

*Installation of
prefabricated
wooden roof
trusses*

Pre-conditions

Preparation

Self-inspection

Execution

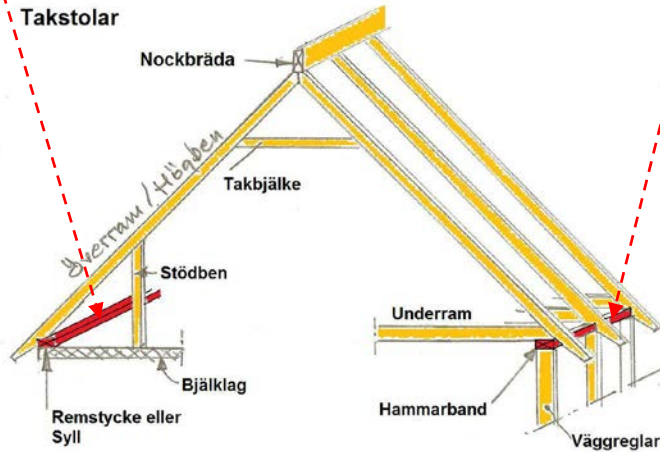


This **work instruction** is designed for use in detailed planning and preparation of work on construction projects. With thorough planning high levels of personal safety and optimal work apportionment can be achieved at the same time as the work can be organized efficiently and cost effectively.

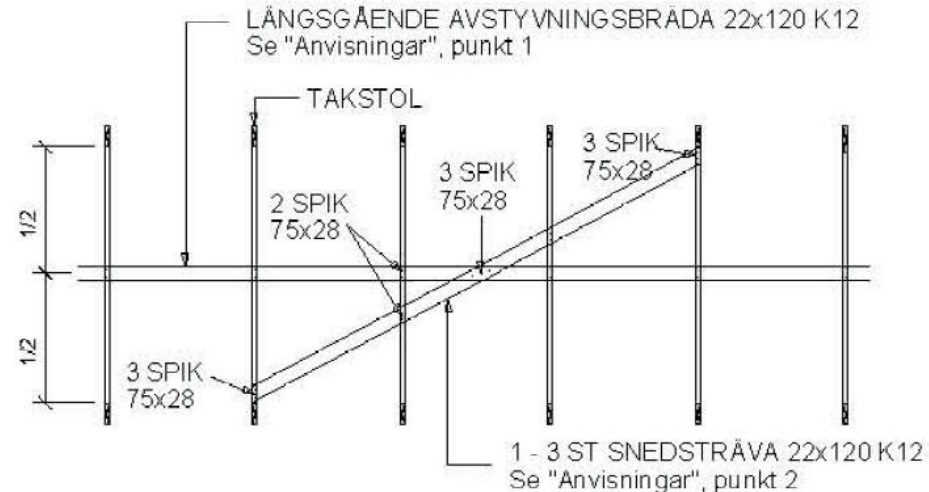
Explanation

The upper horizontal beam that stabilizes the truss is called a **wale**. In modern building technology the wale is defined as the top horizontal batten which holds together a wooden or steel studded frame.

The **roof cill** is a horizontal batten that serves as the base for the truss on, for example, a concrete slab



Exempel på avsträvning med en avstyvningsbräda



On www.stak.org you can find instructions regarding the handling and bracing of roof trusses and a checklist for ordering trusses. The figure on the right is from this website.

Safety — Risk assessment

Work activity & Problem	P	C	Risk= P*C	Action
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	Sannolik	(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 - " -)

Safety — Protective gear

Images included from the Working Environment Authority's brochure Safer Construction Work

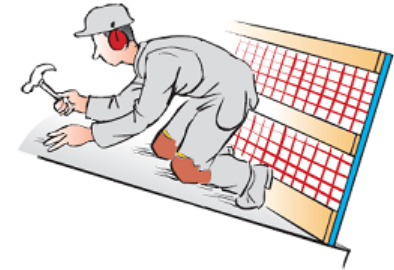
Personal Protective Equipment § 71

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.

Working safer on roofs § 87-92

When engaged in roof work it is usual for a guardrail or equivalent protection to be provided. Railings can sit on the eaves or in a position that ends just below the eaves.

Remember that it may need extra strong railings to stop a person who comes at speed down for a steep roof.





















Skyddsräcke vid takarbete.



Personligt fallskydd, helsele insydd i väst.

(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>

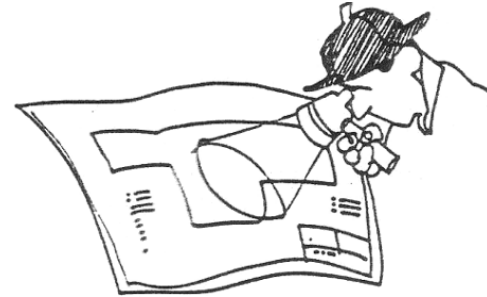
Template & instructions

No	Check	Method or equipment	Frequency	Result	Date Signature	Deviation/Remedy Approval/Non-A
1	Lifting equipment only deployed where intended	Ocular	At delivery			
2	Roof truss c/c, lintels, anchors according to documents	Measuring tape	At assembly			
3	Quality statements on the timber		At delivery			
4	Fasteners are galvanized					
5	Nail length should be 2.5 times the installed wood thickness					
6	Wood thickness > 2 times the screw diameter at the screw head					
7	Battening: Oblique and horizontal					
8						
9						
10						
11						

Key points

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 rafters - right roof truss in the right direction
- anchor trusses well
- prop up the upper rafters of the truss
- do not install damaged trusses

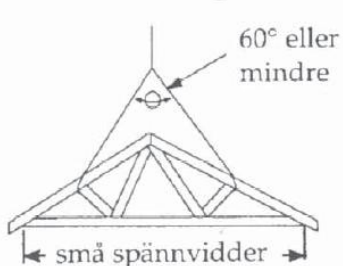
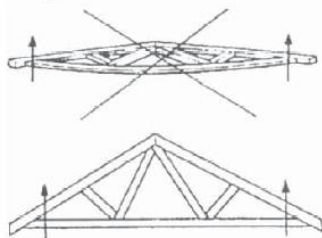
Principles as to how trusses shall be lifted are provided by STAK – The Swedish Roof Truss Association.

The picture below is reproduced with their approval.

Further information include a checklist for ordering prefabricated truss on www.stak.org.

Lyft

- Lyft så att krafterna verkar i konstruktionens plan. Var särskilt försiktig när det blåser.



Checklista för takstolsbeställning

Takstolstyper



Roof trusses are lifted directly from the transport vehicle to the installation site. If they require reparation they should be stored upright on a suitable base, in order to avoid moisture and dirt. If stored for several days - protect from moisture.

Assembly:

1. Support the gable roof truss
2. Follow the roof truss plan
3. Check that the roof trusses are laid in the right direction
4. Aligning
5. Fix the longitudinal and diagonal battens
6. Frame permanent battens according the roof truss plan
7. Anchor according to instructions
8. Protect from moisture



Oblique battens

Execution 3(5)
Work activity

Building component: 41 – Roof structure – Prefabricated wooden roof trusses - 10 (12)



Battens

Cills





Anchoring of roof trusses in concrete beams

Drilling for attachment of angle iron with anchor bolt.

Roof truss anchors showing several types and dimensions.



Installation of insect net.



Roof Truss mounted on walls of concrete.
Paneling and insulation of the attic has commenced.

