

Technical Support Sheet - Operation & Maintenance Manual

HyndsFilter



SW31 O&M
Version: 1.0
June 2026

This guide outlines the maintenance procedures and requirements for HyndsFilter units.

Purpose of this Guide

Where the contents of this guide differ from project specifications and drawings, supervisory personnel should consult with the Hynds team. In the event of any conflict between the information in this guide and local legislative requirements, the legislative requirements will take precedence.

It is the responsibility of the site owner and its contractors to determine the site's suitable access and location for maintenance plant and equipment.

Nothing in this guide is to be construed as a representation, endorsement, promise, guarantee, or warranty, whether expressed or implied.



Safety Advice

The HyndsFilter unit must be maintained in accordance with all relevant health and safety requirements, including the use of PPE and fall protection where required.

Confined Space Entry

Maintenance of the HyndsFilter may require limited entry, however, if entry into the unit is required, then the device is deemed a confined space. As such, if entering the unit, all equipment and training must comply with HSE regulations. It is the responsibility of the contractor or person/s entering the unit to proceed safely at all times.

Personal Safety Equipment

The contractor is responsible for the provision of appropriate personal protection equipment including, but not limited to safety boots, hard hat, reflective vest, protective eyewear, gloves and fall protection equipment. Make sure all equipment is used by trained and certified personnel and is checked for proper operation and safety features prior to use.

Handling

The customer, or their contractor, is responsible for the removal of access lids from the HyndsFilter unit. The customer or contractor should familiarise themselves with the device and site constraints, and particular attention should be given to safety hazards such as overhead power lines and other services in the vicinity when considering the position of plant and equipment.



Operation of the HyndsFilter is as follows:

To ensure ongoing long-term environmental protection the HyndsFilter needs to be maintained every twelve months.

Ongoing maintenance frequency will be determined after initial quarterly inspections in the first year after installation. However, only annual maintenance is anticipated for all units installed within drainage infrastructure. Inspections can be performed by anyone following this document.

Comprehensive maintenance is performed from the surface via vacuum truck. Companies capable of performing this maintenance can be found by researching sewer cleaning or liquid waste removal in your local area.

HyndsFilter is comprised of several structural and functional components:

- A cylindrical precast concrete structure available in a range of diameters and depths acts as a vessel providing structural support and storage for filtered pollutants.
- A rigid high-strength stainless-steel plinth sits in the lower section of the concrete chamber creating a 500mm deep sump for the deposit/accumulation of sediments & debris.
- The multistage filter arrangement is seated on top of the plinth, which comprises three basic elements:
 - a. An inner stainless steel perforated screen
 - b. A stainless-steel basket containing a layer of granulated activated carbon (GAC)
 - c. A pleated cartridge filter housed within a protective perforated stainless-steel support housing
- A rigid high-strength stainless-steel insert sits on top of the filters, which performs all the hydraulic control for the system.
- The heavy-duty lid and surround are designed to meet HD60 loading requirements in accordance with CPAA guidelines, NZS 3101, NZS 3109, and the NZTA Bridge Design Manual. Custom designs for HN-HO-72 loading can also be provided.

Maintenance Overview

- Water enters via an inlet pipe through the concrete chamber, into the center of the stainless-steel insert, then into the center of the chamber. Note: it's possible to have a grated inlet in the center of the lid to pick up overland flow.
- Sediments and other heavy materials fall into the 500mm deep sump of the device.
- Water then passes through the filter arrangement from inside to out under the hydraulic head created by a 150mm difference between the inlet and outlet pipe invert levels.
- Water flow is designed to first pass through the perforated screen, then the GAC layer, and finally through the pleated cartridge for polishing. The filters are designed to only operate at 34% of their hydraulic capability, allowing a redundancy of 66% to cater for blocking over time.
- Once through the pleated cartridge, the water then rises up between the outside of the pleated cartridge and the concrete chamber, and through a series of v-notches in a rim weir on the outer edge of the stainless-steel insert.
- The water passes through these v-notches and onto the return channel toward the outlet pipe. The v-notches are important to ensure that the flow on the return channel remains laminar to minimise losses through the system and into the downstream drainage network.
- While the HyndsFilter is designed as an off-line device, as an added factor of safety, it is also capable of internally bypassing should there ever be a blockage in the filters or the bypass pipe.
- Being a cylindrical chamber, the outlet pipe can be located at almost any angle relative to the inlet pipe.

Inspection Procedure

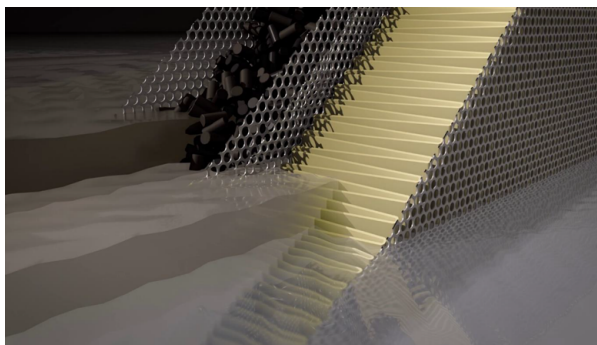
HyndsFilter units are sized to require maintenance every year after initial inspections have determined the pollutant load of installations.

New installs require quarterly inspections to determine the pollutant load of the drainage system and the manufacturer's recommendation is to conduct these quarterly.

Any authorised personal can inspect the HyndsFilter to determine the levels of sediment in the device using the following procedure:

- Locate the HyndsFilter.
- Remove the cast iron lid that's located in the top center of the device.
- Conduct a visual inspection of the inlet and outlet pipes to ensure there are no blockages.
- Conduct a visual inspection of the stainless-steel insert and check for damage; also check for obstructions in entry to the center of the stainless-steel insert.
- Use the Sludge Judge to determine the levels of sediment in the device.
- Lower the Sludge Judge all the way to the bottom of the HyndsFilter chamber. At the base of the unit, the float valve will open allowing materials to flow in. It should be lowered in slowly and not plunged to the bottom.
- When at the bottom of the unit the clear pipe of the Sludge Judge will be filled to the top water level with water (and sediment at the bottom). Tug slightly on the rope to set the check valve trapping the mixture inside
- When the Sludge Judge has been raised clear of the unit, the amount of sediment in the base of the device can be read using the markers on the clear pipe section.
- To empty the Sludge Judge, touch the check valve pin against a hard surface; this opens the check valve allowing the contents to drain out. The depths of the sediment should be recorded.

HyndsFilter will require a clean out when the sediment levels on all models reaches a depth of 500mm.



Maintenance Frequency & Procedure

The HyndsFilter unit must be maintained in accordance with all relevant health and safety requirements, including the use of PPE and fall protection where required.

Maintenance Frequency

It is generally recommended that inspection of the unit to be undertaken every three months for the first year of operation. This schedule may then be relaxed after a year, when confidence is gained regarding the actual pollutant load and run-off generated by the contributing catchment.

You may elect to undertake inspection yourself or choose to contract a waste management service for an inspection and maintenance package. Contact our team for inspection and maintenance recommendations in your area, if needed.

The need for maintenance can be determined easily by inspecting the unit from the surface. The depth of sediment can be measured from the surface without entry into the HyndsFilter via a clear tube (Sludge Judge sediment sampler). For inspection purposes, the sampler can be lowered into the 600mm cast iron lid in the center of the unit. Generally an annual maintenance schedule is recommended. However, maintenance frequency will vary with the volumes of stormwater pollution/ sediment generated by your site based on local conditions. Once site load is established, frequency may vary anywhere from twice a year to once every three years.

Removal of Hazardous Material

The requirements for the disposal of material removed are like that of any other stormwater treatment device. Local guidelines should be consulted prior to disposal. De-watered sediment may be suitable for disposal via landfill. It is recommended to check with the relevant authorities in your local area as some may require testing of the sediment prior to disposal.

Maintenance Procedure

HyndsFilter storage chamber should be inspected twice annually with a sludge judge/survey staff. If the sediment has reached a level of 500mm it should be maintained as follows:

Annual Interval

- Arrive onsite with a vacuum truck
- Remove lid.



- Vacuum out the contents of the sump





- Rinse the exterior and interior of the Stainless-Steel insert with clean water, into the sump.



- Backwash the filters by pumping 2,000L of clean water at a rate of 5 - 10 L/s on the external side of the filters, allowing the water to pass from outside the filters to inside the sump
- A filter exchange is required if the water level on the outside of the filter rises to the level of the return channel.
- If, however, the water freely backwashes through the filters and doesn't reach the return channel level, then the filters can remain until the next inspection
- Vacuum out any sludges and water retained in the sump.

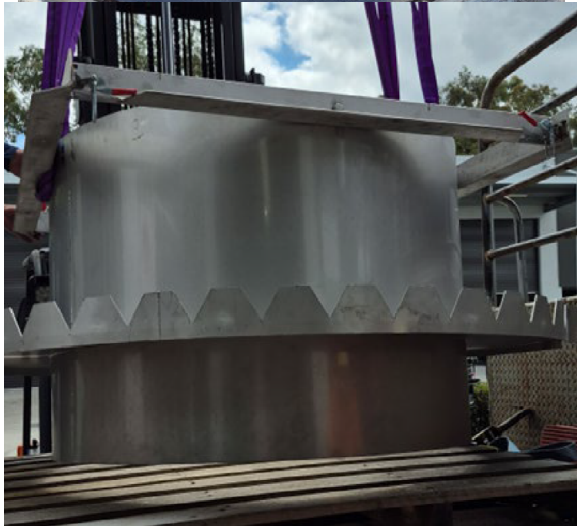


- Replace lid

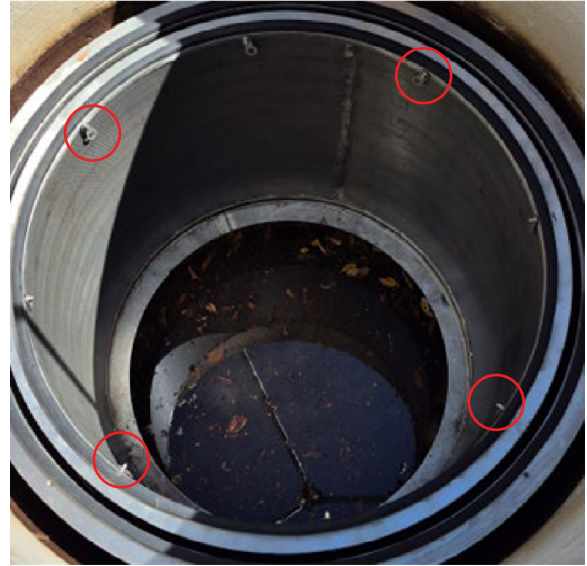
5-year Interval

As above plus:

- Rinse and remove stainless-steel insert. To remove the stainless steel insert, you will find a latch clamp on each corner of the support frame, which might also be cable tied into the locked position. Cut the cable tie (if required) and lift the latch clamp into the "up" position, and this will release the lower loop of the latch clamp from a bracket that is fixed to the concrete chamber wall. Once the four latch clamps have been released the entire stainless-steel insert can be lifted out of the concrete chamber to reveal the filters below.



- Rinse and remove used GAC and pleated cartridge.
- The inner filter is the GAC and the outer filter is the pleated cartridge.
- The GAC filter can be lifted out of the chamber using 4 of the 8 internal lifting eyes. The lifting eyes can be rotated around into the "up" position and a four-chain sling used to lift out the inner GAC filter



- The pleated cartridge is supplied with 4 x M10 stainless steel lifting eyes that are screwed into the top of the pleated cartridge filter for its removal. While there are 8 threaded holes in the top plate of the pleated cartridge filter, only four need to be used for lifting the pleated cartridge from the concrete chamber. Vacuum out any sludges and water retained in the sump.



- Thoroughly rinse the inside of the concrete chamber and then vacuum out the residual material.



- Exchange filters with the replacements brought to site.
- The pleated cartridge filter can be suspended above the concrete chamber and a thorough backwash performed using a standard hose. The GAC filter has a cap on the top, which is secured in place by the bolts that hold the lifting eyes. Once the bolts and lifting eyes are removed the cap can be lifted off, which provides full access to the GAC. The spent GAC can be vacuumed from the filter housing, and re-filled with new GAC onsite, which can be procured from a various suppliers (GAC specification can be found in the Appendix). Once refilled, the cap is replaced, and the GAC filter can be lowered back into position.
- **Note: after the pleated cartridge and GAC filters have been lowered into position, make sure that the lifting eyes on the GAC filter are lowered and the lifting eyes on the pleated cartridge are removed and kept for future maintenance.**
- Re-insert the SS insert and replace the lid.





- **Note: ensure the corner latch clamps are pushed into the locked position prior to refitting the lid. The latch clamps pull the stainless-steel insert down and apply pressure onto the rubber seals on the top and the bottom of both filters, ensuring a watertight seal.**



- If this is the case, the pleated cartridge filter will be backwashed and allowed to dry. Both filters are returned to stock as replacement filters for future maintenance.

10-year Interval

As above plus:

- At the ten-year maintenance interval, the GAC filter is again maintained as per the above procedure, and the pleated cartridge filter is also replaced. The replacement pleated cartridge filter can be sourced from Hynds, or any reputable filter supplier

GAC SPECIFICATION



ACTIVATED CARBON
TECHNOLOGIES PTY LTD

TECHNICAL DATASHEET

ACTICARB[®] EA1000

Description:

Micro & Meso porous Pelletised Activated Carbon, for the treatment of liquids & air streams containing organic pollutants.

Advantages:

- High adsorption capacity with a high rate of removal
- High hardness and therefore reduced production of fines
- High density therefore high mass adsorption capacity

Typical Analysis:

Porosity	microporous
Apparent Density (g/cc)	0.45 - 0.50
Moisture as packed (% max.)	5
Ash Content (% max.)	10
Iodine Number (mg/g min.)	1000
Surface Area (BET M ² /g min.)	1050
CTC (% min)	60
Hardness Index (% min.)	95

Particle Sizes available:

- 4.0 mm

Approval & Certificates:

- Bureau Veritas ISO 9001

Packaging:

- Ex-stock in 20kg bags
- 500kg bags
- Other packaging is available on request.



Activated Carbon Technologies
PO Box 1120, Research 3095, Victoria, Australia
Phone: 03 9437 2600
Fax: 03 9437 2611

info@activatedcarbon.com.au

www.activatedcarbon.com.au

Branches Nationwide Support Office & Technical Services 0800 93 7473

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.

hyndsstormwater.CO.NZ
0800 93 7473

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds Stormwater product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds Stormwater unless expressly stated in any sale and purchase agreement entered into between Hynds Stormwater and the user.

