

PETROLEUM & ENERGY INFRASTRUCTURE
ESHTEL-Terminal.

TANK N^o 44 -Eshel
160 FT – DIAMETER

FLOATING ROOF - DOUBLE SEAL

SCOPE:

This document covers the technical requirements for supply and delivery of Double Seals for External Floating Roof for tank N^o 44 at ESHEL terminal .

The storage tank are planned to handling distillate or crude oil, as follow:

1.1 GAS OIL:

1.1.1 Specific gravity @ 15 ^o C	0.870
1.1.2 Kinematics viscosity @ 37.8 ^o C (cst)	6-7.5
1.1.3 Sulphur content (wt%)	0.25% max
1.1.4 Acidity (mg koh/gr)	0.25
1.1.5 Cold filter plugging point (°C)	9 (max summer) -2 (max winter)
1.1.6 Flash point:	55 ^o C
1.1.7 Copper corrosion (2 HRS/100 c)	1 max

1.2 GASOLINES:

1.2.1 Specific gravity @ 15 ^o C	0.73 –0.765
1.2.2 Kinematics viscosity @ 37.8 ^o C (cst)	0.6
1.2.3 Copper corrosion (2 hr/100 C)	1 max
1.2.4 Aromatics (vol %)	60
1.2.5 MTBE (%)	15
1.2.6 Sulphur content (wt%)	0.15
1.2.7 Vapor pressure 37.8 ^o C (PSI)	9 max

1.3 KEROSENE:

1.3.1 Density 15 ^o C	0.805
1.3.2 Kinematics viscosity (CST at 15 ^o C)	3-4
1.3.3 Copper corrosion (2 hr/ 100 ^o C)	1 Max.
1.3.4 Acidity (mg koh/gr)	0.015
1.3.5 Sulphur content (wt %)	0.2

SITE CONDITIONS:

1. Site altitude is about 200 m' above sea level at
2. Ambient temperature varies between 0^oC- 45^oC.
3. Relative humidity varies between 45% - 95%.
4. Rain fall around 250 mm' / year.

GENERAL REQUIREMENTS:

TECHNICAL DATA:

General:

Seal type:	mechanical seal shoe type
Seal components & accessories:	
- Primary seal:	YES.
- Secondary seal:	YES.
- Static shunts:	YES.
- Foam ports:	YES.
Tank diameter:	160 FT. 50 meter
Nominal Tank volume:	35,000 m ³
Floating roof type:	external, pontoons.
Rim angle:	vertical
Rim space:	200 mm'
Rim space tolerance (at list):	-X+3X
API spec to be meet –API 650 and 653 last revisions	

The sealing elements comprise mainly of soft wipers and compression plates that maintain full contact with the tank shell and keep the floating roof centered.

The Sealing element on the secondary seal will be suitable to the welded seam on the shell.

The design of the seal system will assure a full contact of both parts with tank shell along all tank perimeters, through the wipers at all times.

The vendor should declare the system as maintenance free during the whole life service.

No welding is required for the installation.

Installation and dismantling should be easy avoiding the use of hot works- in service.

The "first" installation shall be at in service tank.

Full IOM documents shall be supply with the goods.

The anticipated life span of the seal working under normal operations shall be at least 15 years.

Primary seal:

The primary seal shall be a shoe plate's type.

The steel plates shall be manufactured from stainless steel- at least 304 ss.

The pusher system will be manufactured from stainless steel- at least 304 ss.

The shoe plate shall be held in permanent contact with the tank shell by a system of independent hanger and pusher mechanisms.

Each shoe plate shall be held and push to place by at least one hanger and one pusher bar or pusher plate.

The shoe hangers allow the shoe to maintain at level position as the rim gap between the floating roof and the shell changes.

The seal shall be fitted with continuous vapor membrane suitable to the storage liquid that described.

Secondary seal:

The secondary seal shall be made of stainless steel, at least 304ss, compression plates fitted with wiper tip that tightly held in continuous contact with the tank shell.

The secondary seal shall be fitted with one of following sealing technique:

1. Vapor membrane.
2. Bolted and gasketed plates.

The vendor shall supply static discharge shunts made of spring grade 304. The vendor shall supply foam ports in the secondary seal according to API 650.

GENERAL TERMS:

The vendor shall supply the following information:

- All drawing including accessories drawings.
- Maintenance instruction.
- Each seal will be separately packed