



Document No.	GIS 26-101
Applicability	Group
Date	7 April 2009

GIS 26-101

Shell and Tube Heat Exchangers (ISO 16812 or API 660)

Group Instruction for Supply

**BP GROUP
ENGINEERING TECHNICAL PRACTICES**

Foreword

This issue of Engineering Technical Practice (ETP) GIS 26-101 is updated to align with the 2007 versions of ISO 16812 and API Std 660. Locations of revisions are marked by bars in the margin.

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Introduction

- a. a. GuidanceRequirements for shell and tube heat exchangers is are based on ISO 16812, *Petroleum and natural gas industries - Shell-and-tube heat exchangers*, First Edition, 2002-07-01/Second edition, 2007-02-15 and API Standard 660 7th Edition, *Shell-and-tube Heat Exchangers*, Eighth edition, August 2007.
- b. b. Guidance statementsRequirements of this GIS are modifications to ISO 16812 and API 660.
- c. c. Modifications to ISO 16812 and API 660 are identified as Add, Modify to Read, or Delete.
- d. d. ParagraphClause numbers in this specification correspond to ISO 16812 and API 660.
- e. e. ParagraphsClauses of ISO 16812 and API 660 that are not revised remain applicable.



1 Scope

Add

This Engineering Technical Practice (ETP)GIS provides guidance on industry standardrequirements for the design, materials, fabrication, inspection, testing, documentation, and preparation for shipment of unfired shell and tube heat exchangers based on ISO 16812 and API 660.

2 Normative references

Add

BP

GIS 06-601	Painting of Metal Surfaces.
GIS 18-014	Heat Exchanger Tube End Fixing.
GIS 46-10	Guidance on Industry Standard for 010 Pressure Vessels.
GS 118-8	Heat Exchanger Tube End Fixing.

American Society of Mechanical Engineers (ASME)

ASME	Boiler and Pressure Vessel Code (ASME Code).
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British Standards Institute (BSI)

BS EN 13445-3	Unfired pressure vessels - Part 3: Design.
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International Organization for Standardization (ISO)

ISO 9001	Quality management systems - Requirements.
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Tubular Exchanger Manufacturers Association (TEMA)

Standards of the Tubular Exchanger Manufacturers Association

U.S. Military Specifications

Mil Spec A-18001	Anodes, Sacrificial Zinc Alloy.
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3 Terms and definitions

3.8 hydrogen service

Modify to Read

...350 kPa (3,5 bar) (50 psi) absolute.

4 General

Add

- 4.6 Thermal design shall be performed using Heat Transfer and Fluid Flow Services (HTFS) or Heat Transfer Research, Inc. (HTRI) methods and software. If other methods and software are used and a dispute regarding the design of the unit arises, a crosscheck using HTFS/HTRI software is required.¹
- 4.7 In case of conflict between documents, the order of priority shall be:

