



INTERNAL FLOATING ROOF **PRO-deck**

- * ALUMINIUM
- * HYBRID
- * STAINLESS STEEL
- * CABLE SUSPENDED



PRO-deck

Internal Floating Roof

PRO-deck Aluminium Floating Roofs have been successfully protecting storage tanks and reduced evaporation for years. This success is attributed to the advanced design and high quality of **PRO-deck**, combined with experienced installation team.

PRO-deck's structural design meet or exceed all known standards for internal floating roofs, in particular the requirements of API Standard 650, Appendix H.

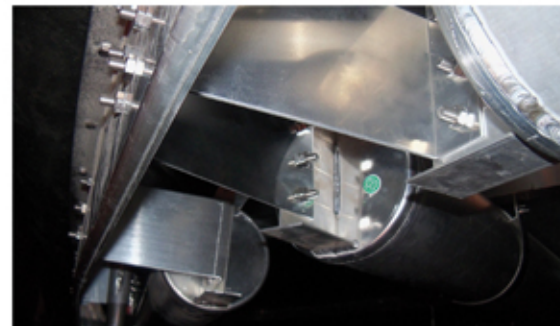
PRO-deck's main interconnecting grid structure has a high strength-to-weight ratio, using contamination free and corrosion resistant aluminium alloy tubular pontoons and extruded channel beams. These flotation pontoons and structural members provide maximum flotation and strength capable of withstanding loads generated by product turbulence and inspection personnel.

PRO-deck roofs are known for their rugged construction, durability and efficiency. They are lightweight, corrosion resistant and virtually maintenance free.

PRO-deck's peripheral rim and deck penetrations isolate and trap product vapors, preventing their escape into the atmosphere. Several types of primary and secondary seals including stainless steel mechanical shoe primary seals are available, all of which are designed to accommodate wide variations in the tank shell and the rim space.

All **PRO-deck** components are designed to pass through the existing shell manway, thereby eliminating additional expense and downtime required to create other access openings. Since the roof parts are pre-fabricated and partly pre-assembled, installation time is reduced to a minimum, resulting in less tank downtime.

Let **ATSTANK** put its proved experience in the design, manufacture, supply and installation of aluminum structures to work for you today.

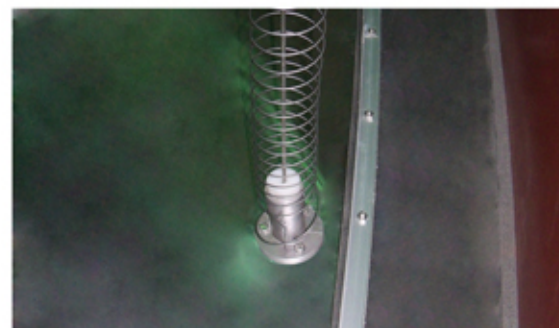
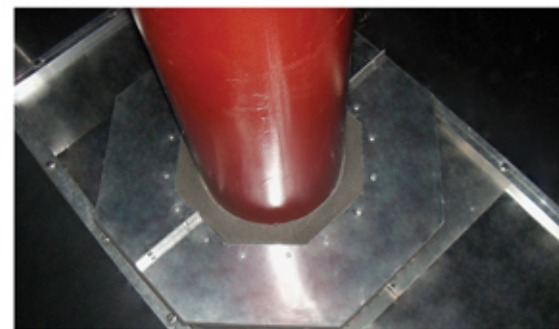


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Internal Floating Roof's unique design features are

- **PRO-deck** is completely assembled without welding and can fit through a 20 inch manway, allowing for much faster installation and quicker tank turnaround.
- **PRO-deck** is also available in a hybrid (stainless steel/aluminium) design, as well as in a complete stainless steel design, when there are compatibility restrictions to use the aluminium design.
- **PRO-deck** reduces the common failure modes of skin and pontoon roofs by reinforcing the pontoon gussets and end caps through an unique design. The additional use of tube saddles ensures equal load distribution on to the floats at the structural interfaces.
- **PRO-deck** uses a peripheral rim profile made from a specially designed large size extrusion. It is designed with the strength to support both primary mechanical shoe seal and a secondary seal without additional modifications.
- **PRO-deck** uses floats made of seamless 210mm diameter tubes, with a thickness of 2 mm and a maximum length of 5600mm.
- **PRO-deck** has a support structure designed for a sheet width of 1500 / 2000mm and a pontoon spacing of 3000mm.
- **PRO-deck** uses PTFE (Teflon™) insulators on the aluminum legs to insulate from the carbon steel tank floor. This prevents the common issues associated with dissimilar metals.
- **PRO-deck** only uses stainless steel bolts and nuts in their constructions.
- **PRO-deck** offers a large variation of seal designs to suit various customers requirements.
- **PRO-deck** can be cable suspended from either cone roof tanks or geodesic dome roofs. This option allows roof height adjustments to be completed from the outside of the tank. With no leg structure under the roof, cleaning inspection and repairs to the tank bottom are simplified.
- **PRO-deck** offers a large number of accessories to meet all operational requirements designed by experienced and dedicated ATS



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When was the first PRO-deck made?

The first PRO-deck was installed in Turkey in 2007 and had a diameter of 24 m. Beginning from then ATS has been supplying many PRO-deck in a various diameters from 3 meters to 100 meters.

What does the PRO-deck cost?

PRO-deck is a cost effective and easy to install system, which could be used in new or old tanks. Each PRO-deck is in accordance with your requirements. You will be pleased to see how economic environmental protection could be.

How efficient is the PRO-deck?

PRO-deck saves up to 98% of product evaporation. Product savings depend on the stored product, the diameter of the tank and the total turnover per year.

What is the estimated pay-back period of PRO-deck ?

This depends on value and volatility of the stored product. This could be 16 months for refined products.

Why are there legs fitted to the underside of the PRO-deck and are they permanently in position?

These legs are fitted to let the tank operators to gain access to the tank bottom when the PRO-deck is lowered. These legs are permanently fitted, they go up and down with the PRO-deck and are usually located such the PRO-deck could be lowered to rest on the tank floor, just above the tank shell manhole. These legs are available in an adjustable version, so the operator could determine the minimum height of the PRO-deck himself.

Can internal tank maintenance work be carried out with the PRO-deck installed?

Certainly! PRO-deck is lowered onto its legs and if burning work is to be carried out, properly protected, then most maintenance work could be carried out from the top of the PRO-deck. If heavy equipment has to be located on PRO-deck then the load should be distributed over as many of the legs as practical using scaffold boards.

Is PRO-deck compatible to all products?

PRO-deck is made from aluminium, which is perfectly compatible with most stored products. Besides, we could supply all stainless steel or a combination of aluminium and steel materials to suit any requirement.

Is the seal between the tank shell plates and the PRO-deck advisable for all types of stored product?

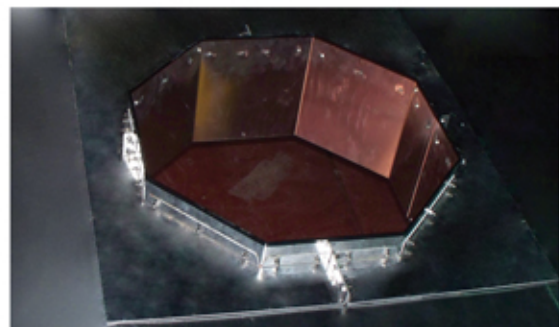
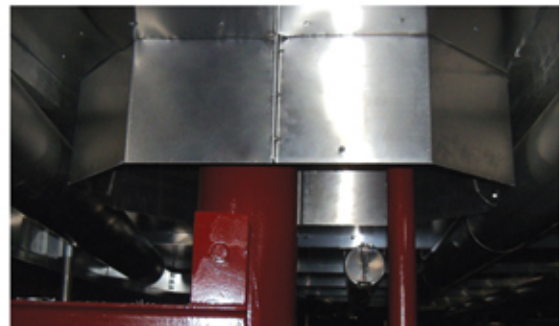
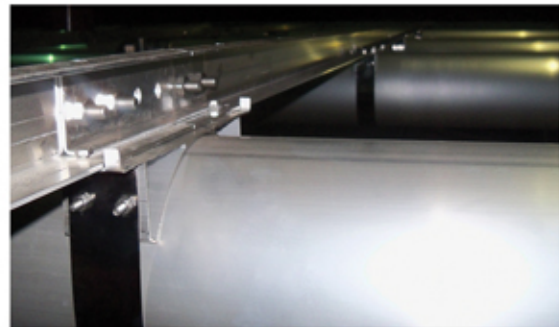
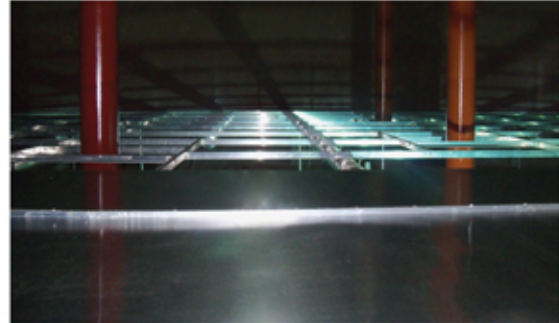
Before the preparation of our proposal for PRO-deck, we should know the stored product so that we could ensure all the material used to manufacture the PRO-deck including the seal is compatible with the stored product. If in later stages the tank is used to store a different product, we recommend that the operator contact ATS with details of the new product and we will advise if any modifications are required to the PRO-deck or the seal.

Is there a minimum or maximum diameter of tank which could be fitted with PRO-deck ?

There is not any limitation on the maximum diameter of tank which could be fitted with PRO-deck. Depending upon the stored product (low SG) there could be some difficulties to overcome the buoyancy for the PRO-deck if the tank diameter is less than 3,000 mm.

Why does PRO-deck use 8" floaters and not 10" like some competitors do?

The advantage of using the smaller diameter of floatation tube is that the PRO-deck takes up less space in the tank and therefore maximizes the volume of the stored product. Also the vapor space



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PRODUCT PROTECTION WITH ALUMINIUM

Acetone	Hexene	Pentene
Acrylonitrile	Hexane	Polymogas
Aniline	Heptane	Pyrol. Gasoline
Alcylate	Heavy Oil	Phenol
Acetonitrile	Isopropane	Paraxylene
Benzene	Isopropynol	Platformate
Butyl Acetate	Isoprene	Reformat
Butyl	JP4	Slops
Crude Oil	Jet Fuel	Sulfolane
Cumene	Kerosene	Sour Water
Cyclo Hexane	Kumene	Styrene
Condensate	Light Gasoline	Solvent
Crude Alcohol	Light Reformat	Toluene
Crack Dest.	MEK	TBA
Diethylether	MTBE	Tetra-Hydro-Furan
Dipropylketon	Methanol	Vinylacetate
Di-Isononyl Phthalatate	Naphtha	Water
Ethlybenzene	Nonene	White Spirit
Ethanol	Orthoxylene	Xylene
Ethyl-Acetate	Octane	
Gasoline Premium/Super	Oxinol	

STANDARD ACCESSORIES

- Anti-Rotation System (Stainless Steel)
- Grounding Cable (Stainless Steel)
- Pressure/Vacuum Relief Vent
- Roof Manhole/Manway
- Manuel Gauging Funnel
- Automatic Gauging Device
- Deck Drain

SPECIAL ACCESSORIES

- Roof Center Vent
- Roof Air Scoop
- Overflow Vent
- Diffuser
- Floating Suction System
- Internal Ladder
- Corrosion Gauge
- Foam Dam

SEAL SYSTEM

- Polyethylene Wiper Seals
- Polyurethane Wiper Seals
- Mechanical Shoe Seals
- Spring Supported Double Seals
- Customer Requirements

PRO-deck



- * VERY SHORT PAYBACK TIME * COST EFFECTIVE INITIAL INVESTMENTS
- * MINIMUM EMISSION * MODULAR DESIGN * CONTINUOUS SAVING
- * PREVENTS PRODUCT CONTAMINATION * RAPID FIELD INSTALLATION DOWNTIME
- * MAINTENANCE FREE – NO COST * LONG SERVICE LIFE
- * NO OPERATING COSTS * MINIMAL STORAGE CAPACITY LOSS



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