the certification process and how the third party labs will be	
NP	182	Toilet and Drainline Clearance		Ge	It is unclear why a recommended but not mandatory test PAS 2C Snagging test is included in “standard.”	Recommend removing PAS 2C.	
NP	182	Disintegration		Te	It states that must pass any of the PAS (3A, 3B, or 3C). Do all tests reflect they hydraulic, mechanical and environmental conditions found in these systems? Do all three tests yield equivalent results? If not, a product must only pass one out of three tests.  During recent discussion with Rob Vilee, Cynthia Finley and others on DC flushable bill, Rob stated that all three of these methods were correlated to have the same results at the end of the test on a 6.3 mm sieve. To accomplish that, test duration periods were altered specifically on the slosh box time. The other point Rob confirmed is that 4 l, 13 rpm at 300 minutes with less than 1’ pieces is equivalent to 4 l, 13 rpm, 2 hours with a 6.3 mm sieve.	Please clarify and show correlation studies to support three options.	
NP	184-187	6.3 Conformity		Ge	Testing and certification to be conducted by third party process provided accredited according to ISO/IEC 17025.	Please identify which third party lab(s) are capable and certified to conduct such assessment.	

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					<p>Attempts have been made to identify third party labs capable of conducting these test methods. We have been unable to identify any such lab at this time.</p> <p>At this time one third party lab that conducts flushability testing has concerns with some of the methods actually correlating to real life testing (beaker test, shaker flask test, snag test...).</p> <p>Given time and money, they feel they could execute the tests. They (their lab specifically) would need to have these new methods / processes certified by ISO (each test needs to be certified). The timing for them to be ISO certified would likely be more than 1 year.</p>		
NP	198-199	6.3 Conformity		Ge	<p>Flushable products are to be marked and labeled with certifier as conforming to this "standard."</p> <p>There are numerous risks associated with certifies making this statement. Have those been vetted out?</p>	Please identify which third party labs/certifiers are willing to have their name included on marketed flushable products.	
NP	201	6.3 Conformity		Ge	IWSFG states "euphemisms" such as "dispersible" are not recognized by this group. It is not clear what this statement is intending to state. In past experience with wastewater on TWG and GD4 drafting committee, wastewater wanted "flushable" replaced with "dispersible."	Please clarify.	
NP	202-220	6.4.2 Non-conforming products		Ge	The Code of Practice (COP) Second Edition has been agreed to by various wastewater agencies and INDA/EDANA. It is unclear why the COP Second Edition language is not used here or why it is not referenced directly.	Replace language with COP Second Edition in this section. It is acceptable to keep the alternate symbol options. But, agreed-to language by industry and wastewater is recommended in this section.	
NP	235-254	7.1.3		Te	Where is the data to support 20% regen cellulose?	Remove this criteria due to lack of scientific	

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		Regenerated Cellulose Fibers			<p>Based on IWSFG reference “When Microplastic is Not Plastic: The Ingestion of Artificial Cellulose Fibres by Macrofauna Living in Seagrass” Macrophytodetritus, Environmental Science and Technology, 2015, 49, 11158-11166, American Chemical Society, this reference directly contradicts statements in this section. This study concluded the following:</p> <ul style="list-style-type: none"> <li>• The fibers do not accumulate in the guts of the invertebrates</li> <li>• The statement regarding take-up in the food chain, implying bioaccumulation, is proven false by the reference which states “The observed viscose fibers thus do not seem to be transmitted from lower to higher trophic levels via predation.”</li> <li>• Results of study support both the biodegradation and lack of bioaccumulation of regenerated cellulose</li> </ul> <p>In addition, viscose fibers are known to degrade more rapidly (100% in 8 weeks) than cotton fibers, both by sunlight or in soil when buried. Direct comparison of degradation of viscose and cotton favors viscose under two different conditions. See Reference Park, C. H.; Kang, Y. K.; Im, S. S. Biodegradability of cellulose fabrics. J. Appl. Polym. Sci. 2004, 94, 248–253.</p> <p>“Rayon fibers, which have a low crystallinity and a low degree of orientation, showed the highest biodegradability in most cases.” See Reference Tera, F. M.; Shady, K. E.; Hegazy, H. Sunlight exposure effects on the surface morphology of viscose rayon fabrics. J. Colouristical Rev. 987, 29, 80–83.</p>	evidence for any such limitation on regenerated cellulose content.	

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**IWSFG Template for Reviewer comments and IWSFG secretariat observations<sup>1</sup>**

Document reviewed: IWSFG-Standard-1-Criteria for recognition as flushable product

Due Date: 2017-09-01

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	83-84	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	86-94	Introduction		Ge	General statements presented here on long term sustainability of wastewater systems with no references or rationale as to why existing flushable products are not found acceptable by wastewater. Given recent data including NYC 2016 study, Perry settlement and recent UK study, flushable wipes were not found to be contributing to blockages or increased operation costs.	Please reconcile or clarify rationale as to how this standard will improve long term sustainability.	
NP	99-102	Introduction		Ge	This document states that "standardization requires the establishment of a language common to the various stakeholders in order to policy understanding and conformity. It would appear that only various wastewater stakeholders were included in the development of these PAS documents. Clearly manufacturers and users of marketed flushable products were not included nor does it appear that toilet manufacturers or plumbers as key stakeholders.  As for the use of the term Publicly Available Standard (PAS) please see first row for comments.	Please justify limiting stakeholder to only select wastewater groups.	

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NP	110-112	3	Scope	Ge	The scope includes defining common terminology in the sale and manufacture of hygiene products. With no such stakeholders involved in this process, it is unclear with no reference as to how such definitions were derived.	Please provide reference or background for expertise in defining common terminology in the manufacture and sales of hygiene products.	
NP	118	3 Scope	3c	Ge	See comments for 110-112		
NP	121-125	4	References	Ge	Why are there no references for common terminology in the manufacture and sales of hygiene products? Why are current or previous versions of INDA/EDANA Guidelines for Assessing Flushability not a reference document?	Please clarify.	
NP	206-207	5.2.2.	Disintegration	Te	Statement indicates that disintegration can occur by exposure to physical forces or biological action. In this definition, it has to be one or the other.	Please clarify.	
NP	208-210	5.2.2	Disintegration	Ge	It states it is operationally defined by mass loss. It is unclear what is rationale or reference for this definition. Is this definition based on INDA/EDAN guidelines.	Please state reference and rationale.	
NP	211-214	5.2.3	Re		Improper definition.	Change to "A dimensionless quantity used in fluid mechanics to help predict flow patterns in different fluid flow situations, such as transitions from laminar to turbulent flow in pipes."	
NP	244-257	5.3.4	Flushable Product	Ge	Definition is circular using draft standard in the very definition.  In addition, there is evidence that currently marketed flushable products do not materially adversely impact those systems. Reference NYC 2016 study and Perry settlement.	Please clarify definition.  Please reconcile evidence that clearly shows compatibility with various systems yet statements that no current flushable wipe would meet this standard.	
NP	260-261	5.3.5	Moist tissues		This language is unclear and not common terminology.	Please clarify.	
NP	274	5.3.7	Primary Packaging	Ge	The reference to toothpaste in primary packaging seems odd and unrelated to products in scope.	Please clarify.	

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**IWSFG Template for Reviewer comments and IWSFG secretariat observations<sup>1</sup>**

Document reviewed: PAS-0-Terms and Defintions	Due Date: 2017-09-01
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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	45-46	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	60-62	Introduction		Ge	This statement references banned substances. Hence there are regulations that companies most follow. It is unnecessary to add this statement in this document.	Remove this statement.	
NP	86-90	6	Principles	Ge	Marketers and Manufacturers must follow all country-specific regulations. IWSFG does not have the expertise or authority to hold Marketers or Manufacturers accountable.	This entire document is inappropriate. Not only this section but the whole document should be deleted and replaced with a general statement that companies are expected to adhere to all EHS regulations for product.	
NP	92-96	7.1	Applied Substances	Ge	Marketers and Manufacturers must follow all country-specific regulations. IWSFG does not have the expertise or authority to hold Marketers or Manufacturers accountable.	This entire document is inappropriate. Not only this section but the whole document should be deleted and replaced with a general statement that companies are expected to adhere to all EHS regulations for product.	
NP	101-102	7.2.1		TE	The term plastic in this context is incorrect. Per IUPAC (International Union of Pure and Applied Chemistry), the definition is "Generic term used in the case of polymeric material that may contain other substances to improve performance and/or reduce costs. <b>Note 1: The use of this term</b>	Please correct.	

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					<p><b><i>instead of polymer is a source of confusion and thus is not recommended.</i></b> (emphasis added)                      Note 2: This term is used in polymer engineering for materials often compounded that can be processed by flow." ("Terminology for biorelated polymers and applications (IUPAC Recommendations 2012)" (PDF). Pure and Applied Chemistry. 84 (2): 377–410. 2012. doi:10.1351/PAC-REC-10-12-04.) Since cellulose is also a polymeric material, an alternative word or phrase should be used. (Recommend definition that was recommended in ISO TC224 WG10.)</p>		
NP	103-117	7.2.2 Regenerated Cellulose Fibers		Te	<p>Where is the data to support 20% regen cellulose?                      Based on IWSFG reference "When Microplastic is Not Plastic: The Ingestion of Artificial Cellulose Fibres by Macrofauna Living in Seagrass" Macrophytodetritus, Environmental Science and Technology, 2015, 49, 11158-11166, American Chemical Society, this reference directly contradicts statements in this section. This study concluded the following:</p> <ul style="list-style-type: none"> <li>• The fibers do not accumulate in the guts of the invertebrates</li> <li>• The statement regarding take-up in the food chain, implying bioaccumulation, is proven false by the reference which states "The observed viscose fibers thus do not seem to be transmitted from lower to higher trophic levels via predation."</li> <li>• Results of study support both the biodegradation and lack of bioaccumulation of regenerated cellulose</li> </ul> <p>In addition, viscose fibers are known to degrade more rapidly (100% in 8 weeks) than cotton fibers, both by sunlight or in soil when buried. Direct</p>	Remove this criteria due to lack of scientific evidence for any such limitation on regenerated cellulose content.	

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					<p>comparison of degradation of viscose and cotton favors viscose under two different conditions. See Reference Park, C. H.; Kang, Y. K.; Im, S. S. Biodegradability of cellulose fabrics. J. Appl. Polym. Sci. 2004, 94, 248–253.</p> <p>“Rayon fibers, which have a low crystallinity and a low degree of orientation, showed the highest biodegradability in most cases.” See Reference Tera, F. M.; Shady, K. E.; Hegazy, H. Sunlight exposure effects on the surface morphology of viscose rayon fabrics. J. Colouristical Rev. 987, 29, 80–83.</p>		
NP	119-126	7.2.3	Test Method	Te	Tappi 401 versus ASTM D629 and other methods of finding the composition of fiber blend do not seem to be 100% accurate to find the percent and type of regen cellulose fibers. They are used to estimate the amount as one of them is done manually and other is done with solvents which dissolving certain fibers in solvent cannot be controlled adequately. Can IWSFG propose another method that is 100% accurate? This might create failures from 20% to 21% results.	<p>Define alternate test method with better accuracy.</p> <p>Re-evaluate the criteria associated with zero tolerance for synthetic fibers.</p>	
NP	137-167	7.5	Healthcare Wastes	Ge	There are strong regulations on all of these substances. This requirement does not belong in this document	.Remove this section.	
NP	187-194	Annex	Banned substances	Te	Surely this is not an exhaustive list of banned substances. As previously stated this is inappropriately included in this document.	Delete this section.	

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NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	61-63	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	77-84	2	Purpose	Ge	Based on the fact that the only stakeholders who contributed to writing these documents were various wastewater groups as stated in these documents, it does not appear that subject matter experts on toilet design and maintenance like toilet bowl manufacturers/designers or plumbers were consulted or asked to peer review this particular test method.	Recommend identified subject matter experts be consulted on this particular test method.	
NP	102-106	5.2			Language is not clear if this section is referencing dry toilet paper and quantity required to conduct test. Sample picture does not adequately clarify quantity of product required or how to prepare sample.	Please clarify.  Line 108 does help clarify to some degree. Suggest that language be included in beginning of this section.	
NP	114-116	5.3	Moist Tissues		This language is not common terminology.	Please include stakeholders with knowledge/expertise in this area to provide commonly accepted terms and definitions.	
NP	131-134	6	Principles		Who uses wastewater to flush their toilets? Should that be artificial fecal matter?  Although wastewater is not used to flush toilets, there is a reference to FG501 (line 108) that	Please clarify.	

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					<p>includes use of simulated fecal matter.</p> <p>It is not clear how this proposed test method would reflect more real world conditions without accounting for actual voids of urine, feces and/or both.</p> <p>It appears that inconsistencies are anticipated if anything other than potable water is used. What data exists to show these inconsistencies?</p>		
NP	138	2A		Te	What happens to the other types of toilets? What was rationale on why this toilet configuration was chosen?	Please clarify.	
NP	151	8	Preparation	Te	Is a baseline test run to confirm system performance? There is no indication to conduct one in this document.	Please clarify.	
NP	160-164	8.2	Number of test pieces	Te	Section starts with requiring 10 specimens. However, it later states 5 specimens. It is unclear required number of products to be tested.	Please clarify.	
NP	165-166	8.2		Te	Why don't we expect the glued part of the toilet paper to pass this test?	Please clarify.	
NP	200-202	8.4	Apparatus	Te	"Periodically" verifying toilet flush volume is vague.	Please be more specific.	
NP	229	10.1	Summary	Ge	What is basis for 10 samples to be tested? What is rationale? And how does that reflect or simulate real world conditions?	Please clarify.	
NP	231-232	10.1	Summary	Ge	"Observations are to be made..." It is not clear what specifics are to be observed. Should those be clearly spelled out as to what tester should be looking for? Should those be recorded?	Please provide more specifics.	
NP	241	10.2	Test Procedure	Ge	Reference is made to Section 6.3. There is no Section 6.3.	Please clarify.	
NP	243	10.2	Test Procedure	Te	Tester is instructed to wait 10 seconds for product saturation. What is rationale or substantiation for that time period?	Please clarify.	

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NP	247	10.2	Test Procedure	Te	Tester is instructed to wait 3 minutes and repeat flush if product doesn't clear the toilet. What is rationale or substantiation for that time period?	Please clarify.	
NP	304	12	Test Report	Te	Dimensions and weights should be included on report. There are not sufficient details in this test method to indicate how products should be weighed and measured.	Please specify.	
NP	309	12	Test Report	Te	Photographs are to be taken during process as indicated in this section. There are not sufficient details as to what should be photographed, during which phase of the process pictures should be taken, and then type / angle and other details to produce what quality photograph.	Please specify.	
NP	323	13	Precision	Te	Document indicates that "periodically the toilets should be checked for correct operation." It is unclear how frequently that should be done.	Please clarify.	
NP	361	Annex 2			Picture shows the pipe removing the flushed water coming out from back of toilet. Qualified test labs have the pipe coming out from the bottom of the toilet for the referenced FG501.	Please clarify.	

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**IWSFG Template for Reviewer comments and IWSFG secretariat observations<sup>1</sup>**

<b>Document reviewed: PAS-2A-Toilet Clearance Test</b>	<b>Due Date: 2017-09-01</b>
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<b>Initials</b>	<b>Line number (e.g. 17)</b>	<b>Clause/ Subclause (e.g. 3.1)</b>	<b>Paragraph/ Figure/ Table/ (e.g. Table 1)</b>	<b>Type of comment<sup>2</sup></b>	<b>Comments</b>	<b>Proposed change</b>	<b>Observations of the secretariat</b>

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NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	62-63	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	78	2	Purpose	Te	Document states "hydraulic forces typically found under intermittent flow conditions." Please cite reference to be able to fully comprehend specific conditions.	Please provide more specific conditions like Reynolds number, pipe diameters, flow velocity, etc.	
NP	83	2	Purpose	Ge	It is stated that this test is "proposed for application in the UK." Does that mean it is only applicable for the UK? In PAS Standard 1, it clearly states this is a required test.	Please clarify. Entire test could be combined with 2A	
NP	104-105	5.2	Unit Size – Toilet Paper	Te	In this document as well as others, limits of 3 g of toilet paper stated. It is unclear what the rationale is for that limitation.	Please provide rationale.	
NP	110	5.3	Moist Tissues		This language is not common terminology.	Please include stakeholders with knowledge/expertise in this area to provide commonly accepted terms and definitions.	
NP	118-119	6	Principles	Te	Please see comments above for Line 78.	Similar clarification requested.	
NP	124-127	6	Principles		Who uses wastewater to flush their toilets? Should that be artificial fecal matter?  Although wastewater is not used to flush toilets,	Please clarify.	

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					<p>there is a reference to FG501 (line 108) that includes use of simulated fecal matter.</p> <p>It is not clear how this proposed test method would reflect more real world conditions without accounting for actual voids of urine, feces and/or both.</p> <p>It appears that inconsistencies are anticipated if anything other than potable water is used. What data exists to show these inconsistencies?</p>		
NP	148-149	8.1	Acquisition		Requiring third party labs to purchase multiple randomly selected packs in various markets could place undue stress on labs without access to those markets.	Please provide more clarity on how to address this concern.	
NP	156-165	8.2	Number of test pieces	Te	Section starts with requiring 10 specimens. However, it later states 5 specimens. It is unclear required number of products to be tested.	Please clarify.	
NP	161-162	8.2		Te	Why don't we expect the glued part of the toilet paper to pass this test?	Please clarify.	
NP	176	8.3.2	Moist Tissues		This language is not common terminology.	Please include stakeholders with knowledge/expertise in this area to provide commonly accepted terms and definitions.	
NP	213	8.4	Apparatus	Te	It states to check slope "from time to time." This is vague and does not provide adequate detail for lab to conduct test.	Please clarify.	
NP	244-245	10.1	Summary	Ge	"Observations are to be made..." It is not clear what specifics are to be observed. Should those be clearly spelled out as to what tester should be looking for?	Please provide more specifics.	
NP	308	12f	Test Report	Te	Dimensions and weights should be included on report. There are not sufficient details in this test method to indicate how products should be weighed and measured.	Please specify.	



**IWSFG Template for Reviewer comments and IWSFG secretariat observations<sup>1</sup>**

Document reviewed: PAS-2B-Drainline Clearance Settling Test

Due Date: 2017-09-01

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
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<sup>1</sup> Adapted from the ISO/IEC Commenting template. <sup>2</sup> Te = Technical, Ge = General, Ed=Editorial

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP					As this test is not mandatory, it is unclear why it is included in these “standards.”	Strongly recommend this test be dropped from “standards.”  Please note comments made below reflect specific points should this test remain in these “standards,”	
NP	Various places throughout document			Ge	The term “standard” is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term “standard” should be replaced with “guideline” throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	86-87	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	103-104	2	Purpose	Te	Document states “hydraulic forces typically found under intermittent flow conditions.” Please cite reference to be able to fully comprehend specific conditions.	Please provide more specific conditions like Reynolds number, pipe diameters, flow velocity, etc.	
NP	132-135	5.2	Unit Size – Toilet Paper	Te	In this document as well as others, limits of 3 g of toilet paper stated. It is unclear what the rationale is for that limitation.	Please provide rationale.	
NP	139-142	5.3	Moist Tissues		This language is not common terminology.	Please include stakeholders with knowledge/expertise in this area to provide commonly accepted terms and definitions.	
NP	150	6	Principles	Te	“Simulated snags” should simulate obstructions such as misaligned joints, tree roots or burrs per Purpose Line 107.	Please confirm.	

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	152-153	6	Principles	Te	It is stated this test provides evidence on mechanism as to how a product snags and releases from a simulated snag. It is not clear that this test would predict real world snags nor how a product may or may not release in real world.	Please share evidence or correlations studies to indicate how this test simulates real world conditions.	
NP	154	6	Principles	Ge	It states "tester acknowledge .." It is unclear who testers are. Are they third party labs? Authors of this document?	Please clarify.	
NP	157	6	Principles	Te	Same concerns raised in Line 150 above.		
NP	159-162	6	Principles		Who uses wastewater to flush their toilets? Should that be artificial fecal matter?  Although wastewater is not used to flush toilets, there is a reference to FG501 (line 108) that includes use of simulated fecal matter.  It is not clear how this proposed test method would reflect more real world conditions without accounting for actual voids of urine, feces and/or both.  It appears that inconsistencies are anticipated if anything other than potable water is used. What data exists to show these inconsistencies?	Please clarify.	
NP	172	7	Apparatus	Te	Snagging test - Zinc is not allowed in the system according to the banned chemicals in PAS 0 and test requires using galvanized screws which is coated with zinc.  In addition, geometry of self-tapping galvanized screw does not simulate obstructions such as misaligned joints, tree roots or burrs. Given that fact, it is unclear how this was accounted for in this test method and, if in fact, this test would predict real world conditions and results.	Please clarify.	
NP	183-182	8.1	Acquisition		Requiring third party labs to purchase multiple randomly selected packs in various markets could	Please provide more clarity on how to address this concern.	

<sup>1</sup> Adapted from the ISO/IEC Commenting template. <sup>2</sup> Te = Technical, Ge = General, Ed=Editorial

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
					place undue stress on labs without access to those markets.		
NP	190-216	8.2	Number of test pieces	Te	Section starts with requiring 10 specimens. However, it later states 5 specimens. It is unclear required number of products to be tested.	Please clarify.	
NP	195-196	8.2		Te	Why don't we expect the glued part of the toilet paper to pass this test?	Please clarify.	
NP	206	8.3.2	Moist Tissues		This language is not common terminology.	Please include stakeholders with knowledge/expertise in this area to provide commonly accepted terms and definitions.	
NP	236-243	8.4	Apparatus	Te	Please see comments above on Line 172. It is unclear how this test apparatus in any way simulates real world snagging conditions.	Strike test.	
NP	290-296	10.2	Test Procedure	Te	Pouring specimen through funnel vs toilet flush action are different hydraulic conditions or have they proven equivalency?	Please clarify.	
NP	332	10.4	Test Results	Te	It is unclear basis for basis and rationale for no more than 95% of initial mass criterion.  It has been shown through ISO work that many toilet papers will not pass this test.	As this test is optional, test should be deleted.  If it is not deleted, please provide rationale for pass criterion.	
NP	366	12.6	Test Report	Te	Dimensions and weights should be included on report. There are not sufficient details in this test method to indicate how products should be weighed and measured.	Please specify.	
NP	371	12.10	Test Report	Te	Photographs are to be taken during process as indicated in this section. There are not sufficient details as to what should be photographed, during which phase of the process pictures should be taken, and then type / angle and other details to produce what quality photograph.	Please specify.	
NP	384				Periodically check is vague.	Please clarify.	

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**IWSFG Template for Reviewer comments and IWSFG secretariat observations<sup>1</sup>**

Document reviewed: PAS-2C-Drainline Clearance Snagging Test

Due Date: 2017-09-01

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	386			Te	Periodically is vague and unacceptable.	Define periodically.	

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	85-86	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	101-102	2	Purpose	Te	It is stated that the purpose of this test is assess product disintegration when subjected to hydraulic forces over a short duration. What part of the wastewater system does this simulate? It is unclear what the rationale for this test is.  In the past, wastewater has been critical of the current INDA slosh box not simulating real world conditions. How is this test an improvement over that one in predicting wastewater transport compatibility?	Please clarify.	
NP	104-107	2	Purpose	Te	The referenced tests are not standard toilet paper tests. Again how does this test predict flushable product compatibility with wastewater infrastructure?  This note appears to assume that to be compatible products must perform exactly as toilet paper does. However, all toilet paper do not perform the same. Nor does this test simulate any real world conditions.  If toilet papers have not historically caused issues,	Delete note.	

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
					why is toilet paper in scope?		
NP	130-132	6	Principles	Te	See note for lines 101-102.		
NP	135	6	Principles	Te	What data to support a speed of 800 rpm (versus sloshbox settings)? Again it is unclear what this test simulates in real world or its ability to predict compatibility with wastewater infrastructure.	Recommend test is deleted.	
NP	139-142	6	Principles		Who uses wastewater to flush their toilets? Should that be artificial fecal matter?  It is not clear how this proposed test method would reflect more real world conditions without accounting for actual voids of urine, feces and/or both.  It appears that inconsistencies are anticipated if anything other than potable water is used. What data exists to show these inconsistencies?	Please clarify.	
NP	154	7	Apparatus		Screen size of 6.3mm – is this common in waste water? What is rationale to move to such a screen size. There are concerns with this screen size opening and potential for blinding. Would this impact test method predictably coupled with shower rinse. Is there data to show this is a robust test method?	Please clarify.	
NP	148	7	Apparatus	Te	Not familiar with what a “pourer spout” is.	Please clarify.	
NP	159	8.1	Acquisition		Requiring third party labs to purchase multiple randomly selected packs in various markets could place undue stress on labs without access to those markets.	Please provide more clarity on how to address this concern.	
NP	171-172	8.2	Number of Test Pieces	Te	Why don't we expect the glued part of the toilet paper to pass this test?	Please clarify.	
NP	196	8.3.2	Moist Tissues	Te	Size of the sheet will impact versus toilet paper where they can use a single sheet as small as 180cm <sup>2</sup> – whereas the moist tissue has a minimum	Please clarify.	

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
					size to 260 cm2		
NP	246-247	10.2	Test Procedure	Te	Instructions on how to place sample in beaker is not clear. And various size products may have different interactions with impellor. Again it is unclear what part of system is being simulated with this test.	Please clarify.	
NP	258-250	10.2	Test Procedure	Te	"Rinse beaker as necessary" is vague.	Please clarify.	
NP	269	10.2	Test Procedure	Te	Rinse time is specified at 1 minute. It is unclear why that rinse time has been chosen.	Please clarify.	
NP	299-300	10.4	Test Results	Te	It is unclear rationale for <5% mass retained on screen at these conditions as to how this simulates real world conditions and what is being protected in system.  Will commercially available toilet paper meet this requirement?	Please clarify.	
NP	336	12	Test Report	Te	Dimensions and weights should be included on report. There are not sufficient details in this test method to indicate how products should be weighed and measured.	Please specify.	
NP	339	12	Test Report	Te	Photographs are to be taken during process as indicated in this section. There are not sufficient details as to what should be photographed, during which phase of the process pictures should be taken, and then type / angle and other details to produce what quality photograph.	Please specify.	

1 Adapted from the ISO/IEC Commenting template. 2 Te = Technical, Ge = General, Ed=Editorial



Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	101-102	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	118-120	2	Purpose	Te	<p>How does 4 l, 13 rpm simulate Re=20,000?</p> <p>The flow is</p> <ul style="list-style-type: none"> <li>• laminar when Re &lt; 2300</li> <li>• transient when 2300 &lt; Re &lt; 4000</li> <li>• turbulent when 4000 &lt; Re</li> </ul> <p>Based on our calculations, Reynolds number for 8 in pipe is around 48000 and for 4 in pipe is around 93000.</p> <p>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 a lot.</p> <p>So it would appear that the system is more dynamic than 20000 they are recommending.</p> <p>Couple the fact the system appears more dynamic</p>	Recommend water volume, rpm and water temperature conditions are specified to yield a Re of 20,000.	

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
					than stated Re number and previous work completed for ISO flushability work that baselined toilet paper that did not break down / disperse as expected, all of which makes it unclear what the endpoint is for this test and what negative impact to the system is being protected by this test.		
NP	144-145	6	Principles	Te	See concerns raised in row directly above this one.	Please clarify.	
NP	147-150	6	Principles		Who uses wastewater to flush their toilets? Should that be artificial fecal matter?  Although wastewater is not used to flush toilets, there is a reference to FG501 (line 108) that includes use of simulated fecal matter.  It is not clear how this proposed test method would reflect more real world conditions without accounting for actual voids of urine, feces and/or both.  It appears that inconsistencies are anticipated if anything other than potable water is used. What data exists to show these inconsistencies?	Please clarify.	
NP	198-199	8.2		Te	Why don't we expect the glued part of the toilet paper to pass this test?	Please clarify.	
NP	168	7.2	Functional Parameters	Te	Current equipment capability of the slosh boxes are not capable of generating a +/- 1/2 or 1/4 degree accuracy when they oscillate. They are not made this sophisticated so a new design should be recommended in the test method.	Please clarify if this restriction impacted test accuracy and reproducibility.	
NP	173	7.2	Functional Parameters	Te	Current equipment motor control at a setpoint of 13 rpm would appear to be on low end of motor range. Does benchmark study confirm that equipment provides reliable and reproducible data,	Please clarify.	
NP	181	7.3	Other	Te	Screen size of 6.3mm – is this common in waste water? What is rationale to move to such a screen	Please clarify.	

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
			Equipment		size. There are concerns with this screen size opening and potential for blinding. Would this impact test method predictably coupled with shower rinse. Is there data to show this is a robust test method?		
NP	182	7.3	Other Equipment	Ge	It states to measure temperature. It is unclear why and if water temperature should be adjusted.	Please clarify.	
NP	Various		Sample Preparation	Ge	Please refer to other documents for inquiries regarding sample acquisition, sample size and moist tissue nomenclature.	Please clarify.	
NP	217-219	8.3.2	Moist Tissues	Te	Size of the sheet will impact versus toilet paper where they can use a single sheet as small as 180cm <sup>2</sup> – whereas the moist tissue has a minimum size fo 260 cm <sup>2</sup>	Please clarify.	
NP	246	9.2	Conditioning	Te	This step requires a pre-conditioning step. However, this statement conflicts with “no rinsing of lotion” statement found in Line 223.  Preconditioning method requires a drainline set up for slosh box test.	Please clarify.	
NP	270	10.3		Te	Why is the purpose of holding the sample for 15 min after preconditioning before slosh box testing?	Please clarify.	
NP	293	10.3		Te	Rinsing procedure requires to use a 6.3 mm diameter hole sieve. The slosh box requirement is 6 mm x 6 mm pieces left after 120 min. These pieces will not necessarily pass through this size all the time to create 95% pass. Also there is no explanation for what the density of the holes (how often, spacing in between, etc.) on the sieve surface as well as the thickness of the metal used for the sieve, this will change the results. How smooth the sides of the holes should be, as this will cause snagging.	Please provide data if these concerns are not warranted.	
NP	277	C			What data to support 13 rpm? See notes above.	26 rpm as per INDA / EDANA Guidelines	

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NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	84-85	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	103	2	Purpose	Te	Re of 20,000 are stated to simulate hydraulic forces. It is unclear how this test method simulates real world conditions or that level of turbulence.	Please clarify.	
NP	124	6	Principles	Te	How does this test simulate a product's potential to disintegrate in real world conditions?	Please clarify.	
NP	127-130	6	Principles		Who uses wastewater to flush their toilets? Should that be artificial fecal matter?  Although wastewater is not used to flush toilets, there is a reference to FG501 (line 108) that includes use of simulated fecal matter.  It is not clear how this proposed test method would reflect more real world conditions without accounting for actual voids of urine, feces and/or both.  It appears that inconsistencies are anticipated if anything other than potable water is used. What data exists to show these inconsistencies?	Please clarify.	
NP	156-157	8.2		Te	Why don't we expect the glued part of the toilet	Please clarify.	

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
					paper to pass this test?		
NP	Various		Sample Preparation	Ge	Please refer to other documents for inquiries regarding sample acquisition, sample size and moist tissue nomenclature.	Please clarify.	
NP	178-179	8.3.2	Moist Tissues	Te	Size of the sheet will impact versus toilet paper where they can use a single sheet as small as 180cm <sup>2</sup> – whereas the moist tissue has a minimum size fo 260 cm <sup>2</sup>	Please clarify.	
NP	194-197	8.4	Apparatus	Te	In previous work in INDA/EDANA guidelines the falsks were found to contribute great degrees of variability to test method coefficient of variation. Has this concern been corrected? Or has it been accounted for in precision and reliability of test method?	Please clarify and provide background data to support test method validation.	
NP	219-220	9.2		Te	Why is there no conditioning step in this test method yet a 15 minute conditioning step is required in 3B?	Please clarify.	
NP	226	10.1		Te	Rinsing procedure requires to use a 6.3 mm diameter hole sieve. Also there is no explanation for what the density of the holes (how often, spacing in between, etc.) on the sieve surface as well as the thickness of the metal used for the sieve, this will change the results. How smooth the sides of the holes should be, as this will cause snagging.	Please provide data if these concerns are not warranted.	
NP	240	10.2	Test Procedure	Te	Test duration is 120 minutes. What is basis for that time period and how does that simulate real world conditions and transit times?	Please clarify.	
NP			Test Report	Ge	As commented on in previous PAS commenting templates, there are insufficient details provided on measurements and photographs required for test report.	Please provide more details.	

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	70-71	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	Various		Sample Preparation	Ge	Please refer to other documents for inquiries regarding sample acquisition, sample size and moist tissue nomenclature.	Please clarify.	
NP	87-88	2	Purpose	Ge	How does this test simulate hydraulic conditions typically found in treatment plants?  Does this test also predict compatibility with on-site septic system?	Please clarify.	
NP	94-98	4	References	Ge	It is unclear why INDA/EDANA FG504 is not referenced in this document.	Please clarify.	
NP	148	7	Apparatus	Ge	There does not appear to be any pictures of apparatus or detailed drawings. This missing information could lead to confusion on proper apparatus set up.	Add in pictures.	
NP	195-196	8.2		Te	Why don't we expect the glued part of the toilet paper to pass this test?	Please clarify.	
NP	302	10.4	Calculations	Ge	Wrong reference to "10a" and "10b."	Should be "11a" and "11b."	



**IWSFG Template for Reviewer comments and IWSFG secretariat observations<sup>1</sup>**

<b>Document reviewed: PAS-4-Settlement Test</b>	<b>Due Date: 2017-09-01</b>
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<b>Initials</b>	<b>Line number (e.g. 17)</b>	<b>Clause/ Subclause (e.g. 3.1)</b>	<b>Paragraph/ Figure/ Table/ (e.g. Table 1)</b>	<b>Type of comment<sup>2</sup></b>	<b>Comments</b>	<b>Proposed change</b>	<b>Observations of the secretariat</b>

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	83-84	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	Various		Sample Preparation	Ge	Please refer to other documents for inquiries regarding sample acquisition, sample size and moist tissue nomenclature.	Please clarify.	
NP	104-109	4	References	Ge	No reference to INDA/EDANA FG505 including OECD methods.	Please include.	
NP	166-167	8.2		Te	Why don't we expect the glued part of the toilet paper to pass this test?	Please clarify.	
NP	191-197	8.3.4	Test mixture	Te	Activity of the microbes needs to be confirmed. There are not sufficient detail instructions in this document to adequately define how to obtain, handle, maintain and protect testers. Simply stated physical properties does not clarify above missing details.  FG505 uses a 1mm sieve while this procedure uses a 600 micron sieve  In addition, there is no control run on activated sludge activity.	Please provide requested instructions on proper activated sludge handling and provide rationale for sieve change and no control.	
NP	225	9.1	Conditioning	Te	Not enough rinse time to remove the preservatives.	Please rectify.	

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Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
			for the Test		It is not clear why the 30 seconds for rinse time was chosen. Given all the transit data shared during the drafting of GD4 and the ISO Technical Specification work along with 120 minutes utilized in this standard for PAS 2B Slosh Box test, clearly 30 seconds simulates nothing in the real world.		
NP	230-233	10.1	Summary	Te	FG505 is similar but has 14 day period while this specifies a 21 day period for disintegration.	Please clarify.	
NP	232	10.1	Summary	Ge	Reference made to conditions in Section 6. There are no specific conditions defined in that section.	Delete reference or identify correct one.	
NP	244-247	10.2	Test Procedure	Te	Inadequate details are provided on maintaining DOL throughout test period. Are there limits on how many times adjustments can be made before the test is considered a failure? With no control specimen it is unclear to know this fact.	Please clarify.	
NP	250	10.2.9	Test Procedure	Ge	Procedure states to "periodically" scrape solids from side of flask. That statement is too vague.	Please clarify.	
NP	257-258	10.2.13	Test Procedure	Te	FG505 uses a 1mm sieve while this procedure uses a 600 micron sieve	Please provide rationale or modify to FG505 sieve size.	
NP			Test Report	Ge	As commented on in previous PAS commenting templates, there are insufficient details provided on measurements and photographs required for test report.	Please provide more details.	
NP	327-329	13	Precision	Te	See comments above in Lines 244-247.	Please clarify.	

<sup>1</sup> Adapted from the ISO/IEC Commenting template. <sup>2</sup> Te = Technical, Ge = General, Ed=Editorial



Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NP	Various places throughout document			Ge	The term "standard" is not appropriate as this collection of terms, definitions, and test methodology reflect the consensus of various wastewater organizations globally. However, this work has not been authenticated or sanctioned by any standards body.	Term "standard" should be replaced with "guideline" throughout all relevant documents.	
NP	Foreword			Ge	In the foreword 4 <sup>th</sup> 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	84-85	Introduction		Ge	This list is not inclusive of all products found in various forensic collection studies including paper towels, baby wipes, etc.	Recommend reviewing various forensic collections studies including NYC 2016, Portland and other global reports for a comprehensive list.	
NP	Various		Sample Preparation	Ge	Please refer to other documents for inquiries regarding sample acquisition, sample size and moist tissue nomenclature.	Please clarify.	
NP	102-103	2	Purpose	Te	Only reference is anaerobic digester. Why is no reference made to onsite septic systems.	Please clarify.	
NP	Various		Sample Preparation	Ge	Please refer to other documents for inquiries regarding sample acquisition, sample size and moist tissue nomenclature.	Please clarify.	
NP	111-119	4	References	Ge	No reference to INDA/EDANA FG505 including OECD methods.	Please include.	
NP	192-197	8.3.4	Test mixture	Te	Activity of the microbes needs to be confirmed. There are not sufficient detail instructions in this document to adequately define how to obtain, handle, maintain and protect testers. Simply stated physical properties does not clarify above missing details.	Please provide requested instructions on proper activated sludge handling and provide rationale for sieve change and no control.	
NP	225	9.1	Conditioning	Te	Not enough rinse time to remove the preservatives.	Please rectify.	

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
			for the Test		It is not clear why the 30 seconds for rinse time was chosen. Given all the transit data shared during the drafting of GD4 and the ISO Technical Specification work along with 120 minutes utilized in this standard for PAS 2B Slosh Box test, clearly 30 seconds simulates nothing in the real world.		
NP	237-238	10.2	Test Procedure	Te	Although this test procedure does require a cotton blank to confirm biomass activity, there is insufficient details as to cotton blank specifications and source.	Please clarify.	
NP	232			Te	FG506 is similar but has 28 day period while this gives a 21 day period for disintegration. It is unclear why time period was changed from FG506.	Please clarify or provide rationale.	
NP	262			Te	FG506 uses a 1mm sieve while this procedure uses a 600 micron sieve. It is unclear basis for this change.	Please clarify.	
NP			Test Report	Ge	As commented on in previous PAS commenting templates, there are insufficient details provided on measurements and photographs required for test report.	Please provide more details.	
NP	284	10.4	Calculations	Te	Although a control cotton blank is used, there is no requirement to report on biodisintegration of that.	Please clarify as to why not.	

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