

NATIONAL BOARD CERTIFICATION OF PRESSURE RELIEF DEVICES



THE
NATIONAL
BOARD
OF BOILER AND
PRESSURE VESSEL
INSPECTORS



Description of Program and Basic Requirements

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OF
PRESSURE RELIEF DEVICES**



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I. Introduction

Thank you for your interest in the National Board Certification Program and Authorization to use the National Board “NB” mark and ASME Code Symbol Stamp with appropriate designator. This program accredits manufacturers of pressure relief devices and assemblers of pressure relief valves which are designed, constructed, tested and marked in accordance with specified Codes recognized by the National Board.

The purpose of this program is to provide the industry with a means to identify those pressure relief devices which are of types that the National Board has certified. The “NB” mark signifies that the relieving capacity or flow resistance and performance of the device type have been determined in accordance with the applicable construction code under National Board supervision. This program also provides the industry with a means to identify those organizations which have established and demonstrated an adequate quality system for the new construction of pressure relief devices.

The general procedure for certification of pressure relief devices involves both the National Board and the American Society of Mechanical Engineers (ASME). The ASME recognizes the National Board as its designated organization with regard to the ASME Certification Mark with “V”, “HV”, “UV”, “UV3”, “UD”, “UD3”, “TV”, and “TD” designators. In order to obtain National Board Certification, the following criteria must be met:

1. The pressure relief device must be manufactured and stamped in accordance with one of the codes of construction accepted by the National Board and;
2. The manufacturer’s or assembler’s quality system must be accepted by a representative of the National Board and;
3. Each device type to which the “NB” mark and the applicable code symbol will be applied shall have successfully completed the design review, rating factor testing and testing of production samples.

II. Application Process

Authorization to apply the “NB” mark and ASME code symbols requires the following items be submitted:

1. Application must be made to the accreditation department of the ASME to obtain the applicable code symbol stamp and certificate of authorization. They will respond with detailed information concerning their accreditation process and applicable fees. The address for ASME is:

ASME International Accreditation Department
Two Park Avenue
New York, New York 10016
Telephone: (212) 591-8461

An on-line system for this activity is available at: <https://caconnect.asme.org>

2. Application NB-502 must be made for each device type to the Pressure Relief Department of the National Board of Boiler and Pressure Vessel Inspectors to obtain capacity certification of that device type and permission to use the “NB” mark. The referenced application should be completed for this purpose and submitted with a non-refundable application fee to:

THE NATIONAL BOARD TESTING LABORATORY
7437 PINGUE DRIVE
WORTHINGTON, OHIO 43085
Telephone: (614) 888-8320
Fax: (614) 848-3474

III. Design Review

When submitting the device type application for National Board certification, manufacturers are requested to submit detailed engineering approved assembly drawings of the device arrangement. These drawings shall include a parts list with material designations and additional information as necessary to complete the design review (i.e. spring design calculations, drawings of valve options, such as bellows, lifting levers variations, hard and soft seat variations, alternate inlet or outlet configurations, etc.)

A review of the device design and the application will be made to verify that the minimum mechanical and material requirements of Construction code have been met. From this review a determination will be made as to the test media and number, sizes and set pressures of devices which must be tested to establish the certified capacity rating for the device type. Please note that for pressure relief valves, compressible and incompressible fluids will be considered under separate certifications.

IV. Initial Certification Testing (Manufacturers only)

The manufacturer shall then arrange for testing of the devices specified above at the National Board Testing Laboratory or at an alternative laboratory accepted by the National Board. The purpose of these tests is to establish the rating factor used to determine the certified capacity of the device or the system in which it is used. In addition to supplying the required number and sizes of devices, the manufacturer must submit detailed drawings of components critical to the flow path for each size of device tested.

Testing and the evaluation of results will be made in accordance with the requirements of the specified code of construction. Initial capacity certification testing should be successfully completed before a visit is made by a National Board representative to the manufacturing facility.

V. Quality System Review

The applicant must make arrangements to have National Board representative visit the applicant's facilities after;

1. Initial certification testing by the manufacturer has been successfully completed and,
2. The National Board has received notification from ASME that the application for obtaining the code symbol stamp has been received from the manufacturer or assembler.

During this visit, the representative will review the written description of the quality system and observe a demonstration of its implementation.

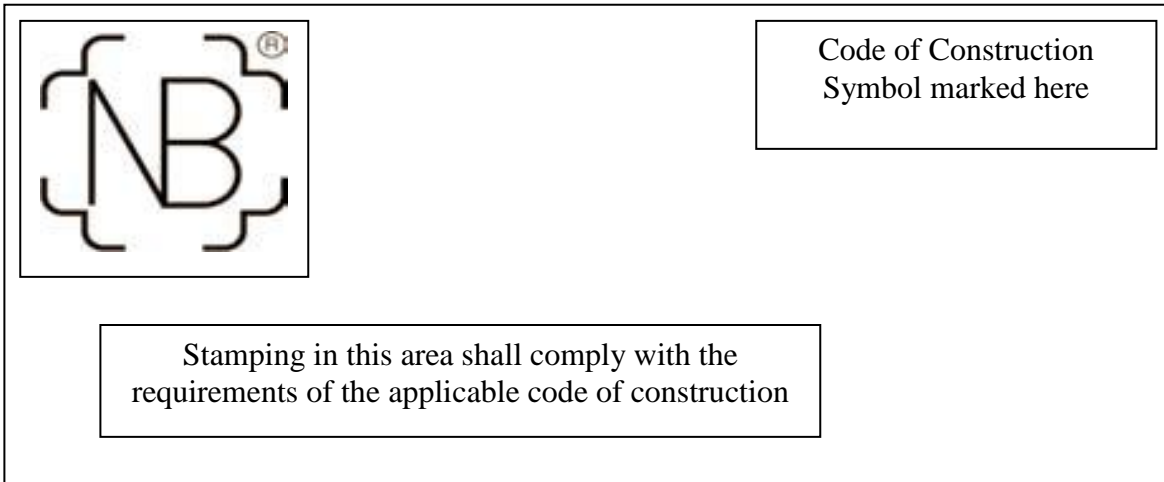
VI. Production Certification Testing

At the time of your quality system review, sample production devices will be selected for testing at a National Board accepted Testing Laboratory in accordance with the code of construction. The purpose of these tests is to demonstrate that the methods of construction, assembly and testing will yield devices which meet the performance requirements of the code of construction and that the device will meet or surpass the flow rating for which it was certified.

VII. Issuance of Certifications and Certificates

Upon successful completion of the review and production certification testing, the National Board will notify the ASME and recommend issuance of the applicable code symbol stamp and certificate of authorization. Additionally, the National Board will issue a capacity certification and permission to use the "NB" mark on the devices of the type certified. This certification will be listed in the National Board Publication, Pressure Relief Device Certifications, NB-18. Once permission is granted, the "NB" mark would be applied to the device nameplate by the authorized organization as shown in the facsimile below:

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VIII. Additional Information

For additional information on the program requirements, please refer to the National Board Publication, Pressure Relief Device Certifications, NB-18.

Fees and expenses of shop reviews and device testing will be paid by the applicant. A schedule of National Board fees and a listing of National Board accepted laboratories will be made available upon request. The applicant should contact the ASME and alternative laboratories for their applicable fees.

If you should have any questions, please feel free to contact the offices of the Pressure Relief Department located at the National Board Testing Laboratory. You may also visit our website at www.NationalBoard.org or contact us by email at: prd@NationalBoard.org.