

# What changes in the calculation of heat exchangers in the 2023 edition of the ASME BPVC?

A summary of the changes that ASME BPVC 2023 makes to the chapters related to the calculation of heat exchangers.

Online version: <https://nextgen.sant-ambrogio.it/KB519131>

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ASME BPVC 2023 introduces a substantial revision within Section VIII Division 1, removing all UHX paragraphs affecting the design of heat exchangers and redirecting the designer to Section VIII Division 2.

## What changes at the regulatory level

Quoting the first few paragraphs of the 2023 version of ASME VIII Div. 1:

UHX-1

GENERAL

*(a) The rules in Part UHX cover the minimum requirements for design, fabrication, and inspection of shell-and tube heat exchangers.*

*(1) Design requirements for shell-and-tube heat exchangers in Section VIII, Division 2, Part 4.18 shall be used in lieu of those previously listed in Part UHX. Table UHX-1.1 lists the new locations for all requirements formerly located in this Division.*

*(2) The Section VIII, Division 1 design requirements listed in Table UHX-1.2 shall be used in lieu of the corresponding Section VIII, Division 2 design requirements referenced in Part 4.18.*

*(3) When Part UHX section, paragraph, table, or graph is referenced, the applicable section of Division 2 shall be used in accordance with UG-16(a) and Mandatory Appendix 46, except as indicated in Table UHX-1.2.*

*(4) Except for the tubesheet, the design of all the elements in the shell-and-tube heat exchanger components shall be in accordance with the applicable rules of Subsection A and the Mandatory Appendices.*

The standard basically redirects the designer to ASME VIII Div. 2 for all chapters concerning the design, manufacture and inspection of heat exchangers, specifying which Division procedure must be followed for which part and providing two maps in Table UHX-1.1 and Table UHX-1.2 to lead back to the corresponding chapters between the two Divisions. Finally it is specified that, with the exception of the tubesheet, all the other parts of the exchanger must be designed according to Division 1 itself.

## What changes in NextGen

Users who have always designed according to UHX within Division 1 will find some minor variations, especially focused on normative references. Where previous editions specified a UHX paragraph, the corresponding Division 2 paragraph 4.18.x will be used.

Naturally, the changes relating to the calculation methods made in the 2023 Edition will also be present.

## What changes in terms of licensing

There are no changes to our licensing model and it will therefore not be mandatory to have a Division 2 license to continue calculating heat exchangers in Division 1.

Users who have an exchanger license limited to Division 1 will continue to be able to use the same license for calculations.

Exchanger calculation licenses will remain independent between the two Divisions, whether you have a single Division or both.

### Do I need to purchase a Division 2 heat exchanger license to calculate Division 1 heat exchangers?

No, if you have a Division 1 heat exchanger license you will be able to continue calculating heat exchangers for that Division. If you purchase a new license, you will purchase the modules related to the calculation of heat exchangers for each Division you need.

### If I have a Division 2 exchanger license, can I do without the Division 1 exchanger license?

No, each Division needs its own exchanger calculation modules to be able to calculate them. It is not possible to use the Division 2 exchanger module for a Division 1 calculation – even if part of the method is in common – since each module has specific interactions with the reference calculation code.