



Confederation of Indian Industry



GreenPro Certification Assessment Report

Aquatron International AB
Ekebyvagen 4, 725 92 Vasteras, Sweden

Aquatron® Solid-Liquid Separator

October 2018

'GreenPro Certification Assessment Report

Company Name: Aquatron International AB

Product Classification: Aquatron® Solid-Liquid Separator

Review date: 10/10/2018

Purpose

The assessment docket submitted by 'Aquatron International AB' for GreenPro certification of their product '**Aquatron® Solid-Liquid Separator**' was evaluated according to the requirements of GreenPro certification for product considered as part of GreenPro 'Innovation' category.

GreenPro evaluation methodology

The product was assessed based on the following parameters:

1. Product Description
2. Product Application
3. Product Performance
4. Benefits to Green Built Environment
5. Case Study

The evaluation has been carried out based on the details collected from product manufacturer, visit to the end user's site where the product is installed, and the feedback from the end user.

Eligibility

The product '**Aquatron® Solid-Liquid Separator**' manufactured by Aquatron International AB qualifies for 'GreenPro' certification.

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Executive Summary

Aquatron International AB has applied for GreenPro – Green Product Certification for their product “**Aquatron® Solid-Liquid Separator**” - A compact solution for separating solid waste from flushing water.

The separation process takes place based on difference in momentum associated with flushing water and the present solids. The mixture passes through the uniquely designed casing of Aquatron separator that separates the liquid from the solid waste. Aquatron separator thus prevents sludge formation and is a solution for avoiding complex and energy intensive sludge treatment equipment. The product is compact in size and can be used in different typologies of buildings as a solution for treating domestic sewage waste from restrooms and toilets.

The product has been found to be an effective solution for enhancing water efficiency and waste management for a facility. Its performance has been validated based on user feedback, site visit and third-party validation reports.

CII Green Products & Services Council appreciates Aquatron International AB for their efforts towards developing an innovative product for enhancing the process of waste management involved in handling domestic sewage waste from restrooms, and on site water efficiency.

Based on the documents provided and the site visit, '**Aquatron® Solid-Liquid Separator**' manufactured by *Aquatron International AB*, meets the requirements of GreenPro certification.

CII - Green Products and Services Council is glad to award 'GreenPro' Certification for the product '**Aquatron® Solid-Liquid Separator**'.

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1. PRODUCT DESCRIPTION

Aquatron® Solid-Liquid Separator separates faecal and other solids from flushing water. The separation process takes place based on difference in momentum associated with flushing water and solids when the mixture passes through the uniquely designed casing of Aquatron separator. The effect of centrifugal force and gravity allows the natural separation process without the use of electricity and chemicals. Solid – liquid separation allows faecal matter to decompose into small quantities of odourless soil and liquids for reuse in gardening, irrigation or ground water recharge. Aquatron separator thus prevents sludge formation and is a solution for avoiding complex and energy intensive sludge treatment and related infrastructure and equipment.

The separator is made of recyclable polyethylene with the manufacturer claiming a lifespan of about 50 years.

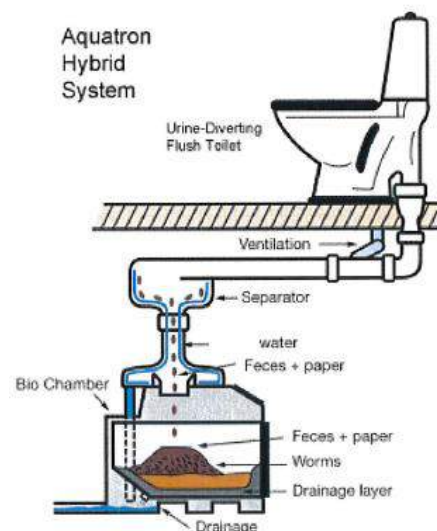


Figure 1: Aquatron® Solid-Liquid Separator

2. PRODUCT APPLICATION

The product is compact in size and is applicable for different typologies of buildings. Current installations have been done at residential buildings, schools, hotels, offices, resorts, factories, etc. The separator can also be used as a retrofit solution for effective sewage treatment in existing buildings. The Aquatron Solid-Liquid Separator comes in two

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sizes. The standard sized separator can be connected to up to 10 toilets whereas the larger one can serve up to 25 toilets. In case of more number of toilets, the number of separators can be increased proportionately.

3. PERFORMANCE CLAIMS

The product's performance is validated as per requirements of European and Swedish Technical approval methodology. Below are the performance parameters for **Aquatron® Solid-Liquid Separator**.

Hydraulic Efficiency, water	99%
Hydraulic Efficiency, toilet paper	100
Hydraulic Efficiency, solid material	100
Water tightness	Pass

The relevant validation documents were submitted for GreenPro evaluation.

4. BENEFITS TO GREEN BUILT ENVIRONMENT

The **Aquatron® Solid-Liquid Separator** contributes in enhancing water efficiency and waste management aspect of a building. It is a proven technology for effective reclamation of 98 % of toilet flushing water for groundwater recharge or secondary uses like irrigation. The product thus contributes to water savings as faecal matter is separated from water. This also leads to efficient bio-digestion of faecal matter. The fully decomposed solid matter becomes a natural fertilizer and can be used for plantation.

5. CASE STUDY

During the site visit to **Shivtara Grain Mill**, it was found that the product is performing to user satisfaction levels. Based on the primary feedback from the end-user, the factory maintenance staff is quite satisfied with the performance of **Aquatron® Solid-Liquid Separator**. The frequency of filling of the solid waste sump tank has drastically reduced. The solid waste decomposition rate has increased significantly, and the extracted water is directed to settling tank for total suspended solids to settle. The wheat wash water from the factory processing is stored in a separate settling tank. Water from both settling tanks is pumped into a reed-bed where the red root zone provides oxygen for bacteria to reduce BOD content. The water is then filtered through layers of sand, gravel and rocks before it flows its release for groundwater recharge through the percolation pit.

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Technical Advice

Based on the observations during the site visit and the feedback from the user, we suggest the Pangaea team (representatives of Aquatron AB) to provide measurement system for measuring quantity of water diverted and solid waste decomposition rate. This shall allow the end user to measure overall effectiveness of **Aquatron® Solid-Liquid Separator**.

Also, we suggest the team to organize trainings for maintenance staff covering the best practices related to use and maintenance of Aquatron® Solid-Liquid Separator, and related auxiliary systems and tanks.