

VERTIKAL DISPLACEMENT

INSTRUMENTS	APPLICATION	RANGE	ACCURACY	RELIABILITY
Settlement Cells	Monitoring settlement or heave in embankments and embankment foundations.	+/-100 mm	+/-0,6 mm	good
	Monitoring subsidence due to tunneling and mining. Monitoring consolidation under storage tanks.			
	Monitoring settlement due to dewatering or preloading.			
	Monitoring settlement in fills.			
Jointmeter and Crackmeters Rod Extensometer	Monitoring joints for unexpected movement to provide early warning of performance problems	0-2 m;0-50 mm	0,5 mm; < 0,15 FS	good
	Monitor joints and cracks in structures that may be affected by nearby construction activities.			
	Monitor cracks in structures that have experienced seismic activity.			
	The rod extensometer monitors changes in the distance between one or more downhole anchors and a reference head at the borehole collar. Typical applications include:			
	Monitoring settlement in foundations.			
	Monitoring subsidence above tunnels and mines.			
	Monitoring heave in excavations. Monitoring the stability of tunnels and other underground openings.			
	Monitoring deformation in abutments and walls.			

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HORIZONTAL DISPLACEMENT

INSTRUMENTS	APPLICATION	RANGE	ACCURACY	RELIABILITY
Digital Tape Extensometer	The tape extensometer is used to detect and monitor changes in the distance between two reference points. Typical applications include: Monitoring convergence of tunnel walls. Monitoring deformations in underground openings. Monitoring displacement of retaining structures, bridge supports, and other structures.	0-30 m	+/-0,1 mm	High
Jointmeter and Crackmeters Rod Extensometer	The rod extensometer monitors changes in the distance between one or more downhole anchors and a reference head at the borehole collar. Typical applications include: Monitoring settlement in foundations. Monitoring subsidence above tunnels and mines. Monitoring heave in excavations. Monitoring the stability of tunnels and other underground openings. Monitoring deformation in abutments and walls. Monitoring joints for unexpected movement to provide early warning of performance problems Monitor joints and cracks in structures that may be affected by nearby	0-2 m; 0-150 mm	0,5 mm; <0,15 FS	buona

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	construction activities. Monitor cracks in structures that have experienced seismic activity.			
rod extensometer	The rod extensometer monitors changes in the distance between one or more downhole anchors and a reference head at the borehole collar. Typical applications include: Monitoring settlement in foundations. Monitoring subsidence above tunnels and mines. Monitoring heave in excavations. Monitoring the stability of tunnels and other underground openings. Monitoring deformation in abutments and walls. Monitoring joints for	1-40 m	+/-1 mm	good
Optical topographie	rock slope and structures	200 m		good
GPS	rock slope and structures			good

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