

# STATISTICAL PROCESS CONTROL (SPC)

## What is the SPC and what is its purpose?

They are statistical tools used not only for manufacturing processes but also for services to monitor the variation of important product and process characteristics.



Their purpose **IS NOT** to detect non-conforming products or non-compliances but to detect abnormal process behaviors that, if continued, will result in non-conforming products or non-compliances.

## What should be measured?

You will find a detailed explanation in the brochure "[Process and Operations Control](#)."

## How is it implemented?

Once the important characteristic to monitor has been identified, such as the dimension of a product or the time of a process, the following steps are taken:

### 1. Set measurement periods and sample sizes.

*For example, every half an hour, measure sequentially the same characteristic on 5 different parts or work cycles.*

### 2. Calculate the average value and its spread.

*There are different types of control charts, with the most common being the X-R chart. It involves calculating the average of the measurements in the sample and its range, which is the difference between the maximum and minimum values.*

### 3. Update the values in the XR charts.

*The average value is updated on the X chart, and the range value is updated on the R chart, and their points are connected.*

### 4. Evaluate the behavior of its tendency.

*There are four behaviors that operators should identify:*

- One point outside the control limits
- 7 consecutive points increasing or decreasing
- 7 consecutive points above or below the average
- Many points alternating near the control limits (more than 25%)

Any of these behaviors implies that the process is operating abnormally and requires investigation to identify and eliminate its cause.



Use mobile devices such as tablets and phones to measure, generate and monitor trends of control charts and send alerts to process owners when a deviation occurs.

Lead your organization to another level of performance with Métricos. Request a demo by WhatsApp at +52 55 4006-7589 or by email to [contacto@metricos.mx](mailto:contacto@metricos.mx).