

In-situ concrete casting with pump including steel trowelling of surface

Pre-conditions

Preparation

Self-inspection

Execution



This **work instruction** is designed for use in detailed planning and preparation of work on construction projects. With thorough planning high levels of personal safety and optimal work apportionment can be achieved at the same time as the work can be organized efficiently and cost effectively.

Safety — Risk assessment

Work activity & Problem	P	C	Risk= P*C	Action
Slips, trips	30	5	150	Base should be checked regarding level differences, cables, etc.
Cluttered workplace = Twists or fall injuries	10	5	50	Regular tidying
Concrete splashing, eye injuries	30	1	30	Protective goggles
Straining, overloading	30	1	30	Use mechanical screeder

Probability = P
Consequence = C
Risk = P * C

Assessment of probability
 P = 0,1 Very unlikely (<1 times/10 years)
 P = 1 Unlikely (1 times/10 years)
 P = 3 Low probability (1 times/3 years)
 P = 10 Relative probability (1 times/year)
 P = 30 Probable (1 times/month)

Assessment of consequences
 C=0,5 Trifle
 C=1 Tiny (1 - 2 days sick leave)
 C=5 Small (3 - 7 days sick leave)
 C=15 Tactile (8 - 29 - " -)
 C=70 Severe (30-299 - " -)
 C=500 Very severe (>300 - " -)

Text from the Working Environment Authority's brochure Safer Construction Work

Personal Protective Equipment § 71

Safety helmet and safety shoes shall be used unless it is clearly unnecessary.

Other personal protective equipment such as eye protection, hearing protection and gloves when required.

Glasses and hearing

If you have glasses with earpieces that go into the ear under the cushions on the hearing protection this will reduce the sound-damping effect. It is therefore important to choose the hearing protection which provides adequate sound reduction even when worn with glasses.

Equipment and materials

Equipment

- Laser with tripod, receiver and base
- Access to electricity at the casting point
- Wide float, possibly mechanical float for stiff concrete
- Shovel
- Bucket and brush for cleaning
- Access to water
- Finishing machine with rotating blades
- Possibly a harness to pump hose
- Concreting shoes/slippers for walking on not hardened concrete

Materials

- Flooring concrete
- Water

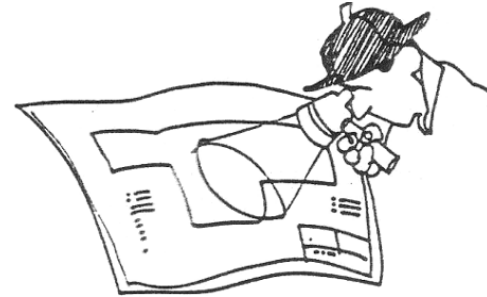


Self-inspection 1(2) Template & instructions

No	Check	Method or equipment	Frequency	Result	Date Signature	Deviation/Remedy Approval/Non-A
1	Watering	The concrete surface should be dry so that it is light before casting.	Water the concrete day before casting of the screeding			
2	Cleanliness	Check for oil stains	Immediately before casting			
3	Laser	Check that the correct height is set.	Before concrete delivery			
4	Delivery note	Check the delivery note that it is the right concrete, texture and quantity supplied. Also ordered additive and air content.	At first shipment or if the concrete behaves strangely			
5	K values	Test cast the test cubes which the station lends out.				
6	Time	Concrete is a perishable product - check the time so that there is time for the casting.	At each delivery			
7	Dehydration	Think of curing time when choosing concrete quality.	When ordering			
8						
9						

Quality criteria for the project and the product

- Study Drawings, Specifications and Inspection planning
- Think through the alternative **methods of production** and handling of materials, tools etc. that can meet the requirements



Pay particular attention to

- Check in the specification and the drawings the slope and smoothness required
- Do not carry out screeding if the base does not comply with the specification
- Take appropriate measures in cold weather

- Weigh and check the upper and lower parts of the floor surfaces
- Side forms of boards or insulation added to demark the limits of the casting area
- Electricity and mechanical installations are protected from damage by penetrating concrete
- Floor surfaces to be cast should be watered one day before casting
- Surfaces should be cleaned immediately prior to casting , oil stains to be removed
- The surface should then be vacuumed clean



The Casting Team

Three people make up the Casting Team: One handles the pump, one pumps out the concrete and one smooth's out the concrete with the float.

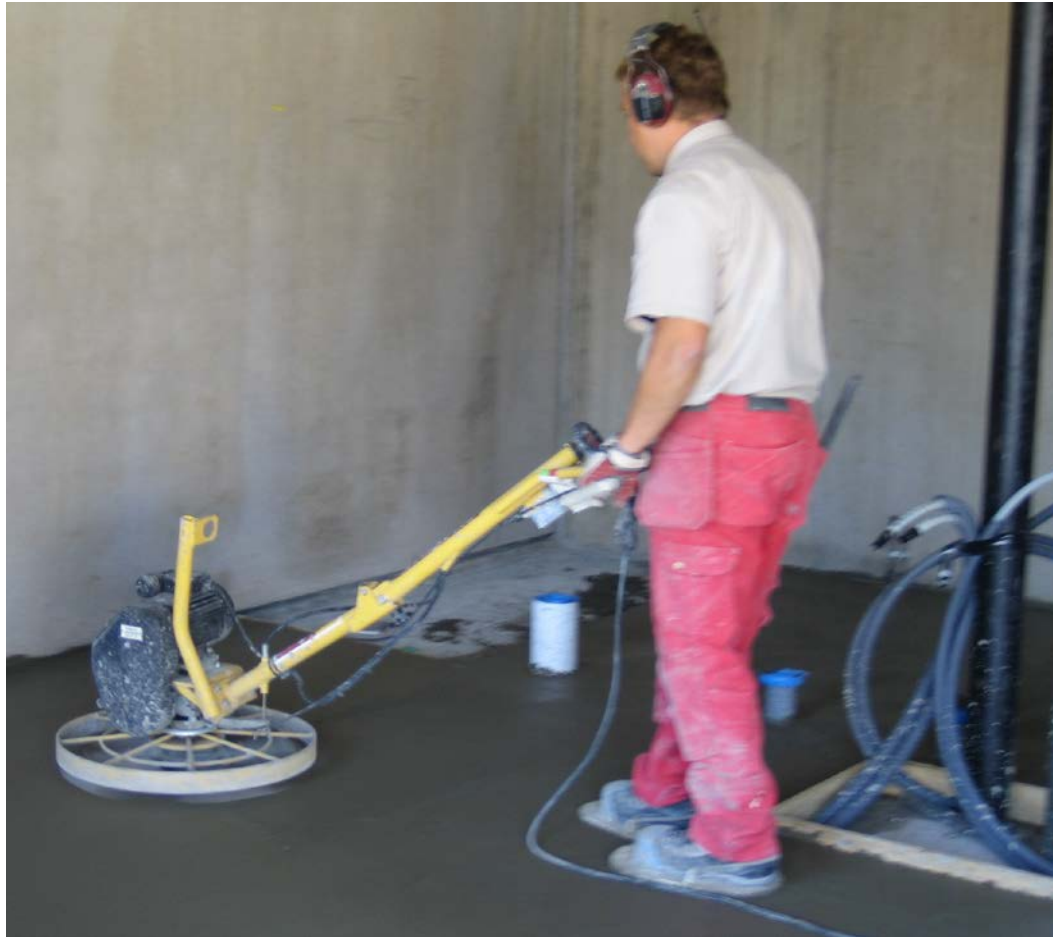
The correct height is checked with 'height - stick' that beeps when the laser shows right height.

The casting was done in the morning and in the afternoon at 14 o'clock it could be walked on and sanded.





After casting each surface is finished with a wide trowel/float.



After a few hours, the concrete is steel trowelled. It requires rigid special slippers ("concrete shoes") to enter the concreted area.



Finished!

