





## FAQ

Frequently Asked Questions

### Static questions

Q: Does Trio truss (3 tube) with two main tubes at the top (Apex down) have the same structural capabilities as two tubes at the bottom (Apex up) ?

A : For ALUR, the single tube (Apex) has the same load capabilities in both situations because of the welded end receivers and solid connectors which distributes compression and tension equally.

Q: Do I have to put the lifting sling on all tubes of a truss?

A: There is no need to pick all tubes. Depending on load, it may only be necessary to put the sling to two of the upper or lower tubes. Always support close to a brace weld point (node). See next page (Pg. 67) for more info.

Q: How can I find out the load bearing and stress results for structures with more than two point and unsymmetrical loads?

A: We provide comprehensive charts in this catalogue for single and two point loads as well as uniformly distributed loads. For unsymmetrical loads, please contact us to advise on and calculate your specific application.

Q: What does it mean that a two tube truss (Duo) has to be stabilised e.g. controlled every 2m?

A: The two dimensional system has a low lateral strength compared to Trio and Quatro formats. Because of this, the tube must be stabilised every 2m's to prevent buckling. This lateral support could be a wall, another 3 or 4 point truss or a grid based on 2m squares.

Q: Is it important to assemble ALUR components to each other to create a continuous bracing pattern.

A: No. ALUR is built with vertical end braces to equally divide the shear forces to all connectors. There is no reduction in strength or free-span with parallel braces. However this is not the case with all truss systems, traditional nut & bolt products can have reduced loading as they generally feature low tolerance components and no end bracing.

Q: When do I have to use corner braces in ground support structures?

A: There is no all-inclusive answer for this question. Corner braces provide additional rigidity for generally taller structures and support for longer spans / higher loads. For further technical advice on your specific project please contact us.

### Legal questions

Q: Which paperwork do I need to construct an event /exhibition rig or ground support?

A: The document requirements vary depending upon the type of structure, usage and environments. TUV certification is available for our systems to verify the specification and performance of our products. For complex structures and generally tall constructions additional structural reports may be required based on the actual configuration which must be submitted to local authorities and / or event organisers. ALUR solutions offers many services to help our clients meet these requirements.

Q: Up to what size roof do I only need a structural analyses and stability certification?

A: The regulations are different from country to country. For example in Germany upto a height of 5m (16.4') and an area under 75sq.m. (807.27 sq.ft.), a structural report is sufficient.

### Roof questions

Q: How much ballast is necessary for a small roof structure?

A: Ballast is determined by many different factors of a roof structure and where it is being setup and must be calculated individually. Please contact us for more details.

Q: Is it possible to use my staging as ballast for a roof structure?

A: With basic staging elements this usually is not possible as the connection between decks is not sufficient to act as one solid surface. With some special stage constructions that are connected to ground support and roof, it is possible to factor the self weight of the stage components as ballast.

Q: What is meant by "friction factor 0,6" in the structural calculation report?

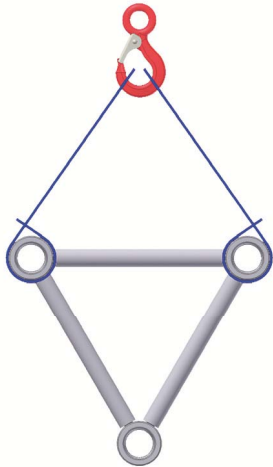
A: Ballast performs two key functions, a) to prevent up-lift and b) to resist movement. Friction factors are used in the calculation of ballast to prevent a structure from sliding, different surfaces (and conditions) produce different levels of friction. In roof structures this is applied to the contact between the bases and the ground.

Factors:

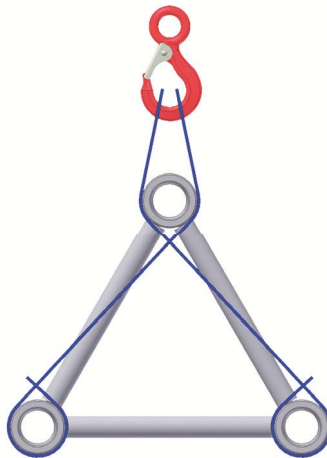
Concrete	Steel	→	Factor 0,2
Steel	Wood:	→	Factor 0,4
Wood	Wood:	→	Factor 0,4
Concrete	Wood	→	Factor 0,6

For example:

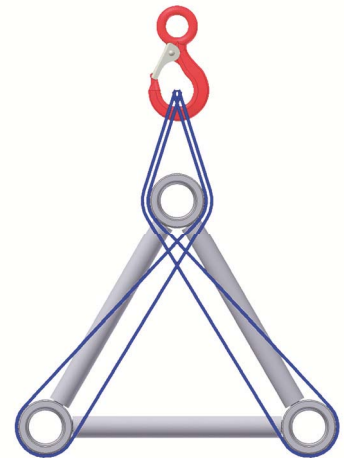
For a roof structure with steel legs it is generally better to secure wood with screws to the bases as Concrete to Wood has the highest friction factor ( resistance ) of material conditions specified by the standards authority. If you want to stack wooden plates under the bases, it is essential to attach the wood plates together with screws.



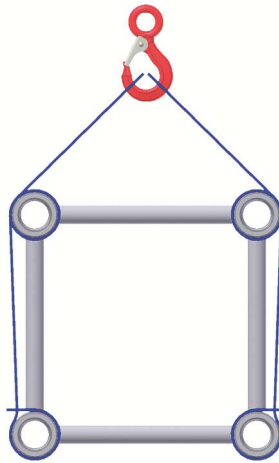
Sling support for Trio truss apex down. 2 slings required. Efficiency around **90%** of recommend rating (Loading on top tubes).



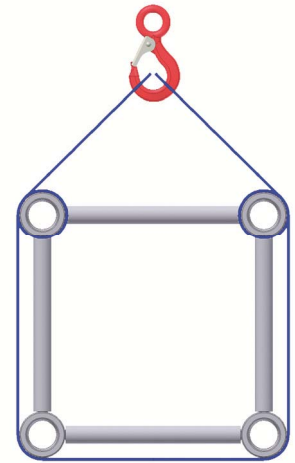
Sling support for Trio truss apex up. 2 slings required. Efficiency around **100%**



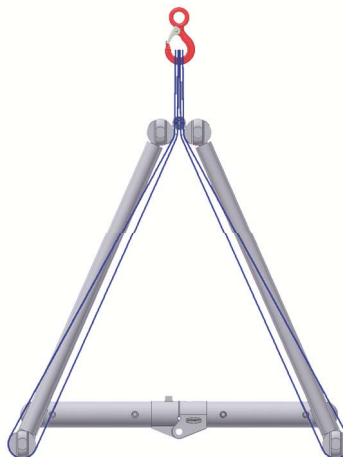
Sling support for Trio truss apex up. 2 slings required. Efficiency around **100%**



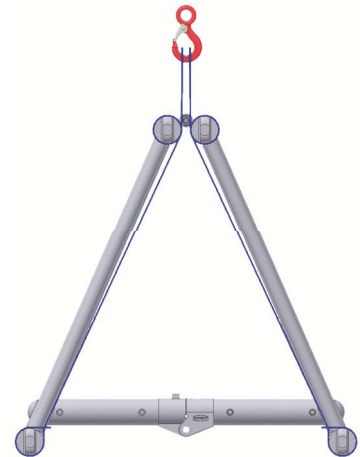
Sling support for quatro truss. 2 slings required. Efficiency around **100%**



Sling support for quatro truss. 2 slings required. Efficiency around **90%**

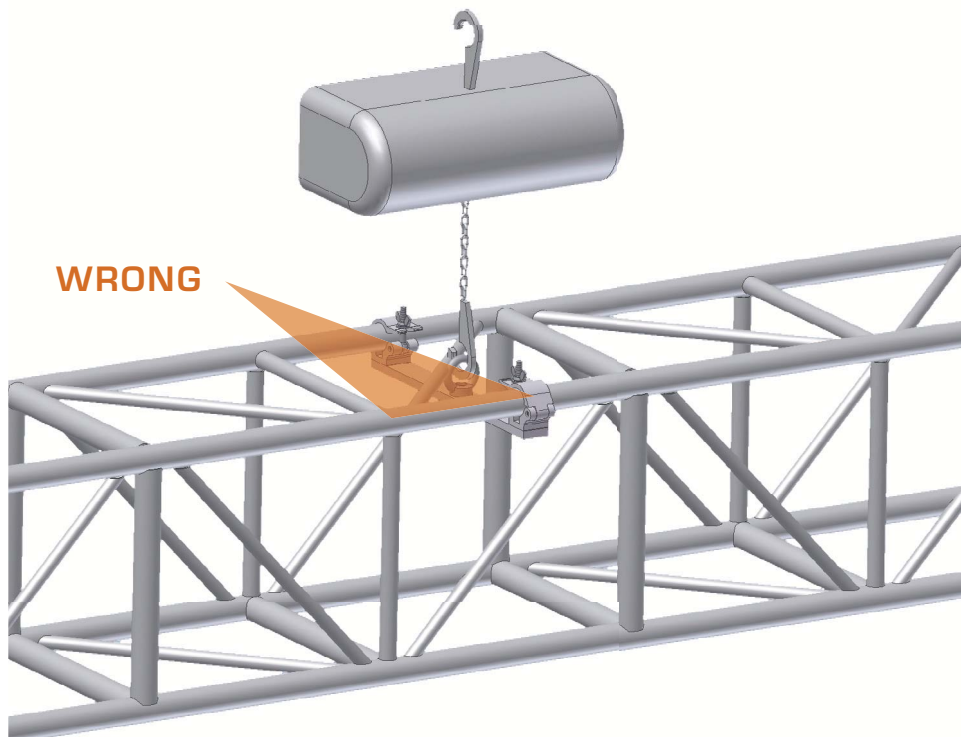
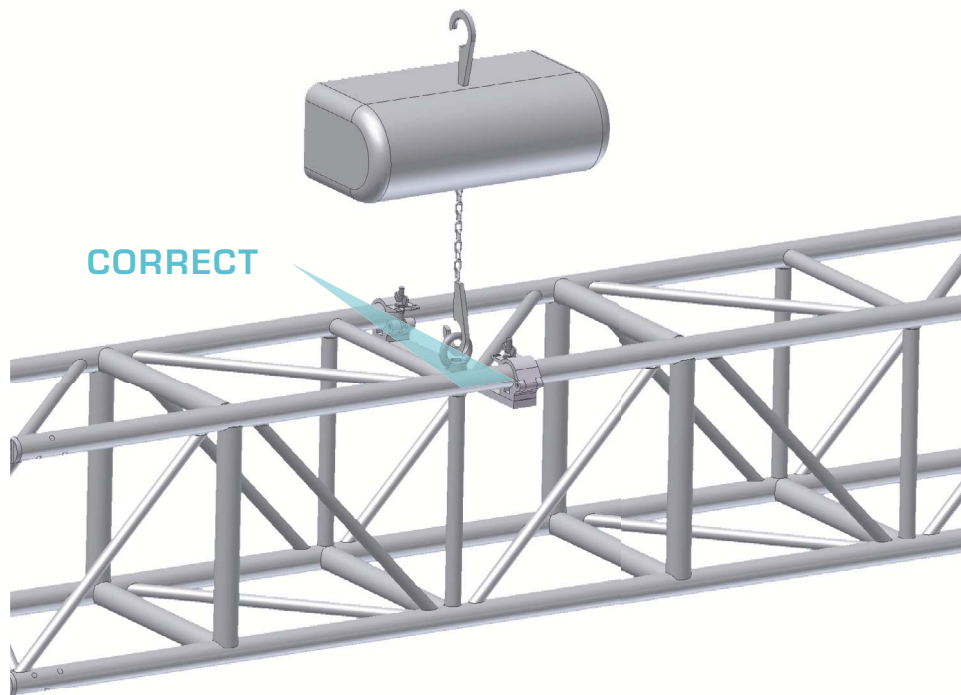


Sling support for folding trusses. 2 long slings required. Efficiency around **100%**



Sling support for folding trusses. 2 long slings required. Efficiency around **90%**

# How to sling and hang?



Safely lifting or suspending truss sections is an extremely important process and should only be performed by qualified professional members. There are many different ways to support the trusses, if you are in any doubt or wish to discuss your specific application please contact one of our offices for further information.

Important: Ceiling supports or slings should always be placed directly at or as close as possible to the node points of the braces (horizontal / diagonal bars). Incorrect positioning can create a bending moment and over-stress the open tube section. See above example.