

Installation of concrete precast stair flights

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: Installation of precast concrete stair flights

Work activity & Problem	P	C	Risk= P*C	Action
Overbalancing elements, crushing injuries	3	70	210	Store in designated areas
Crane Working with the elements/crushing injuries	30	5	150	Education in crane directing/strapping
Falling material/crushing injuries	10	15	150	Helmet compulsory
Fall from ladder fall injuries	10	15	150	Wider use of scaffolding
Cluttered workplace =Twist/fall injuries	10	15	150	Regular tidying

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 protective footwear should be used unless this is clearly unnecessary. Other personal protective equipment such as eye protection, hearing protection and gloves should be worn when required.

First Aid § 31

First Aid should be available. Staff who are trained to provide First Aid should always be available.

Facilities and First Aid equipment should be marked with signs. There shall also be signs presenting phone numbers, address and, if necessary, route description of the local emergency services.



















Regulations related to First Aid are presented in AFS 1999:7 "First Aid and Emergency Support".

Watch out for falling objects § 67

Areas where there is a risk of falling objects should be cordoned off and marked in a clear manner. If such areas must be entered canopy covered walkways or similar shall be provided.



(See also AFS 2008:13, Appendix 3)

 <p>Hoist Load</p>	 <p>Lower Load</p>	 <p>Hoist Load Slowly</p>	 <p>Lower Load Slowly</p>	 <p>Stop</p>
 <p>Swing Boom in direction indicated</p>		 <p>Lower Boom</p>		 <p>Emergency Stop</p>
 <p>Extend Boom</p>	 <p>Retract Boom</p>	 <p>Raise Boom</p>	 <p>Lower Boom</p>	 <p>Signal not understood</p>
 <p>Open</p>	 <p>Close</p>	 <p>Main Hoist</p>	 <p>Auxiliary Hoist</p>	 <p>Finished</p>

Equipment and machinery

Tools and Equipment

- Equipment for installation of stair flights and landings
- Level and staff
- Iron skewers
- 2 crowbars
- Bending wrench for rebar
- Angle grinder with cutting wheel for concrete
- Welding equipment (if required)
- 2 ladders about 3.5 m long
- Hand tools

Materials

- Prefabricated stair flights and landings
- Fiber cement washers
- Safety railings and stanchions

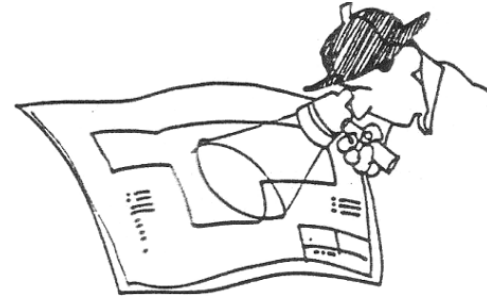


Self-inspection 1(2)
 Template & instructions

No	Check	Metod or equipment	Frequency	Result	Date Signature	Deviation/Remedy Approval/Non-A
1	Delivery notes, marking					
2	Cracking	Ocular				
3	Lifting equipment and mounting accessories					
4	Cast-in fastening products					
5	Communication and Signal schedule incl. of command	ASS Directions No 58				
6	Transport routing and depots					
7	Supporting props, struts and accessories					
8						
9						
10						
11						

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 the location and direction of the stair elements
- support and plumb elements
- do not install damaged elements

A precast stair element is connected...



...and lowered into place.



Washers are inserted to elevate the step to the right height.

Height control.



Washers

Side adjustment





Everything OK, the crane has released.

A landing in place - secured with built-in steel wire and welded to the underside.



Guardrails can be arranged with pole and clamps as left below..



...or with standing studs that go all the way up the stairwell.

Permanent railing installed →.

