 پترو انرژی (سهامی خاص) GPE Project No.: ALL	DESIGN & DEVELOPMENT DEPARTMENT طراحی و توسعه	Doc No.:	24GEN-2000-ALL-CAT-0001
	Technical Catalogue For Aluminium Internal Floating Roof	Date:	11/20/2024
		Client:	ALL
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Technical Catalogue

For


Aluminum Internal Floating Roof

Attention:


This Document is issued for General information of Equipment and may be changed as per client request or GPE in during of the proposal stage. (if needed Completed information is issued in Design Data Sheet document).

D0	Click or tap	For Information	M. Farahnak	H. Kahrizi	Kh. Kahrizi
Rev.	Date	POI	Prepared	Checked	Approved

ISO CODE: 0835-02-FR-00-23


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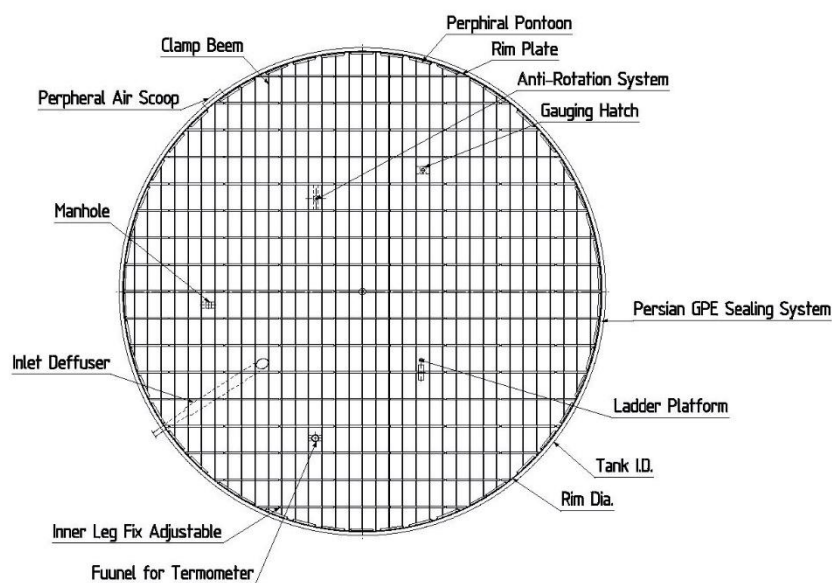
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1. Description


Internal Floating Roofs are installed in Fixed Roof Tanks to control the vapor emissions from volatile hydrocarbon liquids. Atmospheric storage tanks have contributed significantly to emissions of volatile organic hydrocarbons (VOC's). When our society developed an understanding of the economic and environmental impact as a result hereof several products were developed to reduce emissions. At the basis and forefront of these developments was the internal floating roof. By covering major part of the liquid surface and through an effective seal the emission reduction after installing an internal floating roof is in excess of 90%. The API committee has also acknowledged the importance and relevance of this development by maintaining a standard for internal floating roofs (API 650 Appendix H). Floating roofs are available in a wide range of materials including Aluminum and stainless steel, executed as vapor containing as well as direct contact roofs.



Sample Erection of internal Floating Roof

2. Application

The Internal Floating Roof is designed on Fixed Roof Tanks to minimize vapor loss in the tanks. This roof can be used on tanks ranging from 10.0 m to 120.0 m in diameter, and capable with storing virtually all crude and refined products including aromatics.

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3. Type

Pontoon type internal floating roofs (IFR) eliminate VOC emissions by saturating vapor and preventing new vapor to form. These skin and pontoon IFR are designed as light weight floating structure sealed with a closed skin. This design will reduce emission with more than 98%.


The pontoon type has the most cost effect features:

- ease of assembly and installation - all component parts pass through a standard tank shell manhole
- no welding at site - complete installation can normally be carried out in a matter of weeks
- can accommodate both primary mechanical shoe seal and a secondary seal

4. Key Features

GPE Internal Floating Roof is ideally to service in earthquake prone regions. This roof is light weight structure because it's manufactured from Aluminium.

- reducing emissions of VOC's by more than 90%
- maintenance free
- compatible with all stored products, including 100% aromatics
- light weight structure manufactured from Aluminium or Stainless Steel
- can be fitted on tanks with diameters between 10 and 120 meters
- expected service life in excess of 30 years
- designed for each specific tank
- easy installation, full installation manuals and project support available
- complies with API 650 Appendix H standard
- successfully used globally by many major oil and tank storage companies
- realistic engineering option for new storage tanks
- suitable for high filling and emptying rates as well as Nitrogen pigging and mixing operations
- can be equipped with several different seal designs in an extensive range of materials able to withstand 100% aromatics

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5. Accessories

- Sealing System
- Ladder
- Manhole
- Foam Dam
- Free Vent
- Column Well
- Anti-Rotation
- Mixer
- Floating Suction
- Level Indicator
- Temperature Gauge
- Skimmer Suction
- Rim Vent
- PV Vent


6. Standards

API 650-Welded Tanks for Oil Storage.

7. Technical Data

Size	6 m to 133 m
Model No.	2010
Metallic Material	Aluminium S.S. 304
Non-Metallic Material	NBR-PVC NBR PTFE




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8. Guarantee and Warranty

All of GPE products have 120 months warranty and 18 months Guarantee from delivery date.

9. Special Notes

- Position of Automatic Rim Seal Protection (if any) & Rim Vent Nozzles shall be checked to resolve any clash between them & roof seal (by Client).
- Foam Dam Height for new storage tanks shall be considered according to GPE drawing.
- For repairing or constructed tanks after PO, to ensure the correct operation & rim space conditions, GPE requests the client or buyer to measure distance between roof and shell (rim space) in 72 points of each course of tank height with Total Station Camera and deliver data to vendor before seal construction. Otherwise, the average of rim space distance should be as same as nominal rim space and GPE will not be responsible for out-of-range points.
- If there are deviations in the dimensions provided by client after the contract and/or after the site visit by vendor for confirmation of the above information, significant changes in the structure of the system will be made which consequently affects the financial conditions of the project. These effects should be re-checked by GPE and the client should consider and accept all the responsibilities.
- For new storage tanks Outer Rim Holes should be punched according to GPE drawing at site by tank vendor.
- Roof Sealing System installation compliance with roof and shell should be checked during floating roof movement while performing tank hydro test.
- Installation of sealing system should be done under supervision of GPE expert, otherwise the guarantee of the system will be voided.
- Based on API 650-H.4.4.3, All peripheral seals and their attachment to the floating roof shall be designed to accommodate ± 100 mm (± 4 in.) of local deviation between the floating roof and the shell.
- All angles between roof and shell in outer rim space should be removed (If any).
- Other Material & Dimensions would be according to the details mentioned in Final Drawing.

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10. How to Order

20	Aluminium Roof			
	Code	Roof Type		
	10	Aluminium Internal Floating Roof		
		Code	Size	
		XXX	6 m to 133 m	
			Code	Metallic Material
			01	Aluminium
			02	S.S. 304
			Code	Non-Metallic Material
			01	NBR-PVC
			02	NBR
			03	PTFE

Sample:

2010 - **020** - **01** - **01**

It indicates a 20 m-Diameter Internal Floating Roof made of Aluminium for Metallic Parts and NBR-PVC for Non-Metallic Parts.

11. Contact Information

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