

LCA of surgical drapes and tapes: reusable and disposable

EUROTAPE



Healthcare goes green

A life cycle assessment done using European energy modules and the CML impact method showed that the reusable drape system has substantially lower environmental impacts. The reusable drape system also outperformed the disposable drape system in all the three environmental indicators studied within the present analysis.

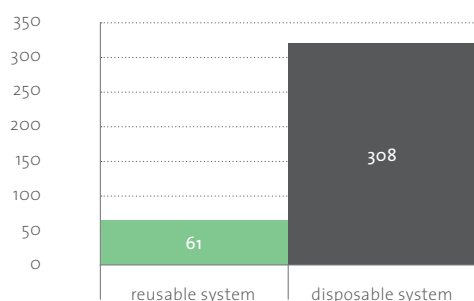
There appear to be increased environmental benefits for many hospital covering items that are reusable versus disposable. Thus, adding the life cycle of other textile and non-textile items found in health care facilities (especially surgical gowns) would further strengthen the environmental benefits of reusable systems.



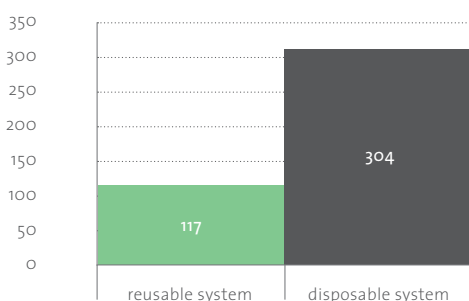
Environment friendly

Reusable and disposable compared in three environmental indicators

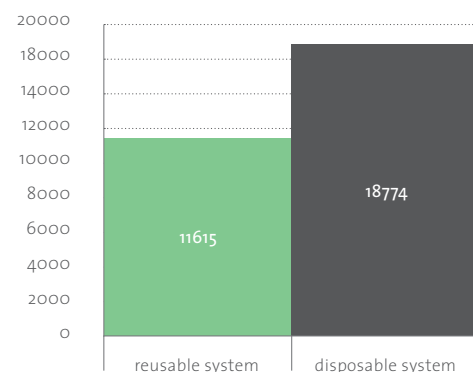
Solid Waste Generation (KG)



Blue Water Consumption (KG)



Natural Resource Energy Consumption (MJ)



Improvement from selecting reusable system: 80%

Life cycle stage	Reusable	Disposable
drapes	0	245
drape packaging	58.1	57
surgical tape	2.96	5.26
tape packaging	0.038	0.022
biological waste on drapes	0.01	0.643
total kg	61	308

Improvement from selecting reusable system: 62%

Life cycle stage	Reusable	Disposable
cooling water	75.1	218
steam	76.9	85.8
laundry reusable drapes (incl. recovered water)	-35	0
total kg	117	304

Improvement from selecting reusable system: 38%

Life cycle stage	Reusable	Disposable
drape manufacturing + supply chain	2300	16260
drape packaging + supply chain	1801	2112
tape manufacturing + supply chain	305	186
tape packaging + supply chain	7.7	4.5
laundry	5717	0
sterilization	413	43
use phase transport	1038	0
end of life	33	168
total NRE	100	162

The surgical tape manufacture and delivery (including tape supply chain) account for less than 3% of the cradle-to-end-of-life net NRE for reusable and disposable drape systems.

Did you know?



Sustainable

The majority of regulated medical waste is produced in the OR from the use of disposable surgical supplies.

Disposable drapes are landfilled or incinerated for energy production at end-of-life. Reusable drapes are made available for recycling into other products.



High protection

Excellent surgical gowns and drapes:

Substantially lower the risk of post-operative infections

Reduce sources of contamination to lower the healthcare cost and morbidity



Comfortable

Evaporation of transpiration molecules to cool the body

Breathable materials keep the body temperature steady

High performance textiles for high performance surgeries

Life cycle assessment of surgical drapes and tapes reusable and disposable - Environment Clarity Inc. (E.Vozzola, M. Overcash, E. Griffing) - October 2018

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