

Application Story

Measurement of Concrete in Bending Drains

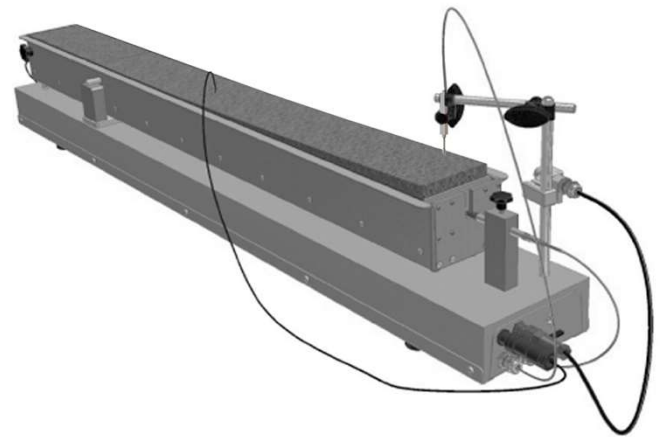
The Challenge

For testing of concrete materials, laboratories will use a "Bending Drain," where concrete is poured and then monitored and tested for shrinkage and bending as it solidifies in a variety of environments. For this, laboratories require measurement sensors that are rugged, durable, and can detect the slightest of changes over several days or months.

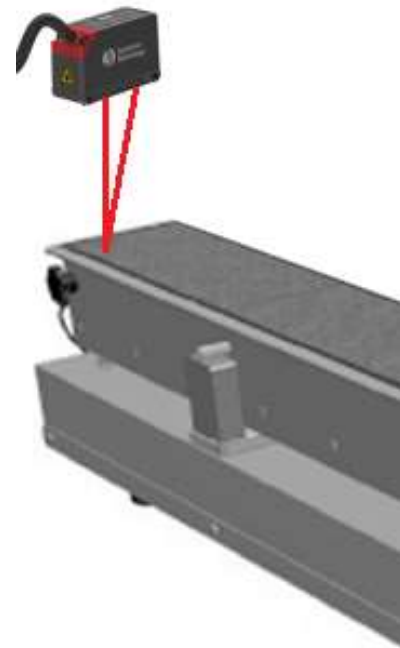
The Solution

Solartron Metrology offers LVDT sensors that meet the needs of Bending Drains and similar laboratory testing instruments. Advantages include:

- **Accurate measurement over months, or years:** Solartron has built sensors for over 75 years, with accuracy and precision that remain consistent throughout the life of the sensor
- **Light Touch or Non-Contact:** For wet materials that have yet to solidify, a standard sensor might dent the material. However, Solartron offers both Ultra Feather Touch sensors, with just 0.05g of tip force, as well as Non Contact laser, with up to 100mm measurement range.
- **Rapid Response:** Any change in measurement is immediately output to any data logger or PC, with no signal delay.
- **Endurance:** Solartron sensors have been tested to millions of cycles, and are built in a stainless steel casing to withstand years of abuse, including vibration and heat. Special high temp and low temp versions are available.
- **High Resolution:** Solartron LVDTs offer resolution up to 0.01 micron, showing the slightest change in measurement that Linear Encoders cannot provide.
- **Multiple Outputs:** Solartron offers DC, 4-20mA, TTL, and other analog output options.
- **Digital Option:** In addition, Solartron's Digital Orbit® network offers a calibrated, digital unit, and enables multiple, synchronized readings into a PC or PLC



An example of Solartron transducers being used on "Bending Drains"



Other Solartron sensors, such as Non-Contact Orbit LT lasers can be used as well to monitor concrete shrink

Solartron Ultra Feather Touch probes have been used in laboratories to check wet concrete and other soft surfaces as they solidify. (Note: Environment must be free of moisture and debris)



Orbit® – The Total Measurement System from Solartron Metrology

The Solartron Orbit® Digital Measuring System provides a limitless set of measurement solutions, with numerous different interfaces to computers and PLC's.



S-Series



Special probes for low temperatures



SI 8500



Compact displacement



S-series transducer monitoring a crack



OP Series



Measurement of concrete compression