

Washroom hygiene: Comparative summary of hand drying systems

Basic hand hygiene consists of thorough hand washing with water and soap, followed by careful hand drying.



Pull-down Linen

Damp fabric is a hygiene problem

Separation of what is clean from what is dirty isn't always possible



Hand Dryers

Jet air dryers increase germ count by **42%**¹

Hot air dryers increase germ count by **194%**¹

Warm air and jet air dryers blow germs into the surrounding area and floors^{1,2}



Paper Hand Towels

Are the most hygienic hand drying method³

Reduce germs on finger pads up to **76%**¹

Rub off and absorb most of the germs¹

¹ Comparative Hygiene Study on three different hand drying methods: paper towel, warm air dryer, jet air dryer – UNIVERSITY OF WESTMINSTER (November 2008)

² Eurofins-Inlab study: Microbial contamination of surfaces associated with different types of hand drier devices (2012)

³ A. M. Snelling et al. (2010). Comparative evaluation for the hygiene efficacy of an ultra-rapid hand dryer vs conventional warm air hand dryers - The Journal of Applied Microbiology

The comparative arguments for each hand drying system

	Rolled Hand Towels	Folded Hand Towels		Pull-down Linen Rolls	Jet Air Dryers
Hygiene	24% Reduction in the quantity of bacteria after drying <small>(study by TÜV Rheinland – Sep. 2005)</small>	24% Reduction in the quantity of bacteria after drying <small>(study by TÜV Rheinland – Sep. 2005)</small>		4% Reduction in the quantity of bacteria after drying <small>(study by TÜV Rheinland – Sep. 2005)</small>	117% Increase in the quantity of bacteria after drying <small>(study by TÜV Rheinland – Sep. 2005)</small>
	76% Reduction in the quantity of germs in finger pads ¹ <small>(European Tissue Symposium – 2012)</small>	76% Reduction in the quantity of germs in finger pads ¹ <small>(European Tissue Symposium – 2012)</small>		The clean rolls supplied are not usually packaged in a hygienic manner and may be stored alongside soiled ones in the same storage location. When the textile rolls are used up and not changed, the users have to use the last piece of (already used) cloth, until replaced.	42% Increase in germ count on hands ¹ Jet Air Dryers blow water droplets in the air as far as 2 meters ¹ Risk of proliferation of bacteria if poorly maintained: stagnant water
Maintenance	36 secs Time required to reload consumables:	21 secs Time required to reload consumables:		44 secs Time required to reload consumables:	No consumables
	Extended period of time between replacement of reels (every 590 passes): little maintenance, dispensers always full	Moderate period of time between replacement of packages (every 150 passes): little maintenance, dispensers always full		Very short period of time between replacement of rollers (every 90 passes)	No time needed to replace consumables, but regular filter changes
	5 seconds Time to clean the dispenser:	3 seconds Time to clean the dispenser:		5 seconds Time to clean the dispenser:	1 minute Time to clean the dispenser: <small>(daily cleaning required by the manufacturer)</small>
Provisioning products	The paper grades are generally certified (Ecolabel, FSC)	The paper grades are generally certified (Ecolabel, FSC)		Use of chemical products for washing operations	Increased consumption of electrical power (appliances from 1600 W to 2400 W)
	Contract for provision of dispensers	Contract for provision of dispensers		Rental of dispensers	Purchase of dispenser (greater initial costs)
	Low inventory costs	Low inventory costs		Requires premises for the storage of high volumes of stock	No storage costs
	-	-		Frequent washing causes the cotton to shrink by about 10% (e.g. from 38 m to 34 m)	Costly repairs that cannot be carried out on location
	Cost transparency	Cost transparency		Invoicing by monthly installment: lack of transparency in relation to real costs	The appliance needs to have an electrical socket (difficult in cases of re-equipment)
	End-of-roller function – no wastage	No wastage on appliances containing two packages: can be reloaded at any time		No continuous system, ends of rolls are often wasted	Installation only possible in dry premises / entirely free of dust. Electrical appliance in a damp environment
Comfort image	Low noise level	Does not make any noise		Low noise level	Raised noise level: 80 / 90 dB
	Needs a storage unit	Needs a storage unit		Absence of dirt on the ground	The water residue is not collected and it remains at the bottom of the appliance or in the ambient area
	63% Of all users prefer this system <small>(study by the European Tissue Symposium in 2012)</small>	63% Of all users prefer this system <small>(study by the European Tissue Symposium in 2012)</small>		-	In the event of breakdown: no option proposed for the drying of hands
	No waiting time when drying your hands	No waiting time when drying your hands		Need to wait for the previous person to have cleaned his/her hands	10-40 seconds Long drying cycle: depending on the model,

The hand drying systems

Summary

	Rolled Hand Towels	Folded Hand Towels	Pull-down Linen	Jet Air Dryer
Reduction in the number of bacteria	-76% ¹	-76% ¹	-4% (TÜV Rheinland)	+42% ¹
Recharge time	Moderate -	Low +	High - - -	Ø consumable + + +
Replacement time for consumables	Every 590 passes +	Every 150 passes -	Every 90 passes - - -	Ø consumable + + +
Cleaning time per appliance	5 seconds Fast	3 seconds Fast	5 seconds Fast	1 minute High
Environmental impact	Paper waste, but often FSC or Ecolabel certified	Paper waste, but often FSC or Ecolabel certified	Chemical products for washing operations	Increased electrical power consumption
Acquisition of dispenser unit	Provision + + +	Provision + + +	Rental contract + + +	Expensive - - -
Waiting time to dry hands	No waiting time	No waiting time	5 seconds	10 to 40 seconds
Noise level	Low	Zero	Low	High 90dB
Costs Provisioning Stocking	Transparency Stocking: +	Transparency Stocking: -	Contract: lack of transparency Stocking: - - -	Appliance expensive to repair Ø stocking: + + +

Unless otherwise stated, all data come from : Sarikohn: 2012 market research - France and Germany.

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