



ESHEL Terminal

.FOAM CONCENTRATE PUMPS

TAG N^o: CP4, CP5

(REVISION 004)

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1. SCOPE:

This document covers the technical requirements for supply and delivery of two (2) UL/FM foam concentrate pumps fitted with electrical motor as well as control panel to be operated at Eshel terminal.

The positive displacement–type pumps shall be listed for the intended application

The pumps and all accessories and parts shall be manufacture and tested according to the N.F.P.A 20 chapter 8: Positive Displacement Pumps.

2. FOAM PROPERTIES:

Foam: According to the attached spec.

3. PUMP CONFIGURATION:

3.1 The pump shall be a positive displacement type.

3.2 Suction Ports: 3" #150 RF.

3.3 Discharge ports: 3" #150 RF.

3.4 The pump shall be appropriate for the viscosity of the liquid.

3.6 The pumps shall be a close tolerance, high precision rotary gear capable of dry running for 10 min without damage.

The seal type acceptable for positive displacement pumps shall be either mechanical or lip seal.

Packing seals shall not be used.

3.7 The pump shall be capable for continuously pumping

4. PUMP DESIGN:

4.1 Pumps performance: 216 GPM (50 m³/hr.) at a discharge pressure of 232 psi (16 bar).

4.2 Materials of construction:

Materials used in pump construction shall be selected based on the corrosion potential of the environment, fluids used, and operational conditions.



Pumps Materials:

Casing:	Brass C 836.
Rotor:	Bronze C 905.
Shafts:	Stainless steel S30300.
Seals:	Lip seal – Teflon. Coupling & coupling guard: "NUPEX" or equal coupling and Cast Steel painted for marine services coupling guard.
Base:	Cast Steel painted for marine services.

- 4.3 The pump shall be fitted with 2" safety relief valve FM Approved, #150 RF, capable of relieving 100% of the pump capacity made of Bronze.
The relief valve shall be set to 255 psi (17,85 bar)

5. MOTOR (DRIVE):

- 5.1 The pump shall be equipped with electrical motor.
5.2 The pump and the driver shall be mounted on a common base frame.
5.3 The base plate shall be large and rigid enough for the largest possible drive applicable to the pump.
5.4 The driver shall be sized for and have enough power to operate the pump and drive train at all design points
5.5 Bearing shall be applied for 15,000 hour.
5.6 The pump will be start up by a star delta device
5.7 The drive shall be manufactured at a recognized and experiences company that having an agent company in the country.
The motor shall be supply with Foam Pump Controller 50Hz, 3Ph, NEMA 2, painted steel enclosure.

6. GENERAL TERMS:

The manufacture shall supply the following documents:

- 6.1 Pump drawings.
6.2 Description of the components.
6.3 Installation drawing.
6.4 Accessories drawing.
6.5 Performance drawing.



6.6 Constriction materials list.

6.7 Instruction for mounting, operating and maintenance.

6.8 All drawing and documents shall be in English language and all the units shall be in the SI system.

7. BOQ:

	Description	Unit	Qua',	Price	Total
7.1	Foam concentrates pump 216 GPM@ 232 PSI	Unit	2.0		
7.2	2" PRV	Unit	2.0		
7.3	Seal	Comp'.	1.0		
TOTAL					

Attached: 1. Pump installation drawing
2. Foam Concentration analyses