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Petroleum, petrochemical and natural gas industries - Flare details for general refinery and petrochemical service (ISO/DIS 25457:2007)

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Industries du pétrole, de la pétrochimie et du gaz naturel - Détails sur les torches d'usage général en raffineries et dans les usines pétrochimiques (ISO/DIS 25457:2007)

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English Version

Petroleum, petrochemical and natural gas industries - Flare details for general refinery and petrochemical service (ISO/DIS 25457:2007)

Industries du pétrole, de la pétrochimie et du gaz naturel - Détails sur les torches d'usage général en raffineries et dans les usines pétrochimiques (ISO/DIS 25457:2007)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 12.

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Foreword

This document (prEN ISO 25457:2007) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum and natural gas industries" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries", the secretariat of which is held by AFNOR.

This document is currently submitted to the parallel Enquiry.

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ISO 25457 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 6, *Processing equipment and systems*.

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Introduction

Users of this International Standard should be aware that further or differing requirements may be needed for individual applications. This International 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 may be particularly applicable where there is innovative or developing technology. Where an alternative is offered, the vendor should identify any variations from this International Standard and provide details.

In International Standards, the SI system of units is used. Where practical in this International Standard, US Customary units are included in brackets for information.

A bullet (●) at the beginning of a clause or subclause indicates that either a decision is required or further information is to be provided by the purchaser. This information should be indicated on data sheets (see examples in Annex E) or stated in the enquiry or purchase order.

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Petroleum, petrochemical and natural gas industries — Flare details for general refinery and petrochemical service

1 Scope

This International Standard specifies requirements and provides guidance for selection, design, specification, operation and maintenance of flares and related combustion and mechanical components used in pressure relieving and vapour-depressuring systems for petroleum, petrochemical and natural gas industries.

Although this International Standard is primarily intended for new flares and related equipment, it may also be used in the evaluation of existing flare facilities.

Annexes A, B and C provide further guidance and best practices for the selection, specification and mechanical details for flares and on the design, operation and maintenance of flare combustion and related equipment.

Annex D explains how to use the data sheets provided in Annex E; these data sheets should be used to communicate and record design information.

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2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods*

ISO 8501-1, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

ISO 10684, *Fasteners — Hot dip galvanized coatings*

ISO 13705, *Fired heaters for general refinery service*

ISO 15156 (all parts), *Petroleum and natural gas industries — Materials for use in H_2S-containing environments in oil and gas production*

ISO 15649, *Petroleum and natural gas industries — Piping*

ISO 23251, *Pressure-relieving and depressuring systems*

API RP 2A[1)], *Recommended Practice for Planning, Designing and Constructing Fixed Offshore Platforms*

ASME STS-1[2)], *Steel Stacks*

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1) American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005

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ASTM A 475 Class A[3], *Standard Specification for Zinc-Coated Steel Wire Strand*

ASTM A 586 Class A, *Standard Specification for Zinc-Coated Parallel and Helical Steel Wire Structural Strand and Zinc-Coated Wire for Spun-In-Place Structural Strand*

ICAO[4], Annex 14 - *Aerodromes, Volume I – Aerodrome Design and Operations*

NACE MR0103 [5], *Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments*

3 Terms and definitions

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

3.1
air seal
purge reduction device
device used to minimize or eliminate the intrusion of air back into the riser from the exit

3.2
assist gas
fuel gas that is added to relief gas prior to the flare burner or at the point of combustion in order to raise the heating value

3.3
back blowing
procedure by which the dry air seal drain line is blown back from the base of the drain into the buoyancy seal to ensure the line is clear

3.4
blowoff
loss of a stable flame where the flame is lifted above the burner, occurring if the fuel velocity exceeds the flame velocity

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3.5
buoyancy seal
dry vapour seal that minimizes the required purge gas needed to protect from air infiltration

Note The buoyancy seal functions by trapping a volume of light gas in an internal inverted compartment that prevents air from displacing buoyant light gas in the flare.

3.6
burnback
internal burning within the burner

Note Burnback can result from air backing down the flare burner at purge or low flaring rates.

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2) American Society of Mechanical Engineers, 3 Park Avenue, New York, NY 10017, USA.

3) American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, USA.

4) International Civil Aviation Organization, 999 University St.,Montreal, Quebec, H3C 5H7 Canada. www.icao.int.

5) American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, USA.

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