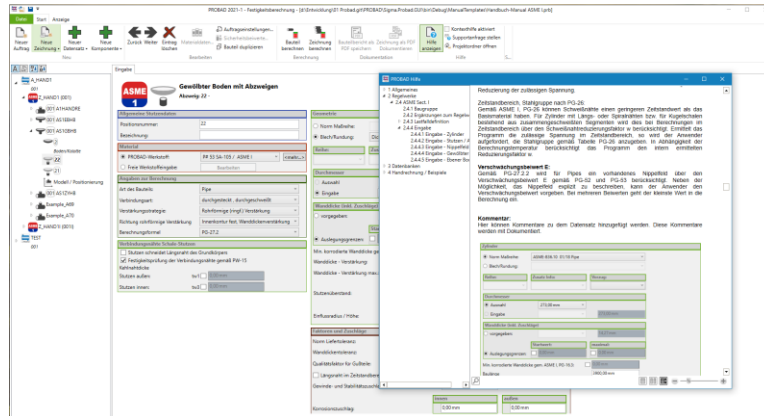




# PROBAD

Code-based Strength calculations of Pressure parts



## PROBAD 2023-1 New Features and Improvements

The program system PROBAD is checked and modified continuously within the scope of the maintenance agreement.

List of innovations, improvements and corrections of the new PROBAD-Releases

ASME I,	Edition 2021,	Release 5.04
ASME VIII/1,	Edition 2021,	Release 8.02
ASME B31.1,	Edition 2022,	Release 4.05
ASME B31.3,	Edition 2022,	Release 2.05
ASME-Piping series		Release 1.13

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Materials according to ASME II-D, Edition 2021:

Materials according to ASME B31.1, Appendix A, Edition 2022:

Materials according to ASME B31.3, Appendix A bzw. Appendix K, Edition 2022:

A detailed documentation of all available ASME materials can be found on the PROBAD start interface in folder 'Information' under the name 'ASME PROBAD Material numbers'.

In this document for all materials the corresponding sources and page references from

ASME II-D, ASME B31.1, Appendix A and/or ASME B31.3, Appendix A or K are listed.

**ASME B31.1, Edition 2022 were released in 07/2022:**

**ASME B31.3, Edition 2022 were released in 01/2023:**

All relevant material data was updated in the PROBAD material database.

ASME B31.1 / B31.3: The following new materials were added:

<b>PROBAD Number</b>	<b>Nominal Composition</b>	<b>Product Form</b>	<b>Specific. No.</b>	<b>Type/Grade Class</b>
Nr. 129	C-Mn-Si	El. fusion welded pipe	A671	CC70/K02700
Nr. 53	Carbon steel	Forging und fitting	A105	K03504

Source ASME II-D: The following new materials were added:

<b>PROBAD Number</b>	<b>Nominal Composition</b>	<b>Product Form</b>	<b>Specific. No.</b>	<b>Type/Grade Class</b>
Nr. 344	9Cr-1Mo-V	Seamless pipe	SA-335	P91 / T2
Nr. 434-435	16Cr-12Ni-2Mo	Forging	SA-182	F316L
Nr. 515-516	42Ni-21.5Cr-3Mo2	Plate	SB-424	N08825 Ann.

#### Dimensions standards:

The dimensions database has been updated due to the following new editions:

- ASME B36.10 2022: Welded and seamless wrought steel pipe
- ASME B36.19 2022: Welded and seamless wrought stainless steel pipe
- ASME B16.20 2017: Metallic gaskets for pipe flanges (incl. grooved metal gaskets)
- ASME B16.21 2021: Nonmetallic flat gaskets (now incl. dimensions NPS 22)



## ASME I, Edition 2021, Release 5.04

### Nozzles:

- Up to now only set-through or intruded nozzles could be calculated as access openings. Now also set-on nozzles can be defined as access openings.

### Flat heads:

- For flat heads of type (b-2), (e), (f), (g-1) and (i-1) now the factor m according to PG-31.4 is documented in the results additionally.

## ASME VIII/1, Edition 2021, Release 8.02

### Nozzles:

- For nozzles, the 'External pressure chart' may not have been fully documented in the results. This has been corrected.

### Conical shells:

- For eccentric conical shells with branch, a shell diameter at the opening that was too small was previously determined. This led to incorrect results in the reinforcement calculation. We corrected this error via an automatic update in 04/2022.

## ASME B31.1, Edition 2022, Release 4.05

### ASME B31.1, new Edition 2022:

- In comparison with Edition 2020 there are no changes in ASME B31.1, Edition 2022, which are relevant for the strength calculation.
- For several materials the allowable design stresses according to Appendix A have changed. The ASME material database has been revised accordingly.

## ASME B31.3, Edition 2022, Release 2.05

### ASME B31.3, new Edition 2022:

- In comparison with Edition 2020 there are no changes in ASME B31.3, Edition 2022, which are relevant for the strength calculation.
- For several materials the allowable design stresses according to Appendix A and Appendix K have changed. The ASME material database has been revised accordingly.



## ASME-Piping Series, Release 1.14

### User interface:

The design of the user interface was brought into line the modern PROBAD interface.

### Documentation of results:

Now in the result display a short documentation can be ordered. In this word document the results of the piping calculation are displayed on the basis of DIN 21057.

### Additions / Corrections:

- Check of further temperature values:  
The component relevant for the maximum allowable pressure may not have been fully documented.
- Elbows and caps:  
For the verification rule 'Rating', the usage ratio of the single components were sometimes documented incorrectly in the results output when the test pressure was specified. This has been corrected..
- Branches:  
For branches with reinforcement pad, the program sometimes crashed when generating the result documentation. This has been corrected.

## User Interface

### Features

- ...

### Bugs fixed

- ...

### Miscellaneous

- ...