 JSC140/M2053	BHARAT HEAVY ELECTRICALS LTD. (A GOVT. OF INDIA UNDERTAKING) P.O BHEL Jhansi - 284120, INDIA Tel.:0510-277001/2412260 Website : jhs.bhel.com	PURCHASE ENQUIRY	
	ENQ NO/DT: E2539001 15/09/23 REV NO/DT: 0 15/09/23	PAGE 1 6	

	PLEASE SEND YOUR BEST QUOTATON AS PER TERMS & CONDITIONS AND REMARK MENTIONED UNDERNEATH.		
	Enq Due on:	29-09-23 FRIDAY	
	Close at:	13:15 Open at:14:00	
	Matcat:	251006 Flex.Separator	
	Validity:	120 days from Technical bid opening date	
	IEM:		
	TOP:	See Special Remarks	
REQUIRED:	RA:BHEL reserves the right to conduct RA		
	Est. Value:	Item wise	
	Bid Type:	TWO BID	Delivery:FOR Jhansi
	Tot Item:	4	E-Proc: Yes

ITEM NO : 1	PSL QTY/UM: 60.00 NO
MATL CODE : TR171611A692	PO QTY /UM: 30000.00 CM
DESTINATION: JS	

DESCRIPTION	DELIVERY	QUANTITY (PSL UM)
FLEXIBLE SEPARATOR FOR 1300 DIA CONSERVATOR AS PER DRG.NO.TR24038A AND TR10150A REV-3A SHEET 1 TO 10, W=2082mm L=2000mm to 8000mm.	FEB-24	60.00

ITEM NO : 2	PSL QTY/UM: 60.00 NO
MATL CODE : TR171611A693	PO QTY /UM: 30000.00 CM
DESTINATION: JS	

DESCRIPTION	DELIVERY	QUANTITY (PSL UM)
FLEXIBLE SEPARATOR FOR 1000 DIA CONSERVATOR AS PER DRG.TR24038A & TR10150A REV-3A SHEET 1 TO 10 W=1610mm L=1100MM TO 7000mm	FEB-24	60.00

ITEM NO : 3	PSL QTY/UM: 5.00 NO
MATL CODE : TR171611A694	PO QTY /UM: 1500.00 CM
DESTINATION: JS	

DESCRIPTION	DELIVERY	QUANTITY (PSL UM)
FLEXIBLE SEPARATOR FOR 750 DIA CONSERVATOR AS PER DRG.TR24038A & TR10150A REV-3A SHEET 1 TO 10 W=1218mm L=1100mm to 5000mm	FEB-24	5.00

ITEM NO : 4	PSL QTY/UM: 5.00 NO
MATL CODE : TR171611A695	PO QTY /UM: 1500.00 CM
DESTINATION: JS	

DESCRIPTION	DELIVERY	QUANTITY (PSL UM)
FLEXIBLE SEPARATOR FOR 800 DIA CONSERVATOR AS PER DRG.NO.TR24038A & TR10150A REV-3A SHEET 1 TO 10 W=1297mm l=1100mm to 5000mm.	FEB-24	5.00

SPECIAL REMARKS:
 1-THIS ENQUIRY IS BEING ISSUED TO ENTER IN TO FRAMEWORK AGREEMENT/ RAT ECONTRACT FOR 1(ONE) YEAR AND 03 MONTHS THERE AFTER FOR SUPPLY OF MATE



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ENQ NO/DT: **E2539001** 15/09/23
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RIAL. THEREFORE ORDERING SHALL BE DONE PROGRESSIVELY AS PER OUR REQUIREMENT.

R/C MAY BE EXTENDED AS PER BHEL REQUIREMENT FOR ORDERING ON MUTUAL CONSENT BASIS. THE QUOTED RATES SHALL REMAIN VALID THROUGHOUT THE VALIDITY OF R/C

2-E-ENQUIRY ON BHEL NIC PORTAL IS BEING FLOATED IN "TWO BID" SYSTEMS.

Please upload your best quotation/ offer on <https://eprocurebhel.co.in> for the requirement strictly as per schedule of price format before due date & time as mentioned in Purchase Enquiry.

ONLY THE BID SUBMITTED ON BHEL EPROCUREMENT PORTAL (NIC PORTAL) <https://eprocurebhel.co.in> WILL BE ENTERTAINED. BID SUBMITTED IN ANY OTHER MANNER LIKE DAK, E-MAIL ETC WILL NOT BE ENTERTAINED.

Price bid :- Bidders have to quote their rate in as per attached Price BOQ format only. Price bid form are to be filled in e-procurement module using Class-III digital signature. Both Part-I (Technical cum Commercial bid) & Part -II (Price bid as per uploaded Price BOQ formats) of the offer shall be duly filled sealed and signed copy to be uploaded by bidders at e-procurement site only.

-Please note that Part Supplies offered for tender BOQ shall disqualify the bidders offer.

-Documents and Credential as per Technical & Financial PQR, Techno Commercial Bids and Price Bids should be uploaded on the e-procurement portal.

-Bidders to ensure that Third party/customer issued certificates being submitted as proof of PQR qualification should have verifiable details of document/certificate issuing authority such as name & designation of Issuing Authority and its organisation contact number and email Id etc. In case the same found not available, Purchaser has right to reject such document from evaluation.

3- ALL THE POINTS MENTIONED IN NIT ANNEXURE-I IS APPLICABLE. PLEASE FILL THE ANNEXURE-I IN COMPLETE MANNER AND SUBMIT IT WITH YOUR SIGN AND SEAL. SUPPLIER SHOULD ALSO SUBMIT COMPLETELY FILLED TENDER DOCUMENT LIKE ANNEXURE-III, PQR ANNEXURE-IV & V, BLANK PRICE BID ETC IN TECHNO COMMERCIAL BID (TENDER PART-I) ALONG WITH REQUIRED SUPPORTING DOCUMENTS.

PRICE BID (BoQ) to be uploaded as (TENDER PART-II).

4- SUPPLIERS HAVE TO QUOTE THE RATES ON F.O.R. BHEL JHANSI BASIS, IN WHICH FREIGHT AND INSURANCE WILL BE ON SUPPLIERS ACCOUNT. EXTRA CHARGES LIKE PACKING, FORWARDING, FREIGHT, INSURANCE ETC. SHALL NOT BE PAYABLE. KINDLY QUOTE BASIC PRICE CONSIDERING ALL CHARGES. GST AS APPLICABLE AT TIME OF DISPATCH SHALL BE PAYABLE EXTRA ONLY. CHARGES QUOTED SEPARATELY IN THE DOCUMENTS ATTACHED BY SUPPLIER SHALL NOT BE CONSIDERED.

5. QUANTITY OF INDIVIDUAL ITEM GIVEN IN ENQUIRY IS INDICATIVE ONLY. IT MAY VARY IN +/-30%. THIS QUANTITY AND VARIATION +/-30% IS FOR EVALUATION OF VALUE OF RC. DURING EXECUTION OF RC AWARDED TO A VENDOR QUANTITY OF INDIVIDUAL ALLOTTED ITEM MAY VARY IN ANY RATIO BUT IT IS LIMITED TO TOTAL VALUE CALCULATED ON THE BASIS OF QUANTITY OF INDIVIDUAL ITEM AWARDED TO VENDOR LIMITED TO +/-30% OF THE VALUE OF RC.

6. Due to large quantity requirement we may finalize rate contract on two sources for supply (distribution shall be 70% to L1 and 30% to counter offer accepting supplier). Depending on the no. of techno-commercially acceptable offers received and acceptance of vendor on L1 rates, counter offer shall be sequentially given to L2, L3 and other vendors till we get required no. of vendors. Final ordering will be done on L1 rates. If we get two techno-commercially clear offers or no acceptance of counter offer ordering for full qty (100%) shall be done on L1 suppliers.



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7. REVERSE AUCTION SHALL BE KEPT FOR FINALIZATION OF RC.
- 8- DRG.TR24038A & TR10150A ARE ENCLOSED.
- 9- DRAWING & DIMENSIONS GIVEN IN DESCRIPTION OF ITEMS ARE FOR REFERENCE PURPOSE. ACTUAL DRGS & DIMNS WILL BE RELEASED WITH PO.
- 10-INSPECTION BY BHEL/BHEL NOMINATED AGENCY. .
- 11-TEST CERTIFICATE/GUARANTEE CERTIFICATE AS PER DRG./SPECIFICATION ARE REQD IN TRIPLICATE ALONG WITH SUPPLY.
- 12-MINIMUM MONTHLY CAPACITY RESERVED FOR BHEL JHANSI SHALL BE 10 NOS.
- 13-SUPPLIER TO QUOTE IN "UNIT RATE/CENTIMETER LENGTH OF FLEXIBLE SEPARATORS"
- 14-FORMULA FOR RATE CALCULATION WILL BE AS FOLLOWS-

RATE OF FLEXIBLES SEPARATOR IN RS.
=(LENGTH OF FLEXIBLE SEPARATOR IN CM.) X (UNIT RATE/CM.LENGTH OF FLEXIBLE SEPARATORS)

- 15-THE BIDDER IS INFORMED THAT THE GENERAL TERMS & CONDITIONS OF ENQUIRY WHICH ARE UPLOAD AT:BHEL Jhansi Supplier information Portal
====>Terms and condition====> Enquiry
On line Link address of GENERAL TERMS & CONDITIONS of Enquiry:-
https://jhs.bhel.com/apps/sip/enq_terms/enq_tems_current.pdf,
ARE TO BE READ BY THE BIDDER BEFORE SUBMITTING QUOTE IN THE ENQUIRY.
BHEL SHALL CONSTRUCT THE PARTICIPATION BY THE BIDDER IN THE ENQUIRY AS ACCEPTANCE TO THE GENERAL TERMS & CONDITIONS OF ENQUIRY.

If you are not in a position to quote due to any reason, you must send regret letter titled enquiry no. etc,failing which you may not be considered for sending future enquiries.

In case the bidder has not submitted PAN No, TIN No. and E-mail ID, the bidder has to submit the same along with the copy of PAN No and TIN No. Else his offer will be liable to be rejected.

If you are not in a position to quote due to any reason, you must send regret letter titled enquiry no. etc,failing which you may not be considered for sending future enquiries.

ENCLOSERS:



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ENQ NO/DT: E2539001 15/09/23
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FOR AND ON BEHALF OF
BHARAT HEAVY ELECTRICALS LTD

AKHILESH PANDEY
DY MANAGER (TRFR MM)
Email:-akhilesh.pandey@bhel.in

* * * * * E N D O F P U R C H A S E E N Q U I R Y * * * * *

NOTE :

- * THE BIDDER IS INFORMED THAT THE GENERAL TERMS & CONDITIONS OF ENQUIRY (JHS 2055A Rev 03) WHICH ARE UPLOADED AT <https://jhs.bhel.com/apps/sip/index.php> AT (TERMS & CONDITION -> FOR ENQUIRY) LINK, ARE TO BE READ BY THE BIDDER BEFORE SUBMITTING QUOTE IN THE ENQUIRY. BHEL SHALL CONSTRUCT THE PARTICIPATION BY THE BIDDER IN ENQUIRY AS ACCEPTANCE TO THE GENERAL TERMS AND CONDITIONS OF ENQUIRY.
- * SUPPLIERS ARE REQUESTED TO INFORM US WITH VALID CERTIFICATE, IF THEY ARE REGISTERED UNDER MSMED ACT'2006. (APPLICABLE FOR INDIAN SUPPLIERS ONLY).
- * FOR SUPPLIERS SUPPLYING FROM OUTSIDE THE LOCAL AREA OF BHEL JHANSI, ENTRY TAX WILL BE APPLICABLE. SUPPLIERS SHOULD NECESSARILY INDICATE RATE OF ENTRY TAX SEPARATELY WHEREVER APPLICABLE. THEY SHOULD ALSO MENTION THE ENTRY TAX CHARGED SEPARATELY IN THE INVOICE.
- * FOR SUPPLIERS SUPPLYING FROM OUTSIDE UP, IN CASE THE OFFER IS SILENT ON ENTRY TAX, IT SHALL BE LOADED SUITABLY WITH THE APPLICABLE RATES
- * IN CASE IF THERE IS ANY DIFFERENCE BETWEEN THE 'SPECIAL REMARKS/ANNEXURES' OF THE ENQUIRY AND THE PREPRINTED TERMS & CONDITIONS (REF JSC140/M2053), THE REQUIREMENT GIVEN IN REMARKS WILL PREVAIL.
- * Reference Sl. No. 2(B) of General Terms and Conditions regarding option for offer submission through Email addressed to tenderbox.jhs@bhel.in , please note that the maximum mail size including attachments should not exceed 15 MB , otherwise the offer shall not be delivered due to size limitation and bidder sending mail attachments more than 15 MB will have no claim whatsoever on the subject tender . Also due to any technical snag , if offer has not reached tenderbox.jhs@bhel.in , it will be bidder's sole responsibility to ensure offer submission through alternate routes before the due date and time .BHEL will not entertain any such claim for non-receipt of offer on time .



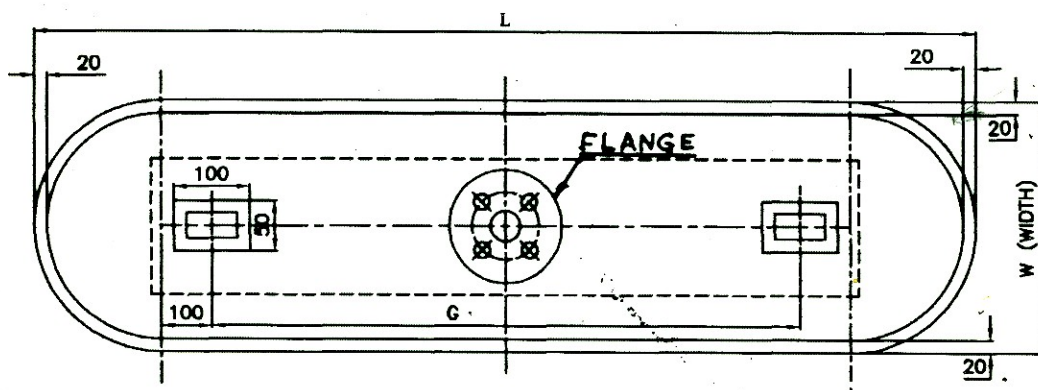
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TR 24038 A

1 पृष्ठों में 1

PAGE 1 OF 1

शीर्षक :
TITLE : FLEXIBLE SEPARATOR FOR ATMOSEAL TYPE CONSERVATOR

$$W(\text{WIDTH}) = \pi/2 (\text{CONSERVATOR DIA}) + 40$$

$$L(\text{LENGTH}) = (\text{CONSERVATOR LENGTH} - \text{DIA OF CONSERVATOR}) + \text{WIDTH OF FLEXIBLE SEPARATOR}$$

$$G = (\text{CONSERVATOR LENGTH} - \text{DIA OF CONSERVATOR} - 200)$$

ITEM NO.	STYLE NO. OF FLEXIBLE SEPARATOR	CONSERVATOR SIZE	W	L	G	REMARKS
01		Ø 800 X LENGTH	1297			CALL DIMN. L & G ON INDENT
02	BF9026040173 ST 604217	Ø 1000 X 4400	1610	5010	3200	
03		Ø 1300 X LENGTH	2082			CALL DIMN. L & G ON INDENT
04						

NOTES:-

FLEXIBLE SEPRATOR SHALL MEET THE SPECIFICATION REQUIREMENT OF TR 10150A.

DRG NO WAS TR 20038A

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APPROVED: Sanjay Pankaj

जारी किया : ISSUED :

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तैयार किया / PREPD.

sd / D.T.K.

दिनांक DATE :

05/12/16

TITLE : FLEXIBLE SEPARATOR (AIR CELL)

1.CONSTRUCTION

POLYIMIDE NYLON FABRIC COATED ON BOTH SIDES WITH SYNTHETIC RUBBER AND MEETING THE COMPLETE REQUIREMENT OF THIS SPECIFICATION SHALL BE USED FOR FABRICATION OF FLEXIBLE SEPARATORS. CONSTRUCTION OF THE SEPARATOR SHALL BE AS SHOWN IN FIGURE-1. ADHESIVES USED SHALL BE COMPATIBLE WITH AIR AND TRANSFORMER OIL AT 100 °C. JOINTS SHALL BE PROPERLY DESIGNED & SUITABLY VALCANIZED. FURTHER, SEPARATOR SHALL BE REINFORCED AT BOTTOM FACE AS SHOWN IN FIGURE 1. TO AVOID DAMAGE DUE TO CONTACT WITH MAGNETIC OIL GAUGE FLOAT. THERE SHALL NOT BE ANY PATCH WORK. ADAPTOR USED SHALL BE MADE FROM STRUCTURAL STEEL CONFORMING TO Fe-410-S TO IS:226. ADAPTOR AND BOLTS SHALL BE CADMIUM PLATED AND PASSIVATED (CD-8 OF IS:1572) OR ZINC PLATED AND PASSIVATED.(Fe/Zn 12.5 OF IS:1573).. THE WIDTH OF THE OVERLAP AT THE JOINTS TO BE SUCH THAT THERE IS NO POSSIBILITY OF JOINT OPENING AND LEAKAGE AND SHOULD BE MINIMUM 75 mm. THE WIDTH OF SIDE JOINTS SHALL BE AS IN FIGURE 1.

2. FUNCTIONAL REQUIREMENT

- (I) FLEXIBLE SEPARATOR SHALL BE SUITABLE FOR CONTINUOUS USE IN TRANSFORMER OIL AT -20°C TO 100°C
- (II) INSIDE COATING SHALL BE VERY GOOD WEATHER AND OZONE RESISTANT, OUTSIDE COATING SHALL BE TRANSFORMER OIL RESISTANT. COMPOUNDS USED FOR COATING SHALL NOT DETERIORATE IN SERVICE

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TITLE : FLEXIBLE SEPARATOR (AIR CELL)

(III) SEPARATOR SHALL BE SUITABLE FOR INFLATION AND DEFLATION

DUE TO CHANGE IN OIL VOLUME IN THE CONSERVATOR. FURTHER, SEPARATOR SHALL BE DESIGNED TO COLLAPSE SLOWLY AS OIL LEVEL RISES IN THE CONSERVATOR.

(IV) SEPARATOR SHALL NOT DEVELOP CRACKS AT -20°C.

(V) FIXATION LUGS AND ADAPTER SHALL BE PROVIDED ON THE SEPARATOR AS SHOWN IN FIGURE-1.

3. MATERIALS**3.1 BASIC FABRIC**

BASIC FABRIC USED FOR MAKING COATED FABRIC FOR MANUFACTURING FLEXIBLE SEPARATORS SHALL MEET THE FOLLOWING REQUIREMENT
MATERIAL - POLYAMIDE 6/NYLON 6, PLAIN WEAVE FABRIC OF SUITABLE CONSTRUCTION.

3.2 COATING COMPOUNDS

THE RUBBER COMPOUNDS USED FOR INSIDE AND OUTSIDE COATING ON THE POLYAMIDE/NYLON FABRIC SHALL MEET THE REQUIREMENT AS GIVEN BELOW-

3.2.1. OIL SIDE COATING

MATERIAL ACRYLONITRILE BUTADINE RUBBER (NBR) COMPOUND BA - 70 OF BS BS: 2751.

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APPROVED: SUBS. SNA

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TITLE : FLEXIBLE SEPARATOR (AIR CELL)

MATERIAL - COMPOUND FOR OIL SIDE COATING BA -70 OF BS: 2751

SL. NO.	PROPERTY	REQUIREMENT	TYPE OF TEST	TEST METHOD
(i)	HARDNESS	$\begin{matrix} +5 \\ 65 \\ -4 \end{matrix}$ IRHD Shore A.	T	IS: 3400 (Pt 2)
(ii)	SPECIFIC GRAVITY	1.33 \pm 0.04	T	METHOD B OF IS: 3400 (Pt-9)
(iii)	TENSILE STRENGTH	12.6 MPa MIN.	T	IS:3400(Pt-2)
(iv)	ELONGATION AT BREAK	250% MIN..	T	IS:3400 (Pt-1)
(v)	COMPRESSION SET $\begin{matrix} +0 \\ 24 \\ -2 \end{matrix}$ HRS. AT 70°C	20 % MAX.	T1	IS:3400 (Pt-10) LARGE TYPE TEST SPECIMEN.
(vi)	ADHESION TO AND CORROSION OF METALS FOR 168HRS AT 70°C	THERE SHALL BE NO CORROSION OR PITTING OF THE METALS. COMPOUND SHALL NOT ADHERE TO THE METAL OR SHOW ANY SIGN OF LIQUID EXTRACTION	T1	BS 903 PT A 37 METHOD A, USING CARBON STEEL
(vii)	ADHESION TO POLYIMIDE 6 FABRIC	45 N / 2.5 cm WIDTH OF STRIP (MIN.)	T1	TEST SPECIMEN TO IS:3400 (Pt-5) TESTING BY MANUFACTURER'S GLUE METHOD
(viii)	RESISTANCE TO HEAT AGEING FOR 168 HRS AT 100°C IN AIR a) CHANGE IN HARDNESS b) CHANGE IN TENSILE STRENGTH c) CHANGE IN ELONGATION AT BREAK	$\begin{matrix} +10\% \text{ MAX.} \\ -25\% \text{ MAX.} \\ -40\% \text{ MAX.} \end{matrix}$	T1	IS:3400 (Pt-4) IS: 3400 (Pt-2) IS: 3400 (Pt-1) IS: 3400 (Pt-1)

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TITLE : FLEXIBLE SEPARATOR (AIR CELL)

(ix)	AGEING IN TRANSFORMER OIL TO IS:335 AT 100°C FOR 168 HRS CHANGE IN PROPERTIES OF RUBBER COMPOUND AFTER AGEING.		T1	IS : 3400 (Pt-6)
	(a) MASS (b) VOLUME (c) HARDNESS (d) TENSILE STRENGTH (e) ELONGATION AT BREAK	+ 3 % MAX. + 10% MAX ± 3 IRHD MAX. -15% MAX. -35% MAX.		IS : 3400 (Pt-9) IS : 3400 (Pt-6) IS : 3400 (Pt-2) IS : 3400 (Pt-1) IS : 3400 (Pt-1)
(x)	AGEING OF OIL AS PER BS 5354 (a) INCREASE IN ACIDITY (b) INCREASE IN SLUDGE CONTENT	0.1 Mg KOH/gm MAX. 0.05% MAX.	T2	IS: 1448 (Pt-2) IS: 12177 TO BE TESTED AT BHEL USING ONE STD. TEST SLAB SUPPLIED BY MANUFACTURER . SIZE 3x12.5 x 75 mm
(xi)	AGEING IN TRANSFORMER OIL TO IS:335 AT 100 °C FOR 30 DAYS. (a) CHANGE IN HARDNESS (b) CHANGE IN VOLUME	±5 IRHD MAX... + 12% MAX.	T2	IS: 3400 (Pt-6) IS:3400 (Pt-2) IS:3400 (Pt-6)
(xii)	FLEXIBILITY AT LOW TEMPERATURE (-10°C)	SHALL NOT CRACK OR BECOME BRITTLE	T1	SAMPLE WILL BE KEPT IN COLD CHAMBER FOR 5 HRS AND THEN BENT BY 180°C ON A MANDREL OF 3mm DIA.
(xiii)	COLOUR	BLACK	T	VISUAL

REF: CUMP.dwg

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TITLE : FLEXIBLE SEPARATOR (AIR CELL)**3.2.2. AIR SIDE UNDER COATING****MATERIAL - CHLOROPRENE RUBBER COMPOUND C 60 OF BS 2752**

SL. NO.	PROPERTY	REQUIREMENT	TYPE OF TEST	TEST METHOD
(i)	HARDNESS	$\begin{matrix} +5 \\ 60 \\ -4 \end{matrix}$ IRHD	T	IS:3400 (Pt-2)
(ii)	SPECIFIC GRAVITY	1.36 ± 0.04	T	IS:3400 (Pt-9) METHOD B
(iii)	TENSILE STRENGTH	13 Mpa MIN.	T	IS:3400 (Pt-1)
(iv)	ELONGATION AT BREAK	250 % MIN.	T	IS:3400 (Pt-1) LARGE TYPE TEST SPECIMEN
(v)	COMPRESSION SET $\begin{matrix} +0 \\ 24 \\ -2 \end{matrix}$ HRS. AT 70° C.	25 % MAX.	T1	IS:3400 (Pt-10)
(vi)	RESISTANCE TO HEAT AGEING, 168HRS AT 100°C IN AIR (a) CHANGE IN HARDNESS (b) CHANGE IN TENSILE STRENGTH (c) CHANGE IN ELONGATION AT BREAK	$\begin{matrix} + 10\% \text{ MAX.} \\ - 25\% \text{ MAX} \\ - 40\% \text{ MAX} \end{matrix}$	T1	$\begin{matrix} \text{IS:3400 (Pt-4)} \\ \text{IS:3400 (Pt-2)} \\ \text{IS:3400 (Pt-1)} \\ \text{IS:3400 (Pt-1)} \end{matrix}$
(vii)	ADHESION TO AND CORROSION OF METALS 168HRS AT 70°C.	THERE SHALL BE NO CORROSION OR PITTING OF THE METAL AND COMPOUND SHALL NOT ADHERE OR SHOW ANY SIGN OF LIQUID EXTRACTION	T1	BS 903 Pt-A 37 METHOD A USING CARBON STEEL
(viii)	ADHESION TO POLYAMIDE 6 FABRIC	45N/2.5 cm WIDTH OF STRIP. MIN.	T1	TEST SPECIMEN TO IS: 3400 (Pt-5) TESTING BY MANUFACTURER'S GLUE METHOD
(ix)	FLEXIBILITY AT LOW TEMP. (AT -10° C)	SHALL NOT CRACK OR BECOME BRITTLE	T1	SAMPLE SHALL BE KEPT IN COLD CHAMBER FOR 5hrs AND THEN BENT BY 180° ON A MANDREL OF 3mm DIA
(x)	COLOUR	BLACK	I	VISUAL

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PRODUCT STANDARD

TRANSFORMER

SHOP/ENGG INSTRUCTIONS

TR 10150A

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TITLE : FLEXIBLE SEPARATOR (AIR CELL)3.2.3 AIR SIDE OUTER COATING: COMPOUND MATERIAL-----HYPALON 40

SL. NO.	PROPERTY	REQUIREMENT	TYPE OF TEST	TEST METHOD
(i)	HARDNESS	65±5 IRHD SHORE A	T1	IS : 3400(Pt-2)
(ii)	SPECIFIC GRAVITY	1.6 ± 0.05	T1	IS : 3400 (Pt-9) METHOD - B
(iii)	TENSILE STRENGTH	8 M pa MIN.	T1	IS : 3400 (Pt-1)
(iv)	ELONGATION AT BREAK	250% MIN.	T1	IS : 3400 (Pt-1)
(v)	FLEXIBILITY AT LOW TEMP. (AT -10°C)	SHALL NOT CRACK OR BECOME BRITTLE	T1	SAMPLE SHALL BE KEPT IN COLD CHAMB- FOR 5 HRS. & THEN BENT BY 180° ON MANDREL OF 3mm DIA.
(vi)	RESISTANCE TO HEAT AGEING IN AIR 168HRS AT 100 °C (a) CHANGE IN HARDNESS (b) CHANGE IN TENSILE (c) CHANGE IN ELONGATION AT BREAK	+10% MAX -25% MAX -40% MAX	T1	IS: 3400 (Pt-2) IS:3400(Pt-1) IS :3400 (Pt-1)
(vii)	RESISTANCE TO OZONE (O3) FOR 96 HRS. AT 40°C O3 CONCENTRATION 200 ± 20 PPHM	SHALL NOT DEVELOP CRACKS	T2	IS: 3400 (Pt 20)
(viii)	COLOUR	OLIVE GREEN	T	VISUAL

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TITLE : **FLEXIBLE SEPERATOR (AIR CELL)**
4.0 COATED FABRIC :-

Sl. NO	PROPERTY	REQUIREMENT	TYPE OF TEST	TEST METHOD
(i)	MATERIAL	NYLON6, PLAIN WEAVE, FABRIC OF SUITABLE CONSTRUCTION	T	IS : 667 - 1981
(ii)	THICKNESS	POLYIMIDE FABRIC 0.5±0.05mm COATED FABRIC 1.25±0.1 mm	T	IS 7702 IS : 7016 (Pt-1)
(iii)	MASS OF POLYIMIDE FABRIC	OIL SIDE COATING 455g/m ² MIN COMBINED AIR SIDE UNDER & OUTER COATING 615g/m ² MIN COATED FABRIC 1400 g/m ² +200 -80	T	IS : 7016 (Pt-1)
(iv)	WEIGHT OF BASIC FABRIC	200 g/m ² MIN	T	IS : 7016 (Pt-1)
(v)	COLOUR OF	AIR SIDE OLIVE GREEN OIL SIDE BLACK	T	VISUAL
(vi)	TEAR STRENGTH ALONG THE WARP ALONG THE WEFT	300 N, MIN.	T	IS : 7016 (Pt-3)
(vii)	BREAKING STRENGTH ALONG THE WARP ALONG THE WEFT WIDTH MIN.	3 kN/50 mm	T	IS : 7016 (Pt-2)
(viii)	ELONGATION AT BREAK ALONG THE WARP ALONG THE WEFT	25% MIN 30% MIN	T	IS : 7016 (Pt-2)
(ix)	AIR PERMEABILITY	5X10 ⁻¹² cm ³ .cm ----- MAX cm ² S.cm. Hg	T2	A STM - D 1334
(x)	LOW TEMP BEND TEST AT -20°C	SHALL PASS	T1	IS : 7016 (Pt-10) SPECIMEN SHALL BE KEPT IN COLD CHAMBER FOR 5HRS AND THEN BENT BY 180° ON A MANDREL OF 3mm DIA
(xi)	BURSTING STRENGTH	7 MPa MIN.	T2	IS : 7016 (Pt - 6) METHOD -A / METHOD-B
(xii)	RESISTANCE TO PERFORATION	390 N MIN.	T1	MANUFACTURER'S METHOD
(xiii)	RESISTANCE TO DAMAGE BY FLEXING	SHALL WITH STAND 100000 CYCLES WITHOUT DAMAGE	T1	IS : 7016 (Pt-4) SPECIMEN SIZE WILL BE 25mm X 150 mm TESTING WITHOUT FOLDING
(xiv)	BLOCKING RESISTANCE	NO BLOCKING	T1	IS : 7016 (Pt-9)
(xv)	MEASUREMENT OF CUT GROWTH	SHALL PASS THE TEST	T1	MANUFACTURER'S METHOD

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TITLE : FLEXIBLE SEPARATOR (AIR CELL)**VISUAL TESTING:**

1. LONGITUDINAL/VERTICAL FOLD ALONG THE LENGTH IS NOT ACCEPTABLE.
2. FABRIC FOLD UPTO 150 mm IS ALLOWED ACROSS THE WIDTH
3. PRESENCE OF FABRIC CONSECUTIVE KNOTS WITHIN DISTANCE OF 2 METERS IS NOT ACCEPTABLE.
4. MISSING CORDS, FABRIC HOLE MORE THAN 0.5 MM DIA IS NOT ACCEPTABLE
5. TIGHT EDGE, BAGGINESS ARE NOT ACCEPTABLE

5. TESTING OF FLEXIBLE SEPARATOR :

- (i) SURFACE FINISH (ROUTINE CHECK) :
SHALL HAVE GOOD SURFACE FINISH . FREE FROM DEEP LINES, PITS UNCOATED AREA, PIN HOLES, CRACKS, PAINT MARK ETC. SURFACE SHOULD BE CLEAN AND FREE FROM DUST, SOIL AND OTHER EXTRANEIOUS MATTER. COATING SHALL BE UNIFORM WITHOUT ANY PATCH WORK..
- (ii) SEPARATOR SHALL BE INFLATED & DEFLATED TEN TIMES. THE PRESSURE SHALL BE 10 Kpa (0.105kg/cm² OR 1.5 PSI). THERE SHALL NOT BE ANY VISIBLE SIGN OF DAMAGE TO SEPARATOR (ROUTINE TEST). *ADDITION TO THIS ALL THE AIR CELL ARE CHECK WITH THE AIR PRESSURE OF 0.1KG/CM² FOR THIS SHIPPING AREA AFTER FITTING IN CONSERVATOR.*
- (iii) SEPARATOR SHALL BE INFLATED AT 10KPa (0.105Kg/cm² OR 1.5 PSI) AND SHALL BE KEPT FOR 24HRS THERE SHALL NOT BE ANY LEAKAGE/SEEPAGE OF THE AIR (ROUTINE TEST).
- (iv) DIMENSIONS AS PER FIG.1 ON PAGE-9 OF TR 10150 A AND BHEL PURCHASE ORDER (ROUTINE CHECK)

6. PACKING:

FLEXIBLE SEPARATORS SHALL BE PROPERLY FOLDED AND WRAPPED IN POLYETHENE SHEET AND THEN PACKED IN PAPER BOARD BOXES TO AVOID DAMAGE IN TRANSIT BOXES TO BE PROPERLY STRAPPED.

7. GUARANTEE/WARRANTY CERTIFICATE, REPAIR INSTRUCTIONS STORAGE HANDLINE & INSTALLATION INSTRUCTIONS SHALL BE FURNISHED ALONG WITH EACH SEPARATOR.
8. THE MANUFACTURES LOGO SHALL BE SCREEN PRINTED ON AIR CELL. INK USED FOR PRINTING SHALL BE COMPITABLE WITH TRANSF. OIL.
9. CODES FOR TYPE OF TEST INDICATED IN PARA 3 & 4 ABOVE ARE AS UNDER:

- | | |
|----|--------------------------------|
| T | ROUTINE TEST |
| T1 | TYPE TEST (ONCE IN 3 YEARS) |
| T2 | TYPE TEST (ONCE IN FIVE YEARS) |

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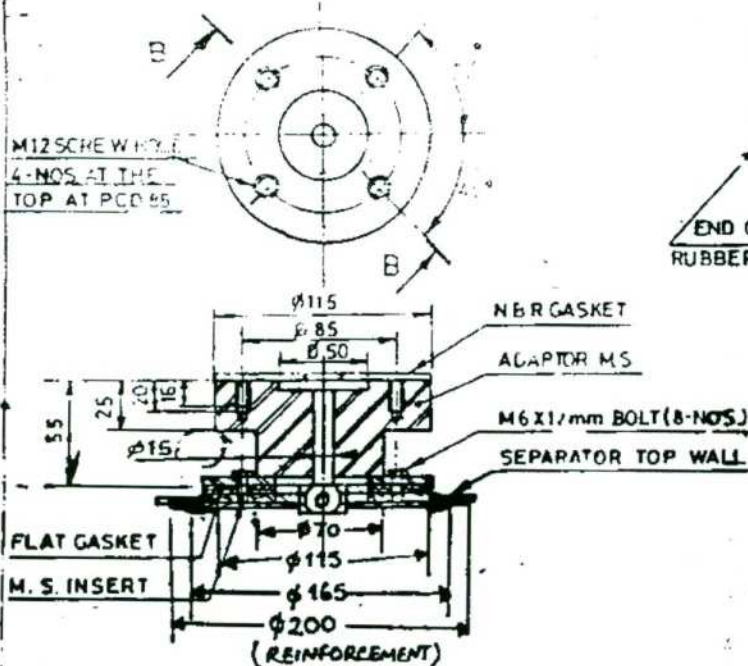
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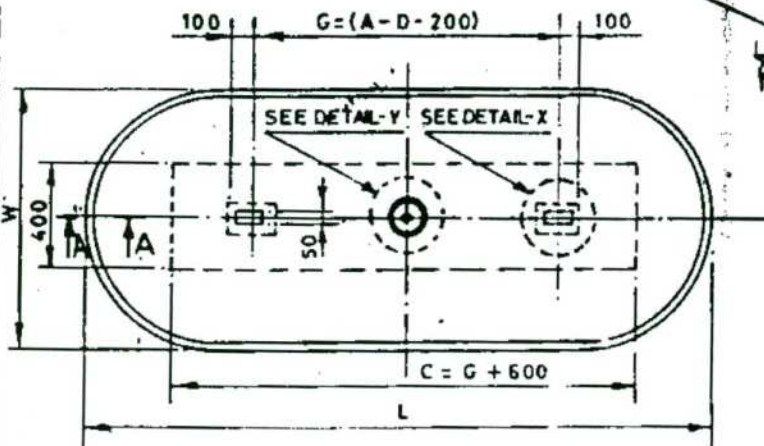
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TITLE : FLEXIBLE SEPARATOR (AIR CELL)



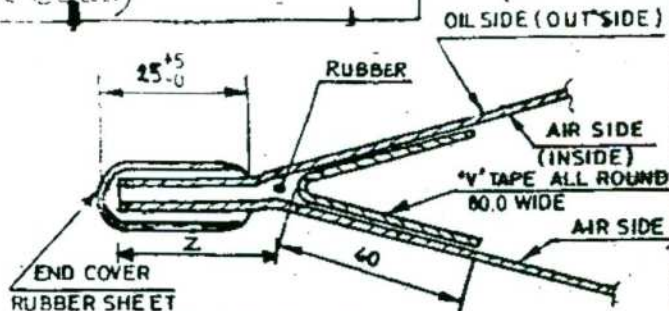
SECTION B-B
(DETAIL-Y)



A & D ARE CONSERVATOR LENGTH AND DIA

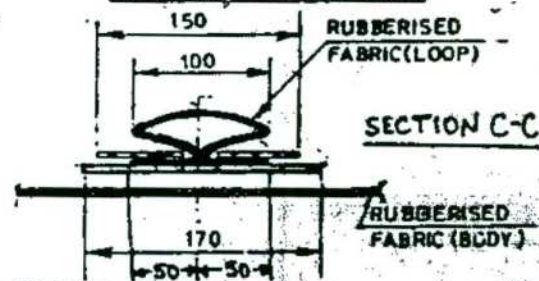
REINFORCEMENT ON
AIR CELL BOTTOM

FIG - 1



JOINT DETAIL SECTION A-A

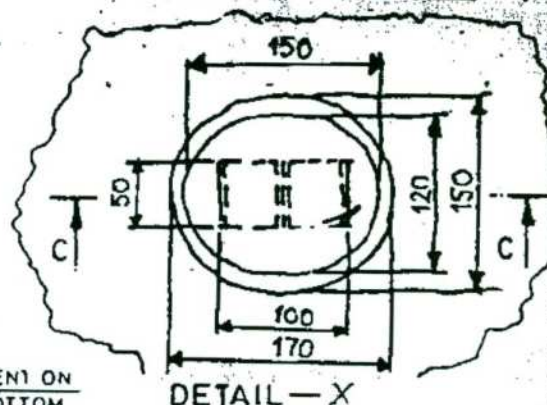
SIZE OF AIRCELL	Z
LARGE	35
MEDIUM	30
SMALL	25



SECTION C-C



DETAILS OF OVERLAP JOINT



DETAIL - X

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TITLE : FLEXIBLE SEPERATOR (AIR CELL)

DIMENSIONS AND TOLERANCES OF FLEXIBLE AIR
CELL IN THE DEFLATED CONDITION

S.No.	WIDTH $W \pm 1.5\%$	LENGTH $L \pm 1.5\%$	DISTANCE BETWEEN LOOPS $G \pm 10$	
1	825	3035	2010	SMALL
2	980	2350	1170	
3	982	3230	2050	
4	1140	2620	1280	
5	1140	3270	1930	
6	1295	2755	1260	MEDIUM
7	1455	2435	780	
8	1295	3745	2250	
9	1455	3215	1560	
10	1455	3995	2340	
11	1610	3490	1680	LARGE
12	1610	4130	2320	
13	1770	3670	1700	
14	1770	4190	2220	
15	1925	3775	1650	
16	1925	4665	2540	
17	2080	4230	1950	
18	2080	4980	2700	
19	2240	4550	2110	
20	2240	5200	2750	
21	2395	4795	2200	
22	2240	5850	2200	

NOTE: ALL DIMENSIONS ARE IN mm.

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