# Brazed Aluminum Plate-fin Heat Exchangers

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Should: As used in a standard, “should” denotes a recommendation or that which is advised but not required in order to conform to the standard.

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Suggested revisions are invited and should be submitted to the Standards Department, API, 1220 L Street, NW, Washington, DC 20005, standards@api.org.

## Contents

## Introduction

It is necessary that users of this standard should be aware that further or differing requirements may be necessary for individual applications. This standard is not intended to inhibit a vendor from offering, or the purchaser from accepting, alternative equipment or engineering solutions for the individual application. This can be particularly applicable where there is an innovative or developing technology. Where an alternative is offered, it is the responsibility of the vendor to identify any variations from this standard and provide details.

This standard has been re-numbered; it was previously published as API Standard 662, Part 2.

A recommended practice is included within this standard (see Annex A).

This standard requires the purchaser to specify certain details and features.

A bullet (●) at the beginning of a paragraph or subsection indicates a requirement for the purchaser to make a decision or provide information (for information, a checklist is provided in Annex B).

In this standard, where practical, US Customary units are included in parentheses for information.

# Brazed Aluminum Plate-fin Heat Exchangers

## 1 Scope

This standard gives requirements and recommendations for the mechanical design, materials selection, fabrication, inspection, testing, and preparation for shipment of brazed aluminum plate-fin heat exchangers for use in the petroleum, petrochemical, and natural gas industries.

## 2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any addenda) applies.

ALPEMA[1], *The Standards of the Brazed Aluminum Plate-Fin Heat Exchanger Manufacturers' Association*, 3rd Edition

NOTE In this standard, this normative reference will be referred to in the text as the "ALPEMA *Standards*" due to its lengthy title and multiple citations.

ASME *Boiler and Pressure Vessel Code (BPVC)*[2]*, Section VIII: Rules for construction of pressure vessels; Division 1 or Division 2*

ASME B16.25, *Buttwelding Ends*

ASME B16.5, *Pipe Flanges and Flanged Fittings NPS ½ through NPS 24 Metric/Inch Standard*

ASME B16.9, *Factory-Made Wrought Buttwelding Fittings*

ASME B31.3, *Process Piping*

## 3 Terms and Definitions

For the purposes of this document, the following definitions apply.

**3.1**
**block**
**core**
An assembly consisting of alternating layers (passages) of corrugated fins, separated by parting sheets and sealed along their edges by means of side bars and bounded by cap sheets, which are brazed to become a rigid structure.

**3.2**
**block-in-shell heat exchanger**
A heat exchanger system consisting of one or more plate-fin heat exchangers installed within a pressure vessel shell.

**3.3**
**cold box**
An enclosure consisting of a carbon steel casing, usually rectangular in shape, that supports and houses plate-fin heat exchangers, pressure vessels, piping, and other cryogenic equipment, filled with insulation and operated under an inert atmosphere.

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[1] Brazed Aluminum Plate-Fin Heat Exchanger Manufacturers' Association, www.alpema.org.

[2] American Society of Mechanical Engineers, Two Park Avenue, New York City, NY 10016-5990, www.asme.org.