



SAM

Soil Anchor Monitor

Overview

SAM measure *changes* in anchor force.

Pre-stressed soil and rock anchors are widely used in civil engineering to resist the horizontal pressures acting on retaining structures. With time, anchor force may decrease due to relaxation and creep. As a result, anchored elements may displace excessively and eventually fail. Therefore, it is extremely important to have suitable permanent means to measure the residual force and verify that the anchor is functioning properly and according to design.



Advantages:

- **Low-cost**

Although a precision instrument, SAM is conveniently priced and makes monitoring more anchors affordable.

- **Accurate**

SAM is designed for accurate reading under eccentric loads, even when not all tendons are used.

- **Forms an integral part of the anchor**

In contrast with other measuring instruments, SAM forms an integral part of the anchor and not an extraneous element which is introduced with the sole purpose of monitoring the forces. SAM is built in the form of a locking plate instrumented with Wheatstone Bridge strain gages and up-to-date electronics.

- **Simple installation and operation**

After the anchor is initially pre-stressed, the special readout box is connected to the SAM and the initial reading noted. Using the calibration factor supplied with each SAM, subsequent readings are easily converted to differences in residual load values.

The rugged readout box is battery operated and contains just one press-to-test button. It can be easily operated by site personnel.

- **Easy remote monitoring**

Any number of SAM devices can be connected by off-the-shelf cables to a conveniently located control box. Thus reading for a large site can be taken in a few minutes eliminating the need for climbing to each anchor separately.

For remote sites, anchor data can be periodically transmitted by cellular modem to a website where it can be easily viewed and processed by the project engineers.



SAM is available for both multi-tendon and single-bar anchors.



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Technical Specifications

Physical	Weight	~ 5kg (11 lbs.)
Power	(Readout unit)	4 AA Alkaline batteries
Measurements	Reading Range	100-1000 kN (10-100 Tons)
	Accuracy	±10 kN (1 Tons)
	Resolution	±1 kN (0.1 Tons)
Standards	EN 1537:1999	Compliant

SAM Reader



SAM Cell



Installation



Calibration curve

