STORMWATER AUSTRALIA

Stormwater Quality Improvement Device Evaluation Protocol (SQIDEP)

VERIFICATION CERTIFICATE

Applicant Information

Company Name	Holcim Australia
Company Address	18 Little Cribb St Milton QLD 4064
Website	www.humes.com.au
Contact Email	charles.kelly@holcim.com

Verified Technology

Product Title	**HumeFilter UPT Family**
SQIDEP Pathway	Local Field Trial Evaluation Pathway
Reviewed Documents	The following documents form the basis of this independent evaluation: • SQIDEP Detailed Performance Report 31/01/23 (Issue 1) (superseded) • SQIDEP Detailed Performance Report 22/03/23 (Issue 2) (current) • Appendix C – iAuditor Sample Collection Reports_Timelapse Videos • Appendix D - ALS Lab testing documentation • Appendix E – Hydrographs • Appendix F - Statutory Declarations • Appendix H - Lab Testing Reports The following files and documents were also provided: • Dirty Water Test.MP4 • Filter_S04pc_Q0100_view1_hiRes.avi • Filter_S04pc_Q0100_view3_hiRes.avi • Hume Filter_Animation.MP4 • Humes UPT.ppt • Stormwater Quality Lab Testing- Final Report • Manly hydraulic laboratory testing Additional information was requested after a meeting between the Evaluators and applicants, chaired by a senior representative from Stormwater Australia including: • Additional laboratory Quality Assurance information in the form of Sample Receipt Notices • Sizing spreadsheets supplied on a confidential basis for the purpose of this review • Additional information on maintenance procedures Further information was provided on 30th May 2023 related to the permeability of the pleated filter. This included: • Technical Data –Non-woven Filter • Cover letter from Matthew King of Filquip Pty Ltd regarding filter permeability

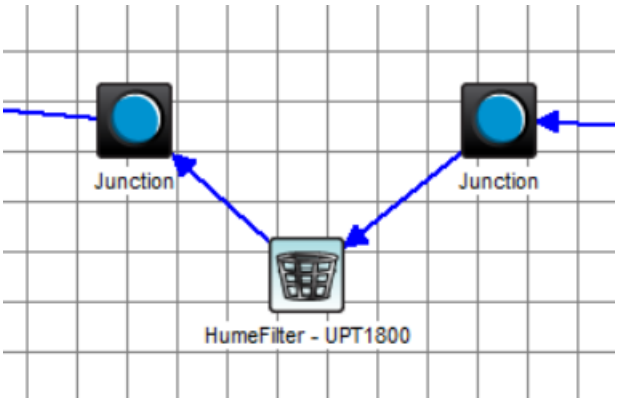
Technology Information

Applicant's Verified Performance Claims	Total Suspended Solids (TSS)	89 %
	Total Phosphorus (TP)	75 %
	Total Nitrogen (TN)	50 %
	Gross Pollutants	90 %

Maintenance Performed during monitoring	The Holcim Humefilter was maintained once during the monitored period. This maintenance involved a filter backwash and removal of captured gross pollutants and sediment. The filter cartridges were not replaced.

Verified method to model in MUSIC

Modelling a HumeFilter in MUSIC is as follows;



Bypass (TFR) parameters should be set as appropriate for each size of device in the family.

Device Designation	TFR (L/s)	Pollutant Removal
UPT1200	12	TSS 89% TP 75% TN 50% Gross Pollutants 90%
UPT1800	30	
UPT2400	55	
UPT3000	100	
UPT3600	160	

Input Properties should reflect those shown below;

Pollutant	Influent range	Effluent Range	Reduction
Total Suspended Solids (TSS)	1000	110	89%
Total Phosphorous (TP)	5	1.25	75%
Total Nitrogen (TN)	50	25	50%
Gross Pollutants	1000	100	90%

Conditions

The limitations of the acceptance of these claims include:

As with the majority of treatment devices, designers should consider the need for pre-treatment on a case-by-case basis with regard to optimising the maintenance regime for the site.

The results are for a road-based catchment. The results lie within acceptable inflow limits for this type of catchment and based on the analysis are found to be representative. The device has been tested within the pollutant loading ranges specified by SQIDEP v1.3. As with the majority of treatment devices, where the influent water is more polluted there would likely be a greater percentage of pollutants removed and a higher residual load in effluent water, and where the influent water is cleaner there would likely be a lower percentage of pollutants removed and a lower residual pollutant load in effluent water. It should be

	noted that for catchment surfaces which are expected to be cleaner (such as roofs) pollutant loads may not be significantly detrimental to receiving environments, and that pre-treatment may offer minimal advantage. The results are reliant on the maintenance of the device being consistent with the manufacturer's guidelines. The life expectancy of the media should be regularly monitored and replaced in accordance with the Manufacturer's Technical Guidelines/Maintenance Manual. The tested device was configured "offline" with flows exceeding the TFR externally bypassing the device. Alternative installations may result in different outcomes. While the device should be capable of capturing Gross Pollutants it has not been optimized for this function. In particular, the collection volume may not suit the catchment area and require additional clean-out.

Independent Reviewers

Evaluator	Evaluator
Andrew Allan	Rod Wiese
AFFLUX CONSULTING STORMWATER MANAGEMENT SOLUTIONS	WIESE INSIGHT

Issue of Verification Certificate

Acceptance by SQIDEP Governance Panel	24-Aug-2023
Acceptance by Stormwater Australia Board of Directors	25-Aug-2023
Verification Issued	31-Aug-2023
Stormwater Australia Verification Certificate Number Reference	SA-2023/07a-VC

Verified under SQIDEP Version 1.3

Field Evaluation Pathway