

# Software validation and ASME PTB test cases

NextGen software is continuously tested to ensure the consistency and correctness of its results, as well as the proper functioning of the user interface. For the American ASME codes, test cases provided directly by the Standard are also available, with which NextGen is verified.

Online version: <https://nextgen.sant-ambrogio.it/KBo40143>

Latest update: 13 feb 2025

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## Access to validation documents

Within [your download area](#), accessible from the side menu via the "Files" item, you can consult and download the software validations.

### Your files

This is your dedicated download area. Find setups, license updates, software validations and other files ready to be downloaded. "Private files" are strictly for your company and should not be disclosed.

### Private files

There are no files available at the moment.

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### Documentation

#	Content	Download
1	<a href="#">NextGen user manual</a> Offline, printable version of the documentation available on this site as of today, in PDF format	<a href="#">Download</a>

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### Public files

#	Content	Creation	Download
1	<a href="#">2023-11-23 NextGen AD2000 validation.pdf</a> Software validation (AD 2000)	Nov 23, 2023	<a href="#">Download</a> 0.22 MB
2	<a href="#">2023-11-23 NextGen EN-13445 validation.pdf</a> Software validation (EN-13445)	Nov 23, 2023	<a href="#">Download</a> 0.22 MB
3	<a href="#">2023-11-23 NextGen VSR validation.pdf</a> Software validation (VSR)	Nov 23, 2023	<a href="#">Download</a> 0.18 MB
4	<a href="#">2023-11-23 NextGen WRC validation.pdf</a> Software validation (WRC)	Nov 23, 2023	<a href="#">Download</a> 0.22 MB
5	<a href="#">2023-12-11 NextGen ASME validation.pdf</a> Software validation (ASME) NG Ver.2023 ASME Edit.2023	Dec 11, 2023	<a href="#">Download</a> 0.22 MB
6	<a href="#">2023-12-12 NextGen ASME validation.pdf</a> Software validation (ASME) NG Ver.2023 ASME Edit.2021	Dec 12, 2023	<a href="#">Download</a> 0.22 MB

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These documents contain certificates from Sant'Ambrogio that confirm the execution of tests, both automatic and manual, on the version of the software provided.

In the case of the ASME code, the verifications also take into account the test cases provided by ASME itself in the PTB volumes of the ASME BPVC.

June 2024

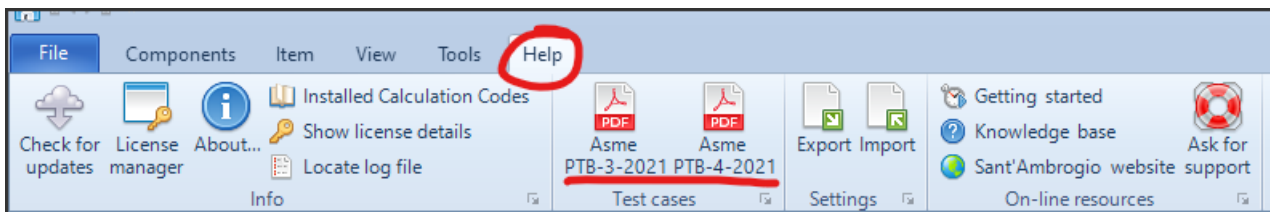
**QUALITY CERTIFICATE**

We certify that our **NextGen** software has been tested according to our Quality Standards. The current **Version 2024** of the program for calculations acc. to *ASME Section VIII Div.1 & Div.2 Edition 2023* has been tested and verified for:

- Correspondence to the results reported in *ASME PTB-4 Ed.2021* and *PTB-3 Ed.2022* examples.
- Comparison to the results of previous NextGen versions.
- Operational usage by testers and developers.

## Access to PTB examples in the form of calculation reports

As a further guarantee of the calculations performed by NextGen, through the Help menu it is possible to access the calculation reports provided with the software, relating to the test cases of ASME VIII Div. 1 and Div. 2, respectively PTB-4 and PTB-3



Clicking on the button will take you to the folder on your disk containing the list of files in PDF format, freely available for consultation.

**Torispherical head - E4.4.4**

*According to: Asme VIII Div. 1 Ed. 2023 UG-32, UG-33 - US Customary Units*

**User notes**  
Final value of MAEP is different than value given in PTB: this is due to a difference between value of B calculated by this software and value of B given by PTB; since PTB 2.3 states that 'The calculation precision in the example problems is intended for demonstration purposes only', results are acceptable.

**Design data**

Internal design temperature	T =	343.33 °C	650.00 °F
Internal design pressure	P =	0.007 MPa	1.0 psi
External design pressure	Pe =	0.38 MPa	55.0 psi
Joint efficiency	E =		1.00

**Material: SA-387 11 1 - Plate**

Allowable stress	S =	117.90 MPa	17,100.0 psi
Allowable stress at room temperature	ST =	117.90 MPa	17,100.0 psi

**Geometry**

Inside diameter	D =	1,828.80 mm	72.000 in
Adopted thickness	t =	15.88 mm	0.625 in
Minimum head thickness after forming	t-c' =	15.88 mm	0.625 in

*Some cases may contain initial notes, which present considerations made by Sant'Ambrogio during the execution of the test with NextGen.*

## Access to PTB examples in .SIT format, which can be consulted and modified by the user

Starting with NextGen version 2025.0, Sant'Ambrogio makes available to its users the .SIT files of all PTB test cases performed during the program validation phase.

These files can be downloaded [from your user area](#).