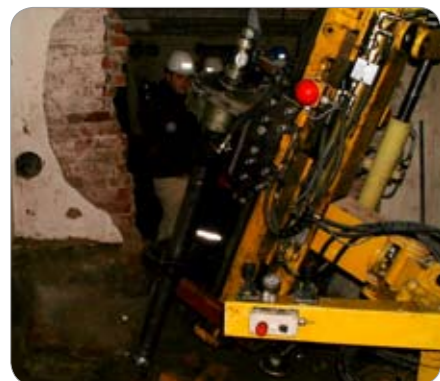


# Successful projects with Wassara™ Casing System

Byrå4



**Helsinki – Finland**  
Reinforcement work in an existing building in central Helsinki.



**Parliament building, Stockholm – Sweden**  
Construction of a 30 meter high grout curtain.



**Munin, Stockholm – Sweden**  
Foundation reinforcement work for a six-storey residential building.



**Bancohuset, Stockholm – Sweden**  
Reinforcement of the unique Banco building in Old Town, Stockholm.



**Tara Mines – Ireland**  
Exploration drilling in water rich formation.



**Tunahus, Lund – Sweden**  
Geothermal drilling to reduce heating costs for over 200 apartments.



**Fagersta – Sweden**  
Reinforcement of foundations for a railway bridge, close to a drinking water supply area.

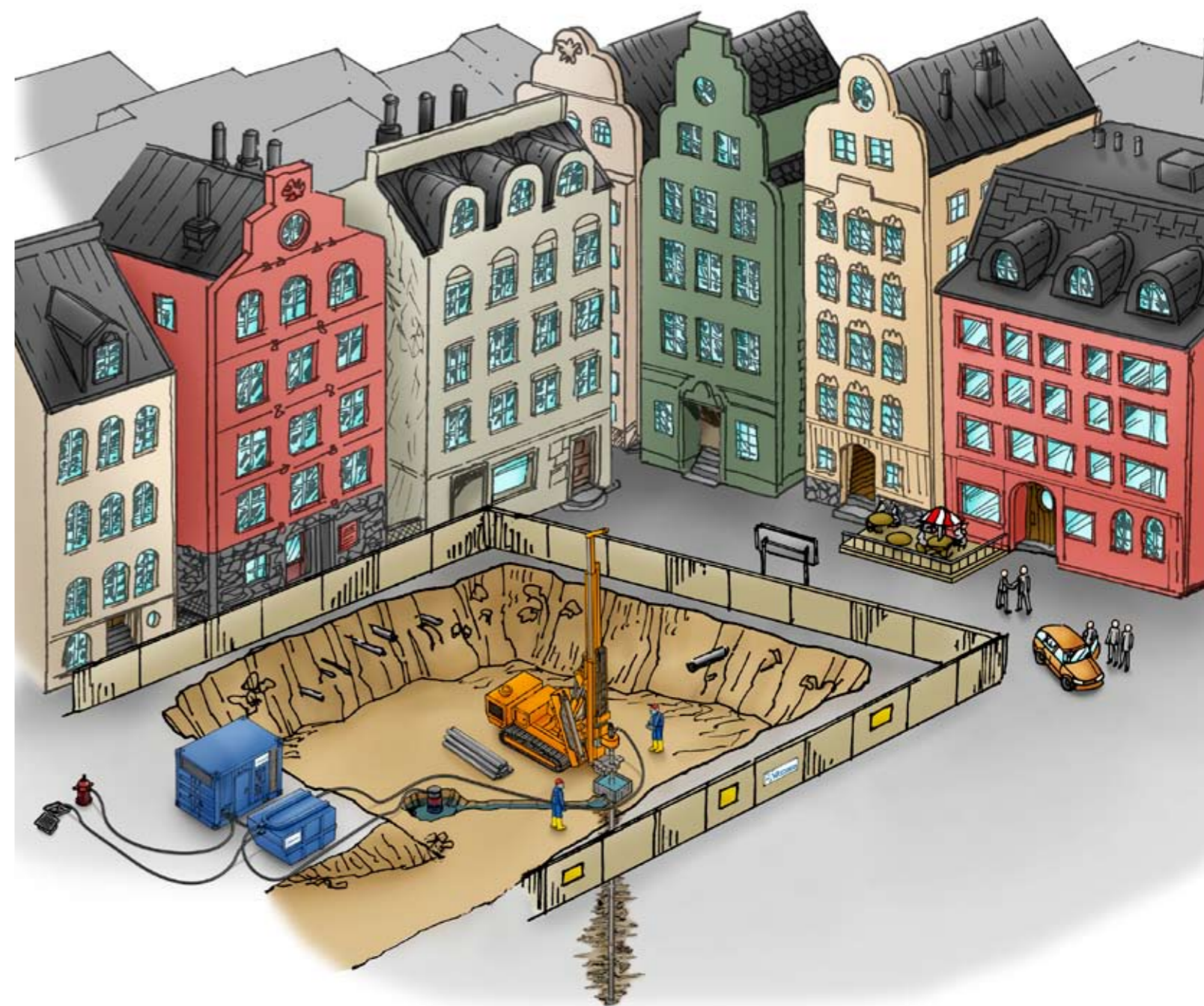


**Hallandsåsen – Sweden**  
Installation of 100 meter long freeze pipes under difficult ground conditions.



**Rosenlundsterrasen, Stockholm – Sweden**  
Foundation work in a sensitive area close to a highway tunnel.

## Wassara™ Casing System



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info.wassara@lkab.com  
www.wassara.com

Wassara offers the mining and construction industry complete systems for effective drilling in soil and rock, based on our core competence in water powered drilling.

# Wassara's water-powered casing system is cost-effective and environmentally friendly.

## Doesn't that sound like a good day on the job?

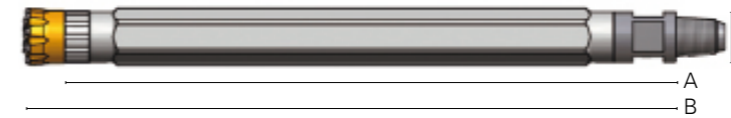
Wassara's water-powered casing system offers entirely new possibilities for efficient casing advancing.

The system demonstrates its superiority most clearly on jobs where the environment is sensitive and has to be handled with care, e.g. when casing advancing in urban environments or when ground conditions are difficult, e.g. clay.

Wassara is a complete water-powered casing system. All its components have been optimized for maximum performance as a unit, making the system economical to use.

Yet another advantage is that our technology has lower environmental impact than traditional drilling systems, and it also offers a significantly better work environment in terms of noise and air pollution.

**Doesn't that sound like a good day on the job? – Every day.**



Wassara™ Hammers.						
Hammer	A mm	B mm	C mm	Weight Kg (Excl. Bit)	Est. Water Cons. New to Worn (l/min)	Rec. Max Operating Pressure** (Bar)
W 80 HD	977	1049	Ø 80–92	32	90–140	100
W 100	1185	1270	Ø 102–111	56.5	160–260	100
W 120	1495	1572	Ø 120–128	99	240–340	100
W 150	1495	1605	Ø 140–162	165	285–410	100

\*\*for casing advancing

W-REX™ System	Casing OD (mm)	Casing Wall thickness (mm)	Ring bit ID (mm)	Ring bit OD (mm)	Pilot bit OD (mm)	Drill through	Hammer
E113	114.3	6.3 & 8.0	61	125	93	No	W80
E139	139.7	10.0	82	150	117	No	W100
E168	168.3	10.0 & 12.5	108	179	145	No	W120
E194	193.7	12.5	127	206	165	No	W150
E219	219.1	10.0 & 12.5	146	232	190	No	W150

Note that the E-system is primarily used for drilled piles where there is no need for a drill through option.

### WASSARA™ CASING SYSTEM – CONSTRUCTION

Casing (OD, thickness)	W-REX™	Hammer	Check valve	Drill tube (OD, thickness, length in mm)	Swivel	High pressure hose - pump unit to swivel (Standard EN856 4SP)	Pump unit	Sedimentation container	Hose - submersible pump to sedimentation container. Max height 15 meter, max length 100 meter	Submersible drainage pump	Hose - water supply to pump unit		
Ø													
114.3/6.3 mm	W-REX E113	W80S/HD/90/1000281 2 3/8" API REG pin	76 mm, 2 3/8" API REG. PIN/BOX No 1000407	76x6.3x1000 2 3/8" API REG, No 4000015	Stenberg 600	Hydroscand* Deltaflex 4 CO Art nr 1015-14-20, ID 32 mm Parker* 701 Spiral Hose Part No 701-20, ID 1-1/4" (32 mm)	WASP 80 Diesel	TBD	OD 75 mm (3")	Grindex* Minette 3 phase ITT Flygt* 2620 3 phase	OD 75 mm (3")		
114.3/8.0 mm				76x6.3x1500 2 3/8" API REG, No 4000014								76x6.3x2000 2 3/8" API REG, No 4000011	76x6.3x3000 2 3/8" API REG, No 4000005
139.7/10.0 mm	W-REX E139	W100S/111/1000292 2 3/8" API REG pin	89 mm, 2 3/8" API REG. PIN/BOX No 1000365	89x6.3x2000 2 3/8" API REG, No 4000013	Stenberg 600	Hydroscand* Deltaflex 4 CO Art nr 1015-14-20, ID 32 mm Parker* 701 Spiral Hose Part No 701-20, ID 1-1/4" (32 mm)	WASP 150 Diesel	TBD	OD 75 mm (3")	Grindex* Minor N 3 phase ITT Flygt 2630 MT 3 phase	OD 75 mm (3")		
168.3/10.0 mm	W-REX E168	W120S/125/1001067 3 1/2" API REG pin	114 mm, 3 1/2" API REG. PIN/BOX No 1000716-114	114x8.8x1000 3 1/2" API REG, No 4000016	Stenberg 600	Hydroscand* Deltaflex 4 CO Art nr 1015-14-24, ID 38 mm Parker* 701 Spiral Hose Part No 701-24, ID 1-1/2" (40 mm)	WASP 150 Diesel	TBD	OD 75 mm (3")	Grindex* Minor H 3 phase ITT Flygt* 2630 HT 3 phase	OD 75 mm (3")		
168.3/12.5 mm				114x8.8x1500 3 1/2" API REG, No 4000017								114x8.8x2000 3 1/2" API REG, No 4000018	114x8.8x3000 3 1/2" API REG, No 4000019
193.7/12.5 mm	W-REX E194 W-REX E219	W150S/160/20317 3 1/2" API REG pin	140 mm, 3 1/2" API REG. PIN/BOX No 1000717-140	140x8.8x1000 3 1/2" API REG, No 4000020	Stenberg 600	Hydroscand* Deltaflex 4 CO Art nr 1015-14-24, ID 38 mm Parker* 701 Spiral Hose Part No 701-24, ID 1-1/2" (40 mm)	WASP 150 Diesel	TBD	OD 75 mm (3")	Grindex* Minor H 3 phase ITT Flygt* 2630 HT 3 phase	OD 75 mm (3")		
219.1/10.0 mm				140x8.8x1500 3 1/2" API REG, No 4000021								140x8.8x2000 3 1/2" API REG, No 4000022	140x8.8x3000 3 1/2" API REG, No 4000023
219.1/12.5 mm				140x8.8x1000 3 1/2" API REG, No 4000020								140x8.8x1500 3 1/2" API REG, No 4000021	140x8.8x2000 3 1/2" API REG, No 4000022

\*Recommended manufacturer