Flange analysis in ROHR2

ROHR2flange

Program System ROHR2

SIGMA Ingenieurgesellschaft mbH
ROHR2flange - features and functions

Flange analysis with the optional available module ROHR2flange.

- Flange analyses acc. to
  - EN 1591-1:2011,
  - EN 1591-1:2014,
  - ASME VIII, Div.1:2010
- Automatic analysis of all flanges in the system taking into account all load cases. The number of load cases can be reduced by the user.
- Automatic generation of load case combinations required for the analyses.
- Simple pre-settings of the flange parameters by means of standard values for flanges, screws and gaskets.
- The flanges may be modified individually and in detail.

- Report of the calculation results in a list

- Automatic generation of a calculation report in German or English
**Calculation standards**

- EN 1591-1 (2014)
- EN 1591-1 (2011)
- ASME BPV VIII (2010) welding necks with sealing strip
- ASME BPV III, App. XI (2010), The calculation of additional forces is executed by the equation of the calculation of H. The equivalent internal pressure is determined by the loads. In ROHR2 dynamic loads are interpreted as load cases working in positive or negative direction, e.g. wind, earth quake.

**Databases**

Databases with data e. g. of pipes, bends, flanges or expansion joints according to technical standards or according to manufacturer’s data. Databases are extendable by the user.

The ROHR2 standard version includes:

**Flanges**

The ROHR2flange databases include:

- EN 1092-1:2008-09, Dimensions of flanges general
- DIN 2627 – DIN 2638, Dimensions of welding necks
- ASME B16.47, Dimensions of welding necks
- ASME B16.5, Dimensions of welding necks and blind flanges

**Types of Flanges**

![Welding necks](image)

**Screws**

**Bolt types**

Select required cross sectional data in accordance with the standard.

- Full shank bolts and reduced shaft bolts acc. to EN 1591-1, appendix A, Nom. dimensions up to M72 following EN ISO 4014 and EN ISO 4016
- Reduced shaft bolts acc. to DIN 2510
- Full shank bolts acc. to ASME B1.1
RoHR2flange Feature list

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Washer/anti-fatigue sleeve

Select required dimensions in accordance with the standard:
- User defined
- ISO 7089
- ISO 7090
- ISO 7091
- ASME B 18.22.1

Bolt nut

Select required dimensions in accordance with the standard:
- ISO 4032
- ISO 4033
- ISO 4034
- DIN 2510
- ASME B 18.22.2

Gaskets

The gasket database at the moment includes more than 350 different types of gaskets of leading manufacturers (www.gasketdata.org).

Gasket dimensions are included in acc. with EN, DIN and ASME for flanges, each one including gasket profiles and sealings in accordance with different standards

Gaskets dimension standards

- EN 1514-1, flat gaskets
- EN 1514-1, tongue and groove
- EN 1514-1, male/female gasket
- EN 1514-2, Spiral-wound gasket
- DIN 2690, flat gaskets
- DIN 2691, tongue and groove
- DIN 2692, male/female gasket
- EN 1514-6, Grooved gasket
- EN 1514-4, Corrugated gasket
- Kempchen WN 104, Spiral-wound gaskets
- ASME B 16.21, flat gasket
- ASME B 16.5 Grooved gasket, male/female
- ASME B 16.5 Grooved gasket, tongue and groove
- Kempchen WN 146 Grooved gasket, male/female gasket
- ASME B 16.20, API Std 6A, EN 12560-5, RTJ gasket
- ASME B 16.20, Spiral-wound gaskets
- User defined gaskets
Manufacturers of gaskets

- A.W. Schultz
- AVKO
- Beyer GmbH
- Burgmann
- Donit Tesnit
- Durlon
- Eagle Burgmann
- Eriks
- Flexitalic
- FluorTex
- FMI
- Frenzelit
- Gambit-Lubawka
- Garlock
- Hecker
- IDT
- James Walker
- Jungtec
- Kempchen
- Klinger
- Kroll&Ziller
- KWO
- Leader Gasket
- M. Zilken GmbH
- Matusza
- Möller
- Montero Fibras Y
- Reinz
- Revoseal
- SGL
- Spetech
- Teadit
- Tedima
- Triangle Fluid Controls
- W.L. Gore
The application of ROHR2flange

Starting ROHR2flange in a ROHR2 Project

Start ROHR2flange in ROHR2win by Loads | Tasks | Flange analysis.

Flange analysis, Basic settings

Report, documentation

Documentation:
- All flanges in one document
- or one flange/document
- Input data, e.g.:
  - Flange type / sealing face
  - Norm / pressure level
  - Nominal width and material
  - Screw type, - size, - number
  - Tightening method
  - Gasket manufacturer, - type and leakage class

Results:
- Stress analysis
- Tightening moment
Program license and system requirements

Program version, network license

ROHR2flange is an optional available module in the program system ROHR2. It can be part of the ROHR2 single user license and ROHR2 network license. In the ROHR2 network license the number of the users of an optional module can be similar or lower than the number of ROHR2 network seats. For system requirements and program features see ROHR2 specification. ROHR2flange is not a stand-alone application. The installation of ROHR2 is required.

Scope of delivery and license key

The programs´ scope of delivery contains:
- the program data
- the program documentation in html format
- unlocking the module on the ROHR2 license key.

The software does not run without the license key. In case of updates/upgrades the license key will be replaced or updated.

Documentation / User manual

The functions of ROHR2flange are part of the ROHR2 online help.

Maintenance and user support

Advice about installation and application is done by the ROHR2 user support (hotline). The hotline is part of the included service after purchase, during time limited licensing (rent) and as a part of a maintenance agreement.
Interfaces and additional programs are integrated into ROHR2. Maintenance of additional programs and interfaces is mandatory in this case.

Software Development, Sales and Support

SIGMA as one of the leading engineering specialists in the Pipe Stress Business offers ROHR2, PROBAD and SINETZ: field tested software products, strongly adapted to the user´s needs. SIGMA engineering division is known as a partner of choice offering consulting services for plant engineering, chemical industry, engineering companies, energy suppliers and technical security boards.

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