FWH+

Trusses Timber

The FWH+ application is suitable for the structural calculation and design of latticed timber girders and trusses typical in portal frame construction:

- Parallel truss
- Hip truss
- Doupble hip truss
- Double-pitch roof
- Single-pitch roof

Continuous chords can be taken into account as rigid bars.

Deflection is calculated in accordance with the strut-and-tie theory.

Standards

- DIN EN 1995
- BS EN 1995
- ÖNORM EN 1995

Calculation/Design

Depending on the selected truss system, the individual load cases and from them the load case combinations to be examined are determined.
The individual bar forces for the individual load cases and superpositions are determined according to the strut-and-tie theory.

The maximum internal forces for the following strut types are determined:
- top chord
- bottom chord
- post
- diagonal strut

The support forces are always determined for the simple loads. Optionally, the support loads can be output separately for the individual action groups.

Verifications

The load case combinations are generated in accordance with DIN 1055 or EN 1990 in combination with the corresponding National Annexes.
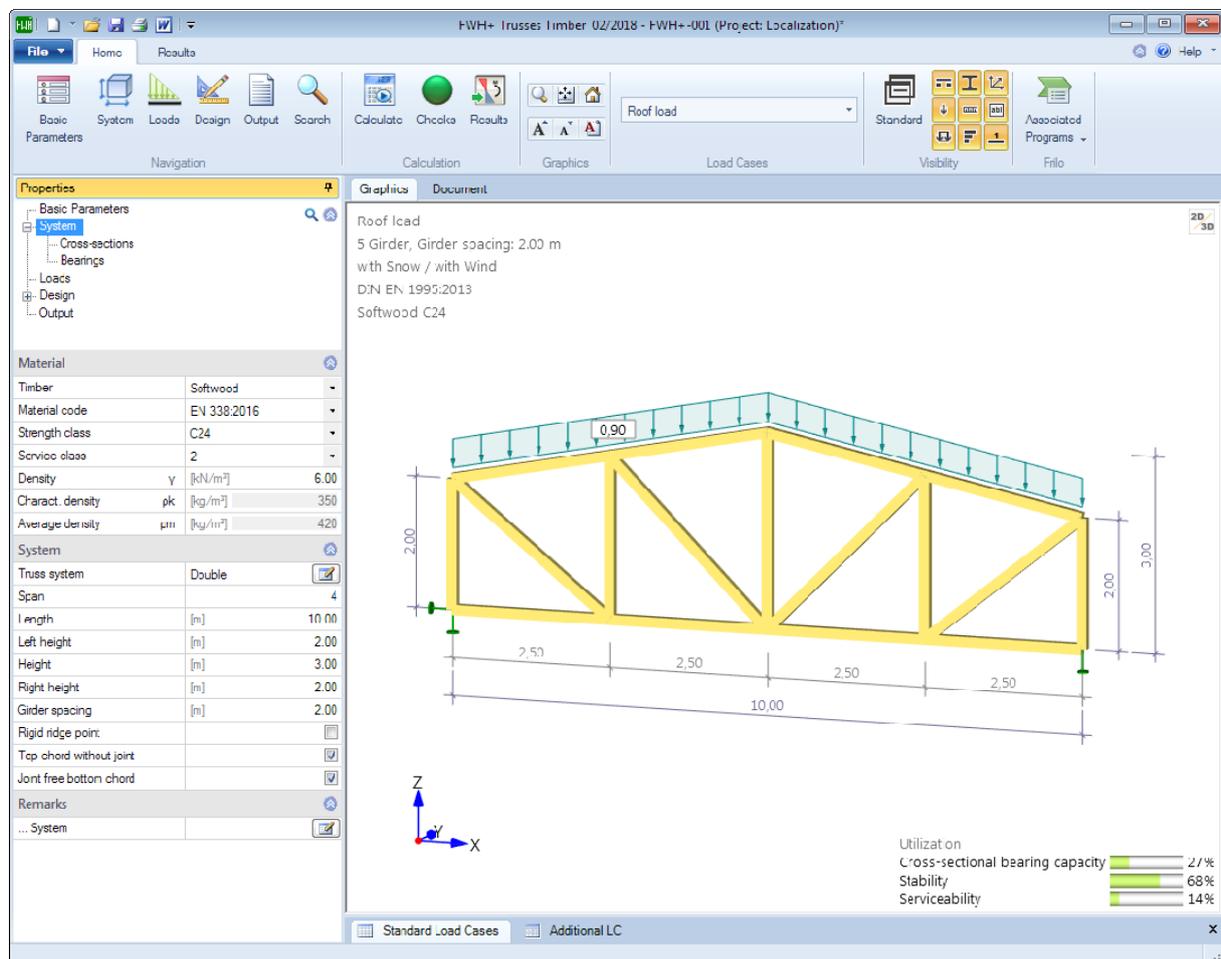
The load bearing capacity, stability and serviceability of underlined latticed timber girders is verified in accordance with either

Stress and Stability Analysis. Stress analysis are according to 6.1 and 6.2.

For shear stress analysis, the full lateral force at the bearing is taken into account.
The proof of stability is carried out according to the equivalent bar method according to 6.3.
The system lengths can be influenced by user-defined outer bearings.

Hot design

Methods:

Simplified/Exact

Load transfer

The characteristic support forces can be transfered to the programs
- Single-span Steel Column STS +
- Timber column HO1 +
- Reinforced Concrete Column B5
- Steel Girder Support ST4
- Reinforced Concrete Corbel B9