



Image source: Zug Estates AG

Project report

GEROthem[®] VARIO geothermal probes

Suurstoffi S43/S45, Risch - Rotkreuz



The Suurstoffi 43/45 construction project is the next stage in the development of the innovative and sustainable Suurstoffi site in Rotkreuz (canton of Zug). The site is considered a showcase project for modern, carbon-free urban development that brings together work, housing, education and leisure in a holistic, energy-efficient environment. During this construction phase, two new commercial buildings are being built, Suurstoffi 43 and Suurstoffi 45. While a 30-year lease with the

Bildungszentrum Gesundheit Zentralschweiz XUND is already in place for Suurstoffi 45, Suurstoffi 43 offers some 10,000 m² of flexible-use office, commercial and training spaces, and will be ready for occupancy by mid-2027. Both buildings have been planned and executed according to the SGNI/DGNB Platinum standard for sustainable construction. The construction project not only represents the architectural completion of the Suurstoffi site but also marks an important

technological milestone with its sustainable energy supply. In the course of completing S43/45, a new geothermal probe field with 87 geothermal probes is being created. The probes go 280 metres deep into the subsoil and are fully integrated into the existing energy network of the Suurstoffi site. This will ensure the supply of heating and cooling energy to the buildings and bring the site one step closer to a completely carbon-free and energy-sufficient supply.



As part of the sustainable development of the Suurstoffi site in Zug, Zug Estates is committed to the carbon-free operation of its buildings. A central component of this strategy is the installation of a new geothermal probe field with 87 high-performance GEROtherm® VARIO geothermal probes from HakaGerodur. The 87 geothermal probes, each extending 280 metres deep, were professionally installed by the specialist company Heim Bohrtechnik AG. To ensure the highest quality standards, each

geothermal probe was tested and logged in accordance with SIA 384/6. The conical GEROtherm® VARIO geothermal probes represent a further evolution of the conventional PN20 probes and offer key advantages: Compared to cylindrical geothermal probes, the conical design of the GEROtherm® VARIO significantly reduces the energy required by the circulation pump. Moreover, the probes maintain their stability even in deeper borehole sections, while the installation of the probes remains straightforward. The new

geothermal probe is seamlessly integrated into the existing energy system of the Suurstoffi site, providing the site with efficient heating and cooling energy, which represents a further step towards a sustainable and future-proof energy supply. With this project, HakaGerodur has once again underscored the advantages of the GEROtherm® VARIO geothermal probes as a reliable and energy-efficient solution for the use of geothermal energy.



Length (m)	Wall thickness		Internal pressure resistance ¹ (bar)		Buckling pressure ⁵ (bar)	
	de 40 (mm)	de 50 (mm)	de 40mm	de 50mm	de 40mm	de 50mm
0	3.70	4.60	16	16	8.5	8.5
-160	3.70	4.60	16	16	8.5	8.5
-200	4.50	5.60	20	20	12.8	12.8
-250	4.50	5.60	20	20	12.8	12.8

¹ According to DIN 12201/2 ² At 20°C/60h according to SIA 384/6

Project details

Construction site

Suurstoffi Site S43/45
CH – 6343 Risch-Rotkreuz

Client

ZugEstates

Zug Estates AG
Baarerstrasse 18
CH - 6300 Zug
www.zugestates.ch

Planner

eicher+pauli

eicher+pauli Luzern AG
Arsenalstrasse 21
CH - 6010 Kriens
www.eicher-pauli.ch

Drilling company



Heim Bohrtechnik AG
Bafflesstrasse 15
CH - 9450 Altstätten
www.hb-ag.ch

Products used

- 87 GEROtherm® VARIO geothermal probes
40 × 3.7-4.5 mm, length 280 m PN16-PN20
 - 87 GEROtherm® grouting tubes PE-HD
de 32, length 282 metres
1. Suurstoffi S43/S45 general plan
(image source: Instagram suurstoffi_areal)
 2. Drone photo of excavation pit
(image source: LinkedIn, Heim Bohrtechnik AG)
 3. Drilling rig, compressor and reel with probe
(image source: LinkedIn, Heim Bohrtechnik AG)
 4. Drilling rig with geothermal probes
(image source: HakaGerodur AG)
 5. Wall thickness distribution with internal and buckling pressure resistance of the GEROtherm® VARIO (image source: HakaGerodur)



 **HakaGerodur**

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