

Deliverable D2.2

Design and costs of heat basket type GSHEs using easy drill up to 325 mm

WP2

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Project acronym	Cheap-GSHPs
Project full title	C heap and E fficient A pplication of reliable G round S ource H eat E xchangers and P umps
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Dissemination Level

PU	Public	
CO	Confidential, only for members of the consortium (including the Commission Services)	X
CI	Classified, as referred to in Commission Decision 2001/844/EC	

Publishable Summery

The easy drill technique of HYDRA provides boreholes up to 325 mm at depths of 80 – 100 m in all types of soil. Inspired on the heat basket & helix type of heat exchangers REHAU designed and produced some new prototypes of heat basket type GSHE which fit into borehole with a smaller diameter (< 350 mm) as needed for the standard product Helix©.

For the final decisions a development matrix was created in this report. The matrix has 4 sections with different observation points. The sections are production, material, installation and simulation. The basis for this matrix is the standard Helix© production. All observations in the Helix production receive the value 3. In cases where the development part is better than the Helix© production there is the value 2 or 1, if the methodology is worse than the standard Helix© there is the value 4 or 5.

The development with the lowest number is the best development of the matrix and will be preferred.

Decision Matrix Task 2.2	Emphasis	Diameter of heat basket min 350mm				Diameter of heat basket min 325 mm	Diameter of heat basket min 325 mm				Heat basket basis
		A (without retaining bands)	B (double Helix)	C (no changing)	D (increase windings)	A (Test production)	A (without retaining bands) material PE-Xa	B (double Helix) material PE-Xa	A (without retaining bands) material PE-Xa stabil	B (double Helix) material PE-Xa stabil	Helix min350mm
production		hot winding process				cold winding process					
Result		156	173	153	160	180	151	164	140	164	153

Table PS-1. Estimation cost matrix of the developed heat basket