centre technique du papier

Grenoble, May 24, 2024

STUDY REPORT No.23.0808/1 En

SUBJECT: FLUSHABILITY ASSESSMENT GD4

SAMPLES / OBJECTS

Samples designation:

- 50302P 60gsm PVA Meltblown

To note:
- Samples received at CTP on: 19/03/2024
- The above samples designation, also mentioned in this report, comes from information provided by the customer. It is not the responsibility of the CTP.
- Samples have been taken and dispatched by the customer.
- The remains of samples are kept during 3 months at least.

ORDER

Your references:	Your purchase order n°A012402POH083 dated on 26/02/2024
Customer:	**Jack EATON**
Company:	**Aquapak Polymers Ltd** Hollymoor Way, Rubery BIRMINGHAM B31 5HE UNITED KINGDOM

TESTS

Laboratory: **FLUSHABILITY LABORATORY**

In charge of the study: **Laurence LEROY** **Visa**

Schedule: Tests performed on weeks 16 to 21/2024

This report concerns only the samples submitted for study.
The copy of this report is authorized in the uncut version only
This report is made of 12 pages (cover included) and 8 appendices.

Domaine Universitaire CS 90251
38044 Grenoble Cedex 9 \ France
Tél. +33 (0)4 76 15 40 15
Fax +33 (0)4 76 15 40 16

www.webCTP.com

Centre technique de l'industrie des papiers, cartons et celluloses Siret 775 594 815 00018 \ Code APE : 7219Z

CONTENTS

1. INTRODUCTION

The objective of this study is to evaluate the compatibility of the tested product with plumbing fixtures and drainlines, on-site treatment, municipal wastewater conveyance according to the Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018.
This document is published by the nonwovens and related industries associations, INDA in the US and EDANA in Europe, as industry guidelines for assessing the flushability of disposable nonwoven products.

2. SAMPLE REFERENCE

The following product has been tested:

- **50302P 60gsm PVA Meltblown**
  - **Dimensions : 200 mm x 200 mm**

Sampling was performed by the customer. Samples were sent by the customer.

3. TESTING METHODS

A summary description of the tests is given below.
Additional technical information is reported on the summary sheet result.

- **FG501: TOILET AND DRAINLINE CLEARANCE TEST**

The purpose of the test is to determine the likelihood that a product will successfully clear toilet and drainage pipe systems.
The proposed test system consists of toilets and drainlines representative of those found in Western Europe.
Each test consists of 35 toilet flushes using a specified loading sequence of product based on the habits and practices of a family of four using moist toilet tissue. This sequence includes empty flushes, product with dry toilet tissue, and product with simulated fecal matter and dry toilet tissue.

- **FG 502: SLOSH BOX DISINTEGRATION TEST**

The purpose of the test is to assess the potential for a product to disintegrate when it is subjected to mechanical agitation in water or wastewater.
The product is placed in an oscillating box containing 2.0 liters of tap water. After 60 minutes of oscillation, the contents of the box are passed through a 12.5 mm perforated plate sieve, recovered and analyzed gravimetrically.
6 replicates are performed.

- **FG503: HOUSEHOLD PUMP TEST**

The purpose of the test is to assess the compatibility of a product with household sewage ejector pump systems by ensuring that the product does not clog, accumulate or otherwise interfere with normal system operation under high usage conditions.
The test equipment comprises a toilet and drainline, through which the product is flushed into a household sewage ejector pump assembly, comprising a basin and submersible pump which discharges through a check valve into a vertical outlet pipe.

The test uses an accelerated loading protocol run over 6 days, including empty flushes, flushes with product. For products which are buoyant in tap water, simulated fecal matter may be introduced in the flush sequence to simulate suspended solids in a residential system.

- **FG504: SETTLING TEST**

The purpose of the test is to assess whether a product settles in septic tanks, onsite aerobic systems and settling chambers that are associated with municipal wastewater treatment plants.
The test product is cut into 100mm x 100mm squares, flushed through a test drainline before adding into a beaker with 1 liter of tap water and introduced in a column filled with tap water.
For products which float in tap water, it is required that following pre-rinsing, the product is swirled gently in a bucket of wastewater for 30 seconds to allow absorption of solids.

- **FG505A: AEROBIC BIODISINTEGRATION TEST**

The purpose of the test is to assess the potential for a product to biologically disintegrate under aerobic conditions typically found in sewers as well as onsite and municipal wastewater treatment systems.
This test measures the total mass of a product retained on a 1mm sieve after being incubated with activated sludge for 14 days at ambient laboratory temperature.

- **FG506A: ANAEROBIC BIODISINTEGRATION TEST**

The purpose of the test is to assess the potential for a product to biologically disintegrate under anaerobic conditions typically found in sewers as well as onsite and municipal wastewater treatment systems.
This test measures the total mass of a product retained on a 1mm sieve after being incubated in anaerobic sludge for 28 days at 35°C +/- 2 °C.

- **FG507: MUNICIPAL SEWAGE PUMP TEST**

The purpose of the test is to assess the compatibility of products with municipal sewage pumping systems.
The test system consists in a recirculating tank where an ITT Flygt pump, model C-3085.183 is continuously running. A flow rate corresponding to the 100% efficiency point is established. After five minutes of steady state flow, a product is introduced every ten seconds for ten minutes (total of 60 pieces) at the pump inlet. At the end of the sample introduction the system remains running for an additional five minutes. No adjustments to flow, gate valve positioning, or pump adjustments are made after establishing the baseline flow rate.
The pump power consumption and flow rate on the outlet are continuously monitored and recorded during each test.
The average % power increase for each run of 60 wipes is calculated.
5 replicates are performed.

Note : for this product, the introduction of the product was modified in order to be able to handle the product that rapidly disintegrates in water. The product was introduced in the form of a pack of 6 sheets together, every minute. This results in the recommended introduction rate of 60 wipes for a period of 10 minutes.

4. RESULTS

Sheets results corresponding are given in Appendix.
Additional comments are given hereafter.

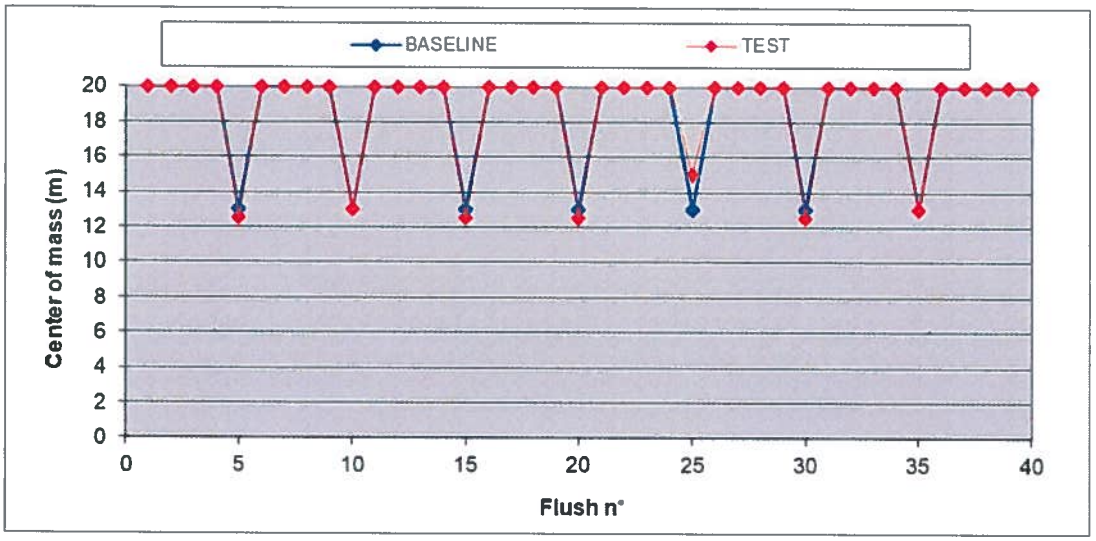
4.1. FG501.R1(18): TOILET AND DRAINLINE CLEARANCE TEST

Flush volume used for the test: 4.5 litres
Use of SFM and dry toilet tissue in the loading sequence.

Results:

- Evacuation from the toilet bowl: no product remaining in the toilet bowl or trap after none of the 35 flushes.

- Distance of the centre of mass of the flushed material from the toilet:
  Base line: flush sequence run without product (only dry toilet tissue and SFM)



Acceptance criteria (*):

· Toilet Clearance: No more than one of the flushes containing product should be associated with a clog that requires use of a plunger to clear product and excess water from the bowl and trap	PASSED
· Drain-line Clearance: The travel distance of the centre of mass of the flushed material in the drain-line does not consistently decrease over the course of five consecutive flushes.	PASSED

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

Comments:
The product fulfils the acceptance criteria for this test. It start to dissolve in the toilet bowl and it is evacuated properly. It clears the drainline without accumulation or blockage of material in the drainline.

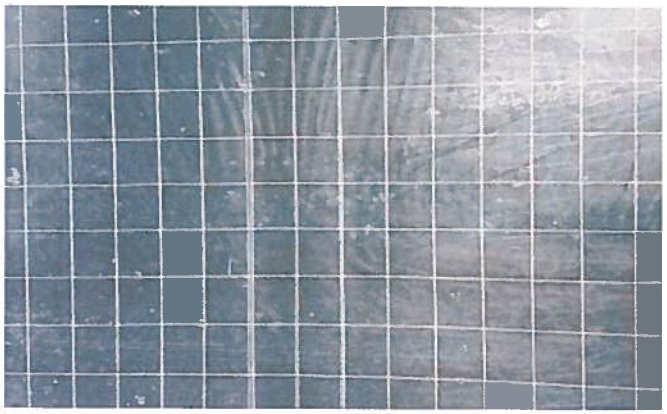
4.2. FG502.R1(18): SLOSH BOX DISINTEGRATION TEST

Results:
Percentage of material passing through the 12.5 mm sieve after 60 minutes:

After 60 min	REPL 1	REPL 2	REPL 3	REPL 4	REPL 5	REPL 6	AVERAGE
RETAINED							
Dry mass (g)	*0,0000*	*0,0000*	*0,0000*	*0,0000*	*0,0000*	*0,0000*	
% mass	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	
PASSED THROUGH % mass	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	**100,0%**

The material dissolves in the slosh-box in less than 1 min of agitation. On average for the 6 replicates, 100% of the material is passing through the 12.5 mm sieve after 60 minutes of agitation in water.

The percentage of the replicate articles tested for which the percentage of the article's initial dry mass passes through the 12.5 mm sieve after 60 minutes is greater than 60% is 100%.



Product after 60 min of agitation in slosh box (on a 25 mm grid)

Acceptance criteria (*):

· The percent of the starting dry mass passing through the 12.5mm perforated plate sieve after 60 minutes must be greater than 60% for at least 80% of the individual replicates tested.	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

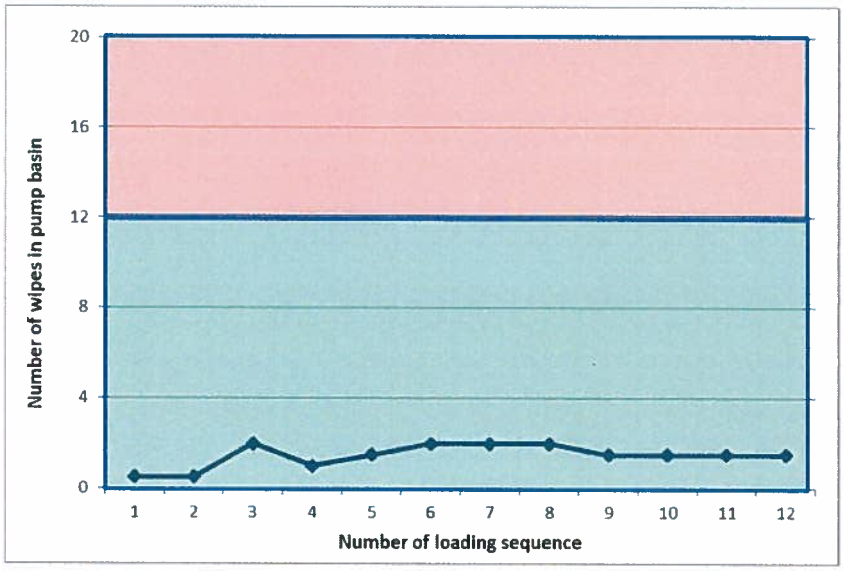
Comments:
The product disintegrates in fibres after 60 minutes of agitation.

4.3. FG503.R1(18): HOUSEHOLD PUMP TEST

Pump model: Liberty Pumps LE51A, ½ HP, discharge ∅ 2"
Pre-screening test for buoyancy in tap water: Positive => no use of SFM in the loading sequence.
1 pad was introduced per flush.

Results:

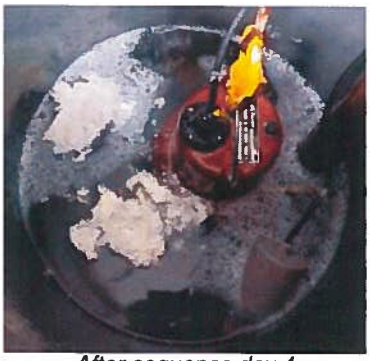
- Amount of product in the pump basin at the end of each loading sequence:



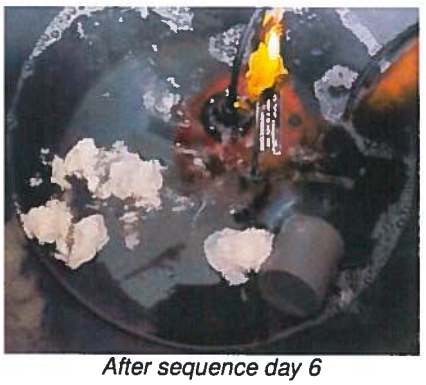

After sequence day 1


After sequence day 2


After sequence day 3


After sequence day 4


After sequence day 5


After sequence day 6

- Product in the collection basin at the end of the test:

Acceptance criteria (*):

· The product must not cause the system to stop functioning at any point during the test	PASSED
· The average number of articles remaining in the basin at the end of days two through six must not exceed the number of articles loaded on a daily basis	PASSED

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

Comments:
The system did function without any problem during the whole test duration. There was no material in the pump at the end of the test and no material in the check valve nor in the drainline.
There was also no material retained by the 6 mm screen in the collection basin.
The average number of products present in the basin at the end of days 2 through 6 is 1.6 articles and this does not exceed the number of product loaded per day (24 articles).
Consequently, the product fulfils the acceptance criteria for this test.

4.4. FG504.R1(18): SETTLING TEST

Pre-screening test for buoyancy in tap water: no material remained at the surface => no raw waste water used for swirling prior to the introduction at the top of the column.

Results:

- The product dissolves in water in less than 5 min after being introduced at the top of the column.

Acceptance criteria (*):

· The average settling velocity for the product that settles must exceed 0.1 cm/sec and at least 95% of the total articles tested must settle	PASSED
· At least 95% of the articles tested must not become sufficiently buoyant to rise more than 30 cm from the bottom of the column within 24 hrs	PASSED

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

Comments:
The product is accepted as it will not maintain at the surface of waste water units treatment.

4.5. FG505A.R1(18): AEROBIC BIODISINTEGRATION TEST

The product was cut in 2 and introduced in aerobic sludge collected in a municipal treatment plant and gently agitated during 14 days at room temperature (23°C). The percentage of mass retained on a 1mm sieve after agitation is determined.

Results:

- Average percent of the initial dry mass passing through the sieve after 14 days: 100%

The acceptance criteria for this test is :

Acceptance criteria (*):

· The average percent of initial dry mass passing through the 1 mm sieve after 14 days should exceed 95%	PASSED

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

Comments:
The product biodisintegrates in aerobic conditions.

4.6. FG506A.R1(18): ANAEROBIC BIODISINTEGRATION TEST

The product is introduced in anaerobic sludge collected in a municipal treatment plant and incubated during 28 days at 35°C. The percentage of mass retained on a 1mm sieve after being incubated is determined.

Results:

- Average percent of the initial dry mass passing through the sieve after 28 days: 100%

Acceptance criteria (*):

· The average percent of initial dry mass passing through the 1 mm sieve after 28 days should exceed 95%	PASSED

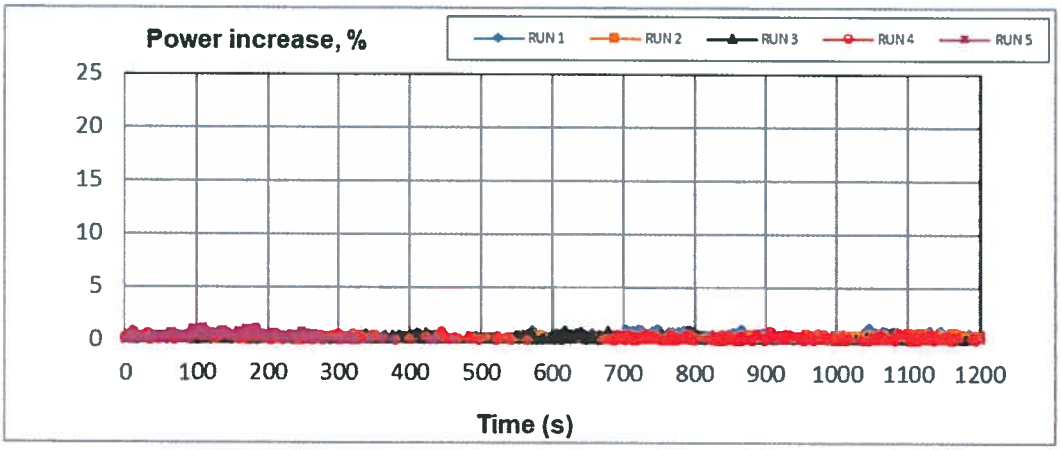
(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

Comments:
The product biodisintegrates in anaerobic conditions.

4.7. FG507.R1(18): MUNICIPAL PUMP TEST

Pump model: ITT Flygt pump model C-3085.183
Flow rate at test start: 21.2 l/s (100% BEP)
The product was introduced at a rate of 6 units per minute. This rsults in 60 wipes introduced in 10 minutes, but all 6 wipes were introduced together to handle the fact that the material dissolves rapidly in water.

Results:
Average power increase during the test:



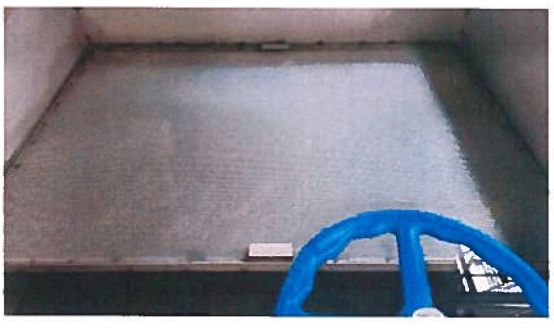
Average % power increase over baseline	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	Grand average
	0,03	0,08	0,90	0,13	0,60	**0,35**

Acceptance criteria (*):

· Based upon integration of the power curves, the average percent power increase over baseline for the five runs must not exceed 5%	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

Comments:
No material was found in the pump impeller at the end of each of the test replicates, as shown in the first picture. The material that passed through the pump was dissolved and no material was collected on the screen, as shown in the second picture. The average power increase over the 5 replicates was 0.35% and this is below the 5% limit.

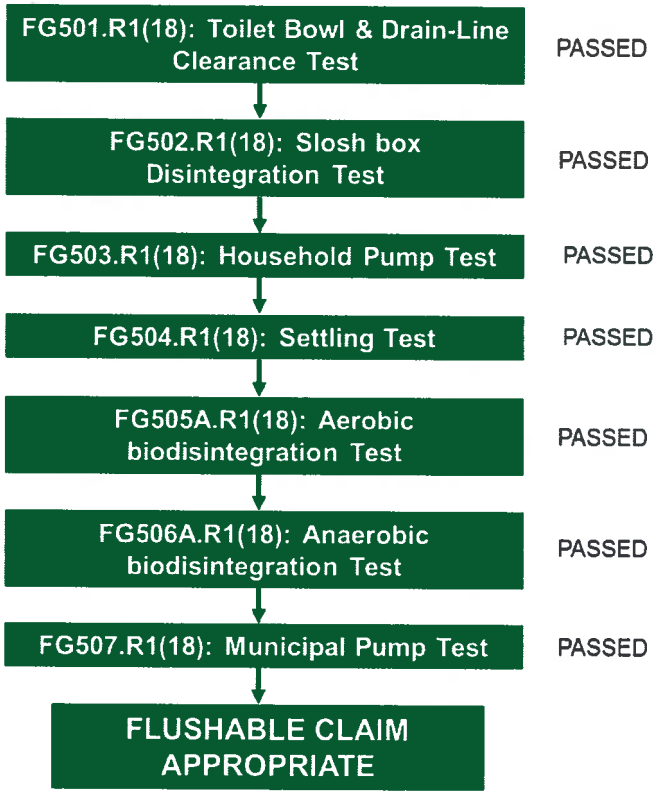


5. CONCLUSION

The product **50302P 60gsm PVA Meltblown** has been submitted to the Technical Flushability Assessment as described in the Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018.

- Results to FG501 (Toilet and Drainline Clearance Test) show that product **50302P 60gsm PVA Meltblown** clears the toilet and the building's lateral drainline and that it transports through the sewer pipe.
- Results to FG502 (Slosh Box Disintegration Test) show that product **50302P 60gsm PVA Meltblown** has the potential to disintegrate.
- Results to FG503 (Household Pump Test) show that product **50302P 60gsm PVA Meltblown** is compatible with household sewage ejector pumps.
- Results to FG504 (Settling Test) show that product **50302P 60gsm PVA Meltblown** will not stay at the water surface.
- Results to FG505A (Aerobic Biodisintegration Test) show that product **50302P 60gsm PVA Meltblown** disintegrates in aerobic conditions
- Results to FG506A (Anaerobic Biodisintegration Test) show that product **50302P 60gsm PVA Meltblown** disintegrates in anaerobic conditions.
- Results to FG507 (Municipal Sewage Pump Test) show that product **50302P 60gsm PVA Meltblown** is compatible with a municipal sewer pump.

Consequently, the 7 tests have been passed successfully as indicated in the flow chart below. **50302P 60gsm PVA Meltblown** passes the Technical Flushability Assessment and is qualified to support a flushable claim.



APPENDICES

The following documents are enclosed:

- One summary sheet per test and per product
- One attestation of flushability

centre technique du papier

FG501.R1(18): TOILET BOWL & DRAIN-LINE CLEARANCE TEST

Test conducted at CTP Grenoble, France for Aquapak Polymers Ltd

Date of the test: 17/05/2024

Sample:

50302P 60 gsm PVA Meltblown
Dimensions: 200 mm x 200 mm
Additionnal ref: 2WS060x00KN0

Equipment setup:			
Toilet type:	Wash-down (Roca Meridian)		
Pipe diameter:	100 mm	Number of 90° blends:	3
Pipe slope:	1,25%	Total length:	20 m

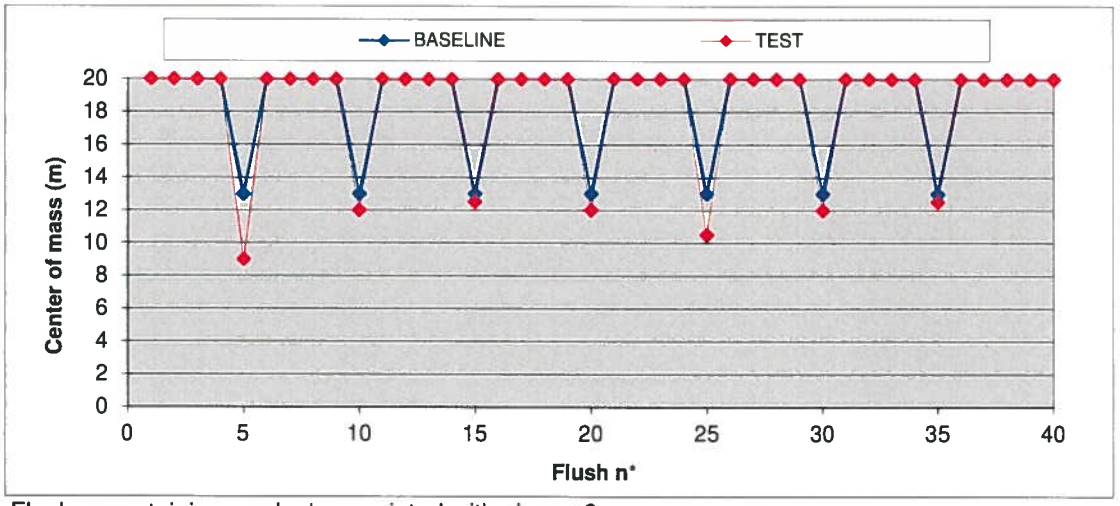
Loading protocol:	
Simulated fecal material (SFM):	Dog food based SFM, 3 pieces of 55g
Dry toilet tissue:	2,33 g (one implement = 3 sheets)
Tested product:	2,68 g (dry product)

Flush sequence:

Flush volume: **4.5 L** Beginning: 4.4L End: 4.4L

Flush 1:	1 TT + 2 product articles	Room temperature: 22°C
Flush 2:	empty flush	
Flush 3:	1 TT + 2 product articles	repeated 7 times (35 flushes)
Flush 4:	empty flush	
Flush 5:	3 SFM + 1 TT + 2 product articles	

Results:



Flushes containing product associated with clogs : 0

Acceptance criteria (*):

· Toilet Clearance: No more than one of the flushes containing product should be associated with a clog that requires use of a plunger to clear product and excess water from the bowl and trap	**PASSED**
· Drain-line Clearance: The travel distance of the centre of mass of the flushed material in the drain-line does not consistently decrease over the course of five consecutive flushes.	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

centre technique du papier

FG502.R1(18): SLOSH BOX DISINTEGRATION TEST

Test conducted at CTP Grenoble, France for Aquapak Polymers Ltd

Date of the test: 18/04/2024

Sample:

50302P 60 gsm PVA Meltblown
Dimensions: 200 mm x 300 mm
Additionnal ref: 2WS060x00KN0

Equipment setup and test protocol:

+/- 11° oscillating table, 26 rpm, 3 boxes
9L rectangular box containing 2L of tap water at room temperature
Water temperature: 22,5°C
Number of articles per box: 1
Number of replicates: 6
Sieve: 12.5 mm perforated plate sieve

Results:

Drying procedure: 24h at 102°C
Pre-rinsing procedure: 30s swirled in tap water
Starting dry mass: 2,4508 g *(SD: 0,0101 g)*

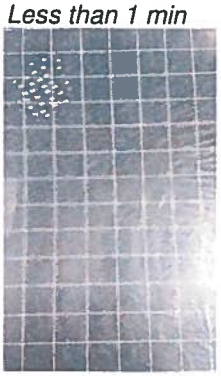
After 60 min	REPL 1	REPL 2	REPL 3	REPL 4	REPL 5	REPL 6	AVERAGE
RETAINED							
Dry mass (g)	*0,0000*	*0,0000*	*0,0000*	*0,0000*	*0,0000*	*0,0000*	
% mass	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	
PASSED THROUGH % mass	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	**100,0%**

% of the individual replicates tested for which the percent of the starting dry mass passing through the 12.5 mm perforated sieve after 60 min is greater than 60%: 100%

Photographs:

Product in the slosh box (view on a 25 mm grid), after:

Less than 1 min



60min

Product retained on the 12.5 mm sieve

Acceptance criteria (*):

· The percent of the starting dry mass passing through the 12.5mm perforated plate sieve after 60 minutes must be greater than 60% for at least 80% of the individual replicates tested.	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

centre technique du papier

FG503.R1(18): HOUSEHOLD PUMP TEST

Test conducted at CTP Grenoble, France for Aquapak Polymers Ltd

Date of the test: 15/05/2024 to 22/05/2024

Sample:

50302P 60 gsm PVA Meltblown
Dimensions: 200 mm x 300 mm
Additionnal ref: 2WS060x00KN0

Equipment setup:

Toilet: Allia Bastia 3/6 L, vertical pipe 100 mm ∅
Pump: Liberty Pumps LE51A model, 1/2 HP, FNPT discharge 2" — Pump basin: 49 cm ∅
Check valve: mechanical - Level detection: float switch
Outlet pipe: 50 mm ∅, 2.4 m vertical, 2.4 m horizontal slope 2%
Activation frequency: every 4/5 flushes

Test in tap water:

The product floats in tap water: NO
Necessity to use SFM for the test: NO

Product load:

2 product articles per flush
Flush volume: 6 L

Loading sequence:

12 loading sequences carried out morning and afternoon with approx. 4 hours between sequences
Each loading sequence consists in 12 flushes as follows:

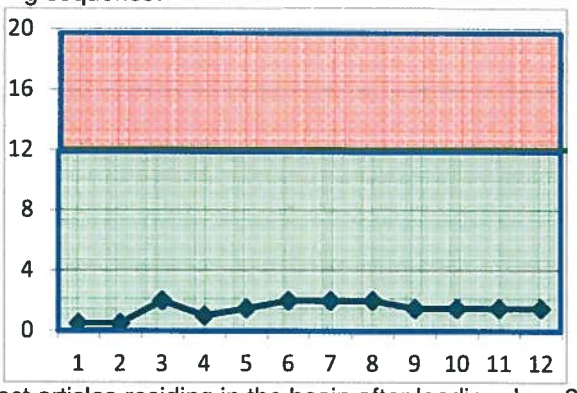
Flush 1:	Product	Flush 7:	Product
Flush 2:	Empty flush	Flush 8:	Empty flush
Flush 3:	Product (+ SFM if used)	Flush 9:	Product (+ SFM if used)
Flush 4:	Empty flush	Flush 10:	Empty flush
Flush 5:	Product	Flush 11:	Product
Flush 6:	Empty flush	Flush 12:	Empty flush

Results:

Pump clogging during the test (YES/NO): NO
Amount of product in pump and check valve at the end of the test: no product
Observation of product in collection basin: fibres

Number of intact articles residing in pump basin at the end of each loading sequence:

Day 1 am	0,5
Day 1 pm	0,5
Day 2 am	2
Day 2 pm	1
Day 3 am	1,5
Day 3 pm	2
Day 4 am	2
Day 4 pm	2
Day 5 am	1,5
Day 5 pm	1,5
Day 6 am	1,5
Day 6 pm	1,5



Photographs at the end of the test:

Material in pump : NO PRODUCT

Material on screen:

Average number of intact articles residing in the basin after loading days 2-6: 1,6 articles

Number of articles loaded on a daily basis : 24 articles

Acceptance criteria (*):

· The product must not cause the system to stop functioning at any point during the test	**PASSED**
· The average number of articles remaining in the basin at the end of days two through six must not exceed the number of articles loaded on a daily basis	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

centre technique du papier

FG504.R1(18): SETTLING TEST

Test conducted at CTP Grenoble, France for Aquapak Polymers Ltd

Date of the test : 21/05/2024

Sample:

60 gsm PVA Metblown

Dimensions: 200 mm x 300 mm

Additionnal ref: 2WS060x00KN0

Equipment setup and test protocol:

200 mm diameter plastic column, 150 cm in height, graduations spaced at 1.0 m

Room temperature: 21,9°C

Product cut in dimensions 10 cm x 10 cm for testing

Product swirled for 30s in water prior to testing

Number of replicates: 10

Test in tap water:

The product floats in tap water: NO

Necessity to swirl the product in raw waste water: NO

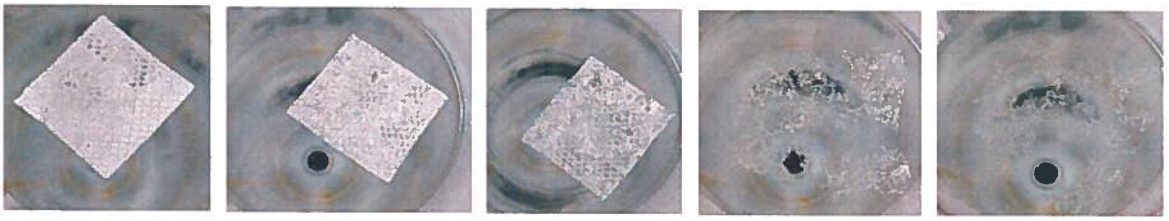
Results:

	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	Mean
Additional water necessary	No	No	No	No	No	No	No	No	No	No	
Time to settle (s)	No settling. The material stays at the surface and dissolves en less than 5 minutes.										
Settling velocity (cm/s)	The product does not settle but it neither stays at the surface										
Product stays at the bottom after 24 hours	The product does not rise at the surface, it dissolves in water.										

Photograph:

Product in the column after

0 min 1 min 2min 3min 4min



Acceptance criteria (*):

· The average settling velocity for the product that settles must exceed 0.1 cm/sec and at least 95% of the total articles tested must settle	**PASSED**
· At least 95% of the articles tested must not become sufficiently buoyant to rise more than 30 cm from the bottom of the column within 24 hrs	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

centre technique du papier

FG505A.R1(18): AEROBIC DISINTEGRATION TEST

Test conducted at CTP Grenoble, France for Aquapak Polymers Ltd

Date of the test : 18/04/2024 to 02/05/2024

Sample:

50302P 60 gsm PVA Meltblown

Dimensions: 200 mm x 300 mm

Additionnal ref: 2WS060x00KN0

Equipment setup:

5cm orbital shaker, 75 rpm, 2.8L flask containing 1L of aerobic activated sludge

Room temperature during the test: 23°C +/- 2°C

Number of articles per flask: 1 article

Positive control: cotton

Pre-rinsing procedure: 30s in water

Sieve: mesh sieve 1 mm

Sampling times: 14 days

Sludge collection:

Sludge collected at Montbonnot municipal wastewater treatment plant

Activated sludge - extended aeration - capacity 35 000 inhabitants

pH = 7,2 (needed to be adjusted : NO)

TSS = 3 300 mg/l (needed to be adjusted : NO)

Storage at room temperature (23°C) before use

Results:

Starting dry mass:

Sample: 2,4508 g

	CONTROL	CONTROL	CONTROL	FLASK 1	FLASK 2	FLASK 3
Sampling time (days)	7	14	14	14	14	14
Starting dry mass	1,1154	1,1039	1,4583	2,4508	2,4508	2,4508
RETAINED						
Dry mass (g)	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
% mass	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PASSED THROUGH						
% mass	100,0%	100,0%	100,0%	**100,0%**	**100,0%**	**100,0%**

Average percent of the initial dry mass that passes through the 1 mm sieve: **100,0%**

SD: *0,0%*

Residues in aerobic sludge after 14 days:

NO RESIDUE

Acceptance criteria (*):

· The average percent of initial dry mass passing through the 1 mm sieve after 14 days should exceed 95%	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

centre technique du papier

FG506A.R1(18): ANAEROBIC DISINTEGRATION TEST

Test conducted at CTP Grenoble, France for Aquapak Polymers Ltd

Date of the test : 18/04/2024 to 16/05/2024

Sample:

50302P 60 gsm PVA Meltblown

Dimensions: 200 mm x 300 mm

Additionnal ref: 2WS060x00KN0

Equipment setup:

2 L amber glass bottles containing 1 L of anaerobic sludge

Incubator temperature: 35°C

Number of articles per flask: 1 article

Positive control: cotton Blank: anaerobic sludge only

Pre-rinsing procedure: gently swirled in tap water

Sieve: mesh sieve 1 mm

Sampling time: 14 days (control) and 28 days

Sludge collection:

Sludge collected at Fontanil Cornillon municipal wastewater treatment plant

Liquid mesophilic methanisation (37°C) - Stay time: approx. 30 days - Capacity 500 000 inhabitants

pH = 6,9 (adjusted : NO)

TSS = 58 000 mg/l (needed to be adjusted : YES)

Adjustment of TSS by diluting

TSS after ajustment = 9 666 mg/l

Storage in hot conditionned room (30°C) before use

Results:

Starting dry mass:

Sample: 2,4508 g

	CONTROL	CONTROL	CONTROL	CONTROL	FLASK 1	FLASK 2	FLASK 3
Sampling time (days)	14	14	28	28	28	28	28
Starting dry mass	1,0252	1,3300	1,2392	1,0277	2,4508	2,4508	2,4508
RETAINED							
Dry mass (g)	*0,0000*	*0,0000*	*0,0000*	*0,0000*	*0,0000*	*0,0000*	*0,0000*
% mass	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PASSED THROUGH							
% mass	100,0%	100,0%	100,0%	100,0%	**100,0%**	**100,0%**	**100,0%**

Average percent of the initial dry mass that passes through the 1 mm sieve: **100,0%**

SD: *0,0%*

Residues after 28 days in anaerobic sludge:

NO RESIDUE

Acceptance criteria (*):

· The average percent of initial dry mass passing through the 1 mm sieve after 28 days should exceed 95%	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

centre technique du papier

FG507.R1(18): MUNICIPAL SEWAGE PUMP TEST

Test conducted at CTP Grenoble, France for Aquapak Polymers Ltd

Date of the test: 21/05/2024

Sample:

50302P 60 gsm PVA Meltblown

Dimensions: 200 mm x 300 mm

Additionnal ref: 2WS060x00KN0

Equipment setup and test protocol:

Pump device: ITT Flygt pump model C-3085.183

Flow rate at test start: 100% BEP - (21,3 +/- 0,2) l/s

Water temperature at the beginning of the test: 17,5°C

Water temperature at the end of the test: 18,8°C

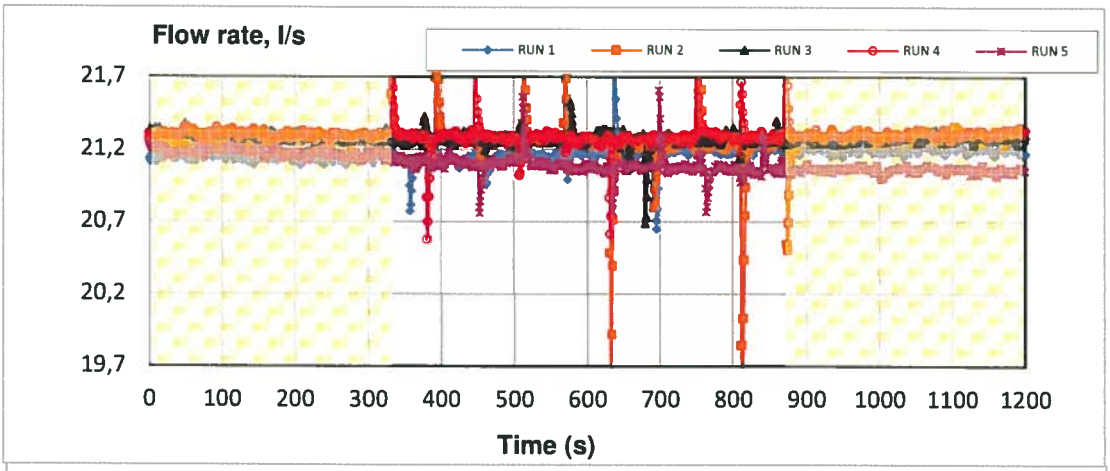
Number of replicates: 5

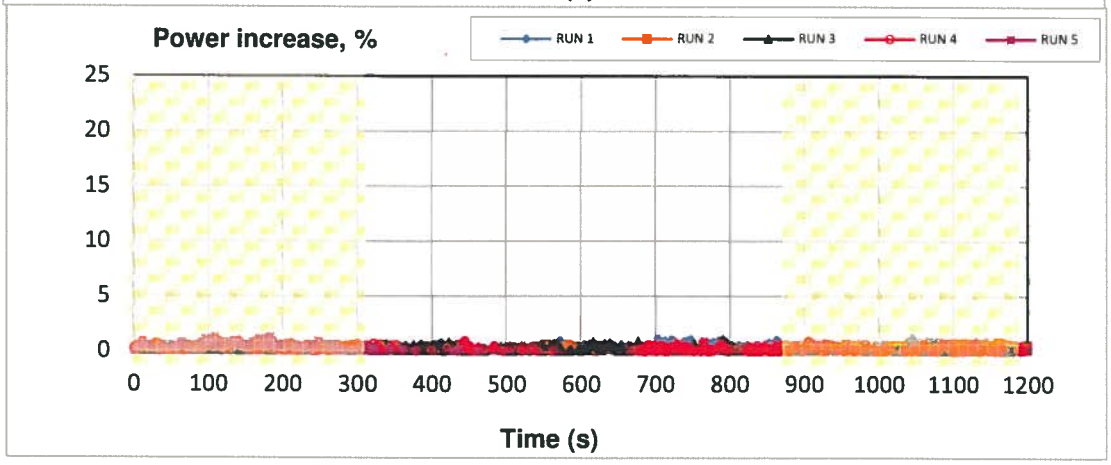
Soaking time: 1 hour

Product was introduced at a rate of 6 units/min

Results:

Baseline average power at start: 2,44 kW



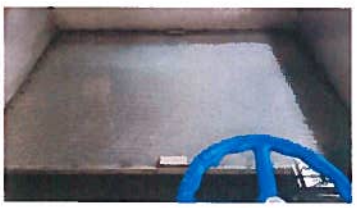


Average % power increase over baseline	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	Grand average
	0,03	0,08	0,90	0,13	0,60	**0,35**

Photographs:

Material found in the pump at the end of test

Material found on the screen at the end of test



Acceptance criteria (*):

· Based upon integration of the power curves, the average percent power increase over baseline for the five runs must not exceed 5%	**PASSED**

(*) Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018

Flushability Assessment GD4

The considered sample

50302P 60gsm PVA Meltblown

Tested on May, 2024
For Company Aquapak Polymers Ltd

is notified being in accordance with the specifications listed in the INDA-EDANA Guidelines for Assessing the Flushability of Disposable Nonwoven Products, Fourth Edition, May 2018.

Sampling was performed by the customer. Samples were sent by the customer.
Results are valid only for the samples assessed.
They do not apply:
. For products converted from tested raw materials
. For raw materials used to manufacture the tested converted products.

The results of the measurements are recorded in the report n° *23.0808/1EN*

Dr Laurence LEROY
Manager of Flushability Laboratory
Conformity Assessment Division

Grenoble, *May 24, 2024*

Centre Technique du Papier
Domaine Universitaire - CS 90251
38044 Grenoble Cedex 9 - France
Tel. +33 4 76 15 40 15
www.webCTP.com