

*Façade cladding on
steel frame instead
of concrete*

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.

Explanation

Background

The supporting structure was built with shell walls and flat concrete slabs with topping.

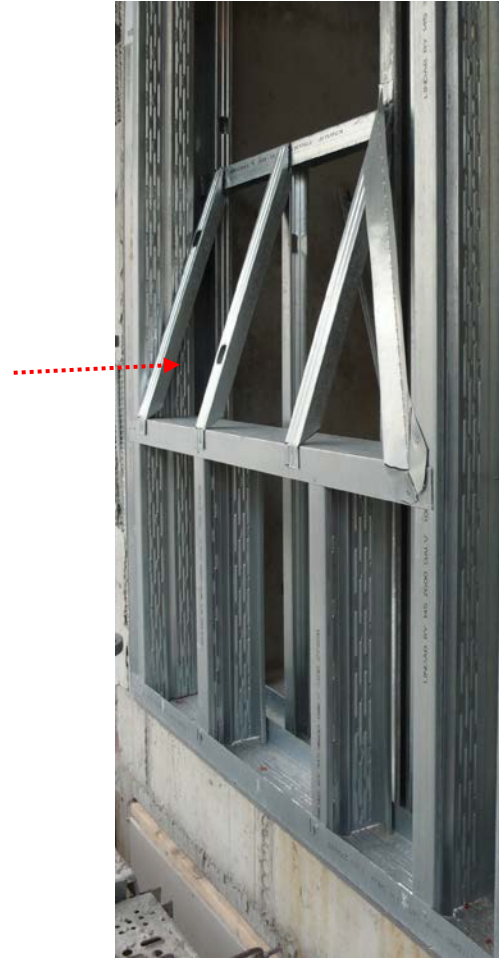
The cladding walls were intended to be made of concrete.

Due to the construction period running overtime the purchaser decided to adopt the contractor's proposal to change to a site-built construction.

Parapets which are to be plastered have been provided with inclined / beveled edges, which means many working hours.

The frames are installed in the following order:

- 1 - Frame of steel studs
- 2 - Installation window
- 3 - External minerit panels
- 4 - External insulation
- 5 - Plastering on some parapets or ½- stone masonry
- 6 - Inside: building paper, insulation, foil and plaster.



Work activity & Problem	P	C	Risk= P*C	Action
Överbelastning, sträckning	10	75	750	Use 'snap studs' or perforated studs
Tripping injuries	3	150	450	
Handling & Cutting joists	3	70	210	Protective Clothing
Fall from trestle or ladder	3	70	210	Use trestle with large standing surface

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

On the construction project the issue of First Aid had been resolved in the manner shown in the photo.



(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

Machinery, tools:

- Trestles preferably with wide standing surface
- Alloy Ladder
- Chalk liner and ruler
- Pen

- A drill with cord
- Bolt pistol or pneumatic gun
- Circular saw
- Screw Machine or screwdriver
- Sheet metal clamp –
for joining sheet metal studs
- Shears

- Cables, junction box , lamps

- A lockable trolley for tools and
equipment reduces unnecessary
running around



Materials

- Steel studs for exterior wall with wood studs / plywood by windows
- Plates and noggins for fixings
- Plastic foil strip under walls, insulation mat
- Sealing strip of EPDM rubber
- Pistol nails and possibly other nail types
- Plaster screws
- Latex

- Mineral wool in some walls



Number steel studs in cladding frame

Do not forget to add for waste- about 10% depending on the nooks and crannies.

Meters of wall

0,45

Number studs =

wall length (ml) / 0.45 +1 (for wall studs S450)

Linear meters of rails and girders

Linear meter rails respectively floor and ceiling purlins = wall length (ml) x 2

Delivery of steel studs

If steel joists and boards are not delivered flat packed and wrapped before the next floor is laid, the packet can be taken in with a trolley.

Check that the floor can withstand the point loads! (Chipboard flooring has poor bearing capacity for point loads !)

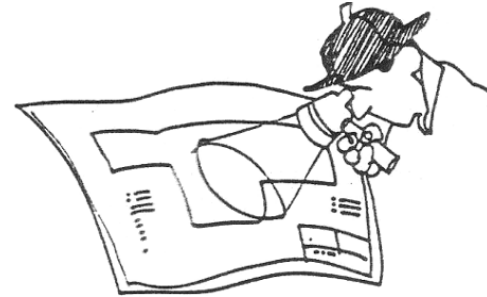


Self-inspection 1(2) Template & instructions

No	Check	Method or equipment	Frequency	Result	Date Signature	Deviation/Remedy Approval/Non-A
1	Sole plate insulation	Proper insulation				
2	Sole plate fixing	Ancohring				
3	Frame studding					
4	Noggins					
5	Beams	Quality of timber				
6	Rough battens					
7	Door openings	Measurements				
8	Documenting with photos					
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

- Wall studs should be cut shorter than the wall height
- Wall studs shall be jointed in accordance with the supplier's instructions
- Do not install damaged joists
- Cutting with angle grinder involves "hot work"

The joists are nailed to the floor and screwed to the ceiling

The vapour barrier is placed and floor joist, 195 mm Thermo, slid into place. Wall bracket is “sealed” at the ends and pushed into place.



Fire hazard " hot work "!



Assembling the joists in the ceiling using a bolt gun can cause damage to the shoulder. Other methods such as shooting with compressed air guns should be selected.

Mounting stud frame

**Wood studs for windows**

Around window openings are fitted plywood boards for mounting of the window frames.





**Sloping parapets -
Intended as
plastered**

A change in material
specification resulted
in these oblique
parapets





Attic boarding

To the left - ready to the attic boarding

Below

The attic boarding is jointed / spliced with long screws that may create problems for those responsible for insulating works.



Waste

Why handle the waste several times?
Deposit it directly in sorting bags





Installation of external walls - coordination!

Stir to radiators come up in the outer walls.

Fixtures can be arranged in different ways.

The electrician will come later.

