

 **GEBERIT**

Life Cycle Assessment  
Urinal flushing controls  
UR60 and UR61

Geberit Sanitary Systems Public





# Framework of the Life Cycle Assessment

Manual as well as electronic controls are used for urinal flushing. Electronic controls are preferable from a hygienic point of view. The flush of the Geberit urinal flushing controls UR60 and UR61 is triggered electrically either with the aid of a battery (9V) or mains supply (230V). The question which type is more efficient from an ecological point of view may be answered by the Life Cycle Assessment (LCA).

## Object of investigation

The Geberit urinal flushing control UR60 was assessed. The difference between the UR61 and the UR60 is that the former has a predetermined 1-liter flushing volume and a different design. The result, therefore, applies to both flushing controls.

## Functional unit

The energy supply for the operation of the urinal flushing control was assessed as a functional unit. The assumption is 60 flushes per day during a period of 10 years.

## Scope

Only the batteries were assessed with respect to battery supply. Correspondingly, the mains supply circuit (transformer, circuit board, electronic components, casting compound, housing), the mains supply line (cable, cable protection duct) as well as the electricity consumption over a 10-year period were assessed.

## Assumptions battery supply

2 to 3 lithium batteries or 5 alkali-manganese batteries are needed in 10 years.

Lithium batteries contain no harmful substances. As a rule, alkali-manganese batteries contain no mercury and cadmium but the heavy metal zinc. The crucial factor was the energy consumption for the production of batteries (0.5 kWh) which, in the case of a lithium battery, equals 50 times the utilizable energy.

Correct disposal was assumed, i.e. the recycling of batteries. Practically all components may be recovered as secondary raw materials.

## Assumptions mains supply

The mains supply circuit and the mains supply line are primarily composed of copper and plastic. As not enough data were available, the production of the mains supply was not included. However, it can be assumed that the impact on the LCA is marginal.

The average electricity consumption of the mains supply circuit is 1 Watt which equals 90 kWh over a period of 10 years. The related emissions are based on the European UCPTTE electricity mix.

Correct disposal was assumed. Upon the disposal of electronic components, all materials, with the exception of plastic parts, can be reused.

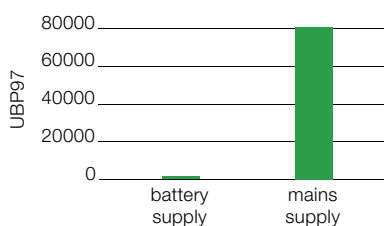


## Result of the Life Cycle Assessment

With respect to the Geberit urinal flushing controls UR60 and UR61, the battery supply clearly has better results than the mains supply from an ecological point of view. The environmental impact of the mains supply equals about 50 times the impact of the battery supply.

### Analysis of result

The environmental impact of the Geberit urinal flushing control UR60 is shown in the form of eco-points in the diagram (UBP97).



The large number of eco-points for the mains supply is due to the electricity consumption during utilization. There is still a significant difference between both types even if the framework conditions change, e.g.:

- 120 instead of 60 flushes per day
- disposal of batteries together with the household garbage instead of recycling
- mains supply line of 1 meter instead of 10 meters
- alkali-manganese batteries instead of lithium batteries

The assessment of battery solutions is generally less favourable than that of mains supply solutions. Therefore, the result shown here is not in line with expectations and was only made possible by the energy-saving Geberit urinal flushing controls.

This result is not an indication that battery solutions are better than mains supply solutions for other applications.

### Recommendations

- Geberit urinal flushing control UR60 or UR61 with battery supply should be installed.
- Lithium batteries should be used.
- Used batteries should be separately collected and returned to the point of sale for reuse.
- Geberit urinal flushing controls should be returned to the Geberit customer service for professional disposal.

### 1-liter water-saving technology

As in the case of flushing cisterns, in addition to the selection of the most suitable type of energy supply, the flushing volume plays an important role. The Geberit 1-liter urinal siphon, suitable ceramic elements and the Geberit urinal flushing control UR61 permit a clean flushing with only 1 liter of water. The intelligent flushing control automatically decreases the flushing volume with more frequent use. Water consumption may be reduced by up to 30 %, depending on the flushing volume.

### Waterless urinals

Waterless urinals offer an opportunity to save even more water. Daily cleaning is, however, absolutely necessary to ensure hygienic cleanliness. Siphon controls with a long lifetime which require no additional power and no sealing liquid are preferable from an ecological point of view.

# Geberit and Sustainability

Geberit is a market leader in the sanitary industry, has been active in environmental protection for many years and is among the pioneers in the environmental area.

One of the core competences has been the preparation of Life Cycle Assessments (LCA) for Geberit production sites and products since 1993. LCAs help Geberit make safely based decisions for the development of eco-friendly products which are inter alia distinguished by their longevity, unproblematic materials, good reusability and minor environmental impact during their lifecycle. In addition, Geberit has integrated the sustainability principle into its corporate strategy for many years.

More details are available in the Geberit Group's Sustainability Report or on the Internet.

## Impact assessment methods

The environmental impact of a product over its entire lifecycle is summed up and weighted in the LCAs – from the extraction of raw materials to disposal. In the process, Geberit uses two recognized impact assessment methods:

- Swiss method of ecological scarcity – 1997  
Measuring unit: Eco-points (UBP97)
- Dutch Eco-indicator – 1999 and 1995 respectively  
Measuring unit: Eco-indicator points (EIP99 and EIP95 respectively)

Both methods permit to fully aggregate the result, i.e. the environmental impact is expressed in a single score. The smaller the number of points, the lesser the environmental impact. The environmental impact scores have to differ by two or more for a product to be clearly better than another from an ecological point of view.

## Detailed report

At your request, we will be happy to provide you with the detailed LCA report (as of October 1998, only available in German). Please contact your local distribution company or the Environmental and Sustainability Division of the Geberit Group.

Geberit AG  
Schachenstrasse 77  
CH-8645 Jona

T +41 55 221 63 00  
F +41 55 212 67 47  
sustainability@geberit.com  
www.geberit.com