

CHADSON ENGINEERING PTY LTD

Commercial Filter Design and Manufacture for over 40 Years

CPC REGENERATIVE PRECOAT PRESSURE FILTERS



Finer filtration with many environmental & public health benefits

Introduction

- The CHADSON CPC Series is manufactured from **fiberglass**, using a high-tech “resin transfer system” producing dense, super-strong laminates.
- The CHADSON CPC Series is the first fiberglass pre coat filter to be manufactured in Australia. The technology has been widely accepted for its many **unique benefits**.
- With its FRP construction, CPC series filters do not have any issue related to possible **corrosion**, nor does it require any **equipotential bonding**.
- The CPC filters are a **local purchase of Australian manufactured product** from an established and **experienced supplier**.
- CHADSON CPC filters offer the same **operational simplicity** as the earlier PCT & NPC Series that been widely used by many prestigious projects, since 1998. Currently there are more than 1000 PCT & NPC filters providing **valuable service in Australia**.
- A **local filter purchase** provides many tangible benefits for all levels of the aquatics industry, pool Owners, governmental bodies and the country in general.

Credentials

The *design capability & the performance* of CPC filters has **multiple features** which includes the use of Isophthalic and vinyl ester **FRP resin systems**.

- ❖ Precoating options in **EITHER closed loop OR a single pass**.
- ❖ Suited for Type 1 (< 1500 ppm Sodium Chloride), Type 2 (1500 - 6000 ppm Sodium Chloride), and **Type 3 (> 6000 ppm Sodium Chloride)**.
- ❖ Listed for use with **Diatomaceous Earth OR Perlite media** with filter rates of 1.61 to 4.89m³/hr/m².
- ❖ **Option of either slurry feed** of filter media during regeneration cycle **OR dry feed** of filter media under vacuum into an empty filter tank.
- ❖ Maximum operating pressure 200kpa, test pressure 350kPa
- ❖ **Backwash flow rates** ranging from 1.61 to 4.4m³/hr/m² **OR by gravity drain down**.

Note : Backwash flow rate is NOT required to match the filter flow rate.

Benefits



The CPC product range is extensive with single tank filter areas ranging from 12.35m² to 123m².

CPC Filters are an ideal selection for fresh water, salt water and or seawater pools. While this may not seem important to those that don't have a salt water pool, the type of construction required to attain this capability provides a filter which will last longer and be more reliable than filters constructed of **lesser material**

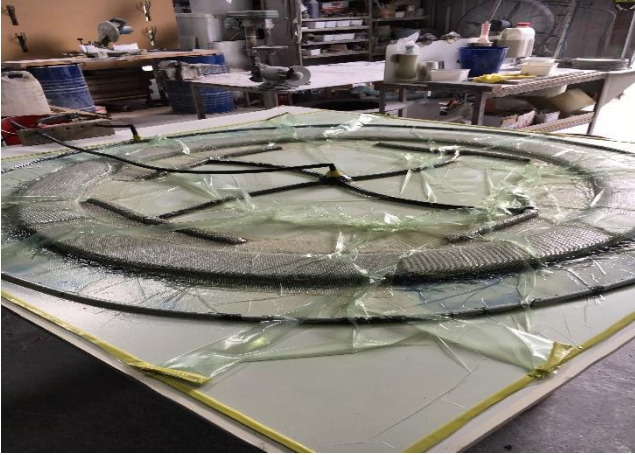
Apart from its mechanical strength & its unique corrosion resistance, CPC filters do NOT require the same **AS3000 Equipotential Bonding requirements**, which are mandatory for all sorts of metal fabricated filter tanks

- ❖ CPC filters are **simple install** and **easy to operate**.
- ❖ CPC filters are supplied and installed by mainstream **accredited PWT Contractors**

FRP Construction

- ❖ The majority ALL commercial filters in Australia are **made from FRP (fiberglass)**. There are many sound & compelling reasons for this trend.
- ❖ Fiberglass is not only chosen for its **excellent corrosion resistance**. Other features such as strength, lightweight construction, and **high abrasion resistance** will provide short term cost savings through easier installation and long term benefits, due to vastly reduced maintenance.
- ❖ Historically **protected carbon steel filters** are only as good as the life and the effectiveness of an applied internal coating. Issues can include surface bonding, pinholes, erosion due to high velocity hot-spots, uneven thicknesses, etc.,
- ❖ CPC Filters are expertly manufactured with the proven Contact Molding & Closed Cavity Bag Molding (CCBM) process's to provide **outstanding mechanical properties**.
- ❖ Whilst the use marine **Grade 316L Stainless Steel** has a long and successful service in Australia, this material does not have the **chloride resistance** necessary for some applications like conventional “salt water” chlorination.

CPC Construction



Closed Cavity Bag Moulding (CCBM)
with resin being infused to create
pressure plate

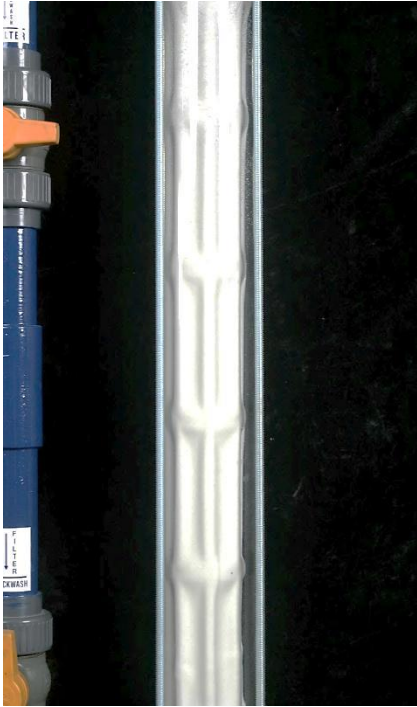


Dished Head – Subassembly



Barrel and dished head – Subassembly,

Filter Candles



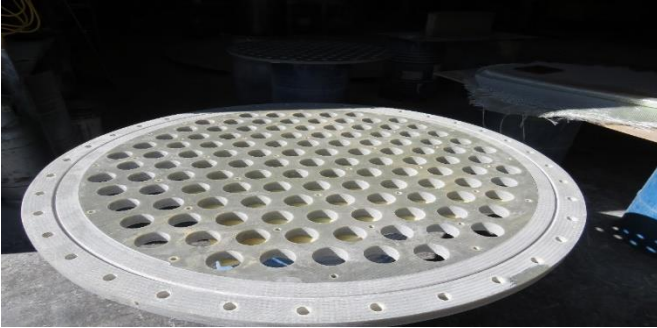
When in a “filter” mode, the filter cake compresses around the rigid core moulding.



When in “pressure backwash” mode the filter sock expands to break and release the collected solids & the used filter cake.

- ❖ CPC filter candles are injection moulded from **ABS engineering plastic**. They are strong and totally non-corrosive.
- ❖ **Rigid filter candles** are not susceptible to any movement within the filter.
- ❖ The replaceable filter sock features a welded construction using long-life **monofilament fabric**.
- ❖ CPC filter socks are designed for single pass precoating & flux rates of up to $4.89\text{m}^3/\text{hr}/\text{m}^2$
- ❖ The use of **larger and fewer filter candles** provides many benefits.

Candle Spacing



Typical TUBE PLATE with generous candle spacing

- ❖ CPC filter candles are **generously spaced** to mitigate potential bridging of the filter cake. This means the total filter area is available for its intended task.
- ❖ The CPC candle spacing provides **balanced** and **effective** media loading.
- ❖ With a generous candle spacing, CPC filter vessels are marginally larger than other options. This is doesn't not impact on **required plant space** and or **vessel cost**.
- ❖ Assessing precoating filters according to **flow capability** can be more meaningful than a “filter area” rating.

Dustless Precoating



- ❖ **WET-VAC** systems combines all the benefits of a dustless dry media transfer with the high process efficiency of filter aid being introduced as a **wet-mixed slurry**.
- ❖ Better and more effective precoating can be expected with the **wet-vac** method.
- ❖ With a wet-vac method, you don't need to drain the filter, prior to a precoating option.
- ❖ Not all of our WET-VAC options are tank mounted and or single pot.
- ❖ Bulk WET-VAC options are also available.

Regeneration



The Media Release Accelerator (MRA) is a **non-obtrusive** “centrifugal frequency generator” as used for vibrating feeders & similar plant in other Industries.

- ❖ CPC filters are regenerated in **four (4) simple steps**:- *Turn-off the main recirculating pump, run the MRA for about 45 seconds, let the filter rest, then re-start the main recirculating pump.*
- ❖ Regenerating an CPC filter is **simple and quick**.
- ❖ With “**tight weave**” **filter socks**, there is NO need to precoat the plant after regeneration. This happens automatically upon the re-start of the CPC filter.
- ❖ The MRA is used for regeneration, before and during various backwash processes.

Backwashing

- ❖ A comparatively simple and **easy to understand process**, which is undertaken manually.
- ❖ The plant Operator can easily vary the operating procedures to accommodate any specific issues and requirements.
- ❖ “Top” backwashing will expand the filter bag. The MRA will break & dispel the filter cake. “Bottom” backwashing will flush-out the collected solids. **QED - you get a cleaner filter much faster & a lot easier.**

About Backwashing.....

Water losses by periodic backwashing is a positive attribute. Its helps to contain TDS within acceptable limits. As in AS-3979 (Hydrotherapy Pools) the use of a backwashable filter is a mandatory requirement. With non-backwashable filters, periodic blow-down of pool water is an essential and inevitable process. From a treatment perspective having the lowest washwater consumption is not a meaningful or relevant attribute.

Feature Summary

Construction Material	Fibre Reinforced Plastic (FRP) using Vinyl Ester Resins
Manufacturing Method	Mixture of Closed Cavity Bag Moulding & Contact moulding
Max Operating Pressure	200 kPa (Test Pressure = 350 kPa)
Full Tank Warranty	5-yrs
Place of Manufacture	Australia
Product Range	A potential for 15 different filter sizes (from 12.35m ² up to 123m ²)
Equipotential Bonding	NOT Required (due to FRP composite materials)
Suitability for Salt Water	YES (No corrosion issues)
Pressure BW Option	YES Although preferable that it is, the backwash tank/sump does not necessarily have to be located below the plant floor level.
Backwash Rate	With use of the MRA, Backwash rates can vary from 1.61 to 4.89m ³ /hr.
Service Provision	Lift'n'Swing Davit included as an integral part of the filter supply. (NO overhead monorails are required)
Media Release Accelerator (MRA)	YES (for Regeneration & Backwash)

Typical Schematic



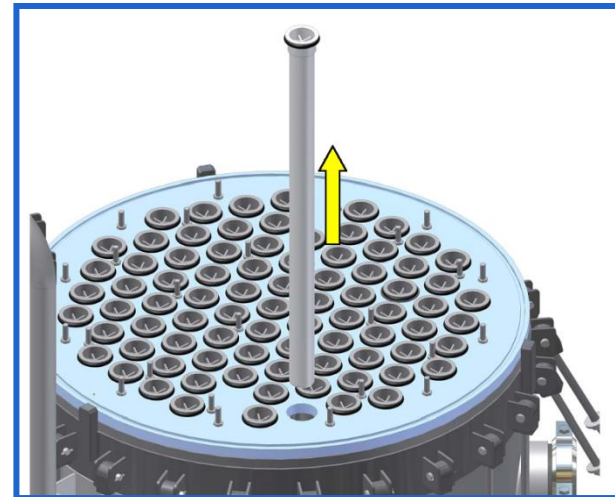
Typical installation schematic with U/V
sterilization

CPC Installation



- ✓ The installation of an CPC filter requires comparatively simple plumbing connections.
- ✓ You do not require any special expertise with automatic control loops, complex electrics and or pneumatics.
- ✓ No air compressor and associated plant is required.
- ✓ CPC filters are comparatively simple to operate and maintain.
- ✓ With pressure backwashing, the backwash tank (waste collection pit) can, in some cases, be elevated above the plant room floor.

CPC Servicing



- With CPC filters, a **Lift'n'Swing Davit** is provided with the filter.
- Contractors do NOT need to concern themselves with the detail or the cost of providing an overhead service monorail.
- The load-rated, pre-engineered **Lift'n'Swing Davit** confirms to all relevant engineering & OH&S requirements.

Photo Gallery



Other Products

If the non-corrosive construction of our CPC filters appeal to you, try our FRP Prepump Strainers.

Product Features:-

- ❖ Cost effective performance
- ❖ Effective “Open Area” Ratios.
- ❖ Flow Capability (up to flow = 198 l/sec)
- ❖ Stainless Steel plate type Interceptor screen provides minimal head loss with superior solids collection
- ❖ Flanged connections (100mm to 400mm) with reduced sized eccentric outlet
- ❖ Clear Viewing Lid with swing bolts
- ❖ Suitable for use with seawater & other corrosive environments.
- ❖ Vacuum gauge
- ❖ Bolt down provision



CHADSON PREPUMP
STRAINERS



CHADSON ENGINEERING was established in 1966 and has been actively involved in the design and manufacture of commercial filter vessels for over 50 years.

We are excited by the recent addition of Regenerative Precoat Pressure Filters (CPC and PCT) into our existing range of granular sand filters. We are also excited by expanding our current FRP manufacturing capability to best serve the needs of the Australian pool market.

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