



# PROTECTOR PROFILL

A range of simple, easy to use, refilling and top up units.



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# PROTECTOR PROFILL DESCRIPTION

## WHAT IS IT?

ProFill is a range of simple, easy to use refilling and top up units for demineralised water for heating and cooling systems. Installed in line with the systems filling device, they ensure that when used with our controlled pH resin that the filling water is supplied in accordance with the VDI 2035 standard.

The range has 5 different sizes, to accommodate your system requirements.



## HOW DOES IT WORK?

The Protector ProFill operates through the process of demineralisation, where water flows over the ion exchange resin, and through this process, becomes demineralised water suitable for heating and cooling systems. Please go to page 05, for the science behind demineralisation.



# WHY DO WE DEMINERALISE THE FILLING WATER OF HEATING & COOLING SYSTEMS?

Modern heating systems are sensitive to hard and corrosive filling water. Increased heating loads and more compact heat exchangers result in higher surface temperatures and thus in the formation of limescale build-up, which then prevents a good heat transfer and could limit the efficiency or lead to premature failures and malfunctioning of the system. In addition, materials such as aluminium or stainless steel are also very sensitive when it comes to an improper composition of the water.

For these reasons, many heating and cooling equipment manufacturers require the use of conditioned filling water, the most common to ensure compliance with the guideline VDI 2035 part 1.

The main aim of Guideline VDI 2035 is to prevent scale formation and water-side corrosion damage.

To reach these goals, the Guideline foresees different procedures, demineralisation, hardness stabilisation, and stabilisation of the pH and is applicable to the process of heating water conditioning for water heating installations in accordance with DIN EN 12828 within buildings when the flow temperature does not exceed 100°C.

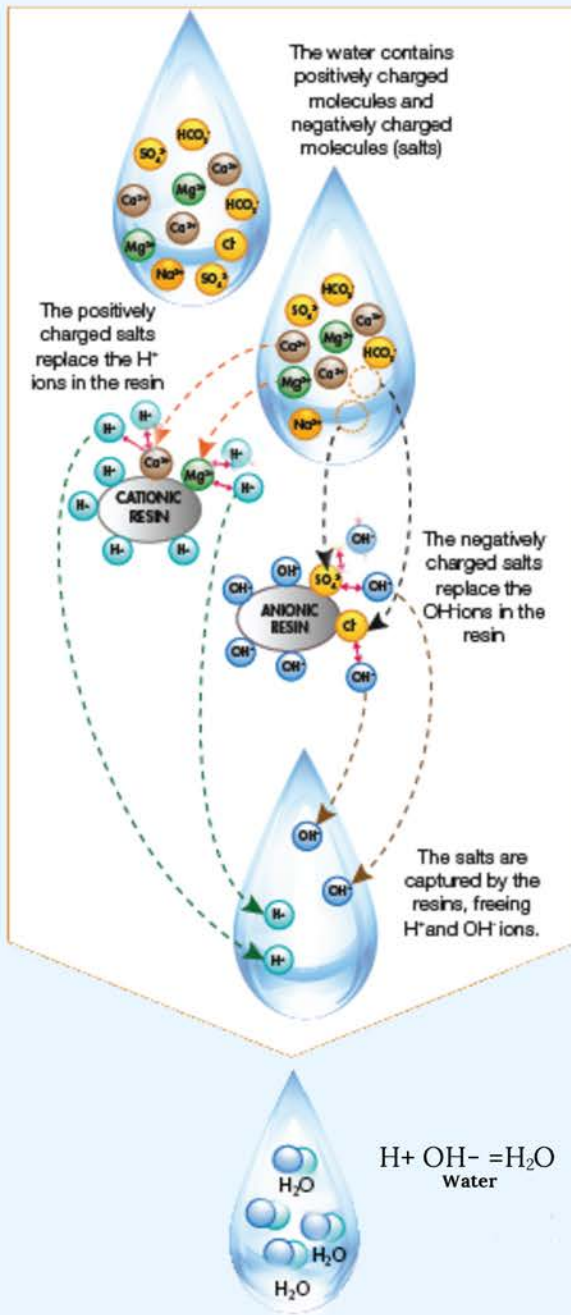


Limescale on surfaces lead to high temperature differences in the heat exchanger itself - thermal stress causes cracks with leaks.



Limescale in a heating pipe, significant reduction in diameter.

# PROCESS OF DEMINERALISATION



The resin beads have two types of ion exchange with the untreated water. As the untreated water passes through the ProFill, positively charged ions from the water will swap with positive hydrogen ions on the resin (cation exchange).

Similarly, negative ions in the untreated water will swap with negative hydroxyl ions on the resin beads (anion exchange).

The ions will be exchanged until none is left in the water other than hydrogen and hydroxyl ions, making H<sub>2</sub>O, demineralised water.





# INTERNAL & EXTERNAL VIEW



**Service valves and meter kit  
supplied as standard.**

# SIZING

ProFill Unit	Max Pressure	Max Temp	Delivery Capacity	Height	Overall Width	Empty Weight	Shipping Weight
ProFill 2l	10 bar	95°C	5 l/min	525 mm	277 mm	6.55 kg	8 kg
ProFill 4l	10 bar	95°C	5 l/min	740 mm	277 mm	8.08 kg	10 kg
ProFill 12.5l	10 bar	95°C	20 l/min	651 mm	370 mm	20 kg	24 kg
ProFill 25l	10 bar	95°C	20 l/min	761 mm	422 mm	32 kg	37 kg
ProFill 50l	10 bar	95°C	20 l/min	1221 mm	422 mm	46 kg	50 kg



# SIZING

## SIZING GUIDE REQUIREMENTS

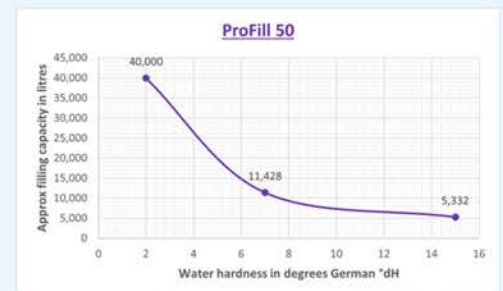
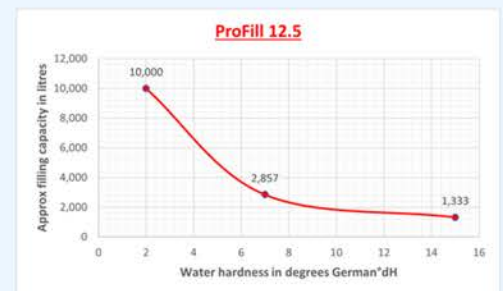
A ProFill should ideally be sized to accommodate 1% of the system water volume being replenished per annum for a good heating or cooling installation. The size will depend on the incoming water hardness where the ProFill is being installed. The annual fill rate of the system can be more than 1% in some circumstances and this will affect the selection as a larger unit may be required to accommodate system issues.

You can find your water company and then your water hardness guide from your local water provider.

<https://www.water.org.uk/advice-for-customers/find-your-supplier/>

Table showing what the approximate filling capacity in litres is with different water hardness in degrees German °dH , for the ProFill range.

	2 °dH	7 °dH	15 °dH
<b>ProFill 2</b>	1666	476	333
<b>ProFill 4</b>	3,333	952	666
<b>ProFill 12.5</b>	10,000	2,857	1,333
<b>ProFill 25</b>	20,000	5,714	2,666
<b>ProFill 50</b>	40,000	11,428	5,332



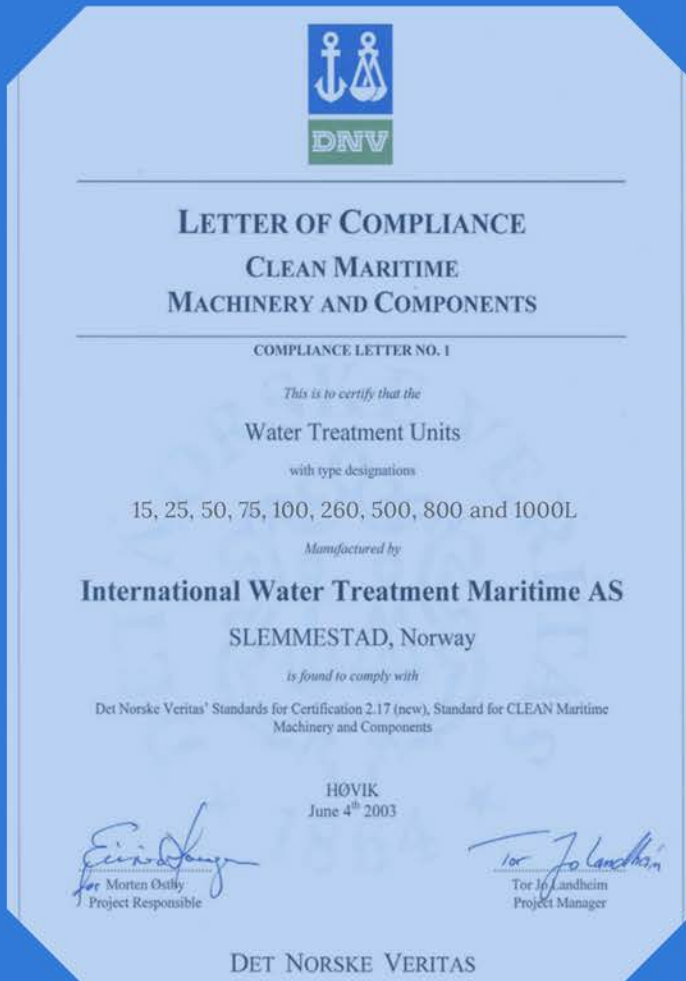


# Environmental Culture Change

*be a part of it*

clean | protect | prevent





Founded in 1992, IWTM have been working with chemical free water treatment using electrochemistry for over 30 years and have offices in Norway, UK, Finland, Sweden, Canada, USA and a worldwide presence in the Marine sector.

We have developed models specifically suited to the higher demands of the marine industry operating at higher pressures and higher temperatures. The marine products are provided worldwide on the world's largest cruise ships working with the leading operators in this sector.

Having secured DNV approval in 2003, we are still the only chemical free water treatment manufacturer to have this certification and approval. DNV is a globally leading quality assurance and risk management company operating in more than 100 countries.

The IWTM Protector™ is our most recently developed product. The Protector range is now available to our land-based customers.

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