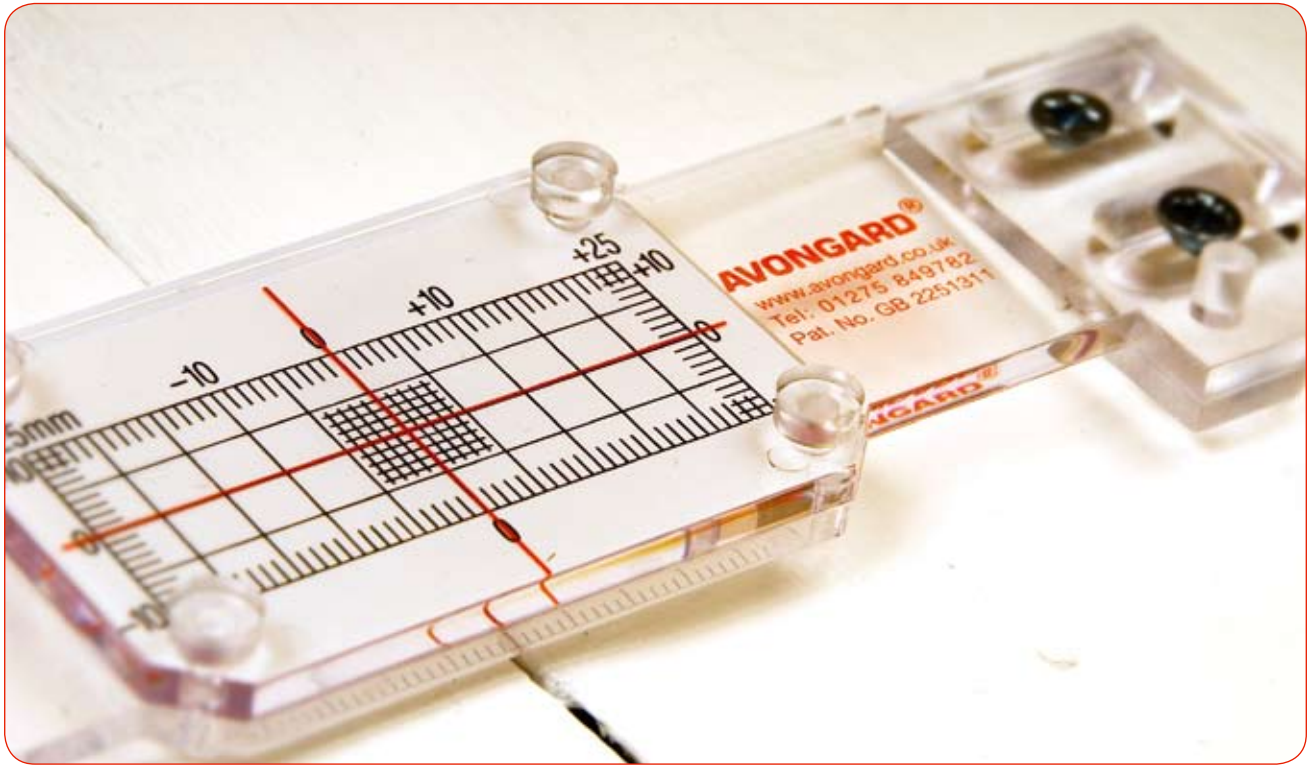


# AVONGARD<sup>®</sup>

SPECIALISTS IN STRUCTURAL MONITORING EQUIPMENT



## Crack Monitoring Products

2008

# About Avongard & Index



**Most buildings crack at some time during their service life. Monitoring the changes in the horizontal and vertical movement across a crack will assist in diagnosing the cause of the crack and deciding on the appropriate remedial work.**

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## About Avongard Tell-Tales

Avongard Tell-Tales are precision gauges that consist of two plates which overlap for a part of their length. The bottom plate is calibrated in millimetres and the top plate is transparent and marked with a hairline cursor in the form of a cross.

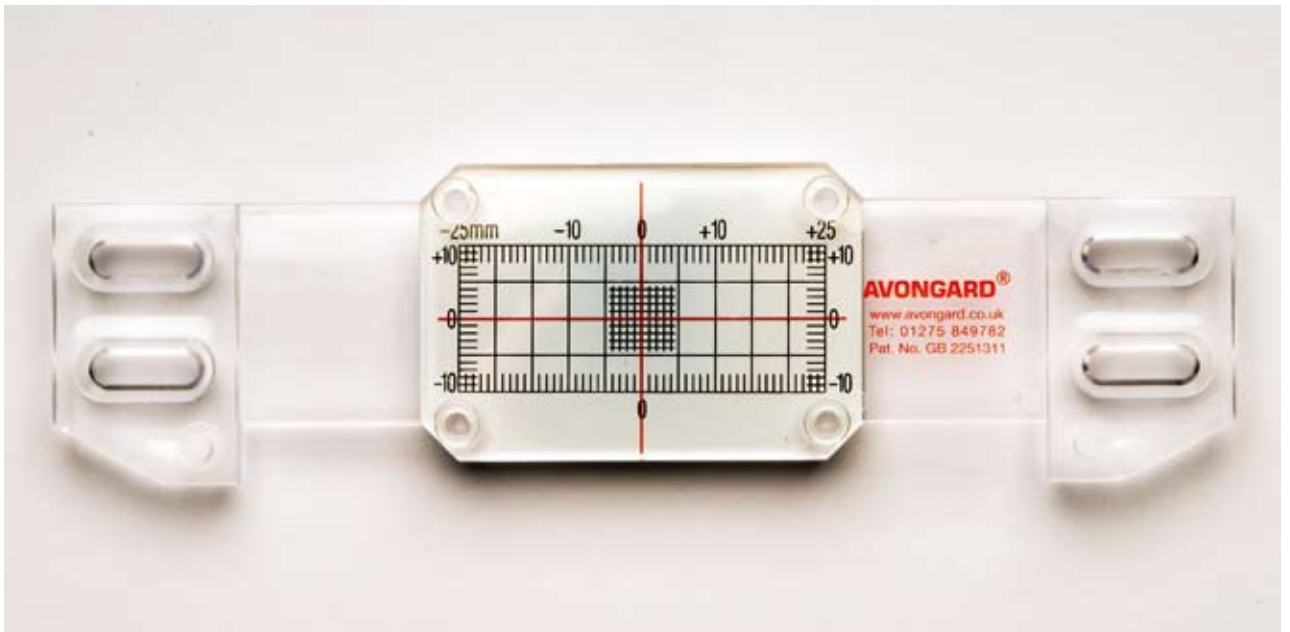
Avongard Tell-Tales are suitable for internal and external use.

The Tell-Tales are manufactured in vandal resistant polycarbonate. The co-efficient of linear thermal expansion is  $7.0 \times 10^{-5}$  cm/cm/°C for ambient temperatures between -30°C to +30°C.

Manufactured to conform to BS EN ISO 9001:2000

(All specifications subject to change without notice.)

# Plus Tell-Tale



The Avongard Tell-Tale Plus monitors horizontal and vertical movement across a crack on a flat surface. The Tell-Tale is preset at zero with four pegs. The pegs are removed after the Tell-Tale is fixed across the crack.

## Specifications

- Avongard Tell-Tales are precision gauges that consist of two plates which overlap for a part of their length. The bottom plate is calibrated in millimetres and the top plate is transparent and marked with a hairline cursor in the form of a cross.
- Fix using screws and adhesive (not included). (see page 10).
- Supplied with full instructions and Crack Record Sheet.

(All specifications subject to change without notice.)

## Applications

**Monitoring cracks to  $\pm 1.0$  mm accuracy:** As the crack opens, or if vertical movement occurs, the cursor moves relative to the calibration scale. The opening or closing of the crack is then recorded on the crack record sheet supplied.



**Monitoring cracks to  $\pm 0.1$  mm accuracy:** For more accurate monitoring, calipers (see page 7) can be used to measure the distances between the monitoring spigots. The distance between the spigots is then recorded on the crack record sheet supplied.



# Corner Tell-Tale



The Avongard Corner Tell-Tale monitors horizontal and vertical movement across a crack in a corner.

## Specifications

- The Tell-Tale is hinged enabling it to be used in internal corners of angles between  $70^{\circ}$  and  $180^{\circ}$ .
- Monitors both internal and external corners.
- Avongard Tell-Tales are precision gauges that consist of two plates which overlap for a part of their length. The bottom plate is calibrated in millimetres and the top plate is transparent and marked with a hairline cursor in the form of a cross.
- Fix using screws and adhesive (not included). (see page 10)
- Supplied with full instructions and Crack Record Sheet.

(All specifications subject to change without notice.)

## Applications

Use singly to monitor two dimensional movement.



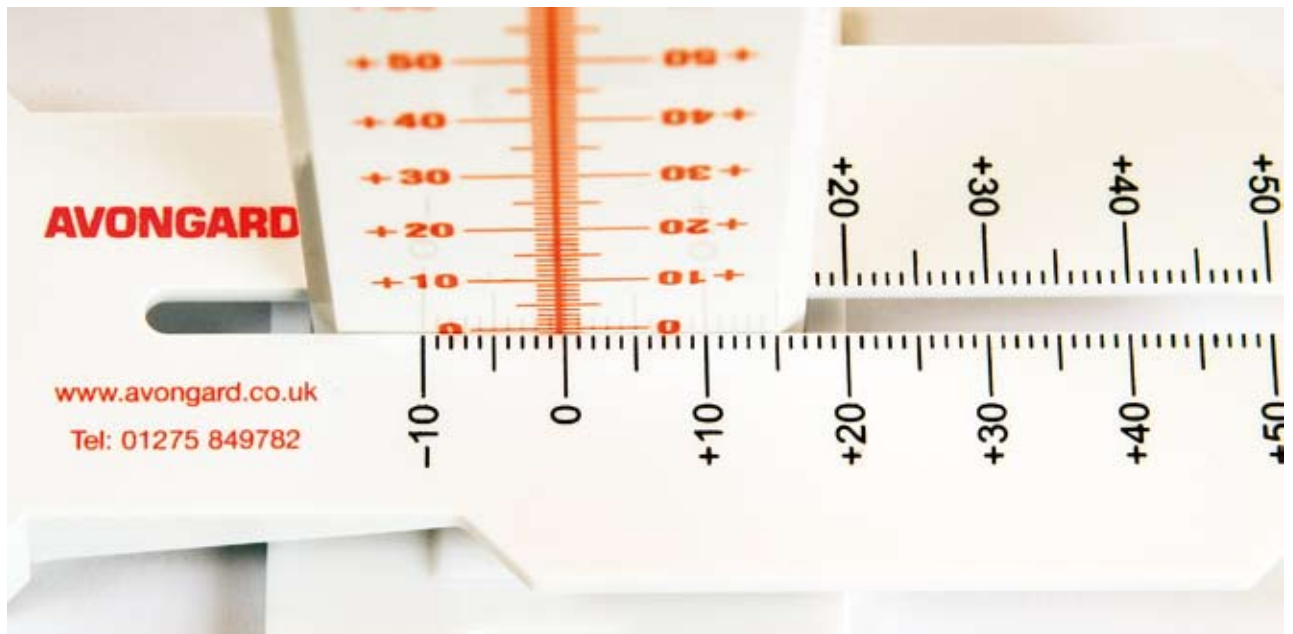
Use in pairs to monitor three dimensional movement.



Re-configure the Tell-Tale components to monitor cracks between ceilings and walls or floors and walls.



# Displacement Tell-Tale



The Avongard Displacement Tell-Tale monitors horizontal and displacement movement where there is a “step” across a crack due to displacement or “out of plane” movement. The Tell-Tale consists of three components. A base plate (not calibrated) a top plate (which is calibrated) and a graduated ruler. The ruler is not left on the gauge but is used to measure the relative movement in the two plates.

## Specifications

- Calibrated in millimetres.
- Displacement monitoring range of 110mm.
- Horizontal monitoring range of -10mm to +50mm.
- Fix using screws and adhesive (not included). (see page 10)
- Supplied with full instructions and Crack Record Sheet.

(All specifications subject to change without notice.)

## Applications

The base plate and horizontal scale are fixed using screws and adhesive each side of the crack to be monitored.

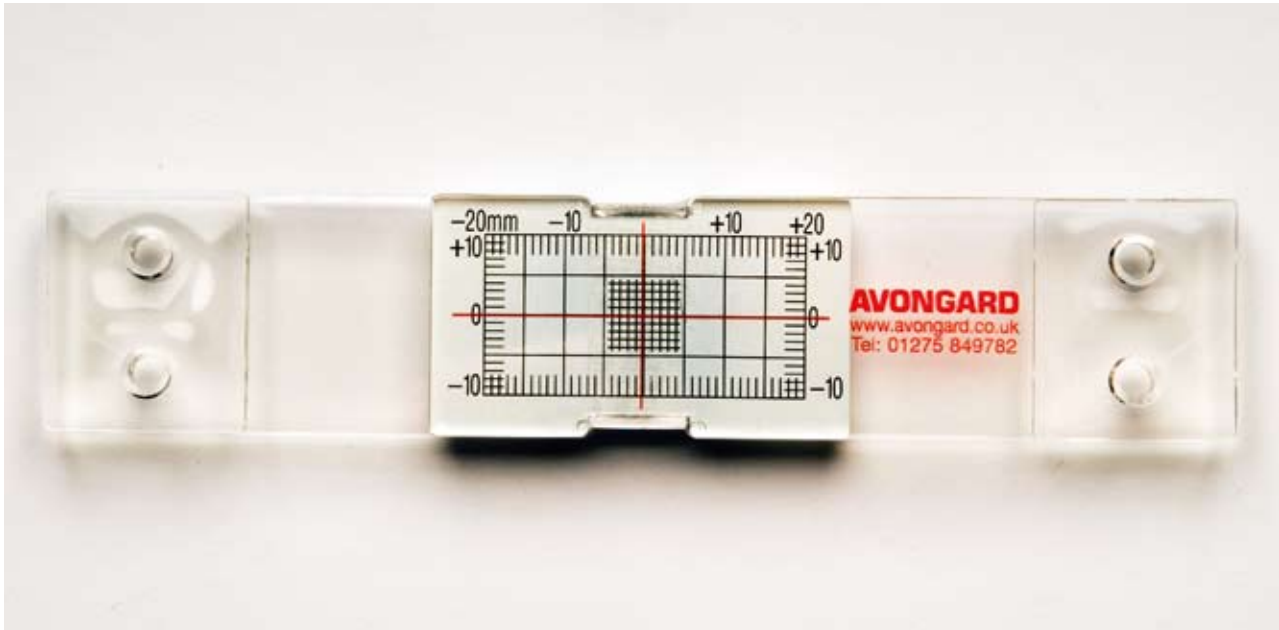


By inserting the graduated ruler, the horizontal and displacement positions can be read and marked on the crack record sheet supplied. The movement of the crack can then be monitored over time.





# Standard Tell-Tale



A basic (and the original) calibrated Tell-Tale that monitors horizontal and vertical movement across a crack on a flat surface. The Tell-Tale is preset at zero with transparent tape. The tape is cut after the Tell-Tale is fixed across the crack.

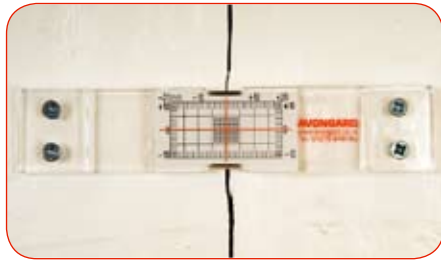
## Specifications

- Avongard Tell-Tales are precision gauges that consist of two plates which overlap for a part of their length. The bottom plate is calibrated in millimetres and the top plate is transparent and marked with a hairline cursor in the form of a cross.
- Fix using screws and adhesive (not included). (see page 10)
- Supplied with full instructions and Crack Record Sheet.

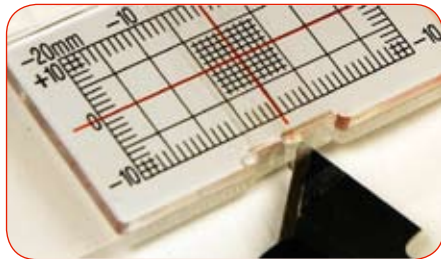
(All specifications subject to change without notice.)

## Applications

The Tell-Tale is fixed across the crack using screws and plugs and/or adhesive.



The tape is then cut. As the crack opens, or closes, the cursor moves relative to the calibration scale. The opening or closing of the crack is then recorded on the crack record sheet supplied.



# Crack Monitoring Kit



This set contains all the products needed to set up a Tell-Tale crack monitoring system. Supplied in a courier bag with shoulder strap, it includes a Crack Width Gauge to measure the width of cracks prior to monitoring, Plus Tell-Tales, all fixings and Crack Record Sheets. It also includes an illustrated manual with full instructions for use. The kit can be replenished by re-ordering any of the components which are also available as separate items.

## Contents of Kit

The kit, supplied in a courier bag, contains:

- 1x Instruction Booklet
  - 1x Crack Width Gauge (Page 9\*)
  - 5x Plus Tell-Tales (Page 2\*)
  - 1x Pair Corner Tell-Tales (Page 3\*)
  - 7x Packs of Fixing Screws (Page 10\*)
  - 1x Pack of Plastic Padding (Chemical Metal) (Page 10\*)
- Crack Record Sheets (to record changes in crack width)

(\* for detailed information on this product, see this page.)

## Applications

Use Crack Width Gauge to measure and record crack width before monitoring.



Use Plus Tell-Tales to monitor horizontal and vertical movement across cracks on flat surfaces.

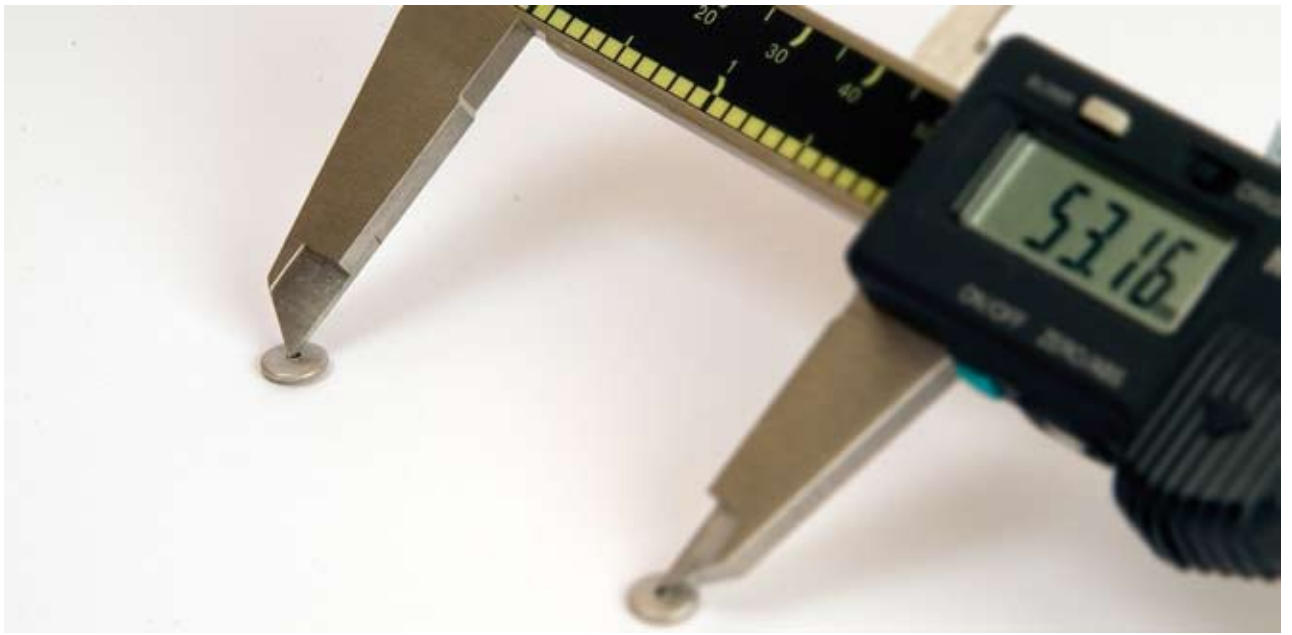


Use Corner Tell-Tales to monitor cracks in corners or between floor and wall or ceiling and wall.



# Calipers

## Digital and Vernier



**Fine resolution monitoring can be achieved using high precision calipers to measure the distances between a datum fixed either side of the crack. Stainless Steel Discs or polycarbonate Avonmarks, all supplied by Avongard, can be used as datum points either side of the crack. Cracks in corners can be monitored using Avongard Corner Discs.**

### Digital Caliper



- Calibrated to 0.01mm and 0.0005ins
- Supplied in durable plastic case
- Manufactured by Mitutoyo of Japan

### Vernier Caliper



- Calibrated to 0.02mm and 0.001ins
- Supplied in a plastic wallet
- Manufactured by Mitutoyo of Japan



# Caliper Kits



**This set contains all that is needed to set up a crack monitoring system using precision calipers. Supplied in a courier bag with shoulder strap, it includes a Crack Width Gauge to measure the width of cracks prior to monitoring, a Digital or Vernier caliper, a pack of monitoring datum and Crack Record Sheets. Also included is an illustrated manual with full instructions and describes best practice methods for using the calipers. All the components can be re-ordered separately in order to replenish the kit.**

## Contents of Kit

The kit, supplied in a courier bag, contains:

- 1x Digital or Vernier caliper
- 1x Crack Width Gauge for measuring the width of cracks prior to monitoring. (Page 9\*)
- 1x Pair of Corner Discs for monitoring cracks in corners. (Page 10\*)
- 1x Pack of 100 Avonmarks. (Page 10\*)
- 1x Pack of 100 Stainless Steel Discs. (Page 10\*)
- 1x Pack of Plastic Padding (Chemical Metal) (Page 10\*)
- Full Instructions and Crack Record Sheets

(\* for detailed information on this product, see this page.)

## Monitoring

The distance between the monitoring datum is measured and recorded on the crack record sheet (supplied).

The rate and trend of movement becomes apparent as subsequent readings are taken.



Cracks may be monitored in corners using Avongard Corner Discs.

Use singly to monitor two dimensional movement or in pairs to monitor three dimensional movement.



# Crack Width Gauge



Prior to monitoring the crack, the widths and location of the cracks are measured. The Avongard Crack Width Gauge is specifically designed for this purpose.

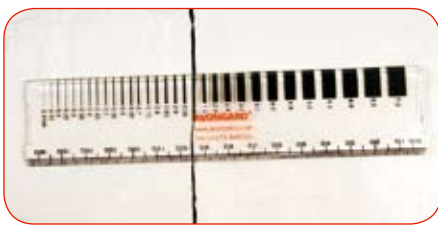
## Specifications

- The Crack Width Gauge is manufactured in polycarbonate. The co-efficient of linear thermal expansion is  $7.0 \times 10^{-5}$  cm/cm/°C for ambient temperatures between -30°C to +30°C.
- Suitable for internal and external use.
- Scale calibrated from end of Crack Width Gauge allows measuring of cracks in corners.
- Supplied in a protective case.
- Manufactured to conform to BS EN ISO 9001:2000.

(All specifications subject to change without notice.)

## In Use

Selecting a location where the edges of the crack are reasonably straight and parallel, hold the Crack Width Gauge in contact with the crack (at right angles to the crack).

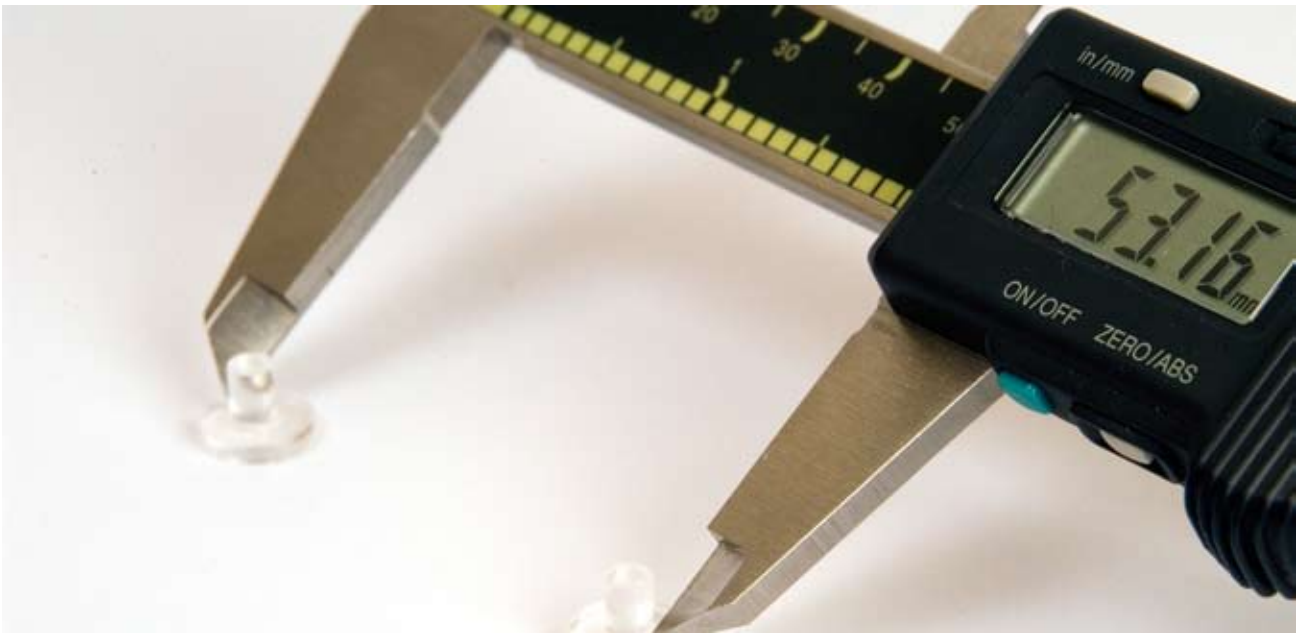


Align the Crack Width Gauge where the calibration and the crack are the same width. Record the width, length and location of the crack.

The scale at the bottom of the gauge may be used to measure crack widths greater than 7mm and cracks in corners or awkward locations.

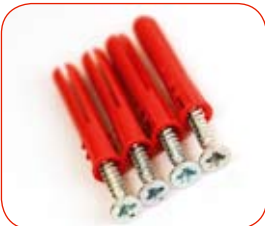


# Accessories & Fixings



## Screws and Plugs

For fixing all Avongard Tell-Tale products and Avongard Corner Discs. This pack of four zinc plated screws and four plastic plugs is suitable for fixing one Tell-Tale or a pair of Corner Discs. For a Corner Tell-Tale, two packs are required. To increase vandal resistance, use in combination with Plastic Padding®. (Pack of 4)



## Plastic Padding®

Plastic Padding® (Chemical Metal) can be used to fix all Avongard Tell-Tale Products as well as all Caliper datum. It can also be used to increase the vandal resistance of all screw fixings by coating the screw before insertion. (Supplied singly)



## Avonmarks

The Avonmarks can be fixed with Plastic Padding® about 80 to 100mm either side of the crack to be monitored. (Pack of 100)



## Stainless Steel Discs

The Stainless Steel Discs can be fixed with Plastic Padding® about 80 to 100mm either side of the crack to be monitored. (Pack of 100)



## Corner Discs

For monitoring with calipers on corners. Supplied with two Stainless Steel Discs. Fix with screws and/or Plastic Padding®. (Pack of 2)

