

Date Distributed:



*THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS*

NATIONAL BOARD INSPECTION CODE GRAPHITE TASK GROUP

MINUTES

Meeting of July 29th, 2025
Columbus, OH

“These minutes are subject to approval and are for committee use only. They are not to be duplicated or quoted for other than committee use.”

The National Board of Boiler & Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229-1183
Phone: (614)888-8320
FAX: (614)847-1828

1. Call to Order

The Chair, Mr. Aaron Viet, called the meeting to order at 9:00 a.m. Eastern Time.

2. Introduction of Members and Visitors

The following members were present at the meeting:

- Mr. Aaron Viet, Chair
- Mr. Jonathan Ellis, Secretary
- Mr. Jesse Wince
- Mr. Andy Stupica
- Mr. Greg Becherer
- Mr. Justin Clements
- Mr. Keith Cummins
- Mr. Chris Cary
- Mr. Tracy Rudy
- Mr. Krunal Patel (sitting in for Mr. Nolan Lee)

Ms. Donna Nier, Mr. Joe Murray, Ms. Emily Metzger, and Ms. Ally Fraser were present for the meeting as guests.

3. Announcements

4. Adoption of the Agenda

A motion was made, seconded, and unanimously approved to adopt the meeting agenda.

5. Approval of the Minutes of the November 2024 Meeting

The minutes from the November 2024 Task Group meeting can be found on the NBIC Committee Information page under the NBIC tab at nbbi.org. A motion was made, seconded, and unanimously approved to accept the minutes from the November 2024 meeting.

6. Review of Rosters

- a. Membership nominations:
 - i. Mr. Joe Murray is expressed interest in becoming a member of the group. Upon sending his resume to the NBIC Secretary, he will be added to the next NBIC Committee meeting for membership approval.
- b. Membership reappointments:
 - i. None
- c. Officer nominations:
 - i. No new officer nominations.

7. NBIC Business

Item Number: 24-67	NBIC Location: Part 3, S3	Attachment Page 1
General Description: Requirement for G-mark when replacing parts		
Subgroup: Graphite		
Task Group: A Viet, J. Wince, S. Mehrez		
July 2025 Meeting Action: Mr. Viet summarized discussion from the July NBIC meeting. From that discussion, Mr. Viet made notes on the original proposal and revised it accordingly. The revised proposal was presented to the group. The group discussed and reworked the proposal and decided to vote on the reworked version. A motion was made, seconded, and unanimously approved to accept this proposal. The proposal will be forwarded to Subcommittee Repairs & Alterations for a vote.		

Item Number: TBD/On Hold	NBIC Location: Part 3, S3	No Attachment
General Description: NBIC Document for Mechanical Repairs - TG Graphite review & comment		
Subgroup: Graphite		
Task Group: A. Stupica (PM), A Viet		
July 2025 Meeting Action: Mr. Ellis told the group that the National Board mechanical repairs guide remains on hold until further notice. An updated version will be provided to the group once National Board staff resume work on the guide.		

8. New Business

Item Number: 25-62	NBIC Location: Part 3, S3.5.4	Attachment Page 2
General Description: Clarify S3.5.4		
Subgroup: Graphite		
Task Group: A. Viet (PM)		
July 2025 Meeting Action: Discussion on S3.5.4 f) – The group felt that a change needed to be made the procedure to allow for purchasing a stock of plugs so that you would only need to buy the qualification kit separate from the plugs. Additional revisions were made to align the section with previous revisions. A motion was made, seconded, and unanimously approved to accept the proposed changes. The proposal will be forwarded to Subcommittee Repairs & Alterations for a vote.		

General Description: Intent interpretation to clarify S3.5.4 f)

Subgroup: Graphite

Task Group: A. Viet (PM)

July 2025 Meeting Action: While discussing Item 25-62, the group asked if there was an immediate solution to address the clarifications made to S3.5.4 f) prior to the publication of the 2027 NBIC. Mr. Ellis stated that the group could propose an intent interpretation to go along with the changes proposed in Item 25-62. If the code changes are approved by Main Committee, then it is likely that the intent interpretation would be approved as well. The group wrote an interpretation question and response and voted to approve the proposed question and response. The proposal will be forwarded to Subcommittee Repairs & Alterations for another vote.

9. Future Meetings

TG Graphite Meeting – November 2025, Clearwater, FL

10. Adjournment

Mr. Viet adjourned the meeting at 2:36 PM EDT.

Respectfully submitted,

Jonathan Ellis

Jonathan Ellis
NBIC Secretary

Item 24-67

S3.2 REPAIRS

c) The materials used in making repairs or alterations shall conform to the requirements of the original code of construction except as provided in NBIC Part 3, S3.2 j). The "R" Certificate Holder is responsible for verifying identification of existing materials from original data, drawings, or unit records and identification of the materials to be installed. Where material strength properties are used in supporting calculations, replacement part materials used for repairs shall meet or exceed the original strength values.

Note: Coefficient of thermal expansion for graphite materials can vary. Therefore, in spring-loaded graphite equipment, differential thermal expansion should be considered.

S3.4 ALTERATIONS

- a) ~~a)~~ The requirements provided in this section shall apply, insofar as they are applicable to the materials discussed herein. Completed alterations shall be subjected to a pressure test that is no less than operating pressure and no more than maximum allowable working pressure. The test pressure shall be maintained for a minimum of 30 minutes, subjected to a pressure test not less than that required by the code of construction. The test pressure shall be maintained for a minimum of 30 minutes. The pressure shall be reduced to MAWP and maintained for inspection.
- b) All re-ratings shall be pressure tested in accordance with the original code of construction. The test pressure shall be maintained for a minimum of 30 minutes prior to inspection by the Inspector. Where the test pressure exceeds the MAWP of the item, the test pressure shall be reduced to the MAWP for inspection. Hold-time shall be as necessary to conduct the inspection.

~~c)~~ Alteration of the spring design (e.g., change in stiffness or the initial compression) of a graphite shell-and-tube heat exchanger shall be done only after revised calculations have been prepared in accordance with the "R" Certificate Holder's Quality ~~Control~~-Management System and accepted by the Inspector. When the standard governing the original construction is any edition of the ASME Code, the calculations shall comply with Section VIII, Div. 1 2019 Edition or later.

~~d)~~ The nameplate shall be applied in accordance with Section 5 of this part. The letter "G" shall be applied to the nameplate under the "R" stamp when graphite alterations are made. The alternate procedure defined in 5.10 may be used in lieu of the stamping and nameplate attachment requirements of NBIC Part 3, Section 5.

Formatted: List Paragraph, Numbered + Level: 1 + Numbering Style: a, b, c, ... + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 0.5"

S3.5.4 PLUGGING OF LEAKING OR DAMAGED TUBES OR BLOCK HOLES

a) The material used for plugging ~~tubes~~ shall comply with the requirements of the ASME Boiler and Pressure Vessel Code (ASME BPV Code), Section VIII, Division 1, Part UIG.

...

f) As an alternative to S3.5.4 e) any "R" Certificate Holder, with or without the Graphite ("G") Designator included on their "R" Certificate of Authorization, may install graphite plugs for a single repair operation, provided the "R" Certificate Holder ~~obtains the concurrence of the Inspector and~~ utilizes a ~~tube~~ plugging qualification kit provided by an ASME Certificate Holder authorized to use the "G" Designator. The kit shall include the following items:

~~1) Certified graphite plugs and certified cement ingredients, both accompanied by the appropriate documentation (e.g., ASME Manufacturer's Partial Data Report).~~

12) The qualified cementing procedure of the ASME Certificate Holder authorized to use the "G" Designator, and a step-by-step procedural checklist that shall be followed explicitly. The cementing procedure shall address the entire ~~tube~~ plugging process including materials, ~~plug~~ configuration, ~~tube~~ hole cleaning and preparation, mixing and application of the cement, application of the plugs, securing the plugs during the curing process, controlling the curing process, and leak testing, thereby meeting the requirements of S3.3.

32) Additional materials and the cementing procedure shall be provided and used to prepare a demonstration plug joint prior to performing the repair being performed. This demonstration plug joint shall be tested by a twist (torsional) test designed to demonstrate acceptable application and curing of the cement (Figure S3.5.4). The test procedure shall include acceptance criteria, which may be based on a principle of breakage of part of the test piece. A successful twist test, in conjunction with the completed procedural checklist, shall serve as a valid cement technician certification for a single repair operation. The twist test shall be witnessed by the Inspector. The "R" Certificate Holder shall review the material certifications, including verification that the shelf life of the cement has not been exceeded. They shall also ensure that the certified cement technician has completed the qualification demonstration, and has access to the cementing procedure and checklist. Prior to accepting the repair plan, the Inspector shall review and verify that the qualified cementing procedure has been completed and that the other elements of the certified kit have been provided by the ASME Certificate Holder authorized to use the "G" Designator, have been administered and completed prior to his acceptance. The "R" Certificate Holder shall note the installation of cemented graphite plugs in accordance with S3.5.4 in the "Description of Work" section of Form R-1. The "G" Designator shall not be applied to the vessel when this alternative repair is performed. The "R" Certificate Holder shall identify and document the location of the plugs on the Form R-1.

h) When cementing the plug(s), one shall ensure 100% of individual plugs, as well as the inside diameter of the hole(s) opening(s), are coated with cement. ~~The plugs shall be inserted one by one, against each other, into each end of the holes(s) being plugged.~~



THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Field Plugging
NBIC Location:	2025 NBIC, Part 3, S3.5.4 f)
Statement of Need:	Clarify S3.5.4f, concerning tube plugging kit materials.
Background Information:	As written in S3.5.4f all plugging materials shall be included in the kit. It is possible to have left over material that should be available for future use. It is also possible to need more materials than initially expected.
Proposed Question:	Is it the intent of S3.5.4f) 1) to require that only materials provided in the kit may be used during the repair operation?
Proposed Reply:	No. Any certified material may be used provided that it is in accordance with S3.5.4 f).
Committee's Question:	Is it the intent of S3.5.4f) 1) to require that only materials provided in the kit may be used during the repair operation?
Committee's Reply:	No. Any certified material may be used provided that it is in accordance with S3.5.4 f).
Rationale:	See Item 25-62