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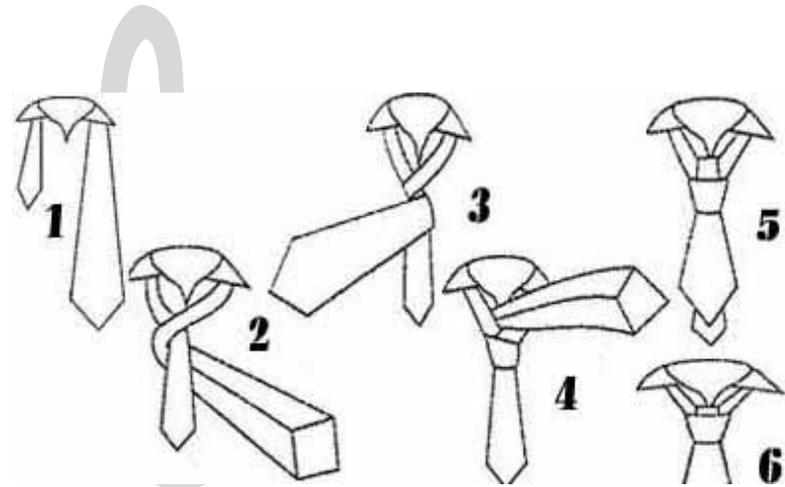
# OPERATIONS STANDARDS

lean



# Definition

- The standard work has its foundation in the pursuit of the excellence of the work.
- Without standardized work, it cannot be guaranteed that operations are always prepared products in the same way.



# Definition

- **Standards for works is the most efficient way to do any process with security and quality.**

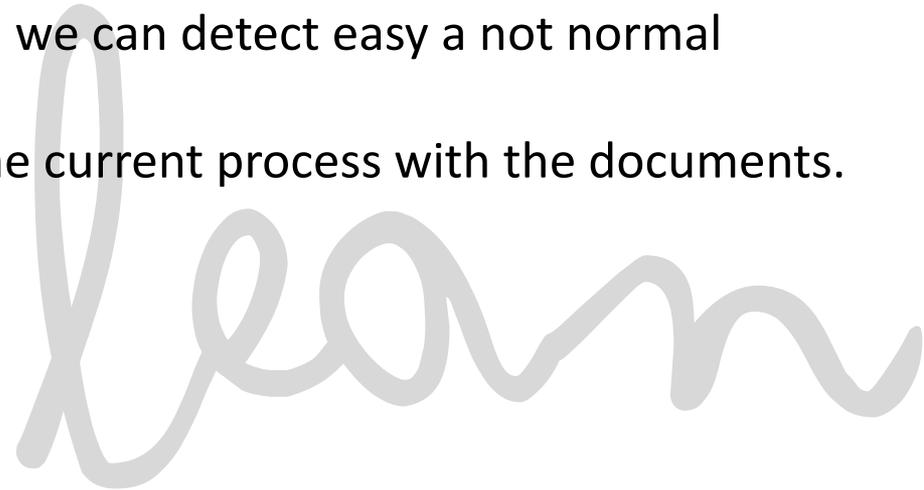


## Why the companies implement the works standards?

- By standardizing the operations, provides the base to assess and manage the process. Will be the base for the improvements .

The standard work documents is using for:

- Check the actions sequence works, have to be with quality and repetitive.
- Supports the visual control, we can detect easy a not normal operation.
- Offers a help to compare the current process with the documents.

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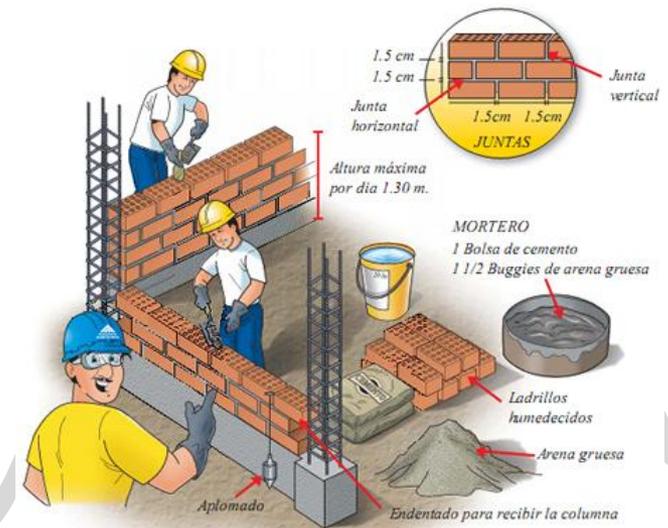
# Why the companies implement the works standards?

- It ensures that operations are safer and more effective.
- It is a tool to start improvements actions.
- It facilitates the method of documents improvements.
- It provides information that is available when it is necessary.
- It helps to maintain a high level of repeatability.
- It improvement the productivity.
- It reduces the learning curve of the workers.

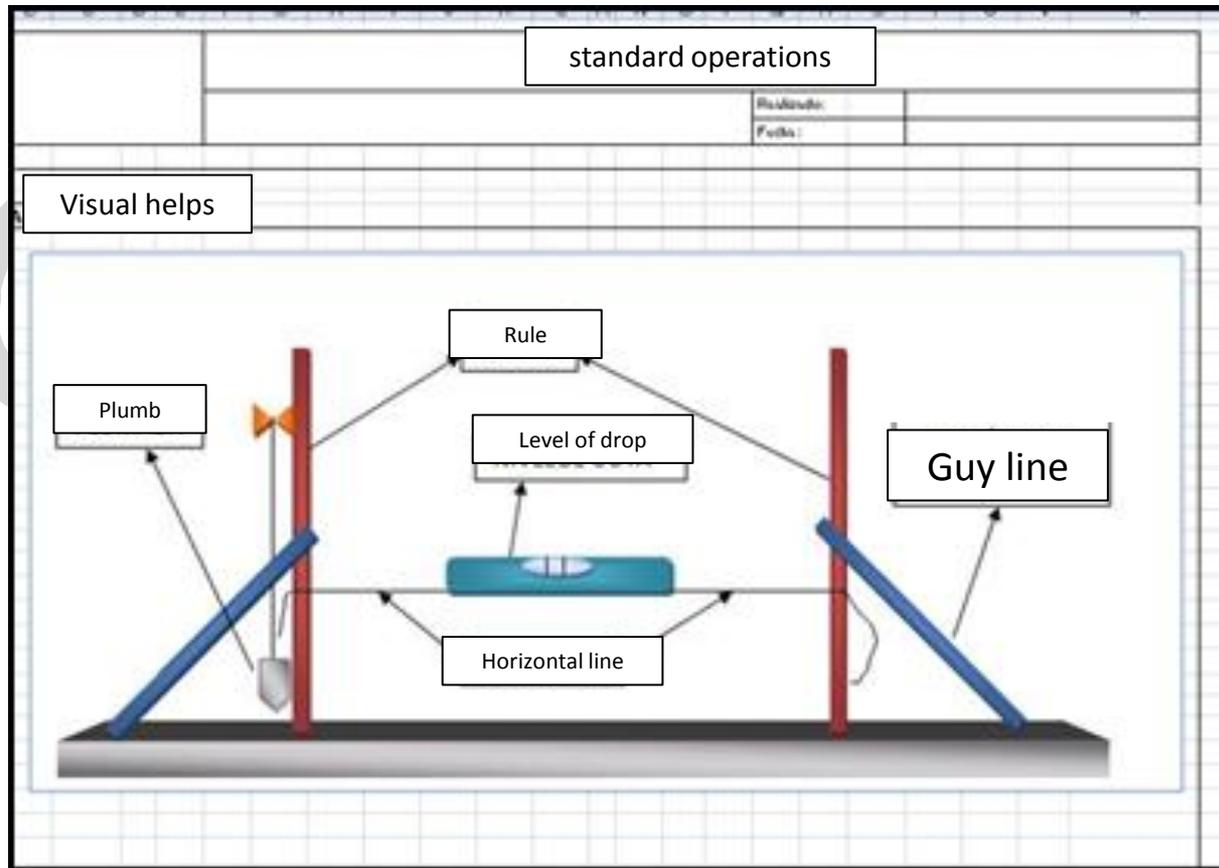


# Process to implement the standard operations

1. Select a specific process.
2. The measurement of time corresponding and put it in the “time process table”.
3. Calculate the capacity of the operation.
4. Design or document the best capacity sequence.
5. Draw the process “standard work”.
6. Document the operations instructions.



# Example

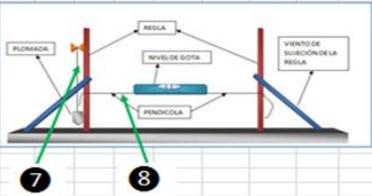


# Operation instructions

- They must be carried out so that every step of the process is properly understood and that any operator understands quickly and clearly what you should do in your job.
- For the recreation of the process instructions, is recommended to involve operators, engineers, staff and quality of human resources, so that, as a team, consider all the relevant aspects in the development process.

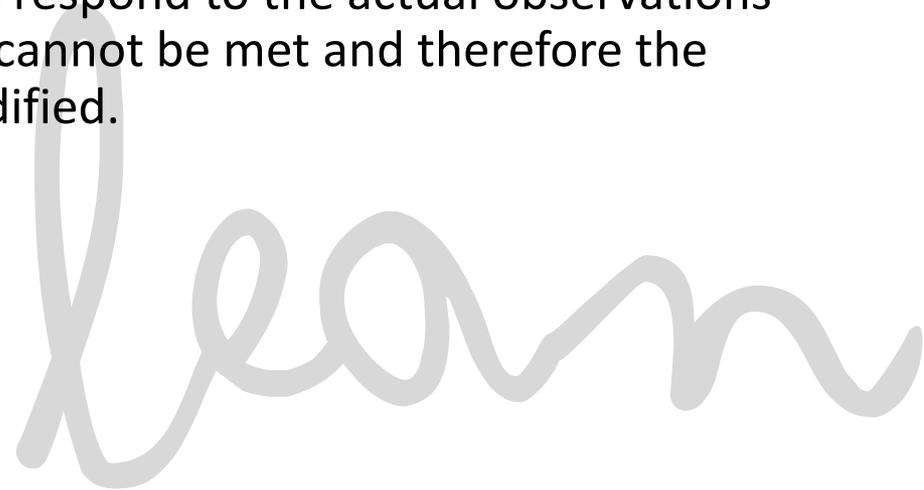


# Operation instructions

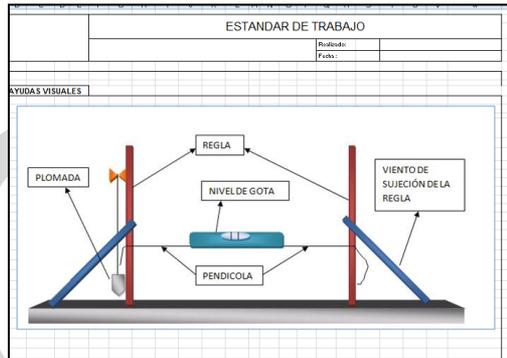
CONSTRUCCION DE UN MURO			
Realizado: _____			
Fecha: _____			
Nº	PROCEDIMIENTO DE TRABAJO		
1	Coger cemento del cubo con la paleta	6	Comprobar el estado con el nivel
2	Llevar el cemento al muro en construcción	7	Comprobar la plomada según se avance en altura
3	Coger ladrillo y poner encima del cemento echado	8	Ir subiendo la pendicola según se avance con nivel
4	Retirar cemento sobrante	9	
5	Realizar la misma operación 5 veces seguidas	10	
		11	
<b>HERRAMIENTAS A UTILIZAR</b>			
Paleta, Liana, Cubo, Nivel, Plomada			
<b>AYUDAS VISUALES</b>			
1			
2			
3			
4			
5			
6			

# Standard worksheet

- The worksheet have to be clear visible for EVERYBODY.
- The criteria of quality and safety must be quantified.
- See exactly what really happens during the operation, before making the worksheet.
- The standard work which does not respond to the actual observations ends up being a requirement that cannot be met and therefore the sheet of operations should be modified.

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# Set of information



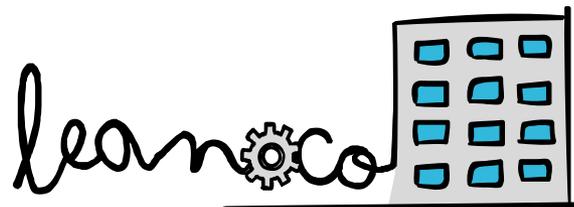
Standard sheet



CONSTRUCCION DE UN MURO		CONSTRUCCION DE UN MURO		CONSTRUCCION DE UN MURO	
Dibujado:		Dibujado:		Dibujado:	
Fecha:		Fecha:		Fecha:	
Nº	PR	Nº	PR	Nº	PR
1	Coger cerner	1	Coger cerner	6	Comprobar el estado con el nivel
2	Llevar el cern	2	Llevar el cern	7	Comprobar la plomada según se avance en altura
3	Coger ladrillo	3	Coger ladrillo	8	Ir subiendo la pendicola según se avance con nivel
4	Retirar cern	4	Retirar cern	9	
5	Realizar la m	5	Realizar la m	10	
HERRAMIENTAS: Paleta, Liana, C		HERRAMIENTAS: Paleta, Liana, C		HERRAMIENTAS: Paleta, Liana, C	
AYUDAS VISUALES		AYUDAS VISUALES		AYUDAS VISUALES	
HERRAMIENTAS A UTILIZAR (Paleta, Liana, Cubo, Nivel, Plomada)		HERRAMIENTAS A UTILIZAR (Paleta, Liana, Cubo, Nivel, Plomada)		HERRAMIENTAS A UTILIZAR (Paleta, Liana, Cubo, Nivel, Plomada)	
AYUDAS VISUALES		AYUDAS VISUALES		AYUDAS VISUALES	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
10		10		10	
11		11		11	

Work instructions

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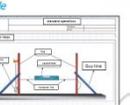
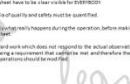


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3.2.1- Working instruction	
<p><b>Definition</b></p> <ul style="list-style-type: none"> <li>The standard work has its foundation in the purpose of the execution of the work.</li> <li>The standard sheet is a tool to be used to guarantee that operations are performed in the same way.</li> </ul> 	<p>When an operation has to do in a concrete way to guaranty the quality assurance of the product, it is necessary that staffs which make this operation do so in the same way, for that standards are born.</p>
<p><b>Definition</b></p> <ul style="list-style-type: none"> <li>Standards for works is the most efficient way to do any process with security and quality.</li> </ul> 	<p>It is very important to do the operations in the same way, is for that the big importance of the standards, every staff have to use the same tools, same jigs, the same instructions in the work. In according with standards of work, the products will be with the quality required for our clients.</p>
<p><b>Why the companies implement the works standards?</b></p> <ul style="list-style-type: none"> <li>By understanding the operations, provide the base for assess and manage the process. WIP is the base for the implementation.</li> <li>The standard work documents is using for: <ul style="list-style-type: none"> <li>to guide the worker execute work with safety and quality.</li> <li>to ensure the visual control system does not normal operation.</li> <li>to offer a help to compare the current process with the documents.</li> </ul> </li> </ul> 	<p>When creating documents necessary for the execution of the works, at the same time, we are preparing the base to study them better and we have the possibility to do improvements, that documents are lives. Whit the standards, we can check the occupational health too.</p>
<p><b>Why the companies implement the works standards?</b></p> <ul style="list-style-type: none"> <li>to ensure that operations are safer and more effective.</li> <li>to ensure that operations are safer and more effective.</li> <li>to highlight the method of document improvements.</li> <li>to define the operation that is needed when it is necessary.</li> <li>to help to determine a high level of responsibility.</li> <li>to facilitate the productivity.</li> <li>to reduce the learning curve of the workers.</li> </ul> 	<p>When implementing the standard work in the construction, you are defining a way of working to get all the people who do the same work, to do in the same way. It is necessary to ask to all workers, they have the knowhow of the work and with that information we have to do the work standard documents. It would be better to ask to more than one worker. The documents have to be easy to learn, we have to avoid big texts without any picture, we have to use pictures, colours, marks or something to get it, in that way, the workers feel part of the company and they can improvement too.</p>
<p><b>Process to implement the standard operations</b></p> <ol style="list-style-type: none"> <li>Select specific process.</li> <li>Do the measurement of the current operation in the "one process team".</li> <li>Establish the sequence of the operation.</li> <li>Set up the document that best suits to sequence.</li> <li>Apply the process "standard work".</li> <li>Document the operation instructions.</li> </ol> 	<p>We have to do activity plan to implement the standard, it is necessary to create a team with a leader and to have periodic meetings to do the actions mentioned. After that, the team has to check with the workers if the standard operation is easy to understand. We have to practice with them and modify if it is necessary. Our target is to have a understandable and effective standard operations.</p>
<p><b>Example</b></p> 	<p>A standard sheet which explains step by step the procedure of lifting a brick wall lists the steps to follow and add explanatory pictures of the process. The best thing is to use pictures from the same company where the work is done so for the employee it is more familiar</p>
<p><b>Operation instructions</b></p> <ul style="list-style-type: none"> <li>They must be central and so that every step of the process is properly understood and that the worker understands exactly what to do and when to do it at your job.</li> <li>For the "visibility" of the process instructions, it is recommended to use different colors, graphics, GIF and audio by physical resources so that, WIP team, can take all the relevant aspects in the document process.</li> </ul> 	<p>Teams multi-disciplinary help elaborate instructions that write operations are seen with different eyes, and takes into account different departments.</p>
<p><b>Operation instructions</b></p> 	<p>An example of operation instructions. It should be clear, sort an specific. The pictures help to understand.</p>
<p><b>Standard worksheet</b></p> <ul style="list-style-type: none"> <li>The worksheet have the clear order for OHS/ISO.</li> <li>The content of quality and safety must be specified.</li> <li>All activities must be clearly specified before making the change.</li> <li>The standard sheet which does not respond to the actual observations will stop being a requirement that can be met and establishes the goal of operations standardization.</li> </ul> 	<p>While the standard sheet is doing, we need to test it in the place of action and staff that will make, it is very important that compliance with all that sheet references, if there are inconsistencies between the standard and the reality, it has to be changed as needed so that it is correctly defined.</p>
<p><b>Set of information</b></p> 	<p>When the standard sheet has several operations, the instruction sheets that help complete the initial standard sheet is necessary. These instruction sheets explains step by step how the operation is performed and should be continuously revised and updated before any change in the product or tools.</p>