

BALUCHISTAN ENERGY COMPANY LIMITED

DEVELOPMENT OF LPG TESTING LABORATORY AT TAFTAN

BASKET STRAINERS



Office Address:

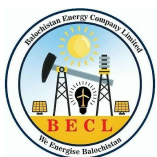
Balochistan Energy Company Limited
67-A, Main Jinnah Town Quetta,
Balochistan, Pakistan

Phone: 9281-2863711, 2863712

E-mail: cfo@becl.com.pk

shayan.ali.siddiqui@gmail.com

Web: www.becl.com.pk



SPECIFICATION FOR BASKET STRAINERS

CONTENTS

<u>SECTION NO.</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1.0	GENERAL	3
2.0	CODES, STANDARDS & SPECIFICATIONS	4
3.0	DESIGN	4
4.0	FLUID DATA	5
5.0	MATERIALS	6
6.0	INSPECTION & TESTS	6
7.0	MARKING	7
8.0	PAINTING	7
9.0	SHIPMENT	7



SPECIFICATION FOR BASKET STRAINERS

1.0 GENERAL

1.1 Scope

The present specification deals with the minimum requirements for the basket strainers to be used for LPG Testing Laboratory at Taftan.

Contractor shall supply strainers along with differential pressure indicating switch with complete hook up and as per specification.

The strainers will be installed outdoors in a non-sheltered place located in a hazardous area.

1.2 Definitions

PURCHASER mean OWNER or OWNER's nominated inspector and CONTRACTOR means SUPPLIER / MANUFACTURER / CONTRACTOR. This definition shall apply throughout this specification.

1.3 Errors or Omissions

1.3.1 The review and comment by the Purchaser of any drawings, procedures or documents referred to in this Specification shall only indicate acceptance of general requirements and shall not relieve the Contractor of its obligations to comply with the requirements of the purchase order.

1.3.2 Any errors or omissions noted by the Contractor in this Specification shall be immediately brought to the attention of the Purchaser.

1.4 Deviations

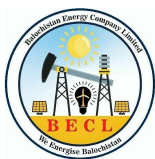
All deviations to this Specification and other specifications or attachments listed in the Purchase Order shall be made in writing and shall require the written approval of the Purchaser prior to executing the work.

1.5 Conflicting Requirements

In the event of conflict, inconsistency or ambiguity between the contract scope of work, this Specification, National Codes & Standards referenced in this Specification or any other documents, the Contractor shall refer to the Purchaser whose decision shall prevail.

1.6 Reporting Procedure

1.6.1 A full reporting and recording system, to be agreed with the Purchaser, shall be implemented and maintained throughout the duration of the Contract. Contractor shall provide reports and summaries for production performance and testing operations in conformance with a manufacturing schedule approved by Purchaser.



SPECIFICATION FOR BASKET STRAINERS

- 1.6.2 Daily, weekly monthly and run summaries of all major aspects of the production process shall be provided as reports to the Purchaser.

Further, all production and testing records shall be made available for inspection by the Purchaser at any time upon request.

1.7 Third Party Inspection

In addition to the inspection and witnessing of tests by the inspectors to be appointed by the Contractor during the manufacturing and shipment of the Equipment Material, Owner may appoint a third party or its own inspector for witnessing of the inspection and tests to be carried out at manufacturer's facility under this specification.

2.0 CODES, STANDARDS & SPECIFICATIONS

The strainers shall comply with:

- ASME Code Section VIII Division 1 "Unfired Pressure Vessels code".
- ASTM standards where applicable.
- The present specification's requirements.
- Project Specifications as applicable

3.0 DESIGN

Strainers shall be in line, single basket type.

The axis of the inlet and outlet nozzles shall be in a horizontal position.

The strainer shall be fitted with a special cover of quick closing and opening type. Cover seal will be of O-ring type. Screwed type quick closures are strictly prohibited.

The strainer may be of the single type, as deemed necessary considering the operating conditions.

The direction of the product in the strainer will clearly be indicated by means of an arrow or any other indestructible mark located on the strainer body.

The straining will be performed by means of:

- One cylindrical basket which shall be of the easy removable type for cleaning purposes.
- One or several baffle plates mounted perpendicularly or diagonally to the direction of the flow or by means of any other solution previously approved by the Owner.



SPECIFICATION FOR BASKET STRAINERS

The strainer shall have the following nozzles:

- 1) At the lowest part of the vessel a drain will be foreseen, including a tee, welding neck flanges and blind flange, as well as necessary stub bolts, nuts and gaskets.
- 2) On the inlet and outlet nozzles, NPT screwed connections 1½" in diameter will be foreseen for differential pressure measurement.
- 3) On the body, a NPT screwed connection will be supplied for thermal expansion pressure safety valve, 1" in diameter.
- 4) At the highest possible point on the strainer a NPT screwed connection, 1½" in diameter will be foreseen for venting purposes.

No connection shall be made on mobile parts or on parts to be handled during cleaning operation.

Nozzles to body connections will be reinforced where necessary by means of reinforcing rings or saddles, whatever is the most convenient.

The maximum head losses across the strainer will be:

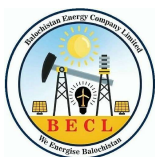
- 1.0 psi with clean baskets at maximum flow rate.

The removable basket shall be perforated steel with 1/8" (3 mm) diameter holes on 3/16" 5 mm centers.

A proper supporting device, skirt or legs will be supplied, welded onto the body of the strainer to enable it to rest on its concrete support foundation.

4.0 **FLUID DATA**

Fluid	Water
Specific Gravity	1
Dynamic Viscosity	1 cp
Sediment Vol. %	-
Sulfur, wt. %	-



SPECIFICATION FOR BASKET STRAINERS

5.0 MATERIALS

The materials used in the strainer production shall be of the best available quality adopted for such a utilization. The physical nature of the strained products shall be taken into account. All metallic parts in contact with the hydrocarbons shall be made of steel. Corrosion allowance of 1.3 mm shall be considered in case of body material.

All parts made of steel will be in low alloyed carbon steel according to ASTM standards, latest edition, or at least equivalent standards previously approved by the Owner.

The carbon equivalent (C.E.) by check analysis shall not exceed 0.36% when calculated on the basis of:

$$CE = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

The strainer baskets will be made of stainless steel according to AISI standards (304 SS).

The O-ring type gasket for cover sealing will be made of neoprene or other approved hydrocarbon resistant material.

The materials of construction as a minimum shall be as follows:

- | | |
|-----------------------|-------------------|
| – flanges | ASTM A-105 |
| – nuts | ASTM A-194 Gr. 2H |
| – bolts | ASTM A-193 Gr. B7 |
| – fittings | ASTM A-234 WCB |
| – pipe | ASTM A-106 Gr. B |
| – structural supports | ASTM A-283 Gr. C |

6.0 INSPECTION AND TESTS

All inspection shall be undertaken by a third party approved by the purchaser. In addition, the Purchaser may appoint its representative or a third party inspector for tests and inspection, which will be carried out by contractor during the production.

6.1 Checking of Dimensions

During shop inspection the dimensions will be checked according to the following requirements:

- 1) Particular attention shall be paid to the parallelism of the external flange faces.

The tolerances shall be:

- flanges up to 10" nominal diameter : 3 mm for 1 meter
- flanges above 10" nominal diameter: 2 mm for 1 meter



SPECIFICATION FOR BASKET STRAINERS

6.2 Tests

The strainer shall be submitted to a hydrostatic test equal to 1.5 times the maximum working pressure. The hydrostatic test pressure shall be maintained for an adequate time to permit a thorough inspection, in any case not less than 30 minutes.

Certified copies of shop tests made on the strainer or its components shall be furnished to the Owner. Owner reserves the right to inspect, at any time, the material and to witness the tests at the Contractor's shop and/or at his sub-Contractor's premises.

All welds will be 100% X-rayed. No heat treatment shall be performed if the thickness of steel plates is greater than 12.7mm. The Contractor shall supply the radiographs inspected and approved by an agreed upon welding inspection organization.

Ultrasonic control shall be applied on welds where X-ray control will not be possible.

7.0 MARKING

A name-plate made of stainless steel shall be fixed in a visible and easily accessible place on the strainer body. This name-plate shall carry:

- the name of the Contractor
- the address of the Contractor
- the serial number of the strainer
- The maximum operating flow in m³/hr.
- The maximum allowable working pressure in Psi.
- the admissible maximum pressure drop at maximum flow
- Basket specification: size of holes or gauge of mesh.

8.0 PAINTING

After hydrostatic tests have been satisfactorily performed and accepted by the Owner, the strainers shall be painted.

9.0 SHIPMENT

All care shall be taken to prevent damage during transportation to the unloading point. The threaded connections shall be plugged by steel plugs.

The flange faces shall be protected by means of a wooden or plywood plates bolted onto the faces.

All machined surfaces shall be properly protected from corrosion by appropriate means easily removable on site.

The water tested material or likely to contain residual water shall be carefully drained and dried so as to avoid damage by freezing during transportation and storage.