



**WEST BENGAL STATE FOOD PROCESSING  
&  
HORTICULTURE DEVELOPMENT CORPORATION LIMITED  
(A GOVT. OF WEST BENGAL ENTERPRISE)  
BENFISH TOWER (6<sup>th</sup> Floor)  
31, G.N. Block, Sector-V  
KOLKATA - 700091**

No. 102/WBSFPHDCL/1770/2022-23

Date: 10.01.2023

**NOTICE INVITING E-EXPRESSION OF INTEREST**

**1. Invitation**

E-expression of Interest are hereby invited from the reputed Manufacturers/Suppliers/Agencies/Dealer and Distributor etc. having sufficient technical capabilities of supplying and installation of Agro Textiles High Density Polyethylene (HDPE) woven Beds for vermin-culture to the different Districts in the State of West Bengal.

An Agreement will be signed with the L-1 bidder that submit the Proposals, meet the evaluation and qualification criteria. Purchase Orders will be placed separately to the L1 bidder on receipt of requisition from appropriate authority.

The Agreement shall be valid for a period of one year from the date of signing of the Agreement.

The agreements will impose no obligation on WBSFP&HDCL to purchase the estimated or any quantity from the bidders.

The bidder has to quote the rate separately for Supplying of HDPE Vermibed & for Supply & Installation of HDPE - Vermi Compost Production Unit as mentioned below:-

Sl No	Name of the Item	Specification	Commencement of Supply
1	Supply HDPE Vermibed	1. Size 12' (length) X 4' (width)X 2' (height) with BIS Standard (IS 15907;2010) (Other details of Standard (IS 15907;2010) are enclosed in Annexure-II)	20 days from the date of placing the supply order.
2	Supply & Installation of HDPE - Vermi - Compost Production Unit	1. HDPE - Vermi-compost production unit having size of 12' x 4' x 2', Support pockets 14nos. for inserting pegs on all sides. Bed is fitted with six polyethylene net windows (3 each on both sides of length), Minimum mass of bed material 340 gm/sqmtrs. Colour : green outer side & white inner side. confirming to IS: 15907:2010 2. 14 no Support Pipe HDPE 50mm dia, thick 2.3mm, Length 36 inch, & 1 no vermiwash drain 20 inch length, confirming to IS: 4984:2016 3. User Manual: Digital colour print in 170 GSM paper , A-4 both side matter in Bengali with Geo-reference.	

*Handwritten signature*

## **2.Scope of Work**

- i. The WBSFPHDCL, hereinafter referred to as the EOI Inviting Authority, seeks offer for supply of HDPE Vermibed from the reputed Manufacturers/Suppliers/Agencies/Dealer and Distributor etc.
- ii. The successful Bidder has to supply of the above items to the different Districts of West Bengal within the stipulated period as specified in the Supply Order, to be issued on receipt of requisition from the implementing Agencies.

## **3.Date and Time Schedule**

<b>Sl.No.</b>	<b>PARTICULARS</b>	<b>DATE &amp; TIME</b>
1.	<i>Date of uploading (Publishing) of N.I.T. and other Documents(Online)</i>	<i>10.01.2023</i>
2.	<i>Documents download start date (Online)</i>	<i>10.01.2023</i>
3.	<i>Bid proposal submission start date (Online)</i>	<i>20.01.2023</i>
4.	<i>Pre-bid Meeting</i>	<i>19.01.2023 at 3 PM</i>
5.	<i>Documents download end date(Online)</i>	<i>01.02.2023</i>
6.	<i>Bid proposal Submission end date(Online)</i>	<i>01.02.2023</i>
7.	<i>Date &amp; Time of opening of technical bids(Online)</i>	<i>03.02.2023</i>
8.	The tenderer should lodge objection to the tender inviting authority within two days (48 hours) from the date of publication of list of technically qualified bidders and beyond that time schedule no objection will be entertained by the authority	

## **4.Eligibility criteria for participation in the Tender**

- i. The prospective Bidders must have valid Trade License/ Certificate of Enlistment/ S.S.I. Registration (EM Part-II/Udyog-Aadhaar) as per notification of Ministry of Small Scale Industries/Ministry of Micro, Small & Medium Enterprises of Govt. of India. (Valid as on date of submission of bid), PAN, GST Registration Certificate, Income Tax return for any three financial years within the period from 2018-19 to 2022-23
- ii. Balance Sheet & Profit & Loss Statement of accounts for the three financial years within the period from 2018-19 to 2022-23
- iii. The prospective Bidder should have credential for supply of polyethylene film /sheet/vermi bed /Installation of Vermi Compost Unit of an amount not less than Rs. 40 lakh to any State/Central Govt. Organization or State/Central Govt. Undertaking or Statutory Body or Local Body or Parastatal for any of the single financial year out of five completed financial years i.e. F.Y. 2018-19,2019-20 ,2020-21, 2021-22 & 2022-23
- iv. The Bidder must have the copy of the Payment Certificate or Work Completion Certificate, as the case may be, issued under the signature of the Competent Authority for supplying the said items . The said Certificate should contain the particulars of the items supplied, period of supply and the total value of supply.

## **5.Mandatory documents requirement**

### **A.For Technical Proposal**

The technical proposal shall contain the signed and scanned copies of the following-

- I. EOI Document
- II. Application in Annexure-I
- III. Payment Certificate or Work Completion Certificate as referred in Clause 4 above to be submitted along with the Performa for performance statement as annexed.
- IV. PAN Card
- V. Trade License/ Certificate of Enlistment (Valid as on date of submission of bid)
- VI. Proof of Registered supplier/manufacturer.
- VII. Registered copy of the trust deed/ Society deed
- VIII. In case of Company – Please enclose Memorandum and Articles of Association along with certificates of incorporation, and date of commencement of business etc.
- IX. In case of Partnership Firm, registered under the Partnership Act., 1932 – Please enclose details of partners, details of their business and partnership deed etc. duly attested by Notary Valid trade licenses/ permission of business in the state.
- X. Income Tax Return for any three financial/assessment years within the period from 2018 - 19 to 2022-23
- XI. Profit & Loss Statements and Balance sheets for the three financial within the period from 2018 -19 to 2022-23
- XII. GST Registration Certificate
- XIII. The company must have BIS/ISI Certificate of HDPE Vermim Bed Production Unit.
- XIV. An Authorization Certificate from the manufacturer in case of dealer/supplier /firm/ agency as annexed.
- XV. Brand Name and Product Brochure/catalogue with specifications of the offered products.
- XVI. Proposer/Bidder shall submit an affidavit mentioning that the “agency/company/firm or its sister company/firm & any of its director/office bearer/authorized agent should neither be convicted by any court of law or blacklisted by any Government/Semi Government concern nor has any named FIR, criminal case regarding misappropriation/defalcation of Govt. fund pending against such or its sister concern by any Government body since 2009.”

**The requisite documents are to be submitted in the respective folder of the E-Tender portal. Failure in submission of any of the above documents may render the Bidder liable to be rejected.**

### ***B. For Financial Proposal***

The Financial proposal should contain-

**Bill of Quantity (BOQ):-**The Bidder is to quote the rate for supply of HDPE Vermibed of each unit (of specified size)

And

Supply and Installation HDPE Vermi Compost Unit of each unit (of specified size) of above items online in the space marked in the BOQ.

**The participant will be rejected in case it is uploaded in the folder of Technical Bid.**

### **GENERAL TERMS AND CONDITIONS**

#### ***1. Registration of Bidders***

Any Bidder willing to take part in the process of e- Tendering will have to be enrolled and registered with the Government e-Procurement system/ Portal, <http://www.wbtenders.gov.in>. Each Bidder is to obtain a **Digital Signature Certificate** for submission of offers from the approved Service Provider of the National Informatics Centre ( NIC).

## **2. Collection of Bid Documents**

The Bidder can search and download EOI Documents electronically from the Government e-Procurement system using the Digital Signature Certificate. This is the only mode of collection of Bid Documents.

## **3. Submission of E.O.I**

EOIs are to be submitted online on the website <http://www.wbtenders.gov.in> in two folders at a time, one in Technical Proposal and the other in Financial Proposal, before the prescribed date and time, using the Digital Signature Certificate. The documents submitted by the Bidder should be properly indexed and self-attested with seal.

## **4. Responsive Bidders**

Prospective applicants are advised to note carefully the minimum qualification criteria before submitting the bids. Conditional/ incomplete bid will not be accepted under any circumstances. Bidders fulfilling all conditions and criteria set forth and qualifying in the Technical Bid as well as making submission of Financial Bid in stipulated manner shall be considered responsive.

## **5. Clarification of Bidding Document**

If there be any discrepancy or obscurity in the meaning of any clause of the bid document or if there be any query of the intending bidder, the bidder shall set forth in writing such discrepancies, doubt, obscurity or queries and submit the same to the Corporation marked to the 'MD, WBSFP&HDCL'. The queries may be sent by email to [wbsfhdcl1@gmail.com](mailto:wbsfhdcl1@gmail.com).

The clarification given in response to the queries shall be final and binding on the bidder.

## **6. Amendment of Bidding Document**

At any time, prior to the deadline for submission of bids, WBSFP&HDCL may, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing amendments. Any such amendment shall form the part of the bidding document. Such amendments and clarifications will be published on the same website.

Prospective bidders are requested to visit the mentioned websites on a regular basis to keep abreast of any news. WBSFP&HDCL will bear no responsibility or liability for bidders failing to do so.

In order to afford the prospective bidders reasonable time in which to take the amendment into account in preparing their bids, WBSFP&HDCL may extend the deadline for

submission of bids. Such amendments, clarifications etc. shall be binding on the bidders and will be given due consideration by the bidders while they submit their bids and invariably enclose such documents as a part of the bid.

**7. Quoting the rates in BOQ :**

- i.* The intending Bidders are required to quote the rate online. No offline offer will be entertained.
- ii.* Bidders are to quote the rate for each unit to be supplied to the different districts in the State of West Bengal
- iii.* **All Bid prices quoted in the BOQ shall be inclusive of all kind of Taxes,Cess, charges including packaging transportation loading, unloading, carrying and delivery up to the Blocks for supply of Vermi Bed.**  
**And**  
**All Bid prices quoted in the BOQ shall be inclusive of all kind of Taxes,Cess, charges including packaging transportation loading, unloading, carrying, installation and delivery up to the Beneficiaries for Supply & Installation of HDPE - Vermi - Compost Production Unit.**
- iv.* The price should be firm, final and irrevocable and not subject to any change whatsoever even due to increase in cost of materials, other components, labor cost etc. and any changes or imposition of statutory levies till the completion of supply as per order.

**8. Rate Validity**

The rate shall remain valid for a period of one year from the date of signing of the Agreement.

**9. Evaluation of Tenders for qualifying in Technical Bid**

- i.* All Bids will be evaluated and compared on the basis of the submitted documents. The Tender Inviting and Accepting Authority will determine the eligibility of each bidder through a Tender Committee. The bidders shall have to satisfy all the clauses specified in eligibility criteria, evaluation committee reserves the right to relax the evaluation criteria.
- ii.* Technical proposal will be opened first by the Authorized representative of the WBSFPHDCL electronically using Digital Signature Certificate.
- iii.* Technical Proposals ,which are declared valid by Tender Committee will only be accepted and qualify for next stage of evaluation i.e. Financial Bid.

**10. Evaluation of Tenders for qualifying in Financial Bid**

- i.* Financial proposals of only those Bidders declared technically eligible by the Tender Inviting Authority will be opened electronically on the web portal on the schedule date.
- ii.* The encrypted copies will be decrypted and the rates will be downloaded and read out to the Bidders remaining present at that time and to be handed over to the Tender Committee.
- iii.* Pursuant to the scrutiny and decision of the Tender Committee, the summary list of eligible Bidders whose Financial Proposals will be considered will be uploaded in the web portal.
- iv.* Lowest quoted rate shall normally be accepted. However, the Tender Inviting Authority reserves the right to accepting a bid other than the lowest on a specific ground to be recorded in writing.

- v. The Tender inviting Authority does not bind itself to accept any or all bids and reserves the right to reject any or all bids without assigning any reason whatsoever.

#### **11. Issue of supply order**

The supply order will only be issued after receiving requisition from the implementing Agencies. Normally, the supply order will be issued to the L1 Bidder for supplying the indented quantity of the materials.

The Corporation reserves the right to vary the quantities of the supply order to be given to the L1 bidder. In case of emergency and adhoc requirement, or if found on inspection of the manufacturing facility of the L1 bidder that he may not be able to supply the quantity in time, the L2 bidder may be requested to supply the materials at the L1 rate. In case of refusal by the L2 bidder, the L3 bidder may be approached to supply at the L1 rate and so on

Supply of the indented quantity of material to the appointed places **shall be completed within 20 working days of the issue of supply order.**

- i. If the Bidder fails to deliver any or all of the materials within the time specified in the supply order due to his fault or inefficiency, a sum equivalent to 2.5% of the price of the delayed materials will be deducted for each week of delay or fraction thereof until actual delivery.
- ii. In case, the delay is beyond two weeks, the Corporation may issue terminate notice to the Bidder to proceed with any or all of the necessary part of supply.

Such failure on the part of the Bidder leading to delay beyond two weeks will result in forfeiture of Security Money and also debar him to take part in the tender process of the Corporation for the next three consecutive years.

#### **12. Deposition of Security Money:**

The successful L-1 Bidder who will get Supply Order from the Corporation will have to deposit Security Money @ 10% of the Order Value given by the Corporation in a form of Demand Draft / Pay Order and to be drawn in favour of the WBSFP&HDCL payable at Kolkata from any Schedule Bank.

#### **13. *Right to accept any bid and/ or to reject any or all bids***

The Corporation reserves the right to accept or reject any or all bids and to annul the process and all bids prior to issue supply order, without thereby, incurring any liability to the affected Bidder or Bidders or any liability to inform the Bidder of the ground

#### **14. *Grounds for Disqualification***

- i. During scrutiny or at any stage of bidding process or even after issuance of supply order, if it comes to the notice of the Tender Inviting Authority that the Bidder has wilfully made any misleading or false representation in the documents/ statements and attachments submitted as the proof of the qualification requirements

- ii. If the Bidder fails to complete the supply within the period stipulated in the supply order due to his own fault/ inconvenience or supply of poor sub-standard quality materials.

Then in both the cases, the Corporation shall reserve the right to cancel the supply order and debar the supplier from participating in any Tender to be invited by the Corporation in the next three years.

#### **15. Disputes**

In the event of any question/dispute or difference arising between WBSFP&HDCL and the Agency on any matter covered by these Terms & Conditions or arising directly or indirectly there from or connected with these Terms & Conditions in any manner, the matter shall be sorted out between the Managing Director, WBSFP&HDCL and the operator and in the case of non-resolution of dispute the matter shall be referred to the ACS/Pr Secretary/Secretary of the Department of Food Processing Industries and Horticulture. When at this level the dispute is not resolved, the dispute would be referred to a sole Arbitrator appointed jointly by the two parties and his award shall be final.

The High Court of Kolkata alone shall have jurisdiction to adjudicate thereon.

The place of Arbitration will be Kolkata and the language shall be English  
The award of the Arbitrator shall be binding on both the parties.

#### **16. Negotiations**

It is clarified that normally no rate negotiation will be done and therefore the Bidders should quote their lowest prices only, however, the Corporation may negotiate the rates with the L1 Bidder in exigencies, if required to do so.

#### **17. Sample:**

Test Report from the CIPET along with sample will be required from the L1 bidder after selection of L1 bidder for tender item/items. Supply order will be awarded after getting satisfactory report for testing of requisite specifications as per tender document.

#### **18. Execution of Agreement :**

After finalization of tender the successful tenderers will be required to execute at their own cost a duly Non-Judicial stamped agreement paper in the prescribed format within 7 (seven) days regulating the terms & Conditions of supply.

#### **19. Payment of Bill**

The Selected Bidder shall receive payments on back to back basis i.e., WBSFP&HDCL will pay to supplier only after receiving of payments from concerned Government Departments/ Authority. The Corporation will not take any responsibility for payment until it has received payment from the concerned Govt. Departments/ Authority. No interest can be claimed by the Agency for any delay of receiving payment from Indenting Authority

  
Managing Director

**Annexure -I**

**Application for participation in Technical bid**

To,  
The Managing Director  
WBSFP&HDCL  
Benfish Tower (6<sup>th</sup> floor)  
31, G.N, Salt Lake  
Kolkata- 700091

**Sub: E-Expression of Interest for Supply of HDPE Vermibed and Installation of Vermi Compost Unit.**

**Ref. No.102 /WBSFPHDCL/1770/2022-23 Date: 10.01.2023**

Sir/Madam,

Having examined the terms & conditions of the above EOI, I do hereby submit the following information and relevant documents for furtherance of my proposal for participation in the tender –

**Eligibility Particulars**

Sl.No.	Particulars	Details thereof
1.	Name of the Bidder	
2.	a) Full Office address	
	b) E-Mail I.D.	
	c) Mobile No.	
3.	Name of the contact person with Mobile Number	
4.	Documents to be submitted by the Bidder (Scanned copies to be uploaded)	Whether uploaded ( Yes / No )
	a. EOI documents	
	b. Payment certificate/ work completion certificate	
	c. PAN Card	
	d. Trade License/ Certificate of Enlistment	Valid up to-
	e. Income Tax Return for any three financial years within the period from 2018 – 19 to 2022-23	
	h. GST Registration Certificate	
	i Audited Accounts for the three years within the period from 2018 – 19 to 2022-23	
5	Any other points considered to furnish	



## UNDERTAKING

- i. I undertake that all of the above information and documents furnished against the prescribed columns are true to the best of my knowledge and belief.
- ii. I have also gone through all the terms & conditions meticulously and I undertake to comply with same sacrosanctly.
- iii. The rate quoted by me will be valid and binding upon me for the entire period as stipulated in the EOI.
- iv. If I fail to complete the supply within the period stipulated in the supply order due to my own fault/ inconvenience, the Corporation shall reserve the right to forfeit the Performance Security deposited by me in this regard and also debar me from participation in the Tender process of the Corporation for the following 3(three) consecutive years.
- v. I shall maintain the specifications of the materials as per EOI and shall replace the sub-standard materials at my own cost .
- vi. I undertake that, I will not claim any payment from the WBSFPHDCL till the payment is received from the Requisitioning Authority by the WBSFPHDCL against the supply of materials to the concerned Authority by the undersigned.
- vi. I undertake that I have not been debarred/ delisted by any State/Central Government Organization or State/Central Govt. Undertakings or Statutory Bodies or Local Bodies or Parastatals during the last three consecutive years up to the last date of submission of Tender.

Date:

Signature of the Applicant

Place:

## MANUFACTURER'S AUTHORIZATION

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are legally binding on the Manufacturer shall include it in its bid.

Date: [insert date (as day, month and year) of Bid Submission] IFP No.: [insert number of bidding process]

To: [insert complete name of Purchaser]

### WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer's factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract against the above IFB.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm against this IFB.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer] Title: [insert title]

Duly authorized to sign this Authorization on behalf of: [insert complete name of Bidder]

Dated on \_\_\_\_\_ day of \_\_\_\_\_, [insert date of signing]

**Note: Specify items for which Manufacturer's authorization is required.**

Note: To be completed and submitted / uploaded as a part of the bid

**Performa for performance statement**

IFP No: \_\_\_\_\_ Date of Opening: \_\_\_\_\_ Time : \_\_\_\_\_ Hours

Name of the Firm : \_\_\_\_\_

Order Placed By (Full address of Purchaser)	Order No. and Date	Description and quantity of ordered	Value of order	Date completion of delivery		Remarks indicating reasons for late delivery, if any	Was the supply of goods satisfactory?
				As per contract	Actual		

Signature and seal of the Proposer

## Indian Standard

# AGRO TEXTILES — HIGH DENSITY POLYETHYLENE (HDPE) WOVEN BEDS FOR VERMICULTURE — SPECIFICATION

**1 SCOPE**

This standard prescribes constructional and other requirements for high density polyethylene (HDPE) woven beds for vermiculture used in producing compost for agricultural purposes.

**2 REFERENCES**

The standards listed in Annex A contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

**3 TERMINOLOGY**

For the purpose of this standard the following definitions shall apply.

**3.1 Vermicompost** — It is well decomposed stable, fine granular byproduct from composting process mediated through the activities of earthworm.

**3.2 Vermiculture** — The process of producing vermicompost is called vermiculture. The earth worm gives excreta fast, after eating any kind of decayed decomposed organic material. Hence, the crop/plants can get the additional nutrients from vermicompost. *Eisena foetida* worm may be used in the process.

**3.3 Vermiwash** — The liquid collected at the drain of the bed is called vermiwash. This liquid consists of different micro-nutrients vitamins and digestive elements. Earthworm excretes a sticky liquid from its glandor. This contains *Colamic pyulite* and antifungal liquid.

**4 MATERIALS****4.1 HDPE Tapes**

Tapes shall be manufactured from HDPE granules (see IS 6192), which shall be UV stabilized by adding suitable UV stabilizer (see Note). The finished bed shall meet the requirements of UV stability and colour fastness to light as given in Table 1. The width of the tape used in the fabric shall be 1.20 mm minimum and

linear density of the tape shall be 88.8 Tex (800 Denier) minimum.

NOTE — Carbon black or black master batch shall not be used for UV stabilization.

**4.2 HDPE Fabric**

Beds shall be manufactured by using suitable HDPE woven fabric (see IS 6899) so that finished bed meets the requirements given in Table 1 and 5.1 to 5.3.

**4.3 Lamination**

**4.3.1** The fabric shall be laminated with the low density polyethylene (LDPE) or suitable combination of LDPE and linear low density polyethylene (LLDPE) melt of coating grade on each side having thickness not less than 25 microns and the coating shall be suitably UV stabilized by incorporating UV stabilizer (see Note under 4.1). The coating film along with colour master batch to get the desired shade shall be such that the finished bed meets the requirements of UV stability and colour fastness to light as given in Table 1.

**4.3.2** A 7-layer laminated fabric is produced using a combination of 3-layers of HDPE fabric and 4-layers of coating film. The layers of HDPE fabric used to manufacture beds shall be joined by sandwich lamination. The lamination as given above shall be such that the finished bed meets the requirements given in Table 1. The minimum coating thickness of the sandwich lamination shall be 40µ.

**4.4 Cord Beading**

A jute/sisal rope beading of minimum 6.0 mm diameter shall be provided along the top periphery of the bed for reinforcement.

**5 MANUFACTURE**

**5.1** General design of the bed shall be as shown in Fig. 1.

**5.2 Construction**

**5.2.1** The bed shall be constructed by heat sealing laminated pieces of woven fabric of the desired dimensions. The panels shall be flat (overlap) joined. The top edges of the bed shall be hemmed by heat

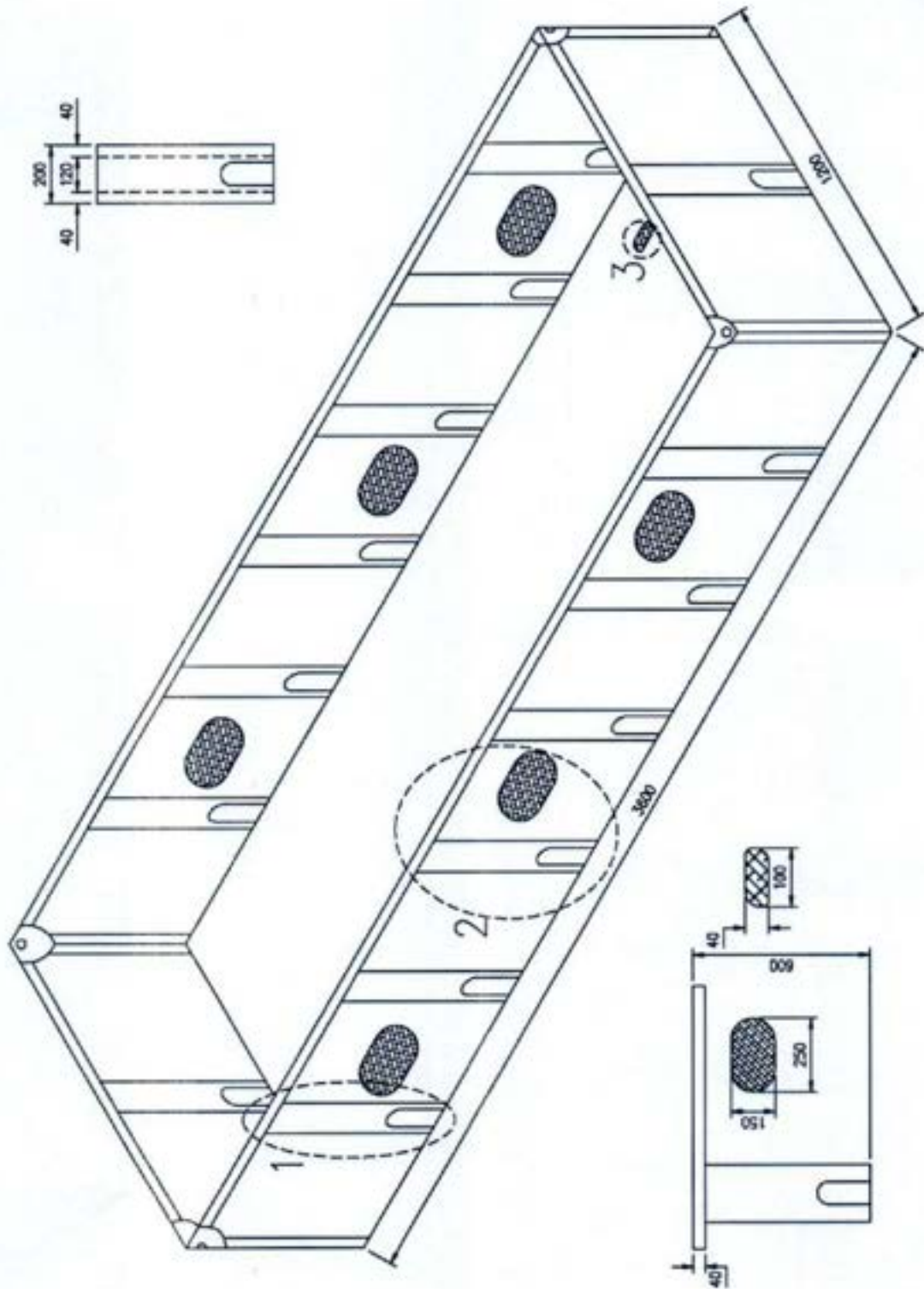


FIG. 1 TYPICAL SHAPE OF A VERMICOMPOSTING BED

sealing along with a jute/sisal rope of 6 mm diameter placed inside the hem as reinforcement. The width of the hem shall be minimum 40 mm. Three net windows of size 260 mm × 150 mm each shall be provided on both sides of the bed along the length for ventilation. These windows shall be made of polyethylene nets and shall be heat sealed at equidistance along the periphery of the bed as shown in Fig. 1. An outlet of 40 mm × 100 mm at the bottom in one corner shall also be provided for draining out the liquor produced during the process of composting. This outlet shall be covered by polyethylene nets and shall be heat sealed.

**5.2.2** Fourteen support pockets for inserting pegs shall also be provided along the periphery of the bed and running across the full height of the bed as shown in Fig. 1. A piece of laminated woven fabric is heat-sealed at the intersection of front/back and bottom panels whereas the other three sides of the fabric for pockets are heat-sealed with the base fabric thus giving the shape of a pocket. The upper end of the pocket thus formed shall be heat-sealed while forming the hemming at the top edge of the bed (see 5.2.1) whereas at the bottom end, a hole of suitable diameter shall be created for inserting wooden pegs having a diameter of 40 mm. The pockets shall have a finished width of 120 mm. The wooden pegs shall be strong enough to provide an erected structure and perform the desired function.

### 5.3 Bonding

If two or more pieces of fabrics are used for the manufacture of bed, the woven fabrics shall be bonded together by a suitable heat sealing process keeping an overlap of at least 2.5 cm.

## 6 REQUIREMENTS

The laminated HDPE fabric used to manufacture bed shall meet the requirements as given in Table 1. Besides the bed shall meet the requirements stated in 5.1 to 5.3.

### 6.1 Dimensions and Mass

The bed shall be made to the shade and dimensions as specified in the contract or order. The following tolerance shall be permissible for length, width and mass ( $\text{g/m}^2$ ):

Dimension	Tolerance, Percent
Length	±1
Width	±1
Mass ( $\text{g/m}^2$ )	± 6 percent on declared mass subject to minimum mass of 340 $\text{g/m}^2$

However, the preferred dimensions of the bed shall be 3 600 mm (L) × 1 200 mm (W) × 600 mm (H).

## 6.2 Water Proofness

**6.2.1** The fabric and joints of the bed shall be tested before and after ageing for water repellency by cone test according to IS 7941 and for resistance to water penetration by the pressure head test according to IS 7940 keeping the height of water column as 900 mm and the time of exposure being 1 h. The test specimen shall be so selected that at least one joint is covered. There shall be no leakage when tested by cone test and does not leak through the bed when tested for resistance to water penetration by the pressure head test from any test specimen.

**6.2.2** The ageing shall be done at 70°C for 168 h as per the method given in IS 7016 (Part 8).

## 7 MARKING

**7.1** Each bed shall be legibly marked with the following information at one corner on one side either with tag or by printing on it with the ink:

- Name and address of the manufacturer,
- Dimensions and mass ( $\text{g/m}^2$ ), and
- Year of manufacture.

### 7.2 BIS Certification Marking

The beds may also be marked with the Standard Mark.

**7.2.1** The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and Rules and Regulations made thereunder. The details of the conditions under which a license for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

## 8 PACKING

The beds shall be packed as agreed to between the buyer and the seller.

## 9 SAMPLING

### 9.1 Lot

The quantity of bed of same size and mass ( $\text{g/m}^2$ ) manufactured under similar conditions and delivered to a buyer against one dispatch note shall constitute a lot.

**9.2** Unless otherwise agreed to between the buyer and the seller, the number of beds to be selected at random from a lot shall be as given in col 3 of Table 2.

## 10 NUMBER OF TEST SPECIMENS AND CRITERIA FOR CONFORMITY

Number of test specimens and criteria for conformity shall be as given in Table 3.

**Table 1 Requirements of Beds Made from HDPE Woven Fabrics**  
(Clauses 4.1, 4.2, 4.3.1, 4.3.2 and 6)

Sl No. (1)	Characteristic (2)	Requirements (3)	Method of Test, Ref to (4)
i)	Mass, g/m <sup>2</sup> , Min	340 (see 6.1)	IS 1964
ii)	Breaking strength before UV exposure, N, Min	1 900 (Warp) 1 300 (Weft)	IS 1969
iii)	Elongation at break, percent	20 ± 5	IS 1969
iv)	Retention of breaking strength after UV exposure, N, Min	85 percent of original actual value (fabric)	Annex B and IS 1969
v)	Welded seam strength before UV exposure, N, Min	65 percent of original actual value (fabric)	IS 1969
vi)	Welded seam strength after UV exposure, N, Min	85 percent of original actual value	Annex B and IS 1969
vii)	Tear strength, N, Min	100 (Warp) 100 (Weft)	Method A2 of IS 7016 (Part 3)
viii)	Puncture strength, N, Min	325	Annex C
ix)	Environmental stress cracking test	There shall be no evidence of stress cracking	Annex D
x)	Resistance to chemicals, change in the mass, percent, Max	0.1 percent	Annex E
xi)	Colour fastness to artificial light <sup>a</sup>	4 or better	IS 2454 (Xenon lamp method)
xii)	Bursting pressure, kgf/cm <sup>2</sup> , Min	35	IS 1966

<sup>a</sup> Applicable for coloured beds only.

**Table 2 Scale of Sampling**  
(Clause 9.2)

Sl No. (1)	No. of Beds in Lot (2)	Sample Size (3)	Sub-sample Size (4)	Permissible No. of Defective Beds (5)
i)	Up to 50	3	2	0
ii)	51-150	5	2	0
iii)	151-300	8	3	1
iv)	301-500	13	5	2
v)	501 and above	20	5	3

**Table 3 Number of Test Specimens and Criteria for Conformity**  
(Clause 10)

Sl No. (1)	Characteristic (2)	No. of Beds/Test Specimens (3)	Criteria for Conformity (4)
i)	Dimensions, average mass (g/m <sup>2</sup> ), manufacture and material	According to col 3 of Table 2	The defective beds do not exceed the corresponding number given in col 5 of Table 2
ii)	Water proofness	According to col 4 of Table 2	All the test specimens shall pass the test
iii)	All other requirements	According to col 4 of Table 2	The test specimens shall meet the requirements as given in Table 1