

	<p>(UNDER JURISDICTION OF DHANBAD/JARKHAND COURT ONLY) Bharat Coking Coal Limited (A Subsidiary of Coal India Limited) (A GOVT. OF INDIA UNDERTAKING) 6, Lyons Range, 4th Floor, Purchase division, Kolkata-700001 (West Bengal) OFFICE OF THE CHIEF MANAGER (MM) Phone No. 033-22304975; Fax No. 033-22304928 Web-site No: www.bccl.gov.in</p>
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Under jurisdiction of Dhanbad Court
and Jharkhand High Court only

Supply / Purchase Order

Ref no: KOL/72/CS & NR Valve/MB/2013/05

Date: 17.06.2013

**M/s.Genuine Trade Centre,
109, Netaji Subhas Road,
Kolkata –700001.**

Contact Person: Sri Rajib Jhunjhunwala
Contact Number: 09433219512

BY REGISTERED POST

(Old Vendor Code No: 629037)
(New Vendor Code No: 1/03/M/X/160)

Category: Traders

Sub: Supply of Cast Steel Sluice Valve-100mm & Cast Steel Non-return Valve-150mm.
Ref: BCCL Tender No: Kol/72/CS, NR & CI Foot Valve/MB/03/ 12-13/21 Opened on
15.01.2013 and your offer No.GTC/BCCL/Valve/12-13 dt.12.01.2013 read along
with subsequent Correspondences and your last letter dated 18.04.2013.

Dear Sirs,

With reference to the above, we for and on behalf of BCCL hereby place supply order on you for supply of Cast Steel Sluice Valve-100mm & Cast Steel Non-Return Valve-150mm (**Material Code: 94036180016 & 94036120083**) at the following price, terms and conditions:

1.SCOPE OF SUPPLY

Sl no.	Item	Qty. (Nos)	Basic Rate (in Rs.)	Basic Value
1.	1. Cast Steel Sluice Valve as per Broad Technical specification at Annexure-A enclosed .The surface quality of steel casting shall be as per IS:8092/1992 with latest amendment. Size: 100mm.NB. (Class - 150) Brand: -“SONTOSH”	150	11250.00	Rs.1687500.00
	2. Cast Steel Non-Return Valve as per Broad Technical specification at Annexure-B enclosed .The surface quality of steel casting shall be as per IS:8092/1992 with latest amendment. Size: 150mm.NB. (Class - 300) Brand: -“SONTOSH”	146	17600.00	<u>Rs.2569600.00</u>
				Rs.4257100.00
				Rs. 42571.00
				Rs.4214529.00
				Rs. 84290.58
				Rs. 42988.19
				<u>Rs. 5313.34</u>
				Rs.4347121.11

(Rupees Forty three lakhs forty seven thousand one hundred twenty one & paise Eleven only)

TERMS & CONDITIONS:

1. **Payment Terms:** 100% within 21 days of receipt and acceptance of the materials by the consignee or from the date of receipt of Bills, whichever is later by the consignee.

2. **Prices:** FIRM and FOR destination except Govt. taxes & duties which shall be paid extra as applicable at the time of dispatch subject to documentary evidence, within the specified delivery period.

3. **Excise Duty:** Not applicable.

4. **Central Sales Tax:** CST extra as applicable at the time of supply. Presently @2% against 'C' Form.

5. **DELIVERY SCHEDULE:** -- 50% quantity (of All sizes) to be completed within 3(Three) months or earlier from the date of receipt of supply order and balance 50% quantity (of All Sizes) to be completed within next two months. Earlier delivery is also appreciable.

Delivery schedule shall be reckoned from the 10TH day from the date of order and the date of receipt of materials at our stores shall be treated as the date of delivery.

6. **Security Money:** - You are requested to furnish a sum of Rs.434713.00 by way of Demand Draft payable at Kolkata or through a Bank Guarantee of any schedule Bank drawn in favour of "BHARAT COKING COAL LIMITED" as Security Deposit within 15days which will be refunded after satisfactory completion of the order. No payment shall be made without submission of Security Deposit.

7. **Inspection** – Pre-despatch Inspection shall be carried out by CMPDIL, Ranchi at your Works premises. Inspection Fees @1.0% on FOR destination price and Service Tax @12.36% on inspection charges shall be paid initially by you along with your Inspection Call, which shall be subsequently reimbursed by BCCL along with your supply bills against documentary evidence e.g. money receipt etc. Final inspection shall be carried out at the consignee end after receipt of materials.

8. **Transit Insurance** – Shall be arranged and covered by you for safe arrival of materials to the consignee end at your cost and risk.

9. PENALTY FOR FAILURE TO SUPPLY IN TIME

The delivery of stores stipulated in Purchase order shall be deemed to be of the essence of the contract and delivery of the stores must be completed by the date specified. No materials should be supplied beyond the specified delivery period, unless specific approval has been obtained from the purchaser.

In the event of failure to deliver the stores within the stipulated date/ period in accordance with the samples and/or specification mentioned in the supply order, and in the event of breach of any terms and conditions mentioned in the supply order. Bharat Coking Coal Limited reserves the right:

- a) To recover from successful tenderer, as agreed liquidated damages, a sum not less than 0.5% (half percentage) of the price of the stores which successful tenderer has not been able to supply (for this purpose part of a unit supplied will not be considered) as aforesaid for each week or part of a week during which the delivery of such stores may be in arrears limited to 10%. Where felt necessary the limit of 10% can be increased to 15% at the discretion of Head of the Materials Management Division.
- b) To purchase elsewhere, after due notice to the successful tenderer on the account and at the risk of the defaulting supplier the stores not supplied or others of a similar description without canceling the supply order in respect of consignment not yet due for supply or
- c) To cancel the supply order or a portion thereof, and if so desired to purchase the store at the risk and cost of the defaulting supplier and also
- d) To extend the period of delivery with or without penalty as may be considered fit and proper. The penalty, if imposed shall not be more than the agreed liquidated damages referred to in clause (a) above.
- e) To encash any Bank guarantee which is available for recovery of the penalty or
- f) To forfeit the security deposit full or in part.
- g) Whenever under the contract a sum of money is recoverable from and payable by the supplier, BCCL shall be entitled to recover such sum by appropriating, in part or whole by deducting any sum or which at any time thereafter may be due to the successful tenderer in this or any other contract with Bharat Coking Coal Ltd. or any subsidiary of Coal India Ltd. Should this sum be not sufficient to cover the full amount recoverable, the successful tenderer shall pay BCCL on demand the remaining amount. The supplier shall not be entitled to any gain under this clause.

10. PRICE FALL CLAUSE.

- i) The prices charged for the stores supplied under the contract by the supplier shall in no event exceed the lowest price at which the supplier offer to sell the stores of identical description to any other organization from date of offer till completion of supply under the contract.
- ii) If at any time during the said period the supplier offers lower sale price of such stores to any other organization at a price lower than the price chargeable under this contract, the supplier shall forthwith notify such reduction or sale to the consignee concerned under intimation to CGM (MM), Bharat Coking Coal Limited, Commercial Block, Level –III, Koyla Bhawan, Koyla Nagar, Dhanbad and the price payable under the contract for the stores supplied after the date of coming into force of such reduction or sale, shall stand correspondingly reduced. The above stipulated will not, however apply to exports by the supplier.

11 Submission of Bills-100% value of bill duly stamped, signed & pre-receipted in quadruplicate as per terms of the order should be submitted for payment to the paying authority through consignee.

Bill should be submitted along with delivery challan in original, Consignee note (if any), packing list if any, Guarantee/ Warranty certificate, Hydrostatic Test pressure report for each valve as per clause no.5 of the technical specification, Copy of Inspection Note of CMPDIL, Price Certificate and other relevant documents, as per order.

No payment will be made without submission of security deposit.

12. **Guarantee /Warranty** – Materials supplied should be guaranteed for a period of 12 months from the date of commissioning or 18 months from the date of receipt and acceptance of material at consignee end whichever is earlier against any manufacturing defects / workmanship / inferior quality. Any defect observed on this account shall be attended within 07 days from the date of receipt of report and replace the materials within 30 days free of cost.

13. **PRICE CERTIFICATE**: You should submit a certificate along with bill as stated below “The rates of the stores under this contract are the lowest at which we are selling to any other customer/Govt. Deptt. / Subsidiaries of CIL/ Other PSUs. If the materials are sold at any lower rate than that mentioned in this contract to any other agency , the same will automatically be applied to this contract from that date “

14 **Packing** - Consignment shall be supplied in suitable standard proper packing as per NIT.

15 Force Majeure Clauses –

If the execution of the Contract / Supply Order is delayed beyond the period stipulated in the Contract / Supply Order as a result of hostilities, declaration of embargo or blockade or flood, acts of nature or any other contingency beyond the supplier's control due to act of God, then BCCL may allow such additional time by extending the delivery period as is considered justified by the circumstances of the case and its decision shall be final. In case additional time is granted by BCCL for execution of the Contract/ Supply Order, the Contract/Supply Order shall be read and understood as if it had contained from its inception the delivery date as extended.

a) The successful bidder will advise, in the event of his having to resort to this clause, by a registered letter, duly certified by the local chamber of commerce, or statutory authorities, the beginning and end of the causes of the delay, within 15 days of the occurrence and cession of such force majeure conditions. In the event of delay lasting out of force majeure, BCCL will reserve the right to cancel the contract, and provisions governing termination of contract as stated in the bid documents will apply.

b) For delay arising out of Force majeure, the bidder will not claim the extension in completion date for a period exceeding the period of delay attributable to the causes of force majeure and neither BCCL nor the bidder shall be liable to pay extra cost provided it is mutually established that the force majeure conditions did actually exist.

c) If any of the force majeure conditions exist in the place of operation of bidder even in the time of submission of bid, he will categorically specify them in his bid, and state whether they have been taken in to consideration in their quotation.

16. **Consignee** – Depot Officer, Ekra Central Stores. P.O: - Bansjora, Block-II Area, BCCL, Dhanbad, Jharkhand, India (Phone NO:-0326-2330350)

17. **Paying Authority-** Chief Manager (F) I/C, BCCL, Kolkata.

18 ALL DISPUTES ARE SUBJECT TO DHANBAD COURT AND JHARKHAND HIGH COURT JURISDICTION ONLY.

ALL OTHER TERMS & CONDITIONS AND TECHNICAL SPECIFICATIONS ALONG WITH SCOPE OF SUPPLY WILL STRICTLY BE AS PER OUR NIT.

This contract is concluded with the issuance of this order. We are enclosing 2 copies of the Purchase order, one of which should be returned to us duly stamped and signed. This issues with the approval of the Competent Authority.

Yours faithfully,
For & on behalf of Bharat Coking Coal Ltd.

Chief Manager (MM), Kol.

INDENT REFERENCE

Sr. No	Indent no. And Date	Budget Certification no. & dt.	Indenting Authority
1	MB/03/Kol/2012-13 dt.10.07.2012. Material Group – Pipe and Pipe fittings.	BC No. BCCL/BC/Rev/Other Stores/13-14/CS Valve Non return valve and CI F valve/02 dt.12.06.2013 for Rs.82,48,460.88	CGM (E&M), Kayla Bhavan, Dhanbad.

Copy to:

1. GM (MM) PUR/GM(S), BCCL, Koyla Bhavan, Dhanbad.
2. CGM (E&M), BCCL, Koyla Bhavan, Dhanbad.
3. Chief Manager (F)/I/C, BCCL, Kolkata.
4. Depot Officer, Central Store, Ekra, BCCL, Dhanbad.
5. MM (Tech Cell), MM Div, Koyla Bhavan. Dhanbad.
6. GM (E&M) Inspection, CMPDIL, GONDOWANA PLACE, KANKE ROAD, RANCHI-834008, JHARKHAND
7. M/s. MA Santoshi Engineering Concern, “V” Road, Monsatala (Near 63Q Road), Howrah-711105. This is in reference to your Authorization letter no. MSEC/GTC/BCC/2012 dt.28.12.2012.
8. Master File/Office Copy.

BROAD TECHNICAL SPECIFICATION FOR CS SLUICE VALVE

GENERAL

1. Name & Address of the tenderer: M/s. Genuine Trade Centre,109, Netaji Subhas Road,Kol-700001.
2. Name & Address of the manufacturer: Ma Sontoshi Engineering Concern,V Road,Monsatala,Near 63Q Road,Howrah-711105.

TECHNICAL DETAILS

1. Make, type & model of the valve: 'SONTOSHI' ,Type-Rising,Model-IS:780/1980
2. Class and size for which suitable: 100mm,Class-150
3. M S Pipe size for which suitable for: 100mm
4. Working pressure for which suitable: (Hyd) 100MM
20Kgcm²
5. Designed Pressure: As per Sl.no.4
 - Test Pressure: 100MM
 - Body : 30Kgcm²
 - Seat : 20Kgcm²

MATERIAL SPECIFICATION AND ISS/BS REF. OF MAIN PART

1. Body : ASTM-A216 Gr.WCB.
2. Spindle : SS As per AISI 410
3. Hand Wheel : ASTM A216 WCB
4. Packing : Die Mounted Graphite with end ring.
5. Wedge and body ring : ASTM A216 WCB
6. Bolts & Nuts, etc: ISI Marked IS:1363
7. Other main parts etc : As per IS specification.
8. Dimensions and ISS/BSS to which those conforms: As per IS:780 & IS:1538
9. All major dimensions like;
 - a) Face to Face: 100MM -255+2mm,
 - b) Flange dia & thickness and drilling (No. Of holes X dia): Flange dia-100MM-220mm.,Thickness-100MM -22mm,No.of hole-100MM-8 No.,Dia of hole-100MM-19mm.
10. Hand Wheel dia etc: 100mm – 320mm (± 3mm)
11. Weight of the valve in working condition: As per IS.standard.
12. Scope of supply - Standard IS:780
13. Optional accessories quoted for and price of each (to be separately quoted in price bid): N.A.
14. Details of lubrication arrangement: As per IS standard.
15. Any other technical details/special feature tenderer may like to mention about the valve offered:
 - a) Bonnet : C.S. to ASTM A 216 Gr.WCB.
 - b) Disc : ASTM A 216 Gr.WCB.
 - c) Seat & Seat Ring: SS to 6603 04 Cr.18 Ni.10
 - d) Gland: ASTM A276 Type 410
 - e) Bonnet Bush: ASTM A276 Type 410
 - f) Yoke & Weidge: ASTM A216 WCB
 - g)Gasket : Compressed Asbestose.
 - h) Minimum wall thickness of Shell : 17 mm.

BROAD TECHNICAL SPECIFICATION FOR CS NON-RETURN VALVE

The details are as above except the followings:-

TECHNICAL DETAILS

1. Make, type & model of the valve: 'SONTOSHI' ,Type-Swing,Model-IS:5312 PART-I
2. Class and size for which suitable: 150mm,Class-300
3. M S Pipe size for which suitable for: 150mm
4. Working pressure for which suitable: (Hyd) 150MM-720 lbs.
5. Designed Pressure: As per Sl.no.4
 - Test Pressure: 150mm
 - Body : 75 Kgcm²
 - Seat : 50 Kgcm²

MATERIAL SPECIFICATION AND ISS/BS REF. OF MAIN PART

6. Body : ASTM-A216 Gr.WCB.
7. Valve Seat/Disc: Seat –SS to IS:6603 Gr.04 Cr.18 Ni.10. Disc-ASTM A216 Gr.WCB
8. Cover Bonnet: ASTM A216 WCB.
9. Gasket : Compress Asbestos.
10. Hinge & Hinge Pin: Hinge-ASTM A216 Gr.WCB. Hinge Pin – ASTM A276 Type-410
11. Body Ring : SS to IS:6603 Gr.04 Cr.18 Ni.10
12. Bolts & Nuts, etc: ISI Marked IS:1363
13. Dimensions and ISS/BSS to which those conforms: As per IS:5312 Part-I 1984 .
14. All major dimensions like;
 - a) Face to Face/between the flanges: 150MM – 400mm \pm 3mm,
 - b) Flange dia & thickness and drilling (No. of holes x dia): Flange dia-150MM-285mm.,Thickness-150MM -23mm,No.of hole-150MM-8 No., Drilling as per IS:1538 Part-IV & V
 - c) Other major dimensions : As per ISS.
15. Sectional view and nomenclature of main parts: As enclosed.
16. Weight of the valve in working condition: As per IS.standard
17. Scope of supply - Standard IS:5312
18. Details of lubrication arrangement: As per IS standard.
19. Any other technical details/special feature tenderer may like to mention about the valve offered:
 - a) Split Pin & Washers: SS
 - b) Minimum Wall Thickness of Shell: 17 mm.
 - c) Valves will be with by-pass arrangement.

ANNEXURE-‘A’

BROAD TECHNICAL SPECIFICATION FOR SLUICE VALVE

This specification broadly covers design, manufacture and supply of Cast steel Sluice Valve to be used for mines dewatering operation, water supply system and other similar application in coalfields Area in BCCL.

1. SERVICE CONDITION:

The valve offered shall be compact and of robust construction to withstand the service conditions. It shall be capable of performing satisfactory service in heavy dust laden atmosphere; ambient temperature of 45 degree C and relative humidity of 90% and other service conditions prevalent in coalfield Area.

2. DESIGN, CONSTRUCTIONAL, FEATURES AND MATERIAL SPECIFICATION.

- a. The Valve shall conform relevant I.S. specification/B.S. Specification/ASTM.
- b. The material of valve parts shall be so chosen so as to be compatible and match tribologically to provide prolonged trouble free service life. All the parts shall be manufactured to standard manufacturing practices to ensure interchangeability of the parts (Annex-III). All the parts shall strictly conform to relevant IS Specification/B.S. Specification/ASTM, whichever applicable.
- c. The valve design shall be such that it provides quick operation and requires very less maintenance. Taper plug valves design incorporating suitable and proven lubricating system shall be preferred. The design of the valve shall be such that it eliminates possibilities of corrosion and erosion at all seating surfaces and shall provide leak proof tightness. It shall provide least resistance to flow and pressure loss shall be minimum.
- d. All casting shall be clean and sound without any defects that may impair their service. No plugging, welding or repairing of such defects is allowed.

e. DIMENSIONS:

The valves with flanges on both sides, shall be to standard dimensions and shall conform to relevant ISS/BSS/ASTM.

- f. The flanges dia and thickness and dimensions of drilling shall be in accordance with Para 6.3 of I.S.780-1980 & IS:1538 (specification for sluice valves for water works purpose –50 to 300 mm size) and shall suit the standard sizes drilled (to same specification) flanges of the corresponding/matching pipe sizes of the .M S .Pipe ranges(to relevant ISS) where these valves are to be used.

3. Valve sizes , Class/Type and nominal pressure:

- a. Valve Sizes:
- b. The sluice valves covered to this specification shall be of the following sizes:-
100mm(4")
- c. Size of the valve refers to the nominal bore of the waterway . The actual bore at any point shall not be less than that of nominal size of the valve indicate in Para –b.
- d. The class of the valve shall be as per relevant B.S. Specification Corresponding pressure ratings shall be as follows:-

<u>Class</u>	<u>Pressure rating</u>
150	20+1.0 Kg./Cm .sq(275 lbs/sq.”)

- e. Pressure rating indicated above means maximum working pressure of the valve.

- f. All the parts of the valve shall be designed so as to withstand the test pressure indicated herein the specification.
- g. The tenderer shall offer for the following class of valve for the sizes indicated against each unless otherwise specifically mentioned:

<u>Class</u>	<u>For valve sizes to be offered</u>
150	Up to and including 100mm.(4") dia

- h. Any specific requirement not covered above shall be indicated separately at the time of tendering.

The valve shall show no sign of leakage under these tests.

4. HAND WHEEL:

- a. Hand Wheel shall be a finished and shall have on the upper side of the rim. ,the words 'OPEN 'and 'SHUT' with direction arrow (clockwise). The letters and arrow shall be cast in recess so that their surfaces shall be level with the surface of the hand wheel rim.
- b. The hand wheel shall be to standard size as detailed in relevant I.S
.Specification/BSS/ASTM specification for the size of the valve offered

5. TESTING:

All the valves shall be subjected to hydrostatic tests and other tests specified in the relevant ISS/BSS/ASTM and to the test pressure indicated below :-

<u>Class</u>	<u>Hydrostatic Test Pressur</u>	
	<u>Body</u>	<u>Seat</u>
150	1.5 times the rated pressure (Para-g)	Higher than the rated pressure (Para-g)

The valves shall show no sign of leakage under these tests.

- a. The valve parts like stem shall be subjected to flow detection test as per the standard testing practices and in accordance with the sampling procedures laid down in relevant ISS/BSS.

6. MANUFACTURER'S CERTIFICATE:

The manufacturers shall supply, free of cost ,a certificate stating that each valve supplied has been subjected to all the tests laid down in this specification and relevant ISS and BSS specifications and conform in all respects to the requirements therein .

7. MARKING:

The following information shall be a on each valve body in raised letters, as per the standard practices: -

- Manufacturer's name or Trade Mark.
- The class of valves.
- Size of the valves.
- Nominal pressure (Max. working pressure) for which it is suitable for.

7.1. MOC & Dimensions as per Annexure-III.

8. PACKING AND STORES;

a. **PACKING;**

All valves shall be supplied with the wedge closed. Bright parts shall be protected against rust. Valves of small diameter may be packed in wooden cases . Valves with smooth finished flanged joint faces shall be suitably protected against damage. Parts liable to injury in transit shall be wrapped with wood wool or similar material as a protection, Hand wheels of valves forwarded loose shall be removed before despatch.

b. **STORAGE;** Valves shall be stored in covered stores away from dirt.

9. GUARANTEE;

The tenderer/manufacturer shall, stand guarantee for the material, the design and the operation of the valves offered and covered under the order to the extent that if any defects chargeable to faulty workmanship ,design or material are found in the valve within a period of 12 months from the date of installation or 18 months from the date of supply, whichever is earlier, the tenderer shall arrange free of cost replacement.

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ANNEXURE-III

MOC & BROAD DIMENSIONS OF THE COMPONENT FOR 100MM SIZE SLUICE VALVE

MOC

1. Body	-	ASTM A 216 Gr.WCB.
2. Bonnet	-	ASTM A 216 Gr. WCB.
3. Stem	-	ASTM A182 Gr. F6a/AISI 410.
4. Disc	-	ASTM A 216 Gr. WCB + 13% Cr.
5. Seat Ring	-	ASTM A105 + Stellite, SS6603,04 Cr.18 Ni10.
6. Gland	-	ASTM A276 Type 410.
7. Bonnet Bush	-	ASTM A 276 Type 410.
8. Yoke	-	ASTM A216 WCB.
9. Wedge	-	ASTM A216 WCB.
10.Hand Wheel	-	A216 WCB/IS:1865 Gr.SG400/15.
11.Nut & Bolt	-	ISI Marked IS: 1363.
12.Gland Packing	-	Die mounted graphite with end ring.
13.Gasket	-	SS316/Compressed Asbestos.
14. Minimum wall thickness of Shell.	-	17 mm.
15. Weight of the dry Valve	-	100mm (#150) – 65-70 Kg.

IMPORTANT NOTE: -

- (1) Hydrostatic Test pressure report for each valve as per clause no.5 of the specification shall be submitted with the consignment.
- (2) BCCL may get few valves tested as per the specifications, if felt necessary, at any Govt. test House, to check the conformity of the test report.

ANNEXURE-‘B’

BROAD TECHNICAL SPECIFICATION FOR SWING CHECK TYPE NONRETURN VALVE

This specification broadly covers design, manufacture and supply of Cast steel both flanged reflux/Non Return Valve of single door swing check type to be used for mines dewatering operation, water supply system and other similar application in coalfields Area in BCCL.

1. SERVICE CONDITION:

The valve offered shall be compact and of robust construction to withstand the service conditions. It shall be capable of performing satisfactory service in heavy dust laden atmosphere; ambient temperature of 45 degree C and relative humidity of 98% and other service conditions prevalent in coalfield Area.

2. DESIGN, CONSTRUCTIONAL, FEATURES AND MATERIAL SPECIFICATION.

- a. The Valve shall conform relevant I.S. specification/B.S.Specification/ASTM.
- b. The material of valve parts shall be so chosen so as to be compatible and match tribologically to provide prolonged trouble free service life and shall require very less maintenance. All the parts shall be manufactured to standard manufacturing practices to ensure interchangeability of the parts. All the parts shall strictly conform to relevant IS Specification/B.S.Specification/ASTM, whichever applicable (Annx-IV).
- c. The valve design shall be such that it provides quick operation and requires very less maintenance. The design of the valve shall be such that it eliminates possibilities of corrosion and erosion at all seating surfaces and shall provide leak proof tightness. It shall give minimum of turbulence and provide least resistance to flow and pressure loss shall be minimum.
- d. All casting shall be clean and sound without any defects that may impair their service. No plugging, welding or repairing of such defects is allowed.
- e. The dimensions, design and shapes of the body, door, cover, etc. shall be suitably selected to ensure that area of flow passage at any cross section of the valve is not less than area of the nominal bore of the valve.
- f. The nonreturn valve offered shall be of single door pattern type, with inclined seating & side by-pass arrangement.
- g. The design & the hinges, hinge pin, door suspension pin, etc. shall be suitable to ensure free swinging of the door in close position of the valve, the door face shall have close race contact with body ring.
- h. The design of doors & hinge shall be suitable so as to withstand satisfactory the repeated impacts likely to occur during service.
- i. The design of valves used in vertical pipe lines shall be such that in the working position, the valve positively close when the flow in the pipe comes to a stop.
- j. Each valve shall carry an arrow very prominently to indicate the direction of flow. The arrow shall be cast integrally on the body of the valve.
- k. The arrow shall be located on the left hand side of the observer while he faces in the direction of flow.
- l. The by-pass arrangement conforming to size & shape and as specified in the relevant ISS/BSS shall be located on the right hand side of the observer when facing in the direction of flow.

3. **DIMENSIONS:**

- a. The valves with flanges on both sides, shall be to standard dimensions and shall conform to relevant ISS/BSS.
- b) The flanges and dimensions of drilling shall be in accordance with Para 5.10.1 of I.S:5312- (Part-I)-1969 “specification for swing check type reflux(Non Return Valves) single door pattern” and shall suit the standard sizes drilled (to same specification) flanges of the corresponding/matching pipe sizes of the M S. Pipe ranges (to relevant ISS) where these valves are to be used.

4. **Valve sizes , Class/Type and nominal pressure:**

- a. Valve Sizes:
- b. The valve shall be of the following nominal size : 150mm.
- c. The nominal size shall refer to the nominal bore of the water ways. The actual bore at any point shall not be less than the nominal size given in b.
- d. The class of the valve offered shall be as per relevant B.S. Specification. Corresponding pressure rating shall be as follows:-

<u>Class</u>	<u>Pressure rating</u>
300	50±1.0 Kg/Cm .sq.(720 lbs/sq.”)

- e .Pressure rating indicated above means maximum working pressure of the valve.
- f .All the parts of the valve shall be designed so as to withstand the test pressure indicated herein the specification.
- g. The tenderer shall offer for the following class of valve for the sizes indicated against each unless otherwise specifically mentioned:

<u>Class</u>	<u>For valve sizes to be offered</u>
300	125mm(5”) dia and above.

- h. Any specific requirement not covered above shall be indicated separately at the time of tendering.

5. **TESTING:**

- a. All the valves shall be subjected to hydrostatic tests and other tests specified in the relevant ISS/BSS and to the test pressure indicated below :-

<u>Class</u>	<u>Hydrostatic Test Pressure</u>	
	<u>Body</u>	<u>Seat</u>
300	Minimum Test pressure	Minimum test pressure shall
	Shall be 1.5 times the	be equal/ higher of the pressure
	Pressure rating of the valve	rating of the valve.

- b. The valves shall be show no sign of leakage under these tests.

6. **MANUFACTURER’S CERTIFICATE;**

The manufacturers shall supply, free of cost ,a certificate stating that each valve supplied has been subjected to all the tests laid down in this specification and relevant ISS and BSS specifications and confirm in all respects to the requirements therein .

7. MARKING;

The following information shall be cast on each valve body in raised letters, as per the standard practices: -

- i. Manufacturer's name or Trade Mark.
- ii. The class of valves and nominal pressure
- iii. Size of the valves.

8. PACKING AND STORES;

a. **PACKING;**

Bright parts shall be protected against rust .Valves of small diameter may be packed in wooden cases . Valves with smooth finished flanged joint faces shall be suitably protected against damage. Parts liable to injury in transit shall be wrapped with wood wool or similar material as a protection.

8.1. MOC & Broad dimensions as per Annexure –IV.

- b. **STORAGE;** Valves shall be stored in covered stores away from dirt.

9. GUARANTEE;

The tenderer/manufacturer shall, stand guarantee for the material, the design and the operation of the valves offered and covered under the order to the extent that if any defects chargeable to faulty work man ship ,design or material are found in the valve within a period of 12 months from the date of installation or 18 months from the date of supply, whichever is earlier, the tenderer shall arrange free of cost replacement.

ANNEXURE-IV

**MOC & BROAD DIMENSIONS OF THE COMPONENT FOR 150MM SIZE NON-
RETURN VALVE**

MOC

- | | | |
|---|---|--|
| 1. Body | - | ASTM A 216 Gr.WCB. |
| 2. Seat Ring | - | ASTM A105 + Stellite, SS6603, 04 Cr.18 Ni10. |
| 3. Bonnet | - | ASTM A 216 Gr. WCB. |
| 4. Disc | - | ASTM A 216 Gr. WCB + 13% Cr. |
| 5. Hinge Pin | - | ASTM A 276 Type 410. |
| 6. Split Pin & Washer | - | SS. |
| 7. Hinge | - | ASTM A 216 Gr. WCB. |
| 8. Gasket | - | SS316/Compressed Asbestos. |
| 9. Cover | - | ASTM A216 Gr. WCB. |
| 10.Nut & Bolt | - | ISI Marked IS: 1363. |
| 11. Minimum Wall
Thickness of. Shell | - | 17 mm. |
| 12. Weight of the dry valve | - | 150mm (#300) – 105-110 Kg. |

IMPORTANT NOTE: -

- (1) Hydrostatic Test pressure report for each valve as per clause no.5 of the specification shall be submitted with the consignment.
- (2) BCCL may get few valves tested as per the specification, if felt necessary, at any Govt. test House, to check the conformity of the test report.

