

TAA

Tissue Absorption Apparatus

Comparison between manual and automatic measurement according to the standard ISO 12625-8





TAA Apparatus

1. Introduction

Noviprofibre has developed an automatic apparatus designed to measure the water absorption time and the water absorption capacity in full compliance with the ISO standard 12625-8.

The TAA apparatus:

- ✓ The basket is dropped horizontally to a height of (25 ± 5) mm above the surface of the water
- ✓ The basket is free so that its weight is not changed by contact with any other parts during the immersion time.
- ✓ Measurement of paper dry weight, water absorption time, draining time, wet weight of paper, water absorption capacity



Fig 1 : TAA The basket is dropped horizontally to a height of (25 ± 5) mm above the surface of the water

2. Assessment of the apparatus at CTP

The TAA apparatus was lent by Noviprofibre to CTP (July to August 2021) with the objective to have some tests performed to compare results obtained with the manual test method (according to ISO 12625-8) and results obtained with the TAA apparatus (automated test method).

3 different tissue products have been selected and assessed by CTP with the *manual method as described in ISO 12625-8* and with the *automated apparatus TAA*.

1. Test Schedule

Tests have been performed in the following conditions for both methods (manual / auto):

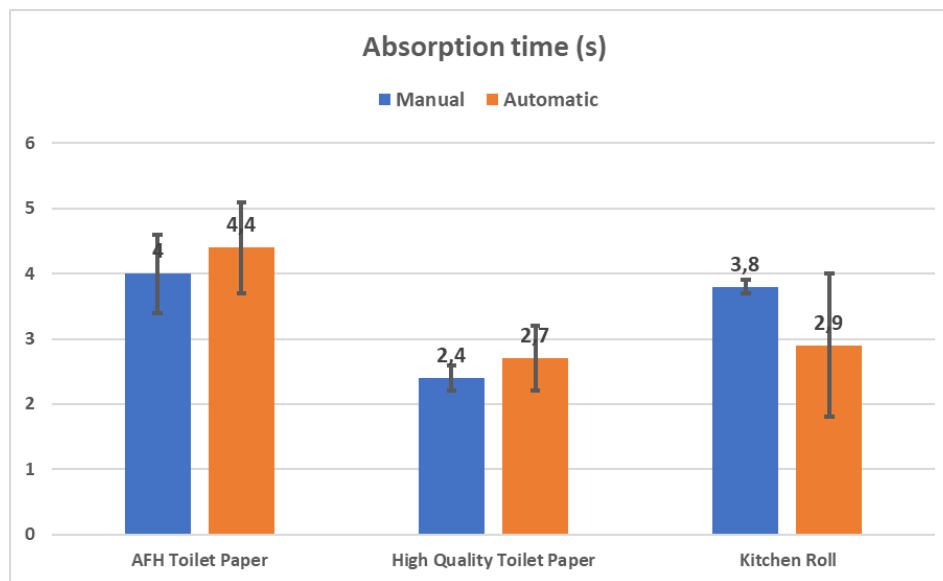
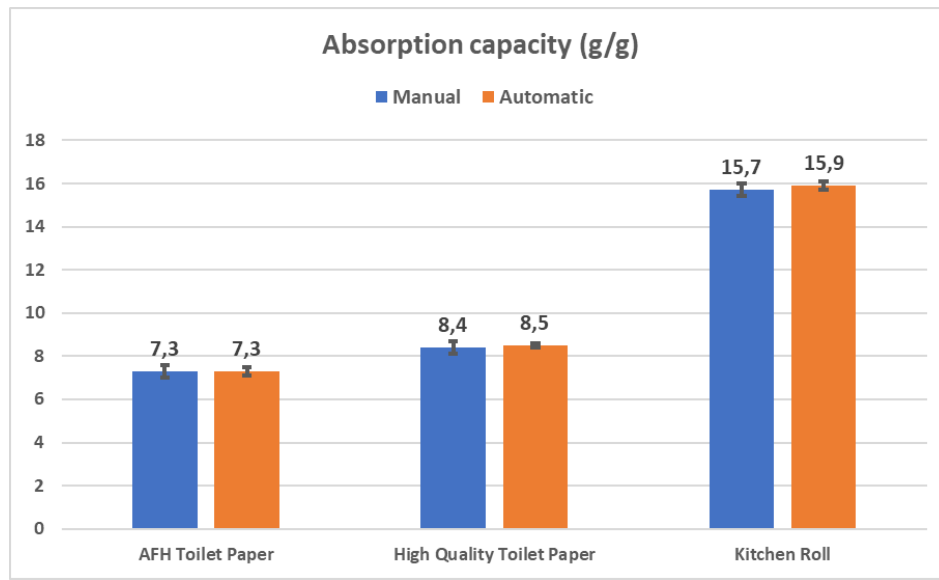
- Amount of product : 5 g
- Water temperature (deionized water): 23°C
- 5 replicates
- For repeatability : tests performed by the same operator 15 days apart

II. Results

a) Comparison auto / manu :

- ✓ **A very good correlation was observed between the 2 methods for both absorption capacity and time.** The standard deviation for the absorption time was slightly higher with the apparatus.

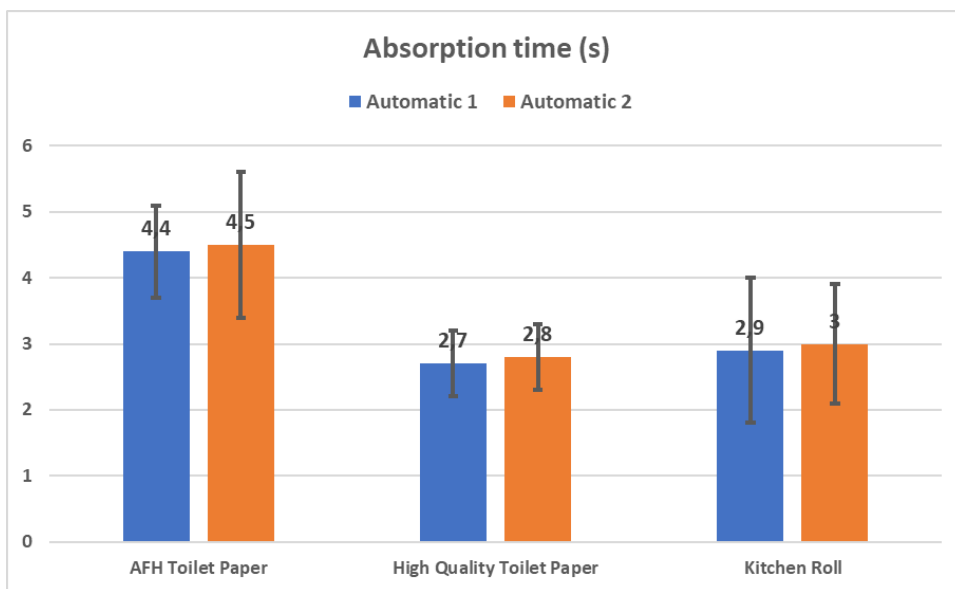
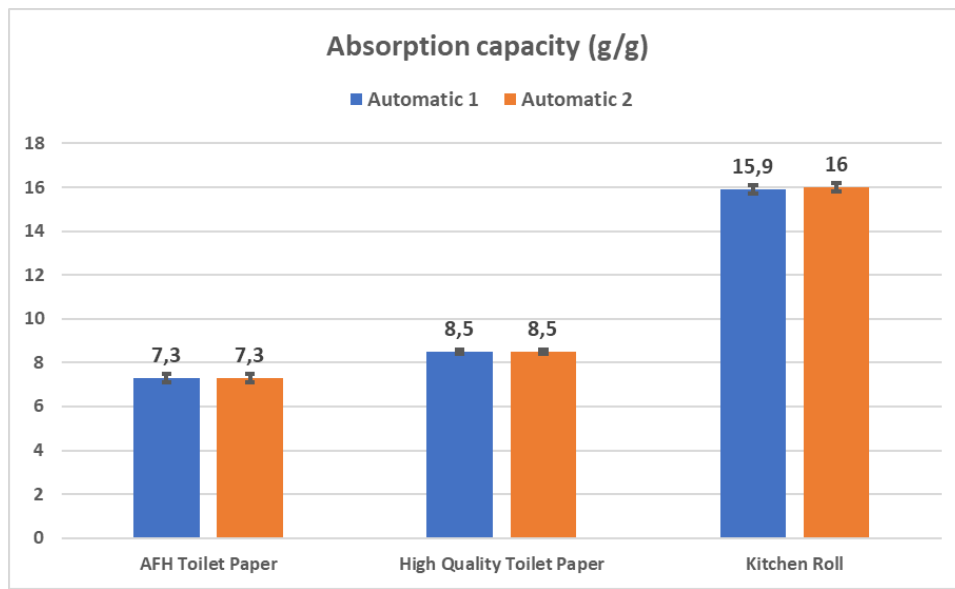
Sample	Method	AFH Toilet Paper		High Quality Toilet Paper		Kitchen Roll	
		Av	SD	Av	SD	Av	SD
Absorption capacity (g/g)	Manu	7,3	0,3	8,4	0,3	15,7	0,3
	Auto	7,3	0,2	8,5	0,1	15,9	0,2
Absorption time (s)	Manu	4,0	0,6	2,4	0,2	3,8	0,1
	Auto	4,4	0,7	2,7	0,5	2,9	1,1



b) Repeatability (automated method only)

- ✓ A very good repeatability of the automated method was obtained for both absorption capacity and time

Sample	Date	AFH Toilet Paper		High Quality Toilet Paper		Kitchen Roll	
		Av	SD	Av	SD	Av	SD
Absorption capacity (g/g)	30/07/2021	7,3	0,2	8,5	0,1	15,9	0,2
	16/08/2021	7,3	0,2	8,5	0,1	16,0	0,2
Absorption time (s)	30/07/2021	4,4	0,7	2,7	0,5	2,9	1,1
	16/08/2021	4,5	1,1	2,8	0,5	3,0	0,9



3. Conclusions

The results of the study demonstrated a very good correlation between the 2 methods for the 3 types of products tested, with an excellent repeatability of the TAA apparatus.

- ✓ **Easy to use and time saving apparatus**
- ✓ **Very good agreement with manual measurements**
- ✓ **Very good repeatability**