BHA

Dynamically Balanced Tank

The software allows the calculation of dynamically balanced tanks exposed to rotation-symmetric effects of actions.

Standards

- DIN EN 1992
- ÖNORM EN 1992
- EN 1992
- DIN 1045 / DIN 1045-1

- The wall thickness of the cylinder (tank) and the thicknesses of the foundation ring and the base slab are constant each.
- The supports of the cylinder walls must be inside the defined foundation ring. If you do not define a foundation ring and a base slab, only the cylinder is considered in combination with a vertically non-sway supporting system without foundation. The entered data concerning the geometry should be checked in the graphical representation of the structural system.
- The subgrade modulus is constant for the base slab and the foundation ring.
- Horizontal displacement and/or torsion of the cylinder head or base can be suppressed or coupled to the foundation.

Calculation

The calculation is based on the method of exact solutions in accordance with the theory of elasticity for elastically supported circular slabs and circular cylinders. With the help of the corresponding displacement functions, stiffness matrices are produced for the slab and the cylinder that allow the application of the displacement method.

Representation of the results

For the representation of the results, the components are divided into 10 elements. In the area where forces are directly transferred from the cylinder to the foundation, two cross-sections are verified which are at the left and the right of the force transfer point.