



**NATIONAL SILKWORM SEED ORGANIZATION**  
**CENTRAL SILK BOARD**

**MINISTRY OF TEXTILES, (GOVT. OF INDIA)**

**TENDER DOCUMENT FOR AWARDING ANNUAL MAINTENANCE  
CONTRACT FOR NEWLY ESTABLISHED COLD STORAGE PLANT  
AT MYSURU**

**IV FLOOR, CSB COMPLEX,  
B.T.M. LAYOUT, MADIVALA  
BANGALORE – 560068**



**NATIONAL SILKWORM SEED ORGANIZATION**

**CENTRAL SILK BOARD**

*MINISTRY OF TEXTILES, (GOVT. OF INDIA)*

*Contents of Tender Document*

**Tender for awarding Annual Maintenance Contract**

**for newly established Cold Storage Plant at Mysuru.**

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## राष्ट्रीय रेशमकीट बीज संगठन

रेशम बोर्ड (वस्त्र मंत्रालय) - भारत सरकार  
चतुर्थ तल, सी.एस.बी. कॉम्प्लेक्स, बी.टी.एम. लेआउट  
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National Silkworm Seed Organization

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No.CSB/NSSO/CSP/AMC/MYS(11) /19-20/

Date: 08.12.2021

To

List enclosed

Sir,

Sub : Inviting sealed quotations for entering AMC for the Cold Storage Plant Mysore-reg

The National Silkworm Seed Organization invites sealed bids (two bid system) from the reputed firms who are in the field of Air-Conditioning & Refrigeration for awarding Comprehensive Annual Maintenance Contract for trouble free functioning of all cold rooms / Humidifiers installed at **Cold Storage Plant, J.L.B Road, Vidyaranyapuram, Mysuru 570 008.**

The Technical bid is to be accompanied with Earnest Money Deposit (EMD) for an amount of ₹ 24,000 -/ in the form of Demand Draft drawn in favour of Director, NSSO, CSB, Bangalore. Further, the sealed bid shall be super-scribed as "Quotation for awarding AMC for the Cold Storage Plant, Mysuru" and should reach this Office on or before 03.01.2022 at 03:00PM

The sealed bids shall be opened on the same day at 04:00PM in the presence of representatives of the Firms, who may wish to participate in the opening of the quotations at the office of the NSSO, CSB complex, IV Floor, B.T.M Layout, Madiwala, Bangalore.

The interested parties may visit the **Cold Storage Plant, J.L.B Road, Vidyaranyapuram, Mysuru 570 008** to know more about the Cold Storage and quote their lowest rate and submit to this Office before stipulated date & time.

Tender document can also be downloaded from the website [www.csb.gov.in](http://www.csb.gov.in) or [www.eprocure.gov.in](http://www.eprocure.gov.in).

Director, NSSO reserves the right to reject any or all bids without assigning any reasons whatsoever.

Yours faithfully,

Encl : As above

DIRECTOR

## INTRODUCTION

The National Silkworm Seed Organization functioning under Central Silk Board, Ministry of Textiles, Govt. of India, is producing high quality silkworm seeds at various Silkworm Seed Production Centres (also known as Grainages) located in different States of the Country and distributing the same to the farmers for producing high quality cocoons for development of Sericulture Industry. All the Grainages of NSSO have got ISO 9001:2015 QMS certification. These Grainages will produce large quantity of commercial hybrid silkworm seed as per the requirement of industry. The seed produced by the grainages has to be preserved in different hibernation schedule in the Cold Storage Plant. After completion of each schedule, the seed will be released from Cold Storage Plant and supplied to the end users.

The NSSO, as part of its activities for preservation of Bivoltine Silkworm Eggs under different schedules to meet the production demand established 80.00 lakh capacity Cold Storage Plant in a newly constructed building at Mysuru.

The above said Cold Storage Plant essentially provided for preservation of live Bivoltine silkworm Eggs. As like silkworm Eggs are to be preserved systematically as per scientifically designed preservation schedules, the room temperature and relative humidity should be maintained accurately as per the requirements throughout the year. The party awarded with the Annual Maintenance Contract of Cold Storage Plant shall maintain the Cold Rooms/Incubation chambers etc., with utmost accuracy and care without any breakdowns during the period of contract.

NATIONAL SILKWORM SEED ORGANIZATION  
CENTRAL SILK BOARD  
BANGALORE – 560 068

**PROCEDURE FOR SUBMISSION:**

The process of tender shall involve submission of bids in TWO parts namely Technical bid and Financial bid:

**Technical bid:**

The sealed technical bid enclosing the following should be submitted:-

- A demand draft towards EMD.
- Copies of certificate for establishing eligibility /qualification criteria
- Copy of PAN card and of Income Tax Returns for the previous 3 years.
- A copy of the GST registration certificate.
- A self attested certificate declaring that the AMC Company is not a defaulter in any of the previous transaction with the board / other govt. departments, not black listed/debarred by any Govt. Department and not executed similar nature of AMC work through another contractor as per format.
- The Technical bid not in compliance with the above will be liable for rejection.

**Financial Bid:**

The Financial bid shall be submitted in the price schedule format.

- The **Technical** and **Financial Bids** should be sealed by the bidder in separate covers appropriately super-scribing as “Technical bid” and “Financial bid” as the case may be. The sealed covers containing technical bid and Financial bid are to be put in a bigger cover which should also be sealed and duly super-scribed on the cover as “**Tender for Annual Maintenance Contract for Cold Storage Plant at Mysuru**”

## TECHNICAL BID

### Format of Technical Bid of the tender for Annual Maintenance Contract for Cold Storage Plant at Mysuru

1	Name of the Tenderer (in Block letters), his/her full postal address, phone / fax and mobile No.	
2	Whether it is Registered Company or partnership company or proprietorship company.	
3	If Registered Company, copy of the Registered Certificate should be enclosed. In case of partnership concern, copy of the partnership deed should be enclosed	
4	Certificate to establish satisfactory completion of at least FIVE years experience in AMC Services with Central / State Government /Autonomous Govt. Bodies / Public Sector Undertakings/ Private sector.	
5	EMD enclosed. If yes, DD No., and Date.	
6	Copies of PAN & Income Tax Return For previous 3 Years.	
7	Brief profile of company (year of establishment/No. of service personnel (attach separate sheet)	
	a) Year of establishment	
	b) No. of service personnel working and their qualification / experience.	
8	Has your company defaulted/been blacklisted by any Govt. agency in the past.	<b>Yes/No</b>
9	Any other information.	

Contd...5....

## DECLARATION

I/We hereby declare that the information furnished in this statement is true and correct to the best of my/our knowledge and I am/ we are aware that in case of any information is found to be incorrect at a later date my/our company will be liable for disqualification from the tender.

Place:

(Signature)

Date:

Name & Designation with Company seal

**FINANCIAL BID**

Format of Financial Bid of the tender for Annual Maintenance Contract for 11 new Cold Rooms for a period of 3 years

Sl. No.	Particulars	Rate for 1 Cold room ( 1 working + 1 standby unit) for 1 year of AMC		Total Rate for 1 cold room (1 working + 1 standby unit) for 1 year of AMC inclusive of GST	Total Rate for 11 cold rooms (22 units) for 1 year of AMC inclusive of GST	Total Rate for 11 cold rooms (22 units) for 3 years of AMC inclusive of GST
		Rate for 1 Cold room for 1 year of AMC	GST			
1	<b>Comprehensive Annual Maintenance Contract for 11 New Cold rooms (22 units) installed at Cold Storage Plant, Mysuru as per Terms &amp; Conditions mentioned in the tender document.</b>					

**Total Rate for 11 cold rooms (22 units) for 3 years of AMC inclusive of GST =**

**In Rupees & Words (.....)**

Note:

In case of discrepancy between unit price and total price, the unit price shall prevail.

The rate quoted shall be on Comprehensive basis which inclusive of all parts as indicated in Commercial terms (Sl. No. 8) and only basic rates shall be quoted.

Cont.7.....



## DECLARATION

I/We hereby declare that the information furnished in this statement is true and correct to the best of my/our knowledge and I am/ we are aware that in case of any information is found to be incorrect at a later date my/our company will be liable for disqualification from the tender.

**Place:**

**(Signature)**

**Date:**

**Name & Designation with Company seal**

# **NATIONAL SILKWORM SEED ORGANISATION**

**CENTRAL SILK BOARD**

**BANGALORE – 5600068**

**TERMS & CONDITIONS**

## **TECHNICAL**

- 1) The newly installed Cold Storage Plant having Cold Rooms and Incubations chambers etc. are installed and commissioned at Mysore.
- 2) Diagrams showing size of the Cold Rooms for preservation of Silkworm Seeds (known as Egg Preservation Cold Rooms – built with an ante room) are enclosed in Annexure-1A,1B,1C,1D,1E.
- 3) The technical specifications viz., data sheets pertaining to all the Cold Rooms – (a) General information; (b) Compressors; (c) Evaporators; (d) Air-cooled Condensers; (e) Refrigeration Components and (f) Electrical load details are furnished in Annexure – 2, 3, 4, 5, 6, 7.
- 4) The firm shall furnish the number of technical personnel available, their qualification and experience in the maintenance of related equipments over a period of 3 years.
- 5) All the Cold Rooms are provided with stand by units. The firms awarded with the AMC are required to maintain functioning of stand by units. It is also informed that if one of the Compressors gets burnt/goes defective, the same shall be repaired and re-installed in the system, within 15 days time. The Firms will not be permitted to pull on the AMC period just by maintaining only one Compressor and also stating that the functioning of the Cold Room has not been hampered due to defect in one of the Compressors.
- 6) The Firms which submit the bids shall render at least minimum four quarterly AMC services during the one year period of the Contract, irrespective of its proper functioning or otherwise.
- 7) Apart from 4 quarterly AMC services mentioned in point No.6 above, the Firms shall attend to all break down/repairs of the Cold Rooms/Incubation chambers etc. as and when intimated by the Incharge Officer of the unit.
- 8) During the Quarterly check up of the Cold Rooms, the technician of the Firm shall carry out the following routine services for smooth functioning of the Cold Storage Plant, Mysuru consisting of Cold Rooms/Incubation Chambers etc.
  - a) Checking of the incoming voltage/output voltage, current drawn on individual phases at the time of running of the Cold Rooms/Incubation chambers etc.
  - b) Checking of the working pressures in the system;
  - c) Checking of the room temperatures in all the Cold Rooms as well as Relative Humidity in the Egg Preservation Cold Room;

- d) Cleaning of the outdoor unit, including air cooled condensers, coils, fins, fans, cabinets, electrical circuits etc.;
- e) Cleaning of Evaporator coils, fins, fans, motors, etc.;
- f) Checking of all safety cut-outs, refrigerant controls etc., for proper functioning;
- g) Checking and arresting of any abnormal sound/noise in the system;
- h) Leak testing of the entire system and arresting the leaks, if any, found in the system;
- i) Attending to any other points/defects that may be pointed out/notified by the Incharge Officer of the unit; and
- j) After attending the services, leaving the site in neat & clean condition.
- k) Any other faults observed from time to time.

9] Whenever the technicians visit the site for attending to the repairs or rendering routine AMC services, he shall visit the site in the morning at least by 10:00 AM and spend a minimum period of 3-4 hours by carrying out all the repairs / services and also to observe the performance of the Cold Rooms. After attending to the services / repairs, he shall call either the Incharge Officer or his authorized staff and show the Cold Rooms in good working condition. He shall also submit necessary service reports for Egg Room and Ante Room separately for the satisfactory AMC services rendered by him. He shall inform his visit to the Unit-In-Charge Officer well in advance.

# **NATIONAL SILKWORM SEED ORGANISATION**

**CENTRAL SILK BOARD**

**BANGALORE – 5600068**

**TERMS & CONDITIONS**

## **FINANCIAL**

1. The Firms which submit the bids shall have at least a minimum of period of 5 years experience in the Dx Type Refrigeration Cold Storage Plants & should have rendered minimum 5 years of Annual Maintenance Contract services for the Dx Type Refrigeration Cold Storage Plants and in order to establish veracity the firm shall attach the Customer satisfactory completion report along with the technical bid.
2. The firms shall enclose necessary proof, i.e. either work order copies or Credential Certificates from the concerned customers/Departments/Company for having rendered or undertaken AMC services of Cold Storages of similar type or much bigger magnitude. The Firms shall also enclose copies of Annual Turnover of the firms. I.T. Clearance Certificates etc., along with the bid.
3. The bidders are advised to accept and sign each page of the tender document with stamp/seal.
4. The firms shall submit the Annual Maintenance Contract charges of the Cold Rooms including incubation chambers and ante rooms. At the time of submission of bids itself, the rates for three years Annual Maintenance Contract of the Cold Rooms must be submitted. The Total AMC period will be for three years. On no account, the quotes rates will be enhanced during the three years period of the contract.
5. The Director reserves rights to award or cancel Annual Maintenance Contract.
6. The successful firm who may be awarded with the Annual Maintenance Contract shall furnish contract agreement containing terms and conditions on non-judicial Stamp Paper of value of Rs.200/- and 25% of the total quoted Contract Value in the form of Bank Guarantee towards Performance Security and remaining 75% of the total quoted contract value in the form of Indemnity Bond. **This security shall have a validity period of one year and three months The Indemnity Bond will be renewed on yearly basis.**
7. The Annual Maintenance Contract Charges will be released on quarterly basis. However, the services rendered by the firm during a particular quarter will be reviewed in the next quarter and based on the services rendered by the firm during the previous quarter; payment will be released in advance for the next quarter.

8. At the time of submission of Invoice for releasing quarterly advance payment, the firm shall submit quarterly service reports of the Cold Rooms countersigned by the In-charge of the unit with respect to previous quarter. Based on the service reports only, the AMC charges will be released.
9. The firm shall submit AMC charges for the Cold Rooms separately on comprehensive basis, which shall include the cost of all the refrigeration machineries, Temperature Controllers, etc. All the essential spares/components/controls including gas charging and electrical spares/other components which are part of the refrigeration system that may be required for replacement during the contract period shall be included in the bids.
10. The break down information of the defects in the Cold Rooms/Humidifiers etc. shall be initially intimated to the Firm, through phone call by the In charge-Officer/staff of the unit. On receipt of the break-down information through telephonic message, a break-down complaint number should be intimated by the firm to the person of the concerned unit. This number is the proof of receipt of complaints and taking action for attending to the repairs. Further communication will be given, if necessary through Letter/Phone/Fax/E-mail etc. depending upon the facilities available in the location.
11. The firms shall attend to the defects of the Cold Rooms at the earliest possible time. i.e. within 24 hours from the time of receipt of the break-down complaint. If the Cold Rooms are not functioning for more than three days in a quarter, a penalty of Rs.100.00 per day per Cold Room shall be levied on the firm for the exceeding days. For calculating the penalty, Egg Room along with ante-room will be considered as One unit.
12. On no account, the Cold Rooms shall go idle due to break-downs for more than three days in a quarter irrespective of the number of break downs occurred in a quarter. The penalty will be calculated at the end of every quarter, on the basis of number of days the Cold Rooms are remained non-functional during that particular quarter. The amount of penalty calculated, if any, will be deducted at the time of release of the quarterly AMC charges for the next quarter.
13. The Humidifiers installed at Incubation Room 1, Incubation Room 2 & Anteroom 2 are to be maintained during the contract period which includes cost of spares.
14. At the time of submission of invoice for releasing quarterly payment, the firm shall submit Service Reports of the Cold Rooms of the unit with respect to the previous quarter. Based on the Service Reports submitted along with invoice, the AMC charges will be released.
15. The firms interested to see the Cold Rooms installed at Cold Storage Plant, Mysore before submission of quotations can visit the location during office working hours **(10:AM to 05:PM with prior intimation to the incharge. Mobile No. 9570052456).**

16. The firm shall be completely responsible for inspection of all Cold rooms / Humidifiers in working condition prior to awarding of AMC. Once AMC is awarded to the firm, from AMC start date the firm is completely responsible for breakdown / defects found in the cold rooms / Humidifiers and in no ways the firm cannot claim that cold rooms / Humidifiers were defective before awarding AMC and needs to be repaired under chargeable basis. In such case the firm awarded AMC has to repair free of charge as per Annual Maintenance Contract.
17. The firms awarded with Annual Maintenance Contract of Cold Rooms should not sub contract the Annual Maintenance Contract to a third party or abandon the work in the middle of the Contract period. In such a case of any breach of any of the terms, the Director, NSSO reserves right to take such action as deemed fit in the facts and circumstances of each of such case.
18. **The firms can submit the technical bid accompanied with Earned Money Deposit (EMD) for an amount of ₹ 24,000/- in the form of Demand Draft drawn in favor of “Director, National Silkworm Seed Organization, Bangalore”.**
19. **EMD is exempted in case of MSME for which copy of certificate has to be enclosed along with the bid. No exemption from submission of EMD, on any grounds, will be allowed. Any bid not accompanied by EMD will be rejected, as non responsive.**
20. The EMD of the unsuccessful bidders shall be refunded after awarding work order to the successful bidder and acceptance of work order by the successful bidder. The E.M.D of the successful bidder shall be returned only after submission of Security Money Deposit.
21. All the Quotations submitted shall have a validity period of 6 months from the date of opening of the Quotations.
22. **All the Sealed Quotations shall be superscribed as “Quotation for Annual Maintenance Contract of Cold Rooms installed at Cold Storage Plant, Mysuru” and shall be addressed to “The Director, National Silkworm Seed Organization, Central Silk Board, IV Floor, CSB Complex, B.T.M. Layout, Madivala, Bangalore-560068”.**
23. The envelope shall indicate the name and address of the party to enable the quotation to be returned unopened in case it is declared “**late**”.
24. If the envelope are not sealed and marked as required, the purchaser will assume no responsibility for the quotation misplacement.
25. The quotation received by e-Mail, facsimile will be summarily rejected.
26. The quotation shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the firm, in which case such corrections shall be initialed by the person or persons signing the quotation.

27. The purchaser may, at its discretion, extend this deadline for submission of quotations by amending the documents in which case all rights and obligations of the purchaser and parties previously subject to the deadline will thereafter be subject to the deadline as extended.
  
28. The last date for submission of sealed bids at this Office is **03.01.2022 up to 03:00PM** at the address specified. The Quotations received after 03.00 PM on the last date stipulated will be summarily rejected. In the event of the specified date for submission of quotations being declared as holiday for the purchaser, the quotations will be received up to the appointed time on the next working day.
  
29. The purchaser will open the tender box and the quotations, in the presence of representatives of the firms who may wish to participate the quotation opening at **04:00 PM. On 03.01.2022 in the Office of the Director, National Silkworm Seed Organization, Central Silk Board, Bangalore.** The firms interested to be present at the time of opening of the bids can participate at 04:00 PM on the above said date.

NATIONAL SILKWORM SEED ORGANIZATION  
CENTRAL SILK BOARD BANGALORE – 560 068

EGG PRESERVATION COLD ROOM

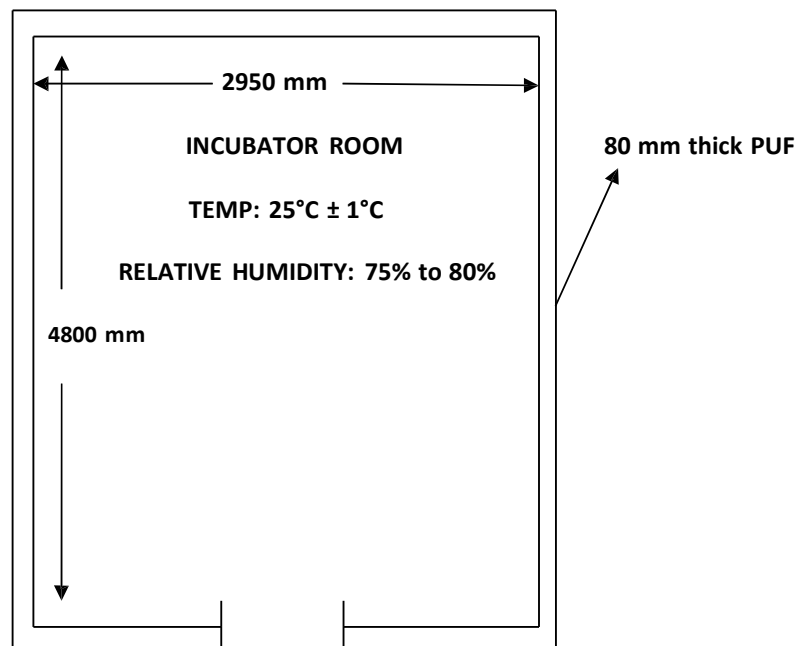
(All dimensions are in mm)

Size of the cold rooms: Internal Dimensions

Length: 4800 mm

Width: 2950 mm

Height: 2680 mm



Door Size: 940 mm X 2060 mm

Measurement: Not to scale



NATIONAL SILKWORM SEED ORGANIZATION  
CENTRAL SILK BOARD BANGALORE – 560 068

EGG PRESERVATION COLD ROOM

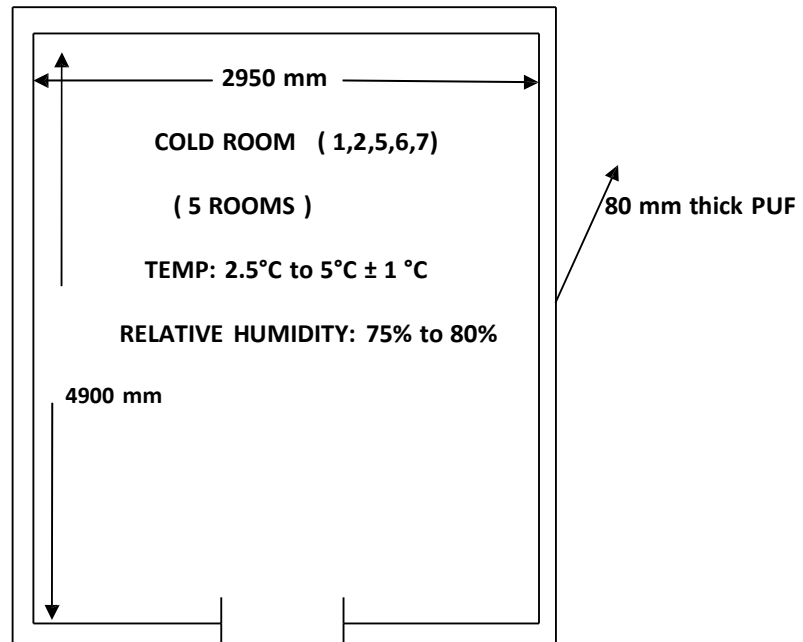
(All dimensions are in mm)

Size of the cold rooms: Internal Dimensions

Length: 4900 mm

Width: 2950 mm

Height: 2680 mm



Door Size: 940 mm X 2060 mm

Measurement: Not to scale

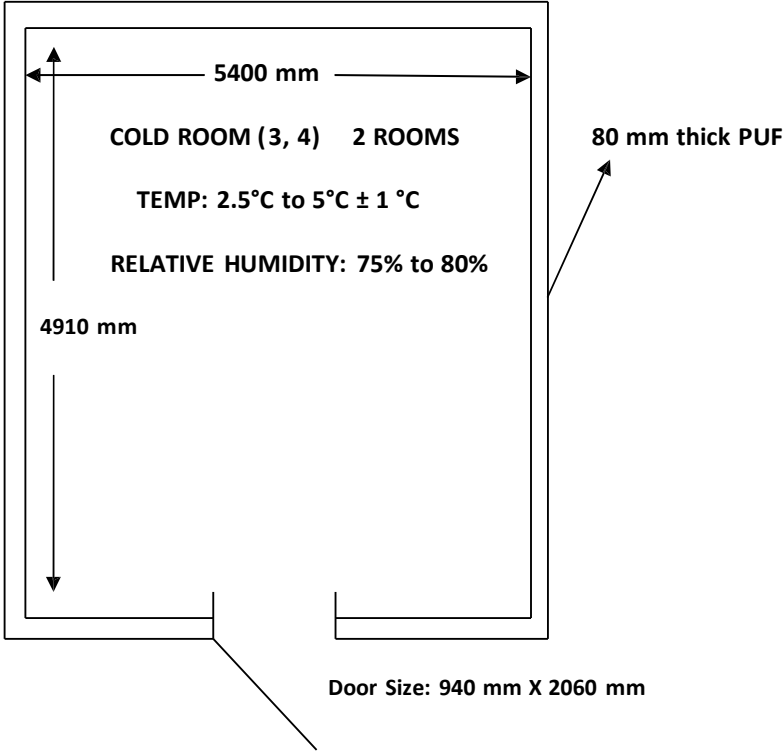
NATIONAL SILKWORM SEED ORGANIZATION  
CENTRAL SILK BOARD BANGALORE – 560 068

EGG PRESERVATION COLD ROOM

(All dimensions are in mm)

Size of the cold rooms: Internal Dimensions

- Length: 4910 mm
- Width: 5400 mm
- Height: 2680 mm



Measurement: Not to scale

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**EGG PRESERVATION COLD ROOM**

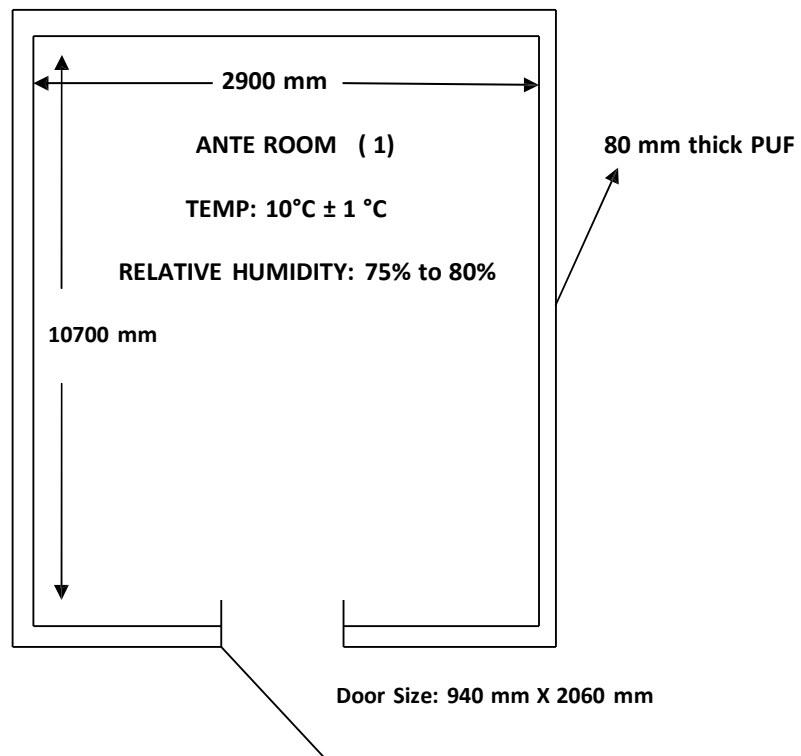
(All dimensions are in mm)

Size of the cold rooms: Internal Dimensions

Length: 10700 mm

Width: 2900 mm

Height: 2680 mm



Measurement: Not to scale

NATIONAL SILKWORM SEED ORGANIZATION

CENTRAL SILK BOARD BANGALORE – 560 068

EGG PRESERVATION COLD ROOM

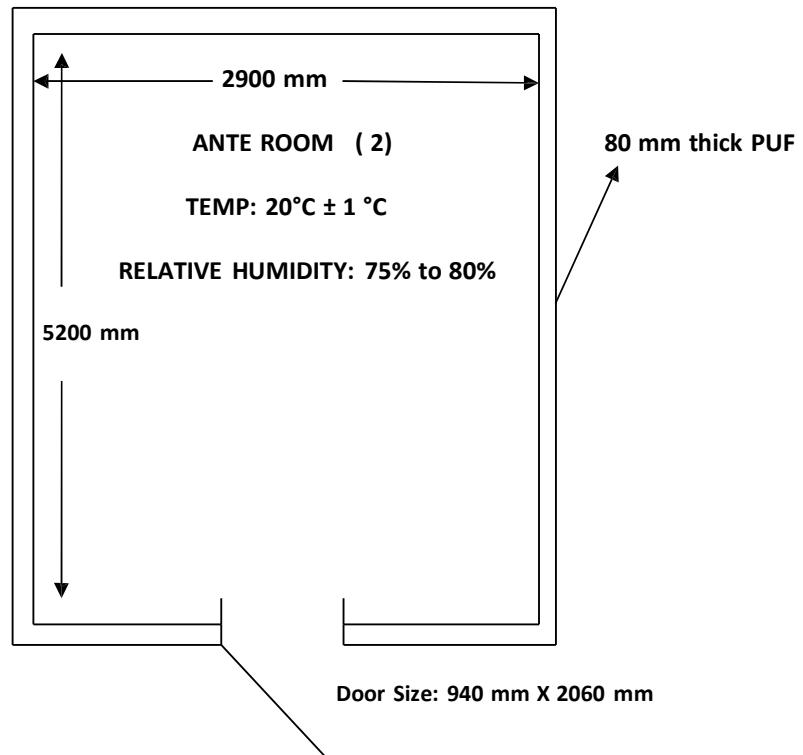
(All dimensions are in mm)

Size of the cold rooms: Internal Dimensions

Length: 5200 mm

Width: 2900 mm

Height: 2680 mm



Measurement: Not to scale

**ANNEXURE - I****COLD STORAGE PLANT, NSSO, MYSURU  
DETAILS OF REFRIGERATED UNITS**

Sl.No	Location	Indoor Unit Model	Outdoor Unit Model	Make	Capacity in Btu/hr
1	Cold Room- 1	RUAH 02014KPI	RUAH 0S2014	BLUE STAR	20000
		RUAH 02014KPI	RUAH 0S2014		
2	Cold Room- 2	RUAH 02014KPI	RUAH 0S2014	BLUE STAR	20000
		RUAH 02014KPI	RUAH 0S2014		
3	Cold Room- 3	RUAHO3014KPI	RUAH 0S3014	BLUE STAR	30000
		RUAHO3014KPI	RUAH 0S3014		
4	Cold Room- 4	RUAHO3014KPI	RUAH 0S3014	BLUE STAR	30000
		RUAHO3014KPI	RUAH 0S3014		
5	Cold Room- 5	RUAH 02014KPI	RUAH 0S2014	BLUE STAR	20000
		RUAH 02014KPI	RUAH 0S2014		
6	Cold Room- 6	RUAH 02014KPI	RUAH 0S2014	BLUE STAR	20000
		RUAH 02014KPI	RUAH 0S2014		
7	Cold Room- 7	RUAH 0154KPI	KHM511PDLE57DAD	BLUE STAR	15000
		RUAH 0154KPI	KHM511PDLE57DAD		
8	Incubator Room- 1	RUAH 0154KPI	KHM511PDLE57DAD	BLUE STAR	15000
		RUAH 0154KPI	KHM511PDLE57DAD		
9	Incubator Room- 2	RUAH 0154KPI	KHM511PDLE57DAD	BLUE STAR	15000
		RUAH 0154KPI	KHM511PDLE57DAD		
10	Ante Room- 1	RUAH 02014KPI	RUAH 0S2014	BLUE STAR	20000
		RUAH 02014KPI	RUAH 0S2014		
11	Ante Room- 2	RUAH 0154KPI	KHM511PDLE57DAD	BLUESTAR	15000

**Note: 1. Incubator 1& 2, Cold Room 7, Anti Room 2 Outdoor units were Emerson Make.**

**2. All the 11 rooms were having Stand by Units except Ante Room -2**

**COLD STORAGE PLANT, NSSO – MYSURU**

**DETAILS OF HUMIDIFIERS**

<b>SL.No</b>	<b>Room</b>	<b>Model</b>	<b>Capacity</b>	<b>Power</b>	<b>Make</b>
1	Incubator - 1	400ES60EMN	6 KG	4.5 KW	PEGO
2	Incubator - 2	400UMCLO2	12 KG	9 KW	PEGO
3	Ante Room -2	400ES60EMN	6 KG	4.5 KW	PEGO

**DETAILS OF HEATERS**

<b>SL.No</b>		<b>Model</b>	<b>Power</b>	<b>No. of Units</b>	<b>Make</b>
1	Incubator Room 1	Heater Bank	10 kw	2	Star Coolers & Condensers Pvt Ltd
2	Incubator Room 2	Heater Bank	10 kw	2	

**CENTRALISED MONITORING SYSTEM- DATA LOGGER DETAILS**

Make: EMERSON Climate Technologies - Dixell Monitoring Systems

Model: XWEB500D

Version: 1.2

Power: 110 – 230 V

Power: 15 VA Max T – 10- 60 deg C RH – 20-85%

**Note: All the Refrigerated Units, Humidifiers, Heater were under the Data logger monitoring system.**

## DATA SHEET – General

SL. NO	Description	Cold Room	Ante Room	Incubator Room
1	Size Of the Room ( in Mtrs)	4.91 X 2.95	2.93 x 5.97	4.79 X 2.95
2	Type Of Refrigeration unit	DX Type Air-cooled Split Unit	DX Type Air-cooled Split Unit	DX Type Air-cooled Split Unit
3	Capacity Refrigeration Unit (In BTU )	30000 & 20000 &15000	20000 &15000	15000
4	Type of Compressor	Scroll Hermetic, Reciprocating Hermetic	Scroll, Reciprocating Hermetic	Reciprocating Hermetic
5	Compressor Make	Copeland	Copeland	Copeland
6	Number Of Evaporators and Condensing Unit	All the Rooms having 100 % stand by condensing and evaporator units		
7	Refrigerant	R404 a & R134 a	R404 a & R134 a	R134 a
8	Refrigerant Capacity (kg)	3.5 & 2.5 & 2	2.5 & 2	2
9	Power Supply connected including stand by unit 3 PH,440 V,50 HZ	4.4 kw & 3.1 kw &2.2 kw	3.1 kw & 2.2 kw	2.2 kw
10	Timer	Through Timer with programmable resolution to trip and start compressor as & when desired		
11	Defrost Type	Not Provided	Not Provided	Not Provided
12	Type of Light Fittings	2 X 28W Weather Proof fitting	2 X 28W Weather Proof fitting	1 X 28W Weather Proof fitting
13	Number Of Light Fittings	7 & 3	4 & 3	10

**ANNEXURE -3****DATA SHEET – Compressor**

<b>Sl.No</b>	<b>Description</b>	<b>Cold Room</b>	<b>Ante Room</b>	<b>Incubator Room</b>
1	Type Of Compressor	Scroll Hermetic	Scroll, Reciprocating Hermetic	Reciprocating Hermetic
2	Make	Copeland	Copeland	Copeland
3	Refrigerant	R404 a & R134 a	R404 a & R134 a	R134 a
4	Refrigerant Connections	Braze With Compressor for Liquid & Suction		
5	Power Supply	V/PH/HZ - 415 / 3 / 50		
6	Power (W)	3725 & 2630 & 1634	2630,1634	1634
7	Compressor LRA	50,36-40,20	36-40,20	20
8	Compressor RA	4.8,3.5 , 2.8	3.5,2.8	2.8
9	HP	Saginomia 400 psig	Saginomia 400 psig	Saginomia 400 psig
10	LP	Saginomia 35 psig	Saginomia 35 psig	Saginomia 35 psig



**Data Sheet – Evaporator**

<b>Sl.No</b>	<b>Description</b>	<b>Cold Room</b>	<b>Ante Room</b>	<b>Incubator Room</b>
1	Type of Evaporator	DX	DX	DX
2	Model	RUAH 20 & 30	RUAH 20	RUAH 15
3	Make	BLUESTAR	BLUESTAR	BLUESTAR
4	Cooling Coil Material	Copper	Copper	Copper
5	Material of Body	SS 304	SS 304	SS 304
6	Air Throw (cfm)	3650 & 3200 &2400	3200 & 2400	2400
7	Fins Material	AL	AL	AL
8	Fins per Inch	8	8	8
9	Number of Rows	3	3	3
10	Type of Fan	AXIAL Flow	AXIAL Flow	AXIAL Flow
11	Type of Defrost	Not Provided	Not Provided	Not Provided

**ANNEXURE - 5**

**Data Sheet - Air Cooled Condenser**

<b>Sl. No</b>	<b>Description</b>	<b>Cold Room</b>	<b>Ante Room</b>	<b>Incubator</b>
1	Type Of Condenser	Air Cooled	Air Cooled	Air Cooled
2	Material Of Body	GI Powder Coated	GI Powder Coated	GI Powder Coated
3	Model	RUAH	RUAH & KHM	KHM
4	Make	BLUESTAR & EMERSON	BLUESTAR & EMERSON	EMERSON
5	Condensing Coil Tube Material	Copper	Copper	Copper
6	Fin Material	Aluminium	Aluminium	Aluminium
7	Fins per Inch	14	14	14
8	Over all face area in (sq.mtr)	1.1 & .55	0.55 & 0.37	0.37
9	No of Rows	2	2	2
10	Type of Fan	AXIAL	AXIAL	AXIAL

**ANNEXURE – 5A**

**Data Sheet – Fan Motor Indoor Unit**

<b>Sl.No</b>	<b>Description</b>	<b>Cold Room</b>	<b>Ante Room</b>	<b>Incubator Room</b>
1	Make	BLUESTAR	BLUESTAR	BLUESTAR
2	Model	RUAH 20 & 30	RUAH 20	RUAH 15
3	Type of Fan	AXIAL	AXIAL	AXIAL
4	Size of Fan Motor(in mm)	500 & 300	300	300
5	No of Fan Motors	2 & 4	4 & 3	3
6	Power (W )	300 & 90	90	90

**Fan Motor Outdoor Unit**

<b>Sl.No</b>	<b>Description</b>	<b>Cold Room</b>	<b>Ante Room</b>	<b>Incubator Room</b>
1	Make	Marathon Electric	Marathon Electric	Marathon Electric
2	Type of Fan	AXIAL	AXIAL	AXIAL
3	No of Fan Motors	2 & 1	1	1
4	Power (W )	75 & 187	75	75

**Refrigeration Components Details**

1. Expansion Valve

Sl.No	Description	Cold Room	Ante Room	Incubator Room
1	Model	TES 2	TSES 2	TES 2
2	Orifice	4 & 6	4	4
3	Qty	1	1	1

2. Filter Drier

Sl.No	Description	Cold Room	Anti Room	Incubator Room
1	Filter Drier Type	DML 163	DML 163	DML 163

3. Digital Temperature Controller

Make; Sub – Zero

Model: SZ 7510

**Data Sheet – Humidifier**

Sl.No	Description	Cold Room	Ante Room	Incubator Room
1	Make	PEGO	PEGO	PEGO
2	Capacity	6/12 KG / HR	6 KG / HR	6/12 KG / HR
	Power Supply	400 V / 3 PH/ 50 HZ		
3	Power ( kw)	4.5/ 9	4.5	4.5 / 9
4	Absorbed Current	6/5/1 3	6/5	6/5/13
4	Relative Humidity Maintenance (%)	75-85	75-85	75-85
5	Cylinders Number	1	1	1
6	Water Supply Pressure	1- 10 bar		
7	Functioning Ambient Temperature	+ 1 to 40 deg C		
8	Functioning Ambient Humidity	< 60 % RH (90% RH non condensing)		
9	Storage Temperature	-10 to 70 deg C		
10	Protection Rating	IP 20		
11	Steam Outlet Diameter (mm)	25	25	25

**Data Sheet – Heater**

Sl.No	Description	Model	Power	No. of Units	Make
1	Incubator Room 1	Heater Bank	10 kw	2	Star Coolers & Condensers Pvt Ltd
2	Incubator Room 2	Heater Bank	10 kw	2	

**Data Sheet - Data Logger**

Make: EMERSON Climate Technologies - Dixell Monitoring Systems

Model: XWEB500D

Version: 1.2

Power: 110 – 230 V

Power: 15 VA Ma