

Software and Services

amntec



ASME, CEN, DIN, FEA,

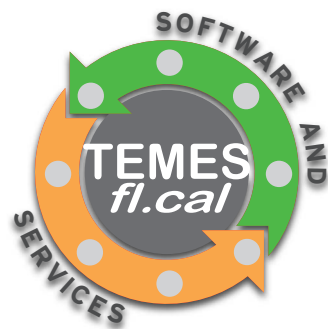
CALCULATION

Stress Analysis, Fatigue Analysis,

OF FLANGED

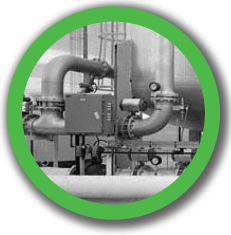
Tightness Analysis

JOINTS



amntec

Advanced Tools and Comprehensive Services for
the Reduction of Fugitive Emissions



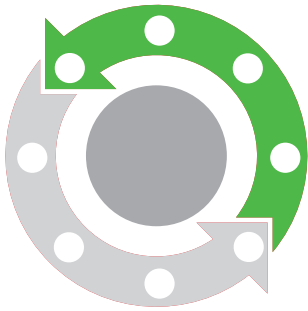
Demands on Tightening Joints

Environmental legislation and regulations have become more stringent in recent years. "Best available technology" is demanded to minimize emissions. On this background the demands on correct function of flanged joints have been specified in greater details in all parts of industry.

PROTECT ENVIRONMENT

Correct function of a flanged joint is given if it is tight and its integrity is guaranteed for the entire period of operation. Integrity usually is achieved by limiting the stresses in the components (safety against failure). Tightness means, the emissions of the joint are limited.

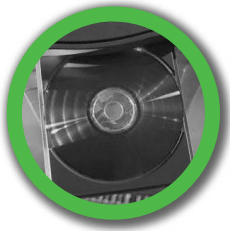
MINIMIZE EMISSIONS



**RELIABLE PROCEDURE:
CHECK EVERY
POSSIBLE PARAMETER**

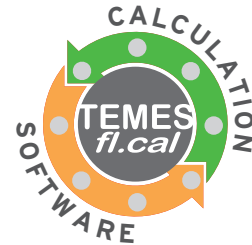
According to the **amtec** philosophy the "best available technology" to minimize emissions is to apply an integral procedure, similar to a quality improvement circle. The analysis steps in this circle should be passed preventively and iteratively, if necessary. As part of the analysis it is necessary to know the relevant loads (during assembly and in operation) in detail, the design of the joint as well as of the gasket must meet the demands, the necessary gasket factors have to be determined, these gasket factors have to be used in stress and tightness analysis and last but not least the mounting procedure has to be reliable and related to the demands.

INTEGRITY & TIGHTNESS



For users that work frequently on the field of flanged joints, the flange calculation software package **TEMES fl.cal** is a reliable tool, based on the state of the art and which is TÜV certified. It incorporates the most relevant analytical codes.

Software for the Calculation of Flanged Joints



■ Calculation codes and standards

Calculation according

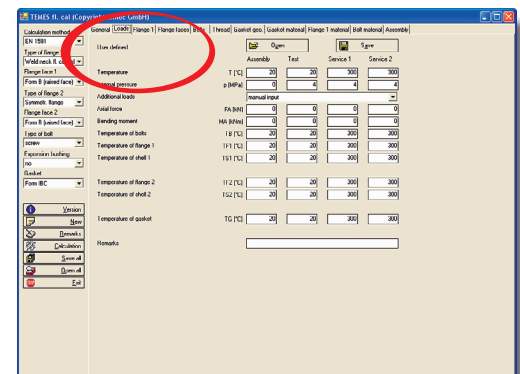
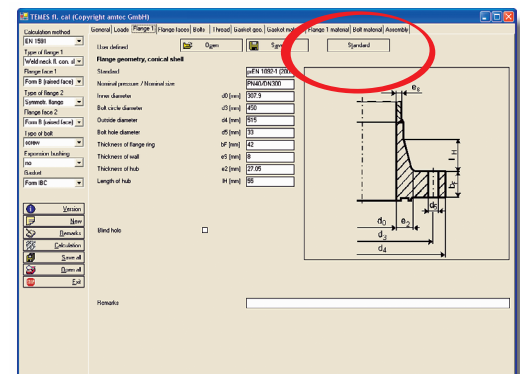
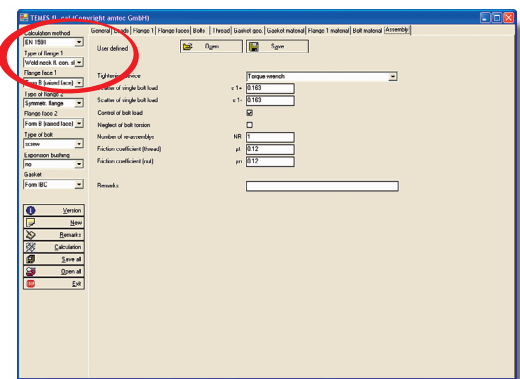
- ASME standards
- EN 1591
(using gasket factors as defined in EN 13555)
- EN 13445

■ Database for geometry and materials

It is possible to put in user defined data for geometry and materials; additionally, the implemented standard database for geometry and materials (for bolts, flanges and gasket) can be used.

■ Load cases

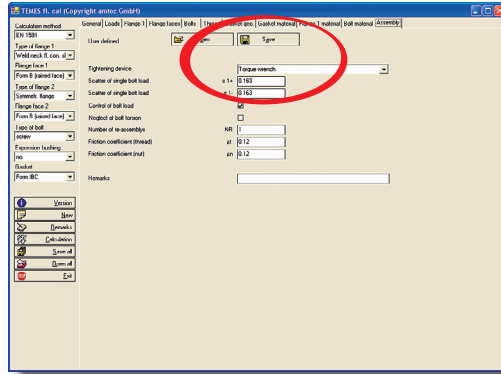
The behavior of the tightening joint is analyzed in pre-defined load steps (input of temperatures, internal pressure, external forces and moments for each step).





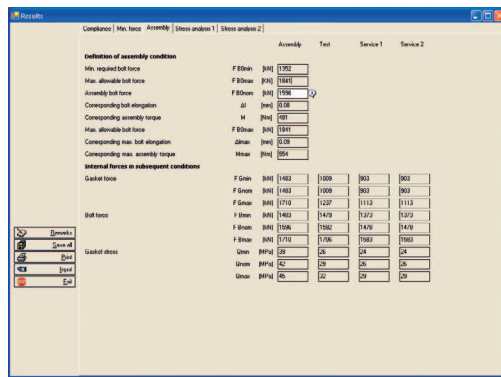
■ Calculation

User defined demands regarding assembly stress, tightness class and tightening procedure are part of the analysis.



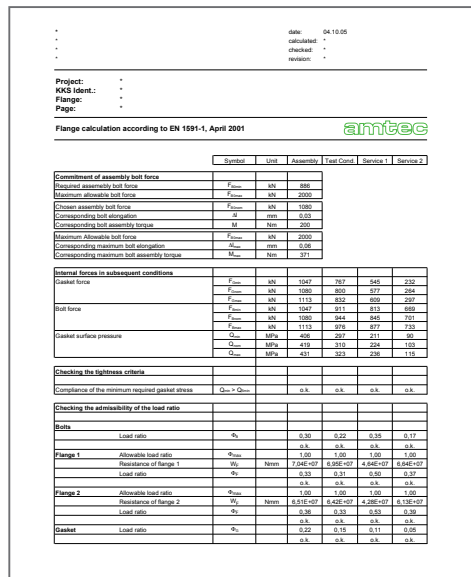
■ Assessment of the results

As results, e.g., the stresses in the bolts and in the flanges, the gasket stress, the flange rotation and the tightness class are given for every load case.



■ Documentation

The results can be printed on paper, saved on hard disk or transferred to other Windows® applications.

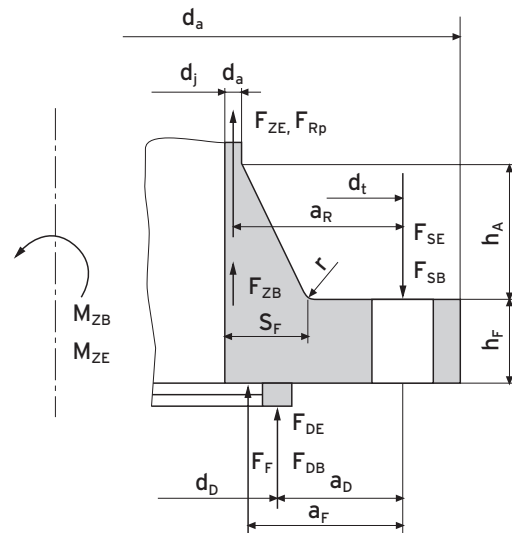
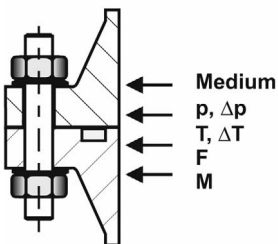
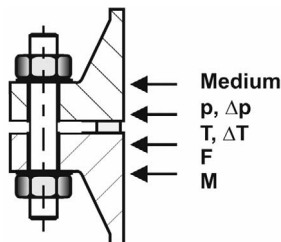


STRESS ANALYSIS
 TIGHTNESS ANALYSIS



Those users who run into flanged joint calculation needs only every once and a while might prefer the comprehensive **amtec flange calculation service**. It is tailored to the real needs, performed by experienced engineers.

Flange Calculation as a Service



We use our own software if analytical approaches are convenient. Especially in the case of special designs that are not covered by analytical methods, additionally, we perform calculations using Finite Element Analysis (FEA).

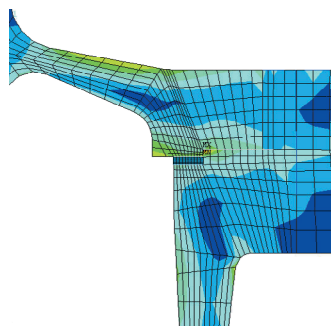
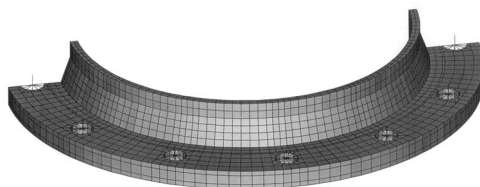


CALCULATIONS ACCORDING TO

- ASME
- CEN
- DIN

CALCULATIONS USING THE

- FINITE ELEMENT ANALYSIS (FEA)



- STRESS ANALYSIS
- FATIGUE ANALYSIS
- TIGHTNESS ANALYSIS



amtec has many years of field experience regarding tightening joints. On this base **amtec** is following an integral philosophy to realize reliable function of flanged joints. Competent consulting is one of our services.

Training, Consulting

amtec provides workshops on flange calculation. Visit our website for actual dates of training courses and workshops.



amtec provides advanced tools and services for:

- gasketed flanged joints
- stuffing box packings
- valve integrity
- integrity analysis of piping systems and vessels



amtec Services GmbH

Hoher Steg 13
74348 Lauffen/N.
Germany

phone +49 7133 9502-0

fax +49 7133 9502-22

info@amtec.eu

www.amtec.eu

