How to use the work instructions - 10 main steps!

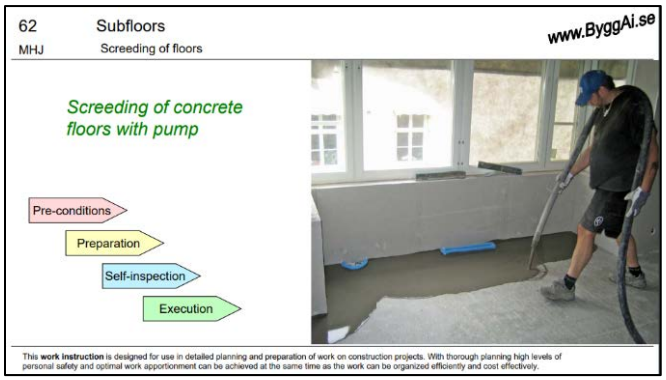
Use the work instructions for work preparations and instructions at construction sites. Work preparation can be done for virtually all operations but is most important when it comes to tasks such as:

- contains a large amount of work (many hours) and lasts a long time,
- involves many people to cooperate,
- new tasks and technically complex tasks.

1. Gather the group that will carry out the work:
   - Skilled worker
   - Team Base
   - Supervisor
   - Estimator/purchaser
   - Subcontractor

2. Inform the group in broad terms about the work to be planned. Visit the location or show on a drawing.

3. Get **Work instruction** from www.ByggAi.se. View it on computer monitor or printed on paper. Go through the different parts.



4. Locate requirements and conditions that are unique to the current case. Look at the drawings, specifications and the manufacturer's instructions.

5. Discuss how the work should be carried out. Use the images as inspiration. Is there anyone who has done this work before and can tell you about how the work can be made to flow smoothly thanks to e.g. aids, smart material handling, etc. Has it ever gone wrong? What happened? Can it be avoided here?

6. Use the work preparation form to take notes of the work design chosen.

7. Reception of materials –
   a. How is materials procured?
   b. How are deliveries planned and divided?
   c. How is the material unload and stored before the assembly of the work?
   d. How is the material transported to the installation place?

8. Describe the machines and tools needed for the operation. Also auxiliary materials (screw, oil, sealing, etc.) need to be listed.

9. Handling of waste and residues?

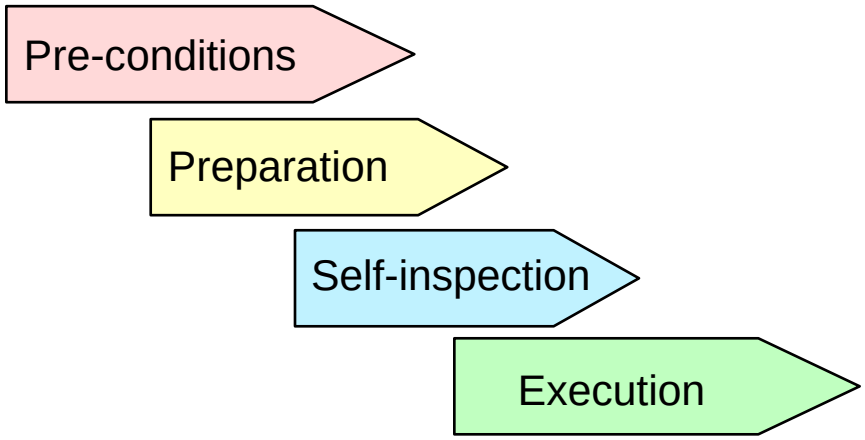
10. What alternative approaches are available. And what are the problems and risks of the chosen. And what is needed to deal with any problems? Self-inspection - follow-up and inspection plan.

Good luck with the work!

ByggAi - Work instructions for construction work – www.ByggAi.se

This is how the different parts of a work instruction are structured

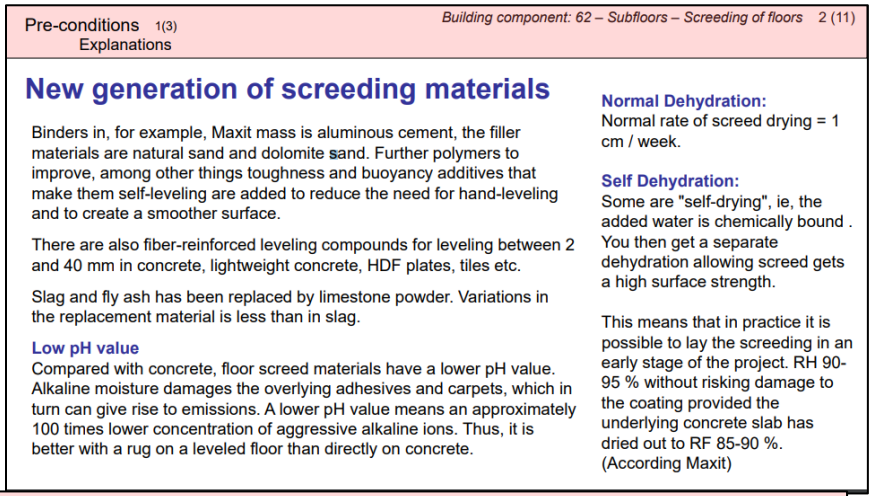
The division of work instructions follows the procedure of work preparation and is divided into four main headings:



1. Pre-conditions

→ Explanation

For some working instructions, an explanation has been added as the first page, e.g. *for subfloor of screed*. This may include new materials or conditions that may require an explanation to create understanding why it is important to work in a certain way.



Pre-conditions 1(3)
Explanations

Building component: 62 – Subfloors – Screeding of floors 2 (11)

New generation of screeding materials

Binders in, for example, Maxit mass is aluminous cement, the filler materials are natural sand and dolomite sand. Further polymers to improve, among other things toughness and buoyancy additives that make them self-leveling are added to reduce the need for hand-leveling and to create a smoother surface.

There are also fiber-reinforced leveling compounds for leveling between 2 and 40 mm in concrete, lightweight concrete, HDF plates, tiles etc.

Slag and fly ash has been replaced by limestone powder. Variations in the replacement material is less than in slag.

Low pH value
Compared with concrete, floor screed materials have a lower pH value. Alkaline moisture damages the overlying adhesives and carpets, which in turn can give rise to emissions. A lower pH value means an approximately 100 times lower concentration of aggressive alkaline ions. Thus, it is better with a rug on a leveled floor than directly on concrete.

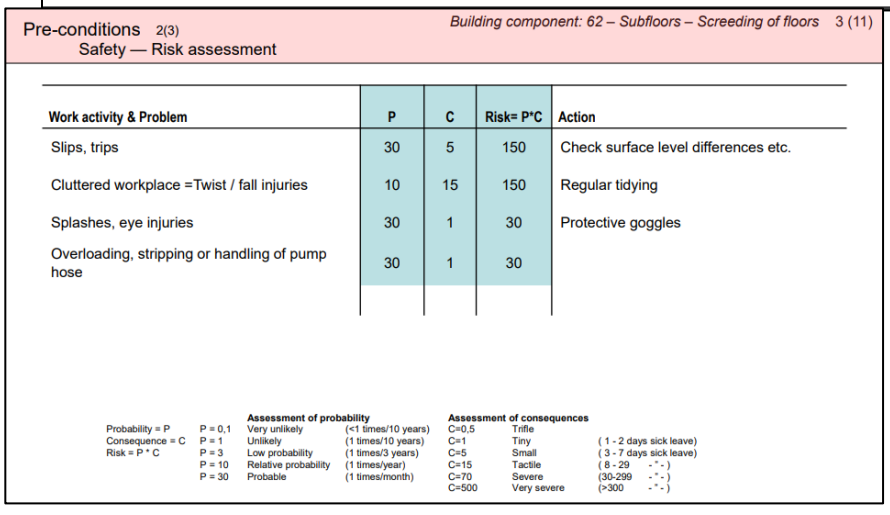
Normal Dehydration:
Normal rate of screed drying = 1 cm / week.

Self Dehydration:
Some are "self-drying", ie, the added water is chemically bound . You then get a separate dehydration allowing screed gets a high surface strength.

This means that in practice it is possible to lay the screeding in an early stage of the project. RH 90-95 % without risking damage to the coating provided the underlying concrete slab has dried out to RF 85-90 %. (According Maxit)

→ Risk analysis – Identification of hazardous parts

In order to facilitate the establishment of your own risk analyses and to draw attention to past risks, a table of the elements that, according to the available statistics, have caused accidents and injuries, is available for each work instruction. Based on this, the risks for the current work for the own project are assessed and documented.



Pre-conditions 2(3)
Safety — Risk assessment

Building component: 62 – Subfloors – Screeding of floors 3 (11)

Work activity & Problem	P	C	Risk= P*C	Action
Slips, trips	30	5	150	Check surface level differences etc.
Cluttered workplace =Twist / fall injuries	10	15	150	Regular tidying
Splashes, eye injuries	30	1	30	Protective goggles
Overloading, stripping or handling of pump hose	30	1	30	

Probability = P
Consequence = C
Risk = P * C

Assessment of probability			Assessment of consequences		
P = 0,1	Very unlikely	(<1 times/10 years)	C=0,5	Trifle	
P = 1	Unlikely	(1 times/10 years)	C=1	Tiny	(1 - 2 days sick leave)
P = 3	Low probability	(1 times/3 years)	C=5	Small	(3 - 7 days sick leave)
P = 10	Relative probability	(1 times/year)	C=15	Tactile	(8 - 29 - " -)
P = 30	Probable	(1 times/month)	C=70	Severe	(30-299 - " -)
			C=500	Very severe	(>300 - " -)

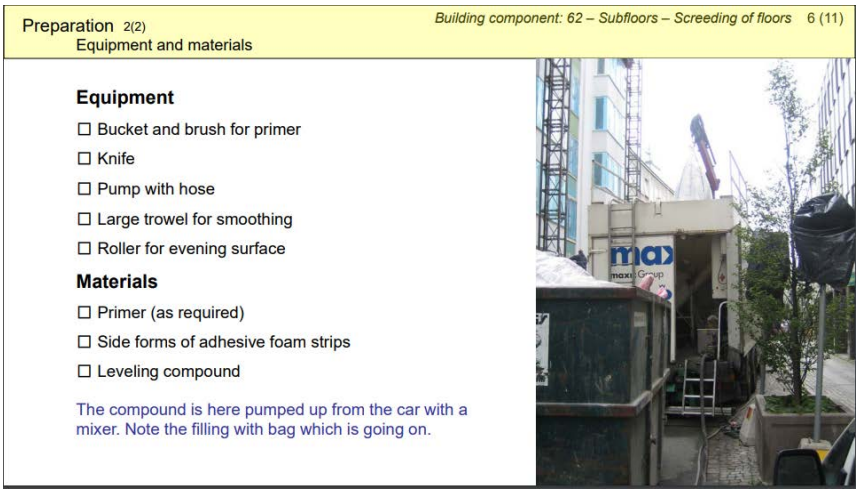
→ Safety, protective equipment

In addition to the risk analysis, images and text from the Swedish Work Environment Authority's brochure that is relevant for the work instruction.

2 Preparation

→ Check
Before the work can start, the main prerequisites must be planned.

→ Equipment and Materials, checklists
Contains checklists on equipment/tools and materials. Especially mounting elements – nails, screws, etc. that are increasingly required, it may be wise to prepare in time.

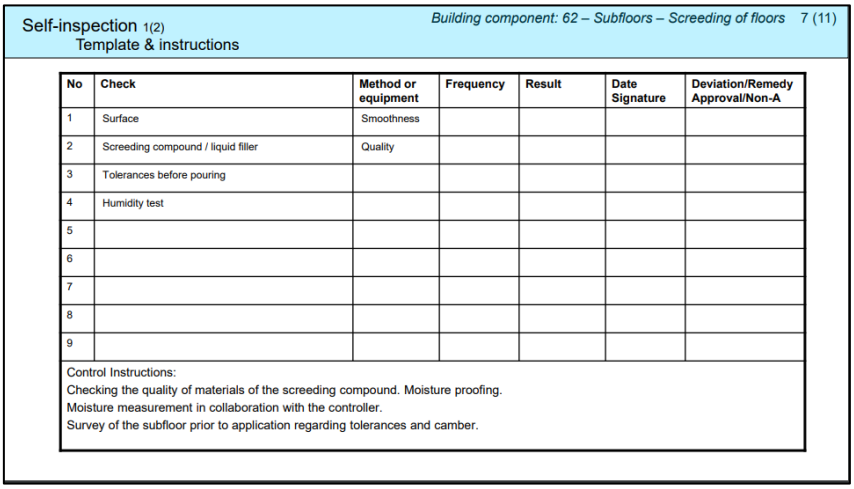


→ Delivery, reception and material handling
Contains comments on how to receive, unloading, transport and store the materials. Here are alternative suggestions for suitable equipment for material handling.

→ Handling of waste and residues
Large quantities of residues are generated in workplaces. For kitchen joinery, for example, the packaging is often 'valuable' if it is dry and clean. Masonry generates heavy mixtures of mortar and brick crusher to be transported away. *There are still construction projects with inadequate sorting at waste.* In addition to direct economic benefits from landfill costs, a better order in the workplace provides many positive side effects.

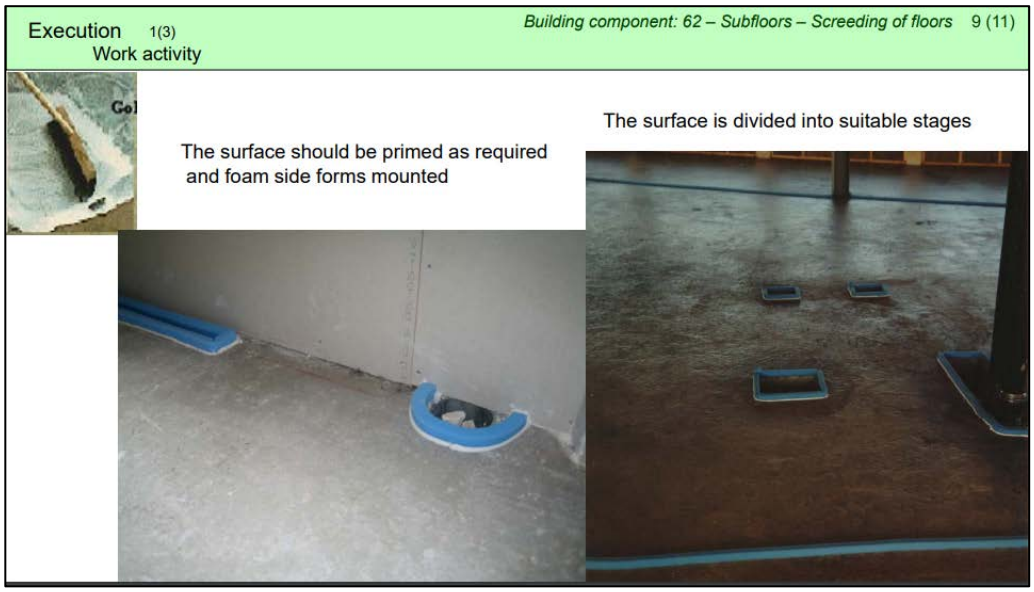
3 Self-inspection
→ Form with draft items
Self-inspection is presented on a form. Most companies have their own forms containing similar parts.

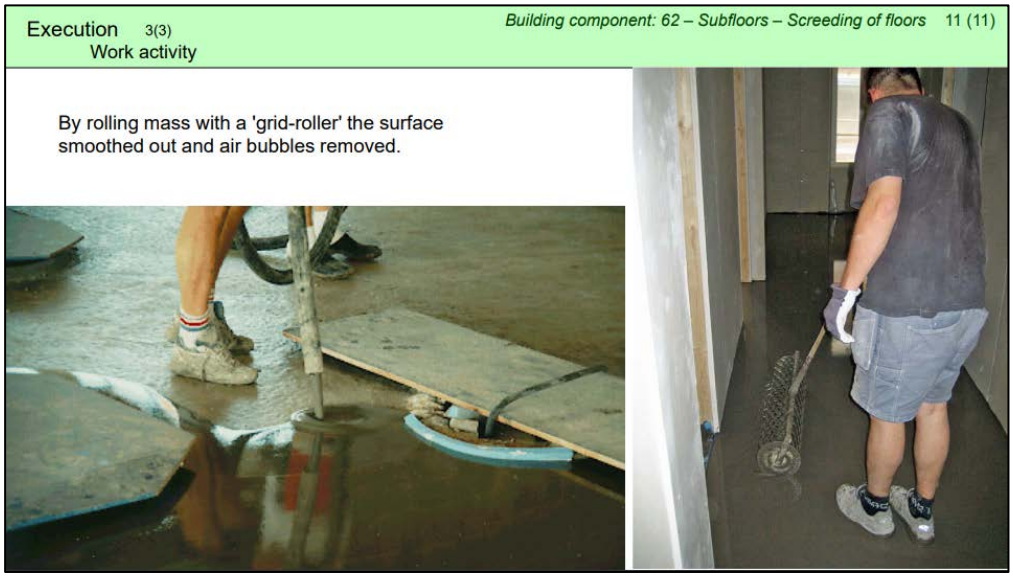
Item to Check - Specifies the item to be checked
Method or equipment - how to check and with what equipment
Frequency - When to check/at what intervals
Result - Was it approved or not
Date - Date the check was performed.
Deviation/Action – If deviation- how to deal with it (action)



4 Work execution

The implementation, i.e. the assembly of material or work is documented with images and text from a previous project. It is intended that those who do the same work next time will get an idea in detail of how all the parts have been carried out and have a basis to make the work *even a little bit better!*





ByggAi - Work instructions for construction work – www.ByggAi.se

Thoughts on work preparation

By looking at pictures together, it's easier for everyone to talk about the same thing. Misunderstandings can be avoided. The first part: Staking out/measurement, must be discussed by supervisors and staff together. The staff/fitters must know what has been marked with lines, etc. For example, is it the centre of a wall marked on the floor or is the finished plastered wall surface. Experienced fitters may have a strong idea of how to perform the release but the management might thing differently!? For each operation, this point should be developed more.

- **Staking out – measurements**
  The demand of "tolerances in sizes" is constantly increasing. Tips from how to measure on previous occasions can reduce the time and number of errors.
  Images with work elements as a basis for discussions at work preparation and for supervisor's instructions.
- **Post-work**
  Some operations require post-work that is reported last under the Execution tab
- **Crane signals**
  Images of characters for routing the tower crane and mobile crane is included in a number of work instructions such as mounting various prefab elements.

The work instructions should be used when preparing work/activities.
In work preparation, the work instructions serve as an experience source since they are a template for how work has been documented and by making it possible to study how the work has been carried out on previous occasions. Thus, participants do not have to start from 'zero' but can start from something to improve. Pictures of different details mean that you talk about the same things and misunderstandings can be avoided.

In the case of new materials, the use of new machines, working methods, etc., supervisors are given a means when instructing the staff. The work instructions also contain tips of various kinds that can be discussed during work preparation.

Documentation of works/activities

When documenting work preparation, consideration should be given to questions that the staff can be asking when preparing the work – at the next opportunity.

Checklist of what should be documented:

Special requirements for the end result?
Does the supplier/manufacturer have special requirements?
How is the material unloaded?
How is the material moved inside the building?
How should the material be stored to minimise transports etc.?
How should the material be labelled?
How is the packaging handled?
How should measures be set out (and tolerances)?
What uncertainties should you consider – personal equipment? Risk analysis!
What is the situation at start? What tools/equipment are used?
Tip: Special tools, templates (keep materials in place), lifting equipment etc?
What fixing elements are needed? (Nail, screw, brick, etc.)
How are residues handled? (Spillage and crushed materials)
Is protection/cover of building parts or other contractors' work required?
Does the built-in material need to be protected?