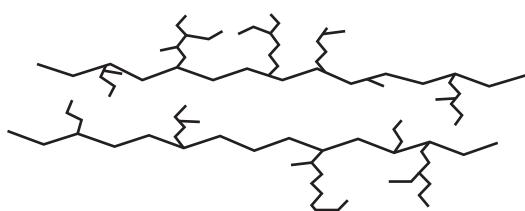


# MUOVITECH GEOPEX

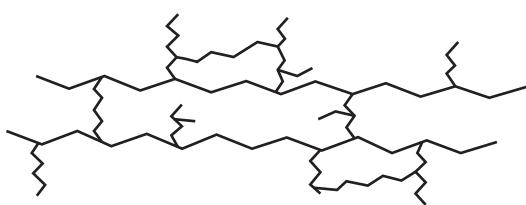
## A NEW GENERATION OF HIGH TEMPERATURE GROUND HEAT EXCHANGERS

By forming extra bonds in the polymer matrix, it boosts thermal resistance, mechanical strength and other important properties. GeoPex is specifically designed for use in the Ground-source cooling and heat storage sectors and helps systems operate reliably at continuously high service temperature. The innovative GeoPex sets new standards in terms of the assembly, efficiency and durability in the renewable energy sector. In this technology, carbon atoms of different High Density Polyethylene chains in heat exchanger are joined together to form the three-dimensional network structure which is shown schematically in the picture.

Normal HDPE molecular structure



MuoviTech GeoPEX molecular structure



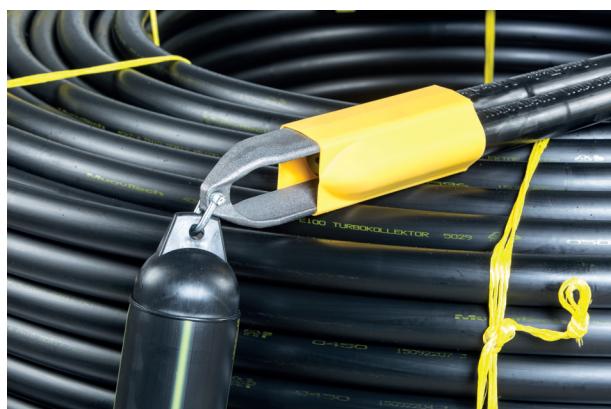
GeoPex collectors not only improves the thermal resistance of the heat exchangers but also enhances the impact strength, creep resistance and resistance to slow crack growth.

MuoviTech offers complete system pressure-rated collectors, manifolds and fittings that meet specifications and requirements for high temperature applications.

### PRODUCT DIMENSIONS

2x40mm SDR 11 Turbo

Collectors can be ordered in standard lengths between 60-300 meters.

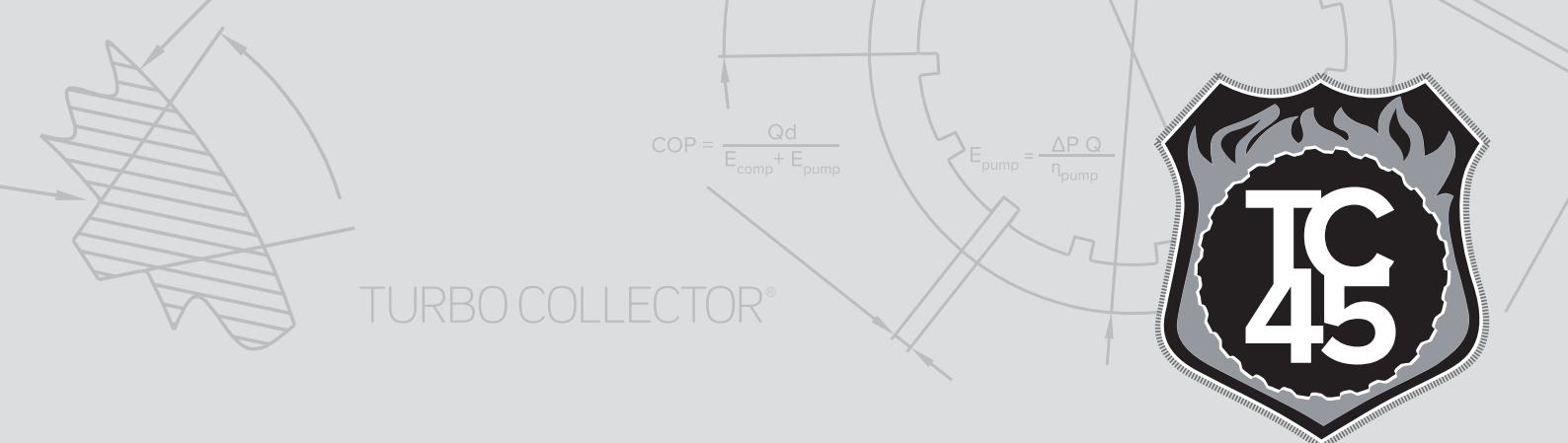


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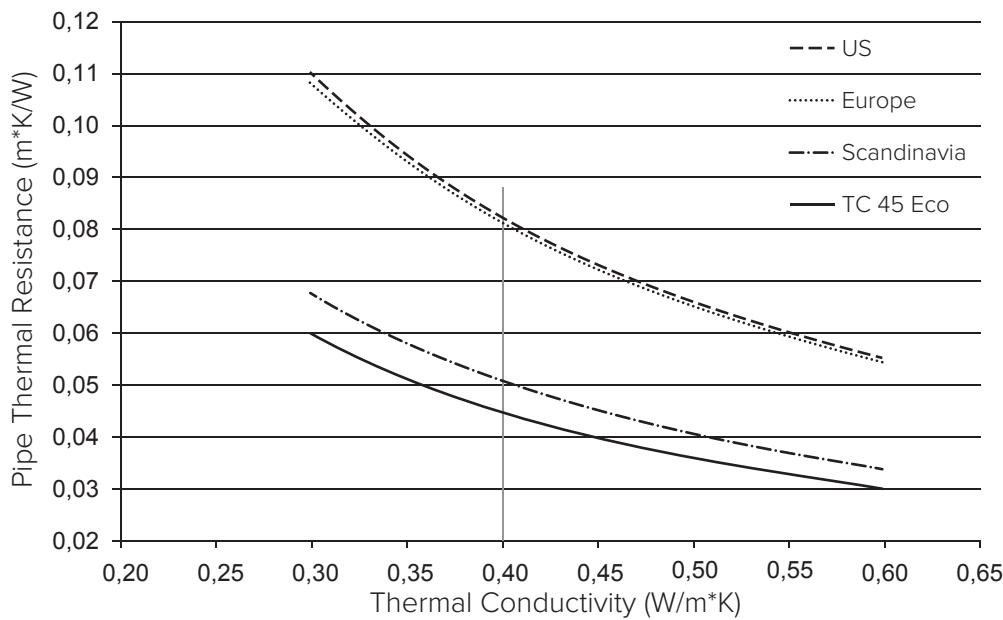
# TURBOCOLLECTOR 45 ECO

## EXCEPTIONAL LOW THERMAL RESISTANCE

TurboCollector 45 ECO is the most effective ground source heat exchanger, due to its exceptional low pipe thermal resistance. TurboCollector 45 ECO is state of art in which combined the unique material property, bi-oriented process technology and cutting edge geometry design.

TurboCollector 45 ECO have optimized material collectors, and fittings and are the system of choice for deep residential, commercial, institutional and industrial applications.

TurboCollector 45 ECO is a dedicated grade polyethylene which has a high density and a bimodal distribution of the molecular mass. It shows excellent resistance to rapid crack propagation and slow crack growth. In addition, due to an improved profile of properties this product offers additional advantages when used for deep ground source heat exchangers.



TURBO COLLECTOR®

The graph compares the thermal resistance of the pipe, in products typically used in different markets.

## PRODUCT DIMENSIONS

2x45mm PN10 Turbo

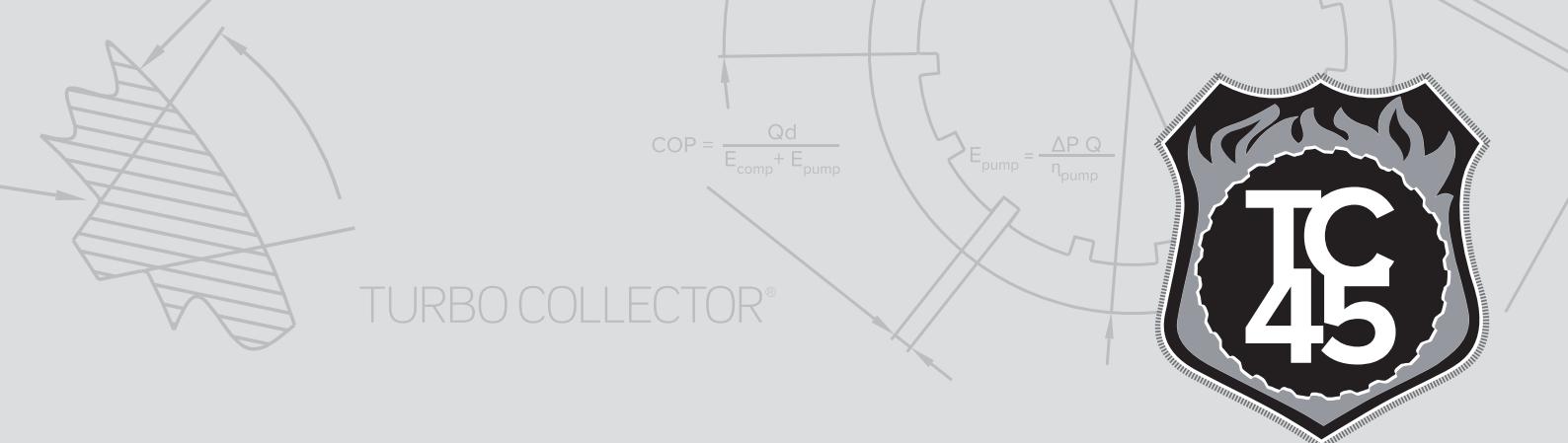
Collectors can be ordered in standard lengths between 60-500 meters

The coils are designed to be optimal for transportation and easy installations.

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# TURBOCOLLECTOR 45

TurboCollector 45mm is designed to be the optimal choice for 115mm boreholes. It has many benefits such as: Easy installation, high flow rate, low borehole resistance and more.

## EASY INSTALLATION IN A 115MM UNDERGROUND PIPE

The 45 mm TurboCollector have been designed to allow installation in a 115mm borehole. They are as easy to install as the 40 mm collector, and considerably easier to install than the 50mm Collector. The 45mm TurboCollector can be installed, in one coil, in a borehole as deep as 500m, where as a 50mm collector must always be in two coils.

## INCREASED FLOW RATE

The flow rate of a 45mm TurboCollector can be adjusted to be higher than a 40mm collector. Measurements have shown that TurboCollector 45mm can achieve a flow rate that's 33% higher compared to the 40mm collectors with a flat inside using the same circulating pump delivery head.

## SMALLER BOREHOLE RESISTANCE

In a 115mm borehole, the borehole resistance using TurboCollector 45mm is on average 11% smaller compared to the 40mm collector.

## IMPROVED ENERGY CONSUMPTION

The surface area of the 45mm TurboCollector is 12.5% larger compared to the 40mm collectors, meaning that with equal flow rates, the 45mm Turbo ground loops benefit from a considerably smaller pressure loss. This translates into significantly smaller circulating pump energy consumption.

Heat exchanger	Flow rate	Pressure drop	Energy consumption
Single U-pipe 40mm SDR17 Smooth	0,6	152	91,2
<b>Single U-pipe 45mm SDR17 Turbo</b>	<b>0,6</b>	<b>93</b>	<b>57,4</b>
Single U-pipe 50mm SDR17 Smooth	0,8	79	59,3

Minimum flow rate (l/s)      Pressure drop (kPa)

Added energy consumption of the circulation pump due to pressure drop and flow rate(W)

The table shows the differences in pressure drop and energy consumption of the circulation pump. TurboCollector 45mm has the lowest energy consumption even compared to 50mm. This illustrates the conditions using specific parameters for the borehole, antifreeze etc. The energy consumption can differ between different models of the circulation pump.

## PRODUCT DIMENSIONS

2x45mm PE45x4,1 PN16 SDR11 Turbo

2x45mm PE45x2,6 PN10 SDR17 Turbo

Collectors can be ordered in standard lengths between 60-500 meters.

The coils are designed to be optimal for transportation and easy installations.



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# STAINLESS MANIFOLD BOX

Manifold box in stainless steel.

Easy installation above ground.

Adjustable foundation.

Including steel manifolds with DN25 balancing valves and DN25 ball valves.

Pre insulated manifolds.

NC Flow balancing valves with adjustment range 5-50l / min.

Optional TA STAD balancing valve.

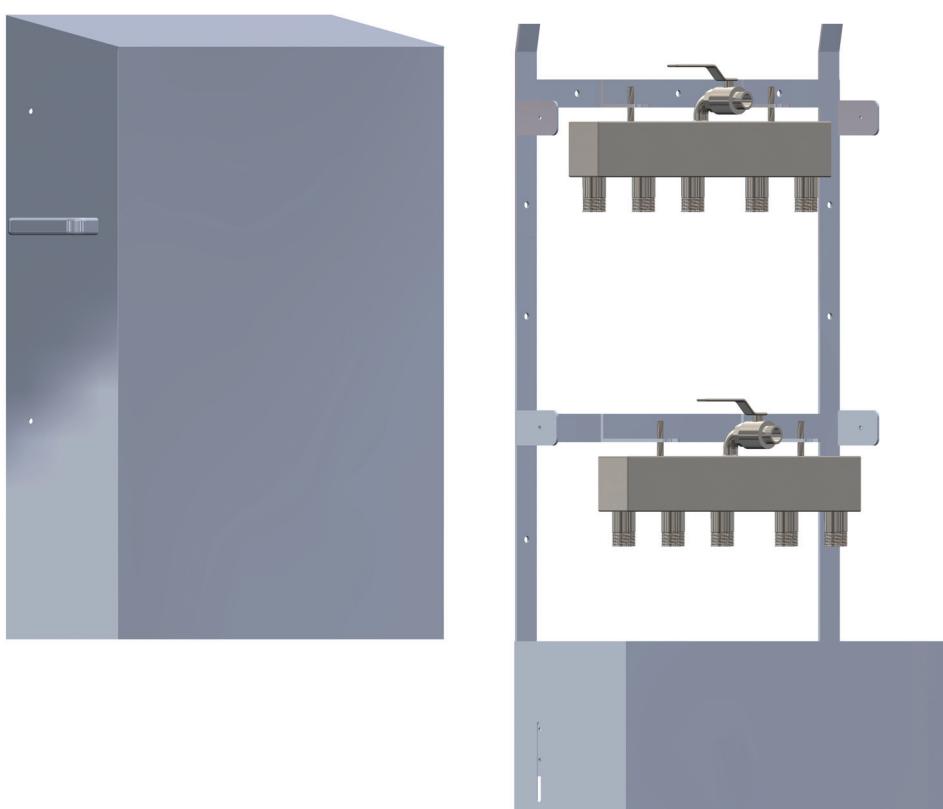
Pressure tested before delivery with 10 bar.

For 3-14 collectors.

Height: 1100mm

Width: 425-1490mm

Depth: 240mm



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# MUOVITECH GEOCONNECT

## GEOTHERMAL ENERGY USING WEB-MONITORING

- Web monitoring for the market's various web browsers.
- 365-24-7 monitoring via web and alarm forwarding to email.
- Industry Custom Web server with unlicensed software.
- Modular PLC system allowing any armament.
- Alarm history and trend curves for temperature, pressure and flow.
- Possibility to connect and monitoring of communicable consumption and energy.
- Ability to access and monitoring of communicable heat pumps.
- Possibility to connect wireless systems / products.
- Mobile 3G modem is optional.



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# COMPACT MANIFOLD CHAMBER

## ADVANTAGES OF THE NEW WELL

Compact and solid construction, easy to install.  
Made of corrosion-resistant components.  
"Genuine" adjustment valve, seat valve.  
Fast and precise to adjust the flow with the "twist-grip".  
Made of high quality glass fiber reinforced plastic.  
Composite lid 15kN with adjustable telescope neck.  
Pressure tested before delivery with 10 bar.  
For 2-12 collectors.



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