

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION		PY 52 284
		TECHNICAL SPECIFICATION FOR		Rev. No. 01
		Y-TYPE STRAINERS FOR FIRE FIGHTING APPLICATIONS		Page 1 of 4

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TECHNICAL SPECIFICATION FOR Y TYPE STRAINER, FOR FIRE FIGHTING APPLICATIONS

1.0 GENERAL

The standard specifies the requirements of 'Y' type strainer, Fabricated body (Flanged Connections as per ANSI B16.5) for various sizes as mentioned in variant table.

2.0 APPLICATION

These strainers are used for carrying water in firefighting applications.

3.0 TECHNICAL REQUIREMENTS

CL NO:	Requirements	Compliance
3.1	Design code & Pressure temperature rating	ASME SEC VIII DIV 1 & ANSI B 16.34, ANSI B16.5 Rating shall be as per Variant Table
3.2	Material	As specified in the TABLE-1
3.3	Construction	Y- Type
3.4	End Connections	As per material description in variant table Flanged: Flat Face (FF) / Raised face (RF)
3.5	Face to Face / End to end dimensions.	ASME B16.10 / Manufacturer's Standard
3.6	Wire mesh (Screen)	a) 30 Mesh size b) Wire dia – 30 SWG <i>(Unless otherwise specified in project specific bid document)</i>
3.7	Free flow area	Four (4) times the pipe flow area <i>(Unless otherwise specified in project specific bid document)</i>
3.8	Perforated sheet (Back up screen)	Sheet thickness, Hole dia & Pitch to be selected by vendor to meet the free flow area requirement
3.9	Screen retainer	Required. Bolted screen retainer with off centered blow down design.
3.10	Maximum allowable pressure drop	1.5 MWC in Clean condition 2.5 MWC at 50% Clogged condition <i>(Unless otherwise specified in project specific bid document)</i>
3.11	Rated flow and maximum flow at the end of the curve	To be furnished by Vendor. Vendor to furnish pressure drop, open area and free flow area calculations (Refer clause 4.2.C)

Note:

For any additional requirements and deviations to this specification and other details like design pressure, design temperature, flow rate, surface preparation and painting etc., project specific bid document PEMC-XXXX provided along with inquiry shall be referred.

Form No:	LAYOUT & PIPING ENGINEERING PROJECT ENGINEERING & SYSTEMS DIVISION	PREPARED	CHECKED	APPROVED	DATE
		AKB	UP/GKC	GS	21.04.20

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TABLE –1

SL NO	PART	MATERIAL
1.	BODY	IS 1239 / IS 2062 Gr B for Sizes up to 150 NB IS 3589 / IS 2062 Gr B for Sizes greater than 150 NB
2.	SCREEN & INTERNALS (INCLUDING SCREEN RETAINER)	SS 316
3.	GASKET	NBR Sheet
4.	COVER	IS 2062 Gr B
5.	BOLTS & NUTS	ASTM A 193 Gr B7 & ASTM A 194 Gr 2H
6.	DRAIN PLUG	ASTM A 105

Note:

1. Cu & Cu Alloys shall not be used for any component.

4.0 TEST & TEST CERTIFICATES

4.1 Body Test:

Unless otherwise specified, the strainer shall be subjected to a hydraulic pressure of

- 30 Kg/cm² (425 PSIG) for #150 FL Body,
- 78 Kg/cm² (1130 PSIG) for #300 FL Body
- No leakage is permitted.

4.2 Test certificates:

5 copies of the following test certificates shall be furnished for review:

- a) Hydraulic test certificates of body shall be provided for 100% of ordered Qty.
- b) Chemical and Mechanical test certificate for components of the strainer body, screen and Cover for each heat/melt.
- c) **Type test certificate for the flow vs pressure drop for each variety of the Strainers for the flow specified. These type test certificates and the Flow vs Pressure drop curves of the strainers submitted by the vendor should have been certified by Govt. approved labs like CWPRS, Pune.**

5.0 GUARANTEE CERTIFICATES

A guarantee certificate for trouble free operating for a period of 12 months from the date of commissioning or 24 months from the date of dispatch shall be submitted.

6.0 DOCUMENTATION

6.1 Along with Quotation: 4 copies each of the following documents shall be submitted along with quotations.

- a) Drawings/leaflets/catalogues for the offered item indicating direction of flow,
- b) binding dimensions, bill of materials with material specification details, hydraulic
- c) test pressure, weight etc.
- d) Pressure drop, flow area & open area Calculations as indicated above in point 3.10.
- e) Quality plan adopted by the supplier during manufacture and inspection/testing.
- f) Any deviation to this standard proposed by the supplier.

Form No:

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BHEL

PE&SD

BHARAT HEAVY ELECTRICALS LIMITED

PROJECT ENGINEERING & SYSTEMS DIVISION

TECHNICAL SPECIFICATION FOR

Y- TYPE STRAINERS FOR FIRE FIGHTING APPLICATIONS

PY 52 284

Rev. No. 01

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6.2

After the award of contract:

a)

All documentations required as applicable and indicated above shall be submitted within 7 days of PO placement.

b)

BHEL will furnish their approvals / comments within 15 days after submission of drawings/ documents.

7.0

CLEANING

Particular care shall be taken to ensure that all foundry sand and loose materials is properly removed by fettling/shot blasting/sand blasting and thoroughly cleaned

8.0

SURFACE PREPARATION & PAINTING

Unless otherwise specified in the project specific bid document, the following shall be followed by default, after the hydraulic testing has been carried out:

a)

Strainer body surface shall be prepared for SA2½ Grade

b)

Internal Paint: 2 coats of Coal tar Epoxy Paint

c)

External Paint: Primer - One coat of epoxy resin based Zinc Phosphate of 30-35 Microns, Finish Paint - 3 coats of epoxy resin based pigmented with titanium dioxide (Shade P.O. Red Colour Shade - RAL 300, Fire Red), 25 microns per each coat.

9.0

PRESERVATION

A suitable temporary rust preventive with minimum life of 1 year shall be applied inside the body in order to prevent corrosion.

10.0

END PROTECTION

Strainer ends shall be protected from external damage and sealed against the ingress of dirt by means of plastic/steel end covers firmly secured.

11.0

PACKING

11.1

The strainers shall be packed separately in wooden cases in order to avoid damage during transit and storage at BHEL. Suitable supporters shall be provided inside the case in order to avoid internal movement. In case of imported consignment, the packing shall be seaworthy, as per the Seaworthy Packing Specification, which shall be provided separately.

11.2

Each packing case must contain 2 copies of the shipping list giving details of all the contents of the cases.

12.0

MARKING

12.1

Body: The body of the strainer shall have the following markings:

a)

PO Number

b)

Nominal size

c)

Pressure rating

d)

Body & Screen material

e)

Suppliers trade mark

f)

Arrow showing direction of flow

g)

Inspector’s identification mark.

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12.2 Packing Case: The following marking shall be done on each packing case.

- Complete address of the consignee and destination as per BHEL purchase order.
- BHEL purchase order No.
- BHEL Standard No.: PY52284
- Number of pieces in each packing case
- Net weight
- Gross weight
- Packing case number and total number of packings
- Arrow indicating top of packing case.

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VARIANT TABLE

VAR	ITEM DESCRIPTION	MATL CODE
01	Y-STRAINER FABRICATED 4" CL150 FF	PY9752284019
02	Y-STRAINER FABRICATED 6" CL150 FF	PY9752284027
03	Y-STRAINER FABRICATED 3" CL150 FF	PY9752284035
04	Y-STRAINER FABRICATED 8" CL150 FF	PY9752284043

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RECORD OF REVISIONS

Rev. No.	Date	Revision Details	Revised	Approved
00	21.04.20	First Issue	GKC	GS
01	02.05.20	Variants 03 and 04 added	AKB	GS