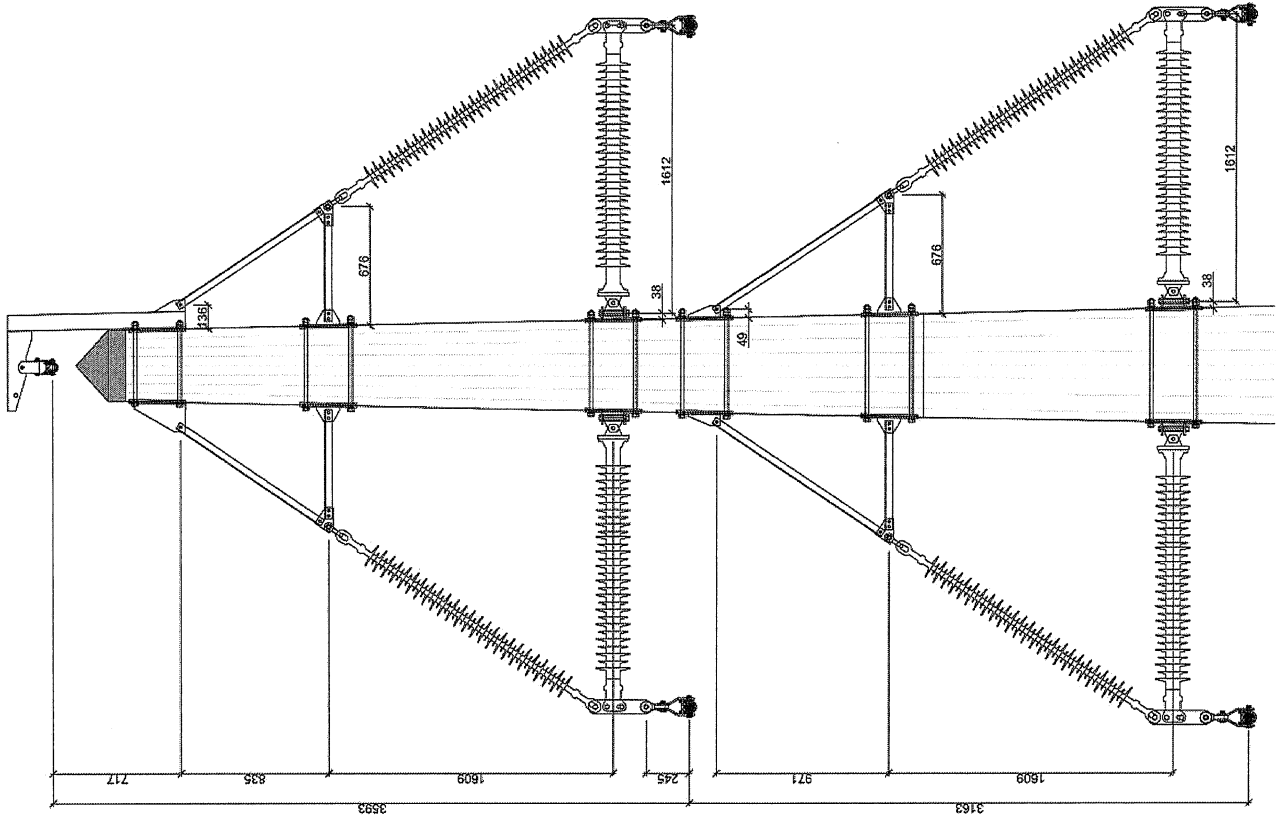


**A** Suspension insulator attachment points  
M 1:15



**Design**  
Manufacturer is responsible for the tower design, fulfilling all requirements listed up on drawing, design description and relevant standards.  
Final geometry and tower design is subject to approval by Hafslund Net/EFLA.

**Compass material**  
Manufacturer is responsible for implementing all relevant standards and upholding good practices.

**Steel**  
Steel quality in all steel parts must fulfill their relevant EN standards

- Tower code: 5355/2-41
- Plates: S355JR, S3
- Other profiles: S355, P2+AR

Work quality must be according to EN 728-2  
Hot dip galvanizing according to EN ISO 1461

**Insulator cross arms**  
EFLA is responsible for the design of the connections for insulators

- Manufacturer is responsible for composite design around steel connections
- Including but not limited to, allowable bolt hole spacing, bearing stress and compression

**Shield wires**  
EFLA is responsible for steel design of the connection for shield wire cradle

- Manufacturer is responsible for composite design around steel connections
- Including but not limited to, allowable bolt hole spacing, bearing stress and compression

**Foundation connections**  
Foundation designs can be found in their relevant drawings

- Rock foundation, see drawing 7090-002-DWG-003
- Soil foundation, see drawing 7090-002-DWG-004
- Manufacturer is free to use their own foundation solutions

**Climbing system**  
Manufacturer is responsible for design and implementation of a climbing system in the towers.

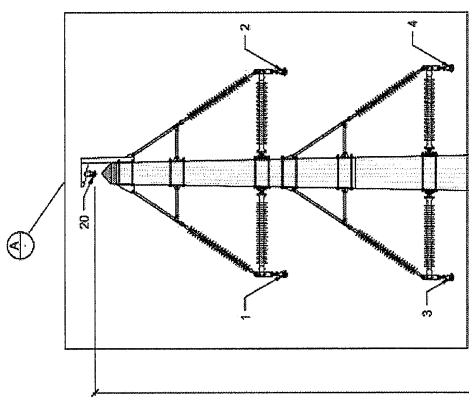
- All relevant locations in the tower must be accessible using such system
- System shall start from height of 2.5 m and reach to the top of the tower

**Loads**  
Each suspension tower has a corresponding load file (LCA) with load points matching points shown in "Suspension tower, view from the back". Manufacturer is responsible for applying the load file to their own tower models for design.

**Tower model**  
Tower model is provided as is, without warranty of any kind.  
Manufacturer is responsible for adapting it to every tower in tower list and applying the corresponding load file

- This document provides the official tower geometry for the tower

Final detailing must be carried out in cooperation between manufacturer and EFLA to ensure that final product meets all requirements.



Profile height = See Towerlist

Suspension tower, viewed from the back  
M 1:50

02.06.03.2019	Minibreak break line removed	KHG	AKS	06.03.2019
01.06.02.2019	Ferste version	KHG	AKS	13.02.2019
<p><b>EFLA</b> Energiteknisk Forskningslaboratorium</p>				
<p>132 kV Kråkerøy-Hvøler Main dimension drawing Details and location of load points</p>		<p>D-2018-134 06.02.2019 KHG 1:50 / 1:15 A1</p>		
7090-002-DWG-037		723-238657		
Hafslund		02		