

## EWT™ CastKleen® Underdrain

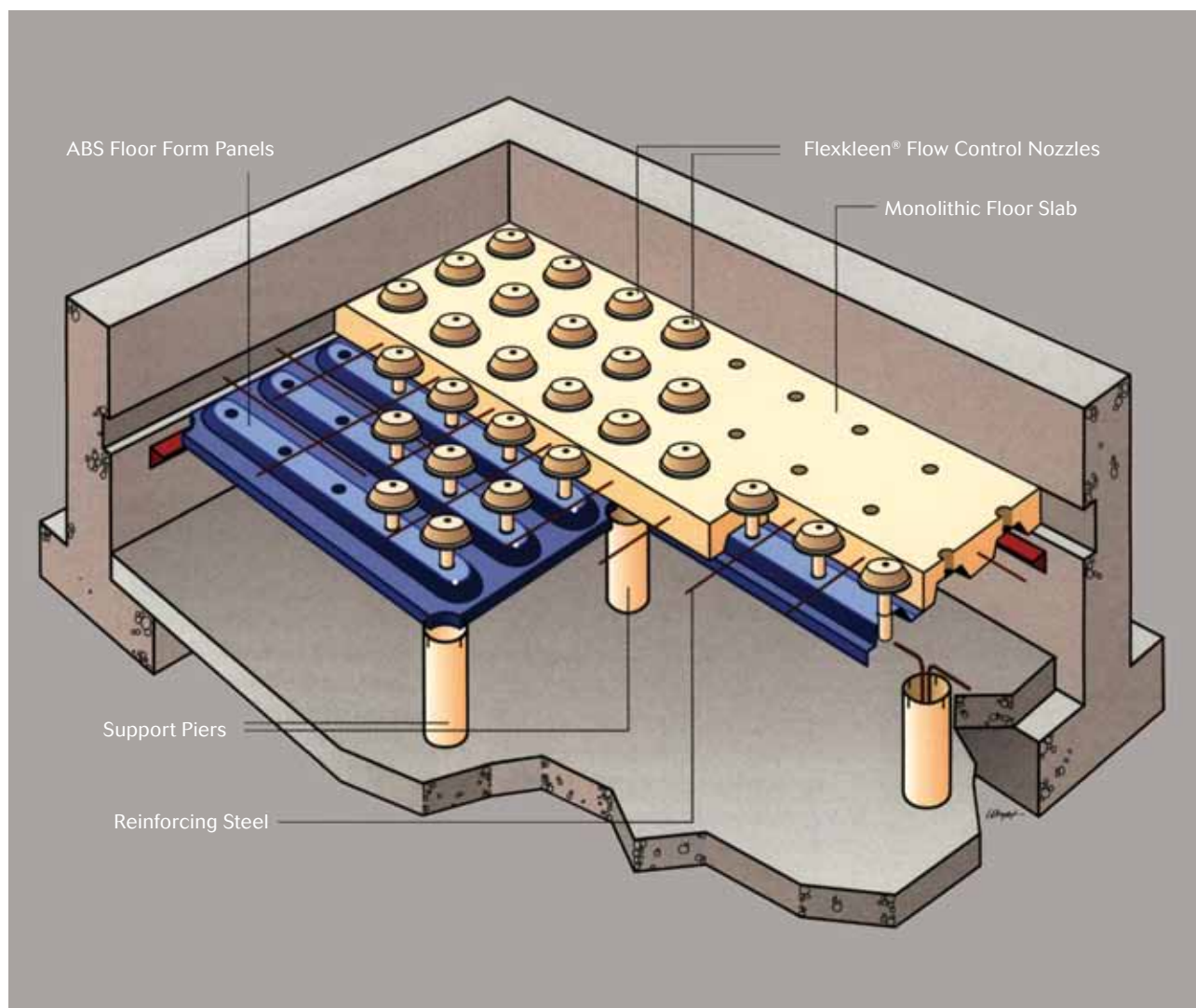
For granular media filters

### Key features & benefits

- Effective air scour backwashing for media filters
- No need for expensive floor-leveling
- Rapidly installed

### How we create value

- Reduces time and money spent at installations
- Pre-tested air distribution ensures effective media cleaning
- Avoids problems of declining filter throughput and the need for more frequent backwashing



# EWT™ CastKleen® Underdrain

The EWT™ CastKleen® underdrain cuts installation costs and boosts backwash performance.

By combining a rapid fit floor-forming system with the consistent flow management of FlexKleen® nozzles, the cast-in-place CastKleen underdrain offers substantial savings over other methods of granular media filter construction, cuts installation times and reduces maintenance costs whilst improving media scour.

Ovivo's engineers have over fifty years of experience in the design and construction of granular media filters for municipal and industrial use. When you specify Ovivo's EWT CastKleen underdrain, you choose not only a proven mechanical system but an organization with extensive installation and operation expertise and a dedication to complete aftermarket care.

## Features and Benefits

### Non-corroding Components

All floor and nozzle components are molded or vacuum-formed from durable ABS plastic and are NFS certified.

### Monolithic Structure

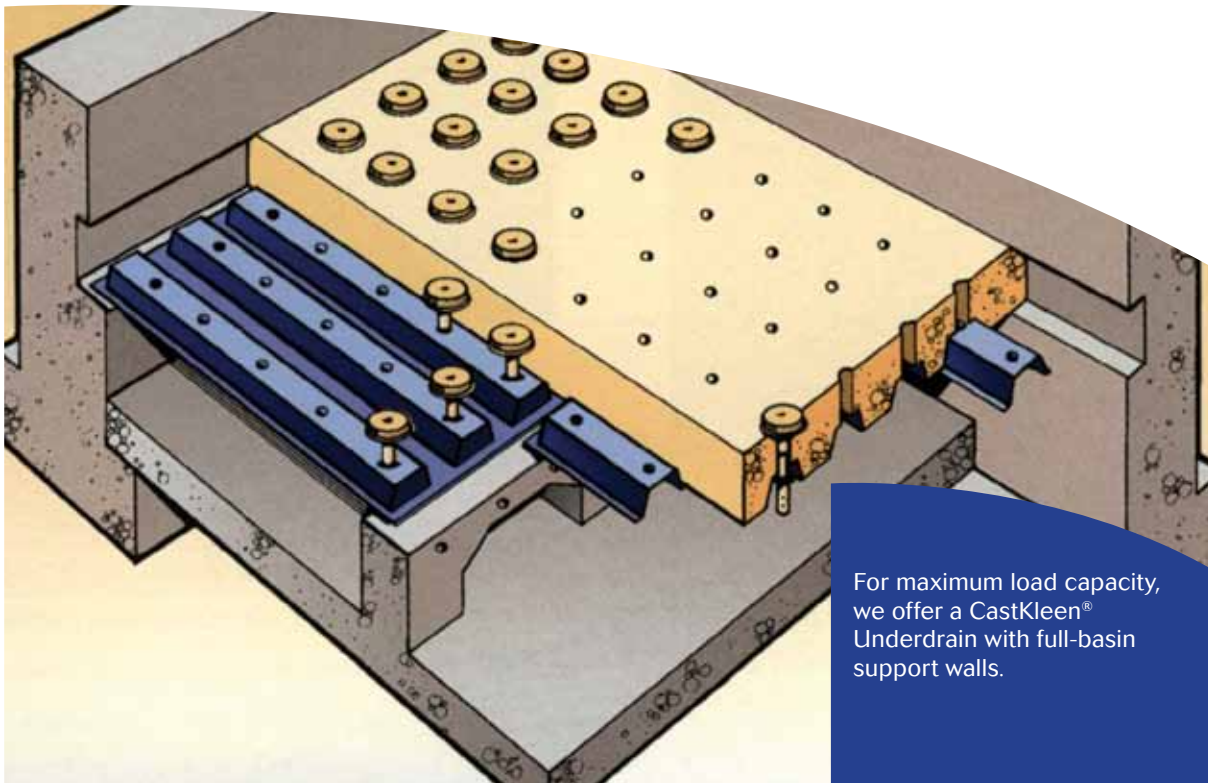
Construction is quick and simple, and uses standard construction techniques. Time-consuming placement and grouting of pre-cast underdrain sections is eliminated.

### FlexKleen Nozzles

Backwash water and scouring air flows are evenly distributed. A fine comb of reverse wedge slots at the outer rim of each nozzle ensures consistent media cleaning and maximum filter throughput. The precision molded slots impose a uniform headloss and prevent media loss. Filter beds can be placed directly over the nozzles without a gravel support layer, allowing maximum utilization of available head and reducing construction and maintenance expense.

### Easy Access

Access to the filter plenum is convenient: a pier spacing of 2' by 4' is used.



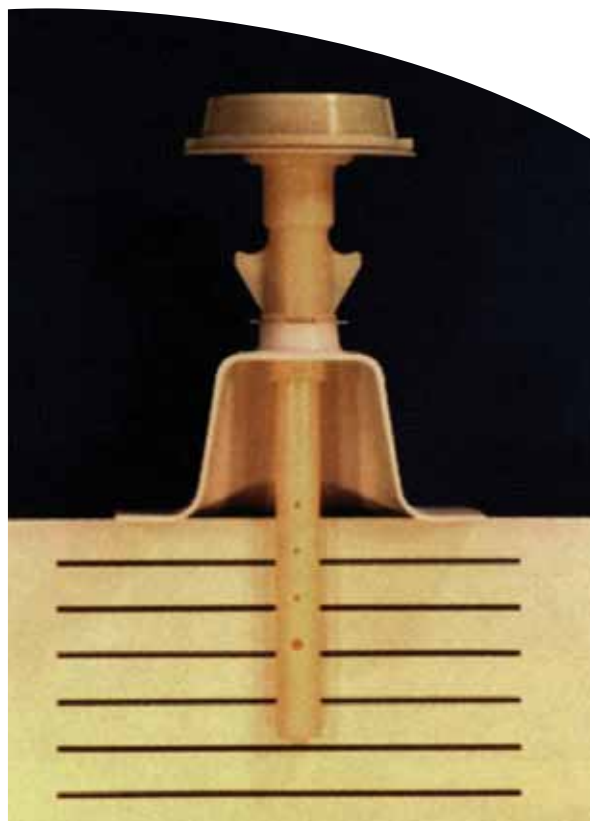
### **Adjustable Nozzle Tailpipes**

For an air scour backwash to be effective, air must be evenly distributed throughout the media bed. Inconsistent cleaning leads to uneven filtration flow, the need for more frequent backwashing and declining filter throughput.

The key to uniform air distribution is the careful placement of all air intake ports at the same elevation. In most underdrain systems, this is accomplished by a laborious process of floor leveling. The EWT CastKleen underdrain system takes a different approach, without the need for expensive floor leveling or finishing.

Ovivo uses a flow control nozzle that has been designed specifically for air scour applications and features an adjustable sleeve and tailpipe assembly. A fixed insert is locked into the floor panels with a snap ring, and is then encased within the concrete

floor slab. The sleeve and tailpipe then slide vertically into the insert, and held at the selected elevation by a tongue-and-groove locking arrangement. With the nozzle removed, a turn of the wrist unlocks, repositions and reseals the tailpipe. Tailpipe elevation can now be achieved quickly and independently of floor grades, ensuring uniform media cleaning without the time and expense spent on floor leveling.



## CastKleen® Underdrain Installation

Snap-together components and cast-in-place installation techniques allow rapid, simplified assembly.

1. Position pier forms and rebar on filter floor.
2. Install CastKleen ABS panels on the edge of the support panel and lock into notches on top of the pier forms.
3. Snap FlexKleen nozzle inserts (with tailpipes) into pre-formed openings on top the panel ribs. (No gluing or alignment required).
4. Lay steel rebar into the channels between and perpendicular to the CastKleen panel ribs.
5. Position plastic seating plates and temporary insert caps onto each nozzle assembly.
6. Pour concrete floor flush with the nozzle seating plates. (Since only minimal floor finishing, is required, concrete work can be completed quickly).
7. Once floor has cured sufficiently, test for load capacity with insert caps still in place.
8. Remove insert caps and install flow control nozzles.
9. With the filter partially full of water, test backwash air flow.
10. Adjust tail pipes for uniform air distribution and the filter is ready for media installation.



**1** Pier Support Configuration

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