The 3 Elements of Standard Work

In this lesson we’re going to continue our journey as we discuss how to design standard work using the 3 elements we introduced in the Standard Work introduction module.

Takt Time

The first element of standard work is **takt time**.

As we learned in the Gemba Academy Transforming your Value Streams course, takt time is the rate at which work must be performed in order to satisfy customer demand. Calculating takt time is done by dividing the net available time an organization has to work in a given period by the customer demand during the same period.

So, for example, if an organization has 480 minutes to work in a day and has a customer demand of 240 widgets… their takt time would be 2 minutes per widget. This takt time sets the pace of work so that it matches customer demand as closely as possible, preventing the waste of overproduction.

Takt time also helps us define the timing of the work we do. As such, we use takt time to balance workloads, design layouts, improve processes and combine work effectively.

Work Sequence

The second element of standard work is the **Work Sequence**.

This is the description of the WORK done in the numbered SEQUENCE of the manual tasks. The work sequence is sometimes referred to as the dance steps of a process.

It's important to clearly define the Work Sequence so that different people can do the job and get the same result. If the process is done differently or in a different sequence each time, you won’t get the same results.
Additionally, problems such as wrong parts, missing parts, accidents, and defects often occur when there isn’t a defined and standardized Work Sequence

**Standard WIP**

The last, but certainly not least, element of Standard Work is **Standard WIP**, which is short for Standard Work in Process.

This is the minimum amount of work in process necessary to keep a process flowing smoothly.

The idea behind Standard WIP is to have the right amount of work in process based on the timing and sequence required as well as taking into account limiting factors within the process such as batch size and waiting time.

Standard WIP includes all in-process materials. These can be parts being worked on manually, parts being processed inside a machine, parts that are drying or curing, or parts being used for setting things up. Now, if you think of how cookies are baked we’ll normally bake a batch of cookies while preparing the next batch to go in. The cookies baking as well as the ready-to-bake cookies outside the oven would represent the Standard WIP of this process. Standard WIP can also be parts or material out to an external vendor for processing.

Now, it’s important to note that while we must establish minimum and maximum quantities for raw materials and finished goods, Standard WIP does NOT include raw material or finished goods.

**Calculating Standard WIP**

So that’s what Standard WIP is, now let’s discuss how to calculate it. In its simplest form, Standard WIP is calculated as follows: (Manual Cycle Time + Auto Cycle Time) / Takt Time.

Now, when a process is operating at, or slightly less than Takt Time, Standard WIP will usually be 1 piece per operation as we see here.

In other words, it’s safe to assume each of these process steps have cycles times less than takt time. Now, in future modules we’ll go into more details on how Standard WIP is treated when a process’ cycle time is greater than takt time since the calculation method is slightly more complex.