

Using Standardized Work to Improve Safety

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Standardized work is defined as the efficient and orderly method of producing work without waste and centered around people. The purpose is to promote efficiency and consistency yielding high quality finished installations. The purpose is also to enable crews to safely build high quality projects at the lowest possible cost.

The history of standardized work is based on proven U.S. Military methods. They were later incorporated by Taichi Ohno during the 1950's at Toyota. One of the central principles of standardized work is part standardization which is also the foundation of the Toyota Production System. Without Standards, it is impossible to improve a business.

Applying this to a construction site and unpacking it a bit, the benefits are tremendous. First, let's presume the company has adopted a culture of standardized work. That means all employees perform the same task in the same way. Implementing Standardized Work requires a company to have a paradigm shift away from "I don't care how you get the job done, just get it done" and move toward an attitude of "Everyone does the job the same way each time". This is very different than how most contractors operate. If ten people perform a task, it gets done ten different ways. What impact does that have on safety? Productivity? Quality? Second, by defining standard ways in which the work is performed, in the office, the fabrication shop AND in the field, companies can identify the root causes of accidents. Figure 1 is an example of a Standardized Work Instruction Sheet.

A further adaptation of the Standard work instruction sheet is a single point lesson. Ever sat in front of the copier trying to make a double sided, collated, stapled copy? What about starting a meeting that requires a conference call or video conferencing and everyone sits around for 20-minutes while IT arrives to fix the problem. Figure 2 is an example of a single point lesson.

The same idea can be applied to tooling as shown in Figure 3.

The single point lesson can even be used to capture field installation standards as shown in Figure 4.

Standardized work deployed throughout an organization, documented through single point lessons and trained to have a tremendous impact on safety. The proper tooling can be available where needed, the proper information, the proper material, etc. By having standards and everyone doing it the same way, safety issues are engineering out of the installation process resulting in fewer accidents, more efficient jobs and higher quality end installations.

Standardized work does not mean one way. It means one way for each specific instance. An example would be one installation standard including tools and materials

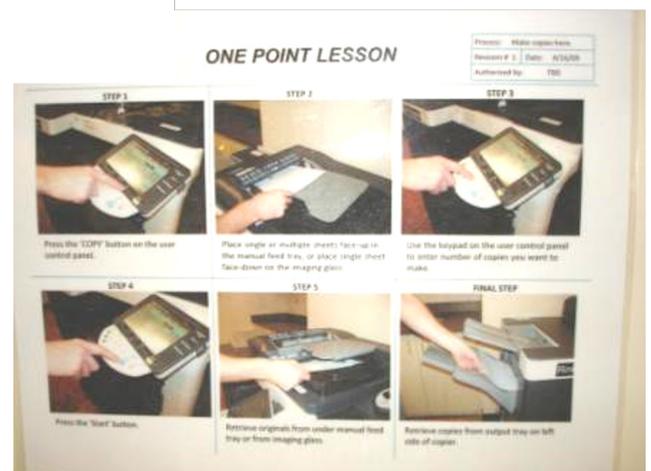


Figure 2 – Sample Single point lesson for Copier



Figure 3 – Sample Single point lesson for returning damaged tools

Preparation for Training	Step 1: Prepare the Student	Step 2: Present the Operation	Step 3: Try out performance	Step 4: Follow- Up
<ul style="list-style-type: none"> 1. Job breakdown sheet complete 2. Ensure the work area was set for training 3. Ensure the area is organized and visually effective 4. Ensure tools and equipment are ready 5. Ensure PPE and safety is communicated and prepare 	<ul style="list-style-type: none"> 1. Put the student at ease 2. Tell them the job name 3. Find out what they already know about the job 4. Get the student interested in learning the job 5. Place the student in the correct position to learn 	<ul style="list-style-type: none"> 1. Tell, show, and demonstrate each major step 2. Tell, show and demonstrate each major step with key points 3. Tell, show and demonstrate each major step with key points and reasons 4. Instruct clearly, completely and patiently 5. Do not give more than can be mastered 	<ul style="list-style-type: none"> 1. Have the student try the job while correcting errors 2. Have the student do the job again while explaining major steps 3. Have student do the job again while explaining key points 4. Have the student do the job again while explaining key points 5. Repeat until you know student understands 	<ul style="list-style-type: none"> 1. Assign the student a task 2. Tell them who to ask for help 3. Check their progress frequently 4. Encourage questions 5. <i>Gradually reduce the coaching follow-up</i>

Figure 1 – Standard Work Instruction Sheet

One Point Lesson

Operation Name: Wall Rough-In
Area: Wall
Initiator: Means and Methods Team
Date: 8/7/2018

Preventative Maintenance: Colored tape on floor should be maintained and changed if torn or wrinkled

Key Point Reference: Be sure to identify the start location on the installation drawing as the kit is packaged sequentially from start to end

Safety Item: Use appropriate PPE and use caution when unpacking materials from the kit

REQUIRED DETAILS:

- Make sure all kits are properly stored at the installation location.
- Cut MC Cable to length of the box using wire cutters.
- Install assemblies per install standards of the install drawing.
- Do not alter assemblies. If you do, contact your supervisor.
- Do not alter assemblies. They have a unique install drawing.
- Excess MC cable materials, shipping materials and other materials should be returned to the kit.
- Complete field rough in per approved drawings.
- Do not use kits for installation until the necessary field rough in drawings are complete.



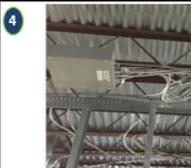
Field Manager will mark the walls with the installation location for each assembly contained in the kit.



Use the MagDaddy J Hook to support the whip off of a stud. Mount the assembly to the studs using two self drilling screws, one in upper left hand screw hole and other in the upper right hand.



Run the MC Cable up and out and secure using Colorado time. Install the dials and AV conduit studs and secure using one hole straps and telescoping bar brackets.



Install all home run ceiling boxes for the work package or kit. Support the MC as necessary and complete terminations with Wago's.



Field manager to verify installation and fill out feedback form to prefabrication. Return all tools, excess materials and buffer kits.

Reference	Name	Office Personnel	Cleaning Crew

One Point Lesson

Figure 4 – Sample Field Installation Standard

for electrical wall rough in with a framed wall and another standard for a masonry application. By defining the installation standards, companies can now determine how they will manufacture and kit their projects. They can also establish detailing standards that accelerate the development of coordination drawings. And let's not overlook the ability to buy materials at the company level versus the job level. All of which is done faster, cheaper, safer and at a higher quality.

Variability in construction projects makes defining standardized work more difficult but it can certainly be done. By defining standardized work and training to the standards, companies can more quickly develop their workforce. Companies that have pursued this strategy have also experienced significant decreases in MOD ratings and accidents. Simple fact is, if the installer has everything they need at the place they need to install it and they know how to do it, everyone wins.

■ *Michael McLin is the Managing Director at Maxim Consulting Group responsible for leading the business and guiding the strategic direction. Michael works with construction related firms of all sizes to evaluate business practices and assist with management challenges. Michael is a nationally recognized, dynamic public speaker and published author. If you have additional questions, you can contact Michael at Michael.mclin@maximconsulting.com or www.maximconsulting.com* ■