



a.p. van den berg



MECHANICAL AND ELECTRICAL CONES

**For geotechnical soils investigation
onshore, nearshore and offshore**

Mechanical and electrical cones

Introduction

A.P. van den Berg has extended experience in cones for measuring geotechnical parameters. All cones are compatible with the A.P. van den Berg acquisition systems. This leaflet gives an overview of the standard supply program. For digital cones and data transfer we refer to leaflet S27 (OptoCone) and S28 (Icône).

*Creating tools
that move
your business*

See the separate leaflets for cones for measuring conductivity or conductance (S24 conductivity cone), environmental parameters (S25 Envirocone) and seismic response (S26 seismic cone).

Mechanical cones	Cone tip area	Friction sleeve area	Measuring principle	Parameters	Max. load (MPa)	Measuring head
Mechanical jacket cone	10 cm ²	n.a.	continuous/ discontinuous	q _c , total load	100	hydraulic or electrical
Mechanical friction jacket cone	10 cm ²	150 cm ²	discontinuous	q _c , q _c +f _s , total load	q _c : 100 f _s : 0.75	hydraulic or electrical

Electrical cones	Cone tip area	Friction sleeve area	Measuring principle	Available parameters	Nom. load (MPa)	Max. load (MPa)	Accuracy* (MPa)	
							standard	Class 1
ELC2	2 cm ²	30 cm ²	subtraction	q _c	50	100	0.1	n.a.
				f _s (Q _c + f _s) - Q _c	0.75	3.0	0.2	n.a.
				U ₂ **	1 F.R.O.	2 F.R.O.	0.01 F.R.O.	n.a.
ELC5	5 cm ²	75 cm ²	subtraction	q _c	50	100	0.1	n.a.
				f _s (Q _c + f _s) - Q _c	0.75	3.0	0.2	n.a.
				U ₂ **	1 F.R.O.	2 F.R.O.	0.01 F.R.O.	n.a.
				l	see table inclinometers below			n.a.
ELC10	10 cm ²	150 cm ²	compression	q _c	50	100	0.1	0.05
				f _s	0.75	1.5	0.010	0.005
			subtraction	q _c	50	150	0.1	n.a.
				f _s (Q _c + f _s) - Q _c	0.75	3.0	0.02	n.a.
			compression/ subtraction	U ₁ , U ₂ and/or U ₃ **	1 F.R.O.	2 F.R.O.	0.01 F.R.O.	0.005 F.R.O.
				l	see table inclinometers below			
ELC15	15 cm ²	225 cm ²	compression	q _c	50	100	0.1	0.05
				f _s	0.75	1.5	0.010	0.005
			subtraction	q _c	50	150	0.1	n.a.
				f _s (Q _c + f _s) - Q _c	0.75	3.0	0.02	n.a.
			compression/ subtraction	U ₁ and/or U ₂ **	1 F.R.O.	2 F.R.O.	0.01 F.R.O.	0.005 F.R.O.
				l	see table inclinometers below			

Inclinometers	Position	Suitable for cones	Measuring direction	Range	Accuracy*
Separate adapter	connected behind the cone	ELC5/ELC10/ELC15 both compression and subtraction types	one	16°	2°
			X-Y	-20° to +20°	± 0.5°
Built in	built in in cone tip	ELC5/ELC10/ELC15 both compression and subtraction types	X-Y	-20° to +20°	± 0.5°

* Accuracy: based on use in conjunction with A.P. van den Berg measuring cables, data acquisitions and software

** Available pore-water pressure ranges: 1.0, 2.0, 4.0, 10.0 and 20.0 MPA

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