

Materials accredited to the BIOMASS system undergo a formal process of acceptance.

## Process description

An expert inspection of potential organic and non-organic materials is conducted and a *prima face* case established for material suitability. Observably unsuitable materials are rejected at this point. Preference is given to materials of recycled origin.

The material accreditation system commences with baseline laboratory analysis where some materials are eliminated due to ineffective performance attributes or unacceptable characteristics such as high, leachable pollutant loadings. This is identified in elemental and characterisation analyses. Numerous studies have resulted in the development of a classification system that enables homogenisation based on analyses of desired inherent attributes and alignment of relative characteristics.

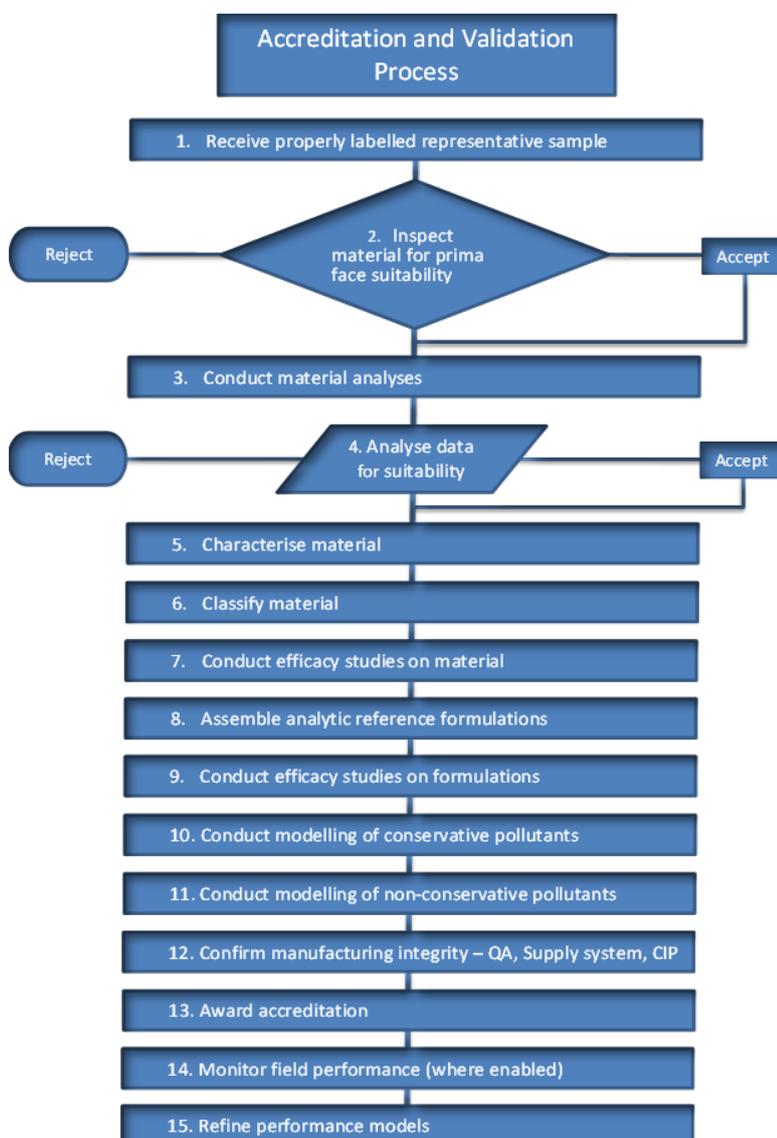
Effective materials are categorised according to homogenised characteristics before testing begins on the performance efficacy of these in reference formulation media.

Relationships are established between specific characteristics and the resultant performance attributes of each material and reference formulation. This enables subsequent manufacturers' formulations to be tailored for the specific performance requirements of particular systems. The result is a validation system methodology that ensures that the components and formulations used in a filter media design are of dependable quality, known performance within an acceptable range and fit for purpose. Subsequently manufacturing warranties can be offered.

Manufacturing to the CORE Specifications can be achieved by any filter media manufacturer using their specific (accredited) proprietary ingredients and formulations.

Specifications contain the elements that are considered essential for bio filtration manufacturing to the CORE system, however the specifications do not constitute the entire spectrum of studies examined in the accreditation process. CORE only accredits those materials, formulations and individual manufacturers that have formally completed the entire accreditation process.

Manufacturers' proprietary materials and formulations must fall within specified operational and performance parameters to be awarded accreditation. The following report provides data from materials and formulations that have passed the accreditation process for use in Singapore. A databank of over 40 Australian and International materials and formulations has been constructed and is growing.



# Specification LGE012

## Filter Media for Vegetated Designs

### DESCRIPTION:

Designed for vegetated applications including landscape, detention basins and rain gardens, Landscape Filter Media allows for the efficient infiltration and treatment of contaminated water run-off from roads, car parks and other impermeable surfaces. The treated water can then be discharged, stored and/or re-used for fit for purpose use such as landscaped areas irrigation. A wide range of plant species and vegetation can be grown in Landscape Filter Media due to the high water retention capacity, organic content and the material nutrient characteristics.

The following specifications are indicative only and may vary. Product mixtures can be purpose designed based on factors such as treatment requirements, hydrology, device, application and plant species used. Product mixtures can contain components including zeolite, clay, recycled carbon materials, perlite, zero valent iron, ash, sawdust, recycled organics, limestone, aggregates, sand and microbial inoculants and can also be produced in various grades and mixtures for transition and drainage layers. Compaction, particle size selection and other properties can be engineered to achieve alternative hydraulic conductivity, life span and retention time requirements.

### *Specification for Landscape Filter Media LGE012*

Hydraulic Conductivity ( $K_{sat}$ )	< 300mm/hr (Determine using AS1289.6.7.2 - 20011 method) < 900mm/hr (Field $K_{sat}$ )
pH (1:5 in H <sub>2</sub> O)	6.5 to 8.0
Organic Carbon*	≤ 5%
Wettability	< 5mm/m (AS4454)
Effective Cation Exchange Capacity	> 10 cmol/kg
Moisture content (air dried)	> 10% < 50%
Inherent Retention Capacity	> 25%
Toxicity	> 60mm (AS4454)
EC	< 1 dS/m (AS4454)
Dispersion	Emerson Class No 8
Leaching	EC < 300 μS/cm after 350mm rainfall
Ponding	Stagnant water fully drained from media in 6 hours
Vegetation integrity	Ca/Mg ratio ≥ 2:1 K/Mg ratio ≤ 1.5:1

\* organic carbon not "organic matter"