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**Haryana State Co-operative Supply and Marketing Federation Ltd.**

**INVITE**

**REQUEST FOR PROPOSAL**

**For Selection of Agency to Operate & Maintain  
Fortified Rice Kernel (FRK) Plant through PPP mode  
in Karnal, Haryana**



Ref. No. Hafed.....XX.....XX.....

**Issued By:**

**HARYANA STATE CO-OPERATIVE SUPPLY AND MARKETING FEDERATION LIMITED**

**HAFED BUILDING, SECTOR 5,  
PANCHKULA, HARYANA – 134108**

## Table of Contents

<b>DISCLAIMER.....</b>	<b>4</b>
Document Control Sheet.....	6
1. Introduction .....	7
2. Background .....	8
3. Purpose of RFP .....	8
4. Role of HAFED .....	9
5. Role of the Agency: .....	10
6. Financial Projections .....	11
Revenue Model .....	11
7. Eligibility criteria, Technical and Financial capability of bidder.....	13
Eligibility of applicants.....	13
Methodology for O & M.....	14
Technical bid qualification .....	14
Evaluation of Technical proposal .....	15
Evaluation of Financial Proposal .....	15
Final Evaluation .....	15
8. Information and instructions to the bidders – General instruction .....	16
Checklist of Submission.....	16
Important Instructions .....	16
Pre-bid Queries .....	17
9. Acknowledgement by Applicant .....	19
10. Right to Accept or Reject any or all Applications/ Bids .....	19
11. Amendment of RFP .....	20
12. Language of proposal .....	20
13. Format and Signing of application .....	20
14. Submission of proposal .....	21
15. Application due date .....	21
16. Late applications .....	21
17. Opening & Evaluation of Applications.....	21
18. Confidentiality.....	22
19. Clarifications from Applicants .....	22
20. Shortlisting & Notification.....	22

21.	Proprietary Data.....	22
22.	Conflict of Interest .....	23
23.	Penalty .....	23
24.	Notification of Award of Contract.....	23
25.	Signing of Contract.....	23
26.	Sub-contracting/Subletting.....	24
27.	Termination by default .....	24
28.	Dispute Resolution .....	24
29.	Validity of Proposal .....	25
30.	Validity of Offers .....	25
31.	Fraud & Corrupt Practices.....	25
	ANNEX-1: COST OF BID DOCUMENT AND BID EMD DECLARATION .....	28
	ANNEX-2: INCOME TAX RETURN & PAN NUMBER.....	29
	ANNEX-3: UNDERTAKING .....	30
	ANNEX-4: Format for Financial Bid .....	32
	Annexure 5:- Civil Work .....	34
	Annexure 6: -Proposed Plant and Machinery .....	42

### **DISCLAIMER**

The information contained in this Request for Proposal document (the “RFP”) or subsequently provided to Bidder(s), whether verbally or in documentary or any other form, by the Haryana State Co-operative Supply and Marketing Federation Limited (the “HAFED”) (the “Authority”) or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is neither an offer nor invitation by the Authority to the prospective Bidders or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in the formulation of their Bid for qualification pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Authority in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require.

This RFP may not be appropriate for all persons, and it is not possible for the Authority, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP may not be complete, accurate, adequate or correct. Each Bidder should therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Authority accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The Authority, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Bidder, under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way with qualification of Bidders for participation in the Bidding Process. The Authority also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP.

The prospective Bidders are hereby informed that the FRK Plant is going to setup at Taraori. The Project envisages Design, Built, Finance, Operate and Transfer of the said unit, details of which have been mentioned in this RFP.

The Authority may, in its absolute discretion but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this RFP.

The issue of this RFP does not imply that the Authority is bound to select or to appoint the Selected Bidder or Concessionaire, as the case may be, for the Project and the Authority reserves the right to reject all or any of the Bids or Bids without assigning any reasons whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Authority or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the Authority shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation for submission of the Bid, regardless of the conduct or outcome of the Bidding Process.

## 1. Introduction

Government of Haryana is committed to improve the health and nutritional status of women and children in the State. Micronutrient deficiency has been identified as a major underlying cause of many health and nutritional disorders including stunting, anemia and some congenital birth defects (including Neural Tube Defects). The latest NFHS-4 data for Haryana shows high prevalence of anemia among children i.e. 71.7% while for non-pregnant and pregnant women is 63 % and 55% respectively which is higher than the national average.

Since food fortification is one of the most cost-effective strategies to address micronutrient deficiencies, Haryana has taken a proactive approach and used this as one of the key strategies to address the issue of hidden hunger. The state started Food Fortification through various vehicles. Milk is being fortified with Vit. A and D, Edible oil is fortified with Vit. A and D and being used in ICDS and MDM, double fortified salt in ICDS and MDM and distribution of fortified wheat flour through PDS in 5 districts reaching around 3.3 million beneficiaries. Fortified wheat flour is also being distributed in ICDS and MDM in 15 districts.

Milled rice generally is low in micronutrient content because its nutrient-rich superficial layer is removed during rice milling and polishing operations. This makes the grain taste better and visually appealing but less nutritious. Rice fortification is a cost effective, culturally appropriate strategy to address micronutrient deficiencies in countries with high per capita rice consumption. Fortification of rice makes it more nutritious by adding vitamins and minerals, many of which are lost during the milling and polishing process. Rice fortified with the fortification mix through extruded fortified kernels mixed with non-fortified rice in a ratio varying from 0.5% to 2% is called Fortified Rice.

Rice Flour is pulverized and mixed with a premix containing vitamins and minerals. Fortified Rice Kernels are produced from this mixture using an extruder machine. Fortified Rice Kernels resembles milled rice in size, shape, and colour but contain

additional vitamins and minerals that retain their micronutrient content when washed and boiled in water. When these kernels are blended with non-fortified rice, typically at a ratio of 1:100, the result is Fortified Rice that is nearly identical to non-fortified rice in aroma, taste, and texture. It is then distributed for regular consumption.

The Fortified Rice Kernels (FRK) and Fortified Rice production facility is like any other food processing facility. All standard manufacturing, quality-control, and food-safety guidelines should be followed during FRK production. Guidelines on good manufacturing practices (GMPs) should be mandatorily followed during Fortified Rice production. The manufacturing and food safety practices must comply with all the statutory and regulatory guidelines of FSSAI as provided in the FSS Act, 2006 and Regulations.

## 2. Background

As per the mandate of Govt. of India and FSSAI all standard manufacturing, quality-control, and food-safety guidelines should be followed during FRK production. Guidelines on good manufacturing practices (GMPs) has been issued which should be mandatorily followed during Fortified Rice production. The manufacturing and food safety practices must comply with all the statutory and regulatory guidelines of FSSAI as provided in the FSS Act, 2006 and Regulations. Therefore, the Authority has decided to invite bids for selection of prospective bidder who shall Operate and maintain 48 TPD Fortified Rice Kernel (FRK) plant through Public Private Partnership (the “PPP”) mode at Hafed Complex Taraori, Distt Karnal.

## 3. Purpose of RFP

HAFED intends to establish FRK plant of capacity 48 tons per day at its Taraori Complex, situated on Delhi-Chandigarh highway. The detailed engineering and DPR has already been prepared by HAFED through a consultant which has been appointed for providing PMC services also for successfully supervising the erection and commissioning of the plant. HAFED intends to select an O & M partner, which will be handed over the FRK

plant after commissioning to run for minimum period of 10 years which may be extendable after analyzing the performance of private partner & approval of competent authority.

The raw material broken rice will be arranged by HAFED and the bidder jointly. The complete output of FRK will be marketed by HAFED & bidder jointly, The Micronutrients and Vitamins etc., utilities, manpower will be sourced by the O & M partner. The costing, revenue and profit will be calculated, and O & M partner will share fixed ratio of profit to with HAFED, besides paying some fixed amount per KG as profit. The entire project cost of Rs. 21,00 lakh will be borne by the O & M partner. The proposed plant will be most modern and state of art for which detailed engineering and specifications have already been prepared and HAFED will initiate the bid for EPC for commissioning of the plant.

This bid is for selecting a professional O & M partner who will be handed over the plant initially for a period of ten years which can be extended on the request of O & M partners after analyzing performance and approval of competent authority. The Hafed intends to select an eligible bidder, through an open competitive bidding process in accordance with the procedure set forth herein.

#### 4. Role of HAFED

- I. The land and the godowns / building for setting up of the plant will be provided by HAFED and the other construction cost if any of the building will be borne by the O & M partner.
- II. The ownership of the land, entire plant machinery and building shall remain with HAFED.
- III. The entire plant will be set up by HAFED as per the DPR and detailed specification already being prepared by HAFED which are given in Annexure V and VI (for reference).
- IV. The partner firm will arrange all raw material and other requirement of material, labour etc. in association with Hafed.
- V. HAFED will regulate the functioning of the plant:
  - a. Random inspection of Operation at any of the facilities, as desired by HAFED.



- b. Direct the successful bidder to undertake appropriate steps required for proper upkeep & maintenance of the facilities and remove any shortcoming observed by them and necessary for efficient working of the plant at their own costs.
  - c. Facilitate in providing necessary regulatory approvals as and when required.
- VI. HAFED shall have the sole rights of Marketing and Sales of the finished goods.

#### 5. Role of the Agency:

- I. The Successful Bidder would be responsible for complete O & M, quality control and FSSAI and other standards compliance production of minimum @ 70% of the plant capacity in the first year, 80% second years and 90% or higher subsequently from third years onwards.
- II. O & M will be for initial period of 10 years which may be extended on satisfactory performance for a further period of 10 years. The O & M period would commence from the date of handing over the completed project facilities to the successful bidder by HAFED.
- III. The required maintenance for proper functioning of the Plant will be borne by the selected agency throughout the O & M period. The details of the civil work, plant and machinery and layout is given in Annexure- V and VI.
- IV. HAFED will share the drawings, O & M manuals of the entire plant to the successful bidder. The O & M bidder will deploy the required technically skilled manpower to run the plant in three shifts.
- V. Furthermore, without prejudice to the generality of the foregoing, it is clarified that the Bidder shall also be responsible for the repair, replacement or making good of any defect, or of any damage to the Facilities arising out of or resulting from any of the following causes:
  - a. Improper operation or maintenance of the Facilities by the Bidder during operation and maintenance of the Facility.
  - and
  - b. Operation of the Facilities outside the specifications of the facilities
- VI. The bidder shall at his own expense provide the required manpower and all amenities to its manpower as per applicable laws and rules.

- VII. The bidder shall ensure that all safety measures are taken at the site to avoid accidents to his or his sub-Bidder or any workmen.
- VIII. The bidder shall be responsible for any loss, damages to equipment, and machineries during O & M.
- IX. The Successful Bidder shall execute the O & M Agreement with HAFED.

## 6. Financial Projections

The financial projections prepared as on date are given in below table:

The tentative cost of civil and plant and machinery has been pegged at around Rs.2100 Lacs, which will be borne by HAFED initially and bidder has to share @40% of the cost which comes to around Rs.840.00 lacs (excluding the cost of land). The successful bidder can deposit this amount in four equal instalments:

- @25% Rs. 210 lacs on signing of the contract,
- @25% Rs.210 lacs, after Plant and machinery order placement
- @25% Rs.210 lacs, after six months during progress of the project work completion of civil construction,
- @25% Rs.210 lacs on Plant handover for O&M

### 6.1 Revenue Model

1. HAFED and the selected agency will share profit in the fixed proportion. Baseline for the minimum of revenue sharing is fixed at 60%.
2. Accordingly, bidders are requested to quote the percentage of revenue (over and above the 60% being minimum) which they want to share with HAFED once the plant start its operations.
3. Financial bids with less than 60% of revenue sharing values will not be accepted.

The table below reveals the projected profit per kg and profit sharing @60% to Hafed

S. No.	PARTICULARS		Amount in Rs. (Per Kg.)
	Installed Capacity Per Day (in MT) 100%		48
1	Sale price		55.00
2	<b>COST OF PRODUCTION</b>		
2.1	Raw Material Consumed		
2.1.1	Broken Rice (97%) @ Rs. 20	17.46	

S. No.	PARTICULARS		Amount in Rs. (Per Kg.)
2.1.2	Vitamin-Mineral Premix (3%) @ Rs. 450	13.50	
		<b>30.96</b>	
2.1.3	Processing Loss 1%	0.31	
2.1.4	Packaging Material	0.60	31.87
2.2	Consumables @ 2%		0.64
2.3	Power, Fuel & Water		9.19
2.4	Salary & Wages		1.32
2.5	Fringe Benefits @ 10%		0.13
2.6	Insurance		0.08
2.7	Repair & Maintenance @ 2%		0.24
2.8	Administrative Expenses		0.14
<b>Total</b>			<b>43.61</b>
EBITD			11.39
<b>Less: Interest</b>			<b>1.50</b>
Net profit per kg			9.89
<b>Net Profit per day (Rs.)</b>			<b>474768</b>
<b>Net Profit per Year (Rs.)</b>			142430515
<b>Net Profit (Rs in lacs.)</b>			1424.31
<b>profit First year @70%</b>			997.01
<b>Second year @80%</b>			1139.44
<b>Third year onward @90%</b>			<b>1281.87</b>

Profit sharing with HAFED	Estimated profit - bidder
5.93	3.96
284861	189907
85458309	56972206
854.58	569.72
598.21	398.81
683.67	455.78
<b>769.12</b>	<b>512.75</b>

For calculating the profit sharing, an independent audit firm will be appointed jointly by HAFED and bidder, fees of which will be shared in the same ration between the HAFED and bidder as share of the profit.

## 7. Eligibility criteria, Technical and Financial capability of bidder

### Eligibility of applicants

As part of eligibility criteria, only those bidders who meet the following eligibility criteria are eligible to participate in the Technical and Financial bidding process. Bidders failing to meet these criteria or not submitting requisite supporting documents / documentary evidence for supporting pre-qualification criteria are liable to be rejected summarily

To be eligible for evaluation of the Proposal, the Bidder shall fulfill the following Minimum Eligibility Criteria:

Sr. No	Minimum Eligibility Criteria	Documents Required
1.	The Bidder/Tenderer should have minimum experience 2 years of O & M of similar food processing plants or other processing plants viz. Grains Cleaning grading and sorting/ food extrusion process/steam Distillation/Spices or grains grinding plants/ equipment, dehydration/drying process technology plant/ sugar syrup plant & equipment of 40 to 50 TPD successfully either of its own or on behalf of other agency/ partner/ owner etc.	The documentary evidence / proof of the above experience should be submitted along with technical bid.
2.	Bidder should be a profit-making firm and should be in profit in the last 2 financial years.	Attach relevant document
3.	Bidder should be registered for ESI/PF and other manufacturing compliances.	Attach relevant document
4.	Bidder should have average turnover of Rs.10 crore Per Annum during last three financial years.	CA Certificate should be submitted along-with Technical Bid.
5.	Bidder should have net worth 1.5 times viz. Rs.12.60 crores	CA Certificate should be submitted along-with Technical Bid.
6.	Declaration as per Annex-2 along with attested Copy of Balance Sheet for the last three years, PAN No., GST Registration Certificate of	Declaration

Sr. No	Minimum Eligibility Criteria	Documents Required
	the bidder	
7.	The bidder should be registered with appropriate authorities under Income Tax Deptt., GST department as applicable.	Attach relevant document
8.	The bidder should not be Blacklisted from any state/ Central agency in the country.	Self-attested undertaking should be submitted by the Bidder.

#### Methodology for O & M

Bidder will submit working plan and methodology for O & M of the making the successful plant and operation and achieving the desired minimum operational efficiencies which are @70% (minimum ) in first year and 80% in second year and @90% from third years onwards.

#### Technical bid qualification

Technical evaluation will be done only for those bidders who have qualified the pre-qualification stage. The technical evaluation of the qualified bidders shall be done based on the following evaluation criteria: -

S. N	Evaluation Criteria	Maximum marks	Reference document
1	O & M experience of similar plant of size 40 to 50 tons per day <ul style="list-style-type: none"> <li>2 years: 10 marks</li> <li>2 to 5 years: 15 marks</li> <li>More than 5 years: 20 marks</li> </ul>	20	
2	Average turnover for last three years <ul style="list-style-type: none"> <li>10 crores – 10 marks</li> <li>10 upto 15 crores 15 marks</li> <li>&gt; 15 crores 20 marks</li> </ul>	20	
3	Existing technical manpower strengths <ul style="list-style-type: none"> <li>Minimum 30 personal on full</li> </ul>		

S. N	Evaluation Criteria	Maximum marks	Reference document
	time pay-roll 10marks <ul style="list-style-type: none"> <li>▪ &gt;30 but &lt; 50 15 marks</li> <li>▪ &gt;50 20 marks</li> </ul>		
4	Methodology and O & M plan	40	
5	Net worth and financial strength <ul style="list-style-type: none"> <li>▪ 12.60 to 15 crore 10 marks</li> <li>▪ 15.01 to 20 crore 15 marks</li> <li>▪ &gt;20 crore 20 marks</li> </ul>	20	
	<b>Total</b>	<b>100 marks</b>	

#### Evaluation of Technical proposal

The minimum Technical Qualification score for the bidder to be qualified is 70 for opening of Financial Bid.

The financial bid will be opened only of technically qualified bidders, and bidder which quote profit sharing more than the threshold required @60% sharing will be considered for the award of the contract.

#### Evaluation of Financial Proposal

- i. Minimum baseline for the sharing of revenue is fixed at 60%. Accordingly, bidders are suggested to quote more than 60% in the financial bid.
- ii. Financial bids with having quote less than 60% would be rejected.
- iii. The department will determine whether the Financial Proposals are complete, unqualified, and unconditional. The cost indicated in the Financial Proposal shall be deemed as final and reflecting the total cost of services. Omissions, if any, in submitting the profit sharing in the financial bids shall not entitle the bidder to be compensated and the liability to fulfill its obligations as per the RFP within the total quoted profit sharing.

#### Final Evaluation

The Next Ranked Bidder shall be kept in reserve and maybe invited for negotiations in case the selected Bidder withdraws or fails to comply with the requirements specified in this document.

## 8. Information and instructions to the bidders – General instruction

### Checklist of Submission

#	Criteria/Form	Status (Submitted/ Not Submitted)	Page No.
1.	Tender Processing fee		
2.	Bid Security / EMD Amount		
3.	Technical proposal / Bid with all relevant documents		
4.	Bidder's relevant document Registration Certificates, last three years audited balance sheet and ITR		
5.	CA's Net worth Certificate		
6.	Experience Details and relevant documents/ certificate		
7.	Undertaking (Annex 3)		
8.	Methodology		
9.	Manpower and resources details		
10.	Financial Bid		

### Important Instructions

#### Registration of bidders on e-Procurement Portal

All the bidders intending to participate in the tenders process online are required to get registered on the e - Procurement Portal i.e. <https://etenders.hry.nic.in/>. Please visit the website for more details.

#### Obtaining a Digital Certificate

- i. The Bids submitted online should be encrypted and signed electronically with a Digital Certificate to establish the identity of the bidder bidding online. These Digital Certificates are issued by an Approved Certifying Authority, by the Controller of Certifying Authorities, Government of India.
- ii. The bidders may obtain Class-II or III digital signature certificate from any Certifying Authority or Sub-certifying Authority authorized by the Controller of Certifying Authorities

- iii. Bid for a particular tender must be submitted online using the digital certificate (Encryption & Signing), which is used to encrypt and sign the data during the stage of bid preparation.
- iv. If the digital certificate issued to the authorized user of a firm is used for signing and submitting a bid, it will be considered equivalent to a no-objection certificate /power of attorney / lawful authorization to that User. The firm has to authorize a specific individual through an authorization certificate signed by all partners to use the digital certificate as per Indian Information Technology Act 2000. Unless the certificates are revoked, it will be assumed to represent adequate authority of the user to bid on behalf of the firm in the department tenders as per Information Technology Act 2000. The digital signature of this authorized user will be binding on the firm.

### Download of Tender Documents

The tender documents can be downloaded free of cost from the eProcurement portal <https://etenders.hry.nic.in/nicgep/app> and also from <http://hafed.gov.in/>

### Pre-bid Queries

Bidders may request a clarification with regard to any part of the RFP document. Any request for clarification must be sent in writing through e-mail with subject as “Selection of Agency to Setup and Operate the Fortified Rice Kernel (FRK) at Karnal” to the email id ..... and queries must reach by ..... The format for pre-bid clarification is as follows:

#	Section/ Clause No.	Name of Section/ Clause	Text (which is mentioned and requires clarification)	Clarification required (Suggested/proposed text)

- .1. The HAFED shall endeavor to respond to the questions raised or clarifications sought by the applicants. However, the HAFED reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this clause shall be taken or read as compelling or requiring the authority to respond to any question or to provide any clarification.
- .2. The HAFED may, on its own, if deemed necessary, issue interpretations and clarifications to all applicants. All clarifications and interpretations issued by the HAFED shall be deemed to be part of the RFP. Verbal clarifications and information given by the HAFED or its employees or representatives shall not in any way or manner be binding on the HAFED.



3. No alterations, amendments, omissions, additions, suspensions or variations of the work (hereinafter referred to as variation) under the contract shall be made by the successful bidder except as directed in writing by HAFED.
4. HAFED shall have full powers, to instruct the successful bidder to make any variation to the scope of work, roles, responsibilities, etc. of the contract, from time to time. The selected bidder shall carry out the aforesaid variations suggested by HAFED and be bound by the same terms and conditions as provided for in this RFP and/or the contract. The successful bidder will also have the discretion to give HAFED any suggestion with respect to the project/subject matter at hand. It is however clarified that acceptance/use of such suggestion/variations shall be the sole discretion of HAFED.

#### Number of Applications and costs thereof

- No bidder shall submit more than one application for the Project.
- The bidder shall be responsible for all of the costs associated with the preparation of their applications and their participation in the bid process. The Authority will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

## 9. Acknowledgement by Applicant

1. It shall be deemed that by submitting the Bid, the bidder has:
  - i. Made a complete and careful examination of the RFP;
  - ii. Received all relevant information requested from the HAFED;
  - iii. Accepted the risk of inadequacy, error or mistake in the information provided in the RFP or furnished by or on behalf of the department.
  - iv. Agreed to be bound by the undertakings provided by it under and in terms hereof.
2. The department shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP or the bidding process, including any error or mistake therein or in any information or data given by the HAFED.

## 10. Right to Accept or Reject any or all Applications/ Bids

- I. Notwithstanding anything contained in this RFP, the HAFED reserves the right to accept or reject any application and to annul the bidding process and reject all Bids, at any time without any liability whatsoever or any obligation for such acceptance, rejection or annulment, and without assigning any reasons thereof. In the event, that the authority rejects or annuls all the applications/bids, it may, in its discretion, invite all applicants/bidders to submit fresh applications/bids hereunder.
- II. The HAFED reserves the right to reject any application and/or bid if:
  - i. At any time, a material misrepresentation is made or uncovered, or
  - ii. The applicant does not provide, within the time specified by the authority, the supplemental information sought by authority for evaluation of the application.
- III. If such disqualification/ rejection occur after the Bids have been done and the highest bidder gets disqualified/ rejected, then the HAFED reserves the right to:
  - i. Invite the next highest bidders to match the highest bidder/ submit their bids in accordance with the RFP;
  - or
  - ii. Take any such measure as may be deemed fit in the sole discretion of the authority, including annulment of the bidding process.
- IV. The HAFED reserves the right to verify all statements, information and documents submitted by the applicant in response to the RFP. Any such verification or lack of such verification by the authority shall not relieve the applicant of its obligations or liabilities hereunder nor will it affect any rights of the authority there-under.

## 11. Amendment of RFP

- .1. At any time prior to the deadline for submission of bid, the HAFED may, for any reason, whether at its own initiative or in response to clarifications requested by the bidders, modify the RFP by the issuance of Addendum.
- .2. Any Addendum thus issued will be uploaded online on <https://etenders.hry.nic.in/nicgep/app> and [www.vitaindia.org.in](http://www.vitaindia.org.in).
- .3. In order to afford the bidders, a reasonable time in which to take an Addendum into account, or for any other reason, the HAFED may, at its own discretion, extend the application due date.

## 12. Language of proposal

- .1. The application and all related correspondence and documents should be written in the English language. Supporting documents and printed literature furnished by the bidder with the application may be in any other language provided that they are accompanied by appropriate translations of the pertinent passages in the English language, duly authenticated and certified by the applicant. Supporting materials, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the bid, the English language translation shall prevail.
- .2. All communication provided should be legible, and wherever the information is given in figures, the same should also be mentioned in words. In case of difference in amounts stated in figures and words, the amount stated in words only will be taken as correct and final.

## 13. Format and Signing of application

- .1. The proposal shall provide all information sought under this RFP. The HAFED would evaluate only those bids that are received in the required format and complete in all respects. Incomplete and / or conditional bid shall be liable for rejection.
- .2. The bidder shall submit separate folders for Pre-qualification document, technical document and financial document.
- .3. The proposal shall be typed or written in indelible ink, stamped (Company/firm stamp or seal) and signed by the Authorized signatory of the applicant who shall also initial each page. In case of printed and published documents, only the cover shall be initialled. All the alterations, omissions, additions or any other amendments made to the bid shall be initialled by the person(s) signing the bid. The proposal shall contain page numbers.

#### 14. Submission of proposal

The bidders shall upload the required technical and commercial documents online on <https://etenders.hry.nic.in/nicgep/app> using the digital certificate

#### 15. Application due date

- .1. The bids should be submitted before time mentioned in Document control sheet in the manner and form as detailed in this RFP.
- .2. In the event that the due date for the bid submission is a holiday for the HAFED, the next working day (at same time) will be the date of submission.
- .3. The HAFED may, in its sole discretion, extend the application due date by issuing an Addendum.

#### 16. Late applications

Applications received by the Authority after the application due date shall not be eligible for consideration and shall be summarily rejected. Authority shall not be responsible for any delay in submission of the same.

#### 17. Opening & Evaluation of Applications

- .1. The HAFED would open the bids for the purposes of evaluation at the place specified in Document Control Sheet and in the presence of the applicants who choose to attend.
- .2. The bidders will be deemed to have understood and agreed that no explanation or justification on any aspect of the bidding process or selection will be given.
- .3. Any information contained in the bid shall not in any way be construed as binding on HAFED, its consultants, agents, successors or assigns, but shall be binding against the bidder if any project is subsequently awarded to it under the bidding process on the basis of such information.
- .4. The HAFED reserves the right not to proceed with the bidding process at any time without notice or liability and to reject any bid without assigning any reasons.
- .5. If any information furnished by the bidder is found to be incomplete, or contained in formats other than those specified herein, the HAFED may, in its sole discretion, exclude the relevant project from computation of the experience of the applicant.
- .6. In the event that a bidder claims credit for an Eligible Project, and such claim is determined by the HAFED as incorrect or erroneous, the HAFED shall reject such claim and exclude the same from computation of the experience. Where any information is found to be patently false or amounting to a material

misrepresentation, the HAFED reserves the right to reject the application and/ or bid in accordance with the provisions laid in this RFP.

#### 18. Confidentiality

Information relating to the examination, clarification, evaluation, and recommendation for the short-listed pre-qualified bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising the HAFED in relation to or matters arising out of, or concerning the bidding process. The HAFED will treat all information, submitted as part of the bid, in confidence and would require all those who have access to such material to treat the same in confidence. The HAFED may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/or authority or as may be required by law or in connection with any legal process.

#### 19. Clarifications from Applicants

- .1. To facilitate evaluation of applications, authority may, at its sole discretion, seek clarifications from any applicant regarding its application. Such clarifications shall be provided within the time specified by authority for this purpose. Any request for clarifications and all clarifications shall be in writing.
- .2. If the bidder does not provide clarifications sought, as mentioned above, within the prescribed time, its bid shall be liable to be rejected. In case, the bid is not rejected, the department may proceed to evaluate the bid by construing the particulars requiring clarification to the best of its understanding, and the bidder shall be barred from subsequently questioning such interpretation of the HAFED.

#### 20. Shortlisting & Notification

- .1. Based on the evaluation of bids, the HAFED would prepare a list of bidders that shall have been qualified through the evaluation criteria and the same will be communicated to all the bidders. The HAFED will not entertain any query or clarification from bidders who fail to qualify.
- .2. The pre-qualified/eligible bidder shall only be invited to make a presentation to the "Evaluation Committee" constituted for the purpose.
- .3. The financials of only those applicants will be opened, who have scored at least 70 in Technical Qualification.

#### 21. Proprietary Data

All documents and other information supplied by HAFED or submitted by the bidder to HAFED shall remain or become the property of the HAFED. The bidders are to treat all

information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their bid. The HAFED will not return any bid or any information provided along therewith.

## 22. Conflict of Interest

The agency shall not receive any remuneration in connection with the assignment except as provided in the contract. The agency and its affiliates shall not engage in any activities that conflict with the interest of HAFED under the contract. Agency shall provide professional, objective and impartial advice and at all times hold HAFED's interest paramount, without any consideration for future work and that in providing advice, they avoid conflicts with other assignments and their own corporate interests. The agency understands that it shall not be hired for any assignment that would be in conflict with their prior or current obligations to other clients, or that may place them in a position of being unable to carry out the assignment in the best interest of HAFED

Without limitation on the generality of the foregoing, an agency shall not be hired, under the circumstances set forth below:

- a) Relationship with HAFED's staff: Consultants/ Agencies (including their experts and other personnel, and sub-consultants) that have a close business or family relationship with a professional staff HAFED (or of the project implementing agency) who are directly or indirectly involved in any part of (i) the preparation of the TOR for the assignment, (ii) the selection process for the contract or (iii) the supervision of such contract may not be awarded a contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to HAFED throughout the selection process and the execution of the contract.

## 23. Penalty

If Agency fails to deliver the services per the agreement or to the expectation of HAFED, it shall be liable to pay penalty as may be imposed by HAFED. If there is still any performance issues after consecutive 02 quarters the contract shall be terminated and PBG and contribution shall be forfeited and blacklisted.

## 24. Notification of Award of Contract

The HAFED will notify the successful bidder in writing that its proposal has been accepted. The notification of award will constitute the formation of the contract after submission of performance bank guarantee by the successful bidder.

## 25. Signing of Contract

The successful bidder will sign the Contract with the HAFED within 15 days of the release of award of Contract. After signing of the Contract, no variation in or modification of the

term of the Contract shall be made except by mutual written amendment signed by both the parties

#### 26. Sub-contracting/Subletting

Neither party may assign nor transfer any of its rights and obligations under the Agreement to any person without the other party's consent. The successful bidder shall not assign or transfer the whole or any part of scope of work nor shall it subcontract/sublet.

#### 27. Termination by default

HAFED may terminate the Contract if:

- a) If the selected agency fails to remedy any breach hereof or any failure in the performance of its obligations hereunder, within fifteen (15) days of receipt of notice of default or within such further period as HAFED may have subsequently granted in writing;
- b) the selected agency becomes insolvent or bankrupt
- c) if the selected agency fails to comply decisions / mandate of HAFED.
- d) any document, information, data or statement submitted by the selected agency in its Proposals, based on which it was considered eligible or successful, is found to be false, incorrect or misleading; or
- e) if the acts of the selected agency are found to be unethical by HAFED.

#### **Termination by Agency:**

After the duration of 01 year from the starting date of the Contract, the selected agency may terminate the contract by giving 3 months' notice to the federation which will be subjected to the following conditions:

- forfeiture of security / Contribution money / PBG
- All the machineries, Civil work and equipment's should be in same working condition as it was handed over to the agency at the time of initialization of project.

#### 28. Dispute Resolution

In the event of any legal disputes, between parties, the appropriate court in Panchkula will have sole and exclusive jurisdiction to settle disputes.

### 29. Validity of Proposal

Proposals shall remain valid for a period of 180 (one hundred and eighty) days from the date of opening of Commercial Proposal. The HAFED reserves right to reject a proposal valid for a shorter period as non-responsive. In exceptional circumstances HAFED may solicit the Bidders consent to an extension of the period of validity.

Prior to the expiration of the validity period, the HAFED will notify the successful bidder in writing or by fax or email, that its proposal has been accepted. In case the tendering process is not completed within the stipulated period, the HAFED, may like to request the bidders to extend the validity period of the bid. The request and the response thereto shall be made in writing. Extension of validity period by the bidder shall be unconditional. A bidder granting the request will not be permitted to modify its Proposal. HAFED, however, reserves the right to call for fresh quotes at any time during the period, if considered necessary.

### 30. Validity of Offers

The commercial price quoted in the financial bid shall be valid for a minimum period of 180 days from the date of awarding the contract. Bids mentioning a shorter validity period than specified shall be ignored/rejected and will not be accepted.

### 31. Fraud & Corrupt Practices

1. The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the bidding process. Notwithstanding anything to the contrary contained herein, the authority shall reject an application without being liable in any manner whatsoever to the applicant if it determines that the applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the bidding process.
2. Without prejudice to the rights of the authority hereinabove, if an applicant is found by the authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the bidding process, such



applicant shall not be eligible to participate in any tender or RFP issued by the authority during a period of 2 (two) years from the date such applicant is found by the authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.

3. For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:
  - I. "Corrupt Practice" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly with the Bidding Process or the LOA or has dealt with matters concerning the Concession Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or (ii) save and except as permitted, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Agreement, as the case maybe, any person in respect of any matter relating to the Project or the LOA or the Concession Agreement, who at any time has been or is a legal, financial or technical adviser of the Authority in relation to any matter concerning the Project;
  - II. "Fraudulent practice" means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;
  - III. "Coercive practice" means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any person's participation or action in the Bidding Process;
  - IV. "Undesirable practice" means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing,

lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and

- V. “Restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

**TECHNICAL BID**

<b>N.</b>	<b>Particulars</b>	<b>Proof to be uploaded</b>
	Certificate from the proprietor/partner/firm authorizing firm's representative to sign/participate in opening and negotiation of the tender (signature duly attested).	Self attested certificate.
	GST registration certificate.	Copy of registration.
	PAN card.	Copy of PAN card.
4	Bidder must have sufficient experience of  <b>Design, Manufacture, Supply, Installation, Testing &amp; Commissioning Of 48 TPD Fortified Rice Kernel (FRK) Manufacturing &amp; Packaging Plant at Taraori Complex Hafed Houses Rice Plant (Karnal) On PPP Mode.</b>	Copy of registration / certificate of incorporation of the bidder firm/company etc. and related work experience in past.
5	Original/downloaded tender document duly filled in, signed & stamped by the bidder or his authorized representative.	Copy of certificate be uploaded/ provided.
6	Bidder should have average turnover of Rs. 10.00 Crores per annum during last three financial years.	Copy of CA certificate be provided / uploaded.
7	In case of EPC company bidding, Latest/ valid authorization from the principal company/Manufacture of the plant and machinery is required to be submitted, if applicable. However, in case plant manufactures is bidder, relevant certificate from Government, Specific to the plant and machinery as per the BOQ will be required to be submitted.	Certificate to be provided/ uploaded
8	Bidder must not be blacklisted by any Central/ State Department / organization.	Self attested undertaking be provided/ uploaded.
9	The bidder should be registered with appropriate authority under income tax department, GST Department as applicable.	Copy of required certificates be provided/ uploaded.
10	The Bidder should have its own Bank Account.	Copy of Bank details be provided/ uploaded.

- Business Name and constitution of the Bidder firm. Also state if the firm is registered under
  - The Indian Companies Act, 1956
  - The Indian Partnership Act, 1932
  - Any act, if not, who are the owners. (Please give full Names and Address)
- Whether the Bidder firm is/ are
  - Manufacturer / Contractor / EPC
  - Manufacturer's Authorized agent

**Note:** In case of being Manufacturer's Agent/EPC, enclose a copy of latest Manufacturer's Authorization along with the Tender.

- For partnership firms state whether they are registered or not registered under Indian

Partnership Act. 1932. Should the answer to this question by a partnership firm be in the affirmative, please state further:-

Whether by the partnership agreement authority to refer disputes concerning the business of the partnership to arbitration has been conferred on the Partner who has signed the tender.

If the answer to above is in the negative, whether there is any general power of attorney executed by all the partners of the firm authorizing the partner who has signed the tender to refer dispute concerning business of the partnership to arbitration.

4. Bidder should have sufficient experience manufacturing and supply in food or spices processing equipment.
5. Bidder should have at least one project experience in steam distillation/Spices Oleoresin process.
6. Bidder should have experience in dehydration/drying process technology through mechanical/ tunnel/ bed dryer.
7. Bidder should have experience in spices and food cleaning /grinding /blending process line.

Signature of witness

Signature of Bidder

Full Name and Address of Witness

**FINANCIAL BID**

Name of tenderer: \_\_\_\_\_

Address: \_\_\_\_\_

**Subject : Price Quote for DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 48 TPD FORTIFIED RICE KERNEL (FRK) MANUFACTURING & PACKAGING PLANT AT TARAORI COMPLEX HAFED HOUSES RICE PLANT (KARNAL) ON PPP mode.**

S. No.	Description of item	Amount in (Rs.)	
		In figures	In words
1	DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 48 TPD FORTIFIED RICE KERNEL (FRK) MANUFACTURING & PACKAGING PLANT AT TARAORI COMPLEX HAFED HOUSES RICE PLANT (KARNAL) ON PPP mode.		
	<b>A. Civil &amp; Electrical Work as per BOQ (Bill of quantities)</b>		
2	Packing & forwarding		
3	GST @		
4	Entry Tax/Any other charges, if any		
5	Transportation Charges including insurance charges and all applicable taxes		
6	Installation, testing & commissioning charges for require Equipment and utilities as per specification & drawing enclosed.		
7	GST on (5 and 6 ) if applicable		
8	Total cost (1) to (7)		

**Notes:**

- 1) Tenderer shall provide information regarding Fuel/power/maintenance/ user manual.
- 2) The Tenderer for which total cost of equipment quoted is found lowest shall be L-1.
- 3) Tenderer should indicate clearly whether the tax mentioned above is against any concessional form. In case the concessional form is not provided, the rate of tax should be mentioned.
- 4) Bidder should quote the most competitive rates with conformity to the specifications and commercial stipulations given in the tender in the very instance least they run and risk of losing out in absence of negotiations.
- 5) The rate must be written both in words and figures. There should be no erasures and or over writings, correction, if any, should be made clearly and initialed with date. In case if there is variation observed in the rates in between words & figures, the words shall be considered.
- 6) The conditional offer which affects the rate of quoted item shall be liable for rejection even the rate is lowest.
- 7) The bidder will submit the bifurcation of rates of each item as mentioned in the BOQ and Scope of Work separately after opening of the financial bid.

8) These rates are valid for 60 days from the date of opening of price bid.

Signature with seal of tenderer  
(In token of acceptance of above)

## ANNEX-1: COST OF BID DOCUMENT AND BID EMD DECLARATION

**Tender ID.....**

**Date of opening**

**Name of the tender:**

Cost of bid document and Bid EMD as required by this Tender ID **No:-----**  
-----) are being submitted in the form of Debit Card, Net Banking and RTGS/NEFT/  
or Over the Counter(OTC)

Amount\_\_\_\_\_

Details of RTGS/NEFT

\_\_\_\_\_

### **Bid EMD**

Amount\_\_\_\_\_

Details of RTGS/NEFT

\_\_\_\_\_

**Signature of the Bidder**

**Name & Address with stamp**

## ANNEX-2: INCOME TAX RETURN & PAN NUMBER

**Tender ID:**

**Date of opening:**

**Name of the Bidder:**

Copies of IT Returns, PAN Number, GST Registration as required by this Tender Enquiry are being submitted along with this tender as per details given below.

S. No.	Description	Remarks
i.	Copies of Income Tax Returns for the Assessment Years (For last three years) and balance sheets	
ii.	Copy of Permanent Account Number	
iii.	Copy of GST Registration number	
iv.	Any other	

**Signature of the Bidder**

**Name & Address with stamp**



## ANNEX-3: UNDERTAKING

### UNDERTAKING ON NON-JUDICIAL STAMP PAPER OF Rs. 100/-.

**Tender ID**

**Date of opening:**

I/ We M/s\_\_\_\_\_ hereby declare that:

1. I/ we am/are agency engaged in business of\_\_\_\_\_ have examined the above-mentioned tender document including amendment/ corrigendum (if any) the receipt of which is hereby confirmed.

2. I/ we do hereby offer for appointment of Operation and Maintenance partner for HAFED's 48 TPD fortified rice kernel (FRK) manufacturing and packaging plant at Taraori complex HAFED for a period of 10 years which can be extendable mutually. We also agree to deposit @40% contribution towards fixed assets.

3. I/we have quoted profit sharing rates with all statutory taxes, charges & compliances i.e. EPF, ESI, etc. as applicable.

4. I/ we agree to abide by my/our offer for a period of 180 days from the date of opening of the tender.

5. I/ we have carefully read and understood all the Terms and Conditions of the Tender and shall abide by them.

6. I/we agree for the all clauses and terms and conditions of this Bid/tender enquiry. In case any condition put forth by us is against the terms and conditions of tender, the same shall be treated as to be having no affect whatsoever and that the tender terms and conditions shall only prevail upon such conditions, if any.

7. I/ we have necessary expertise and financial strengths for providing the O & M services for such capacity of the plant.

8. I/We declare that we have necessary resources for O & M of FRK (Fortified Rice Kernel) manufacturing plant and enough manpower to cater to any additional need of Client on short notice, if any such need arises in the tenure of the contract.

9. I/ we also declare that in case of change constitution of our firm or for any other change, merger, dissolution, insolvency etc. shall be immediately

brought to the notice of client. In such case the continuing Partner(s), Administrator, permitted assigns shall be responsible to meet the liabilities under this tender/contract.

10. The tender document has been downloaded from the official website for bidding purpose is a true copy of the original.
11. Our firm or any other firm with similar type of operation with same or some/one of the partners/proprietors being same as of the tendering firm has not been black listed in the past 3 years by any Government/ private institution. If there is any such case of blacklisting / unsatisfactory service, please attach the details of the same.
12. I/we also certify that that there is no vigilance/ CBI case pending against the Bidder firm/ Agency/ or any other firm with similar type of operation with same or some/one of the proprietors being same as of the tendering firm. If there is any case, please attach the details of the same.
13. I/we also certify that that there is no pending case for payment/ civil liability pending against us in any of the courts. If there is any case, please attach the details of the same.
14. I/We hereby undertake that the above-mentioned information is correct to the best of my knowledge and belief and nothing has been concealed deliberately / inadvertently. In case any of the above information is found to be false, the Institute reserves the right to cancel the tender at any stage even after the award of the tender, without assigning any reason thereof.

**Signature of the Bidder**

**Name & Address with stamp**

#### ANNEX-4: Format for Financial Bid

Dated:

To

The Managing Director  
Haryana State Co-operative Supply and Marketing Federation Limited (HAFED)

HAFED Building, Sector 5, Panchkula,

Haryana - 134108

**Sub: Tender Reference No.\_\_\_\_\_to Onboard an agency to Operate and Maintain Fortified Rice Kernel (FRK) Plant at Karnal**

Dear Sir,

1. With reference to your RFP document dated ..... I/we, having examined the Bidding Documents and understood their contents, and pursuant thereto, hereby submit my/our Financial Bid for the aforesaid mentioned services as per Schedule of Requirements and other terms of the RFQ cum RFP. The Bid is unconditional and unqualified.
2. The interested bidders are required to quote percentage of total revenue sharing.

Sr. No.	Particulars	Percentage (%) of total revenue
1.	% sharing of total Profit (more than 60%)	

*Note:*

- a. GST & all other taxes will be calculated over and above of total revenue sharing and will be paid extra.
3. I/We agree and undertake to abide by all the terms and conditions of the Bidding Documents. By filling this Form online, we hereby irrevocably consent and agree to be bound by all the terms and conditions set out hereunder.
  4. I / We further confirm that we shall not demand Additional charges/Fee, any other charges etc. from Haryana Government during the mentioned Period.
  5. We hereby declare that our Financial Proposal is unqualified and unconditional in all respects and there are no deviations from the stated terms in the Bidding Documents.

Yours faithfully,

(Signature of the Authorized signatory)

(Name and designation of the of the Authorized signatory)

## Annexure 5:- Civil Work

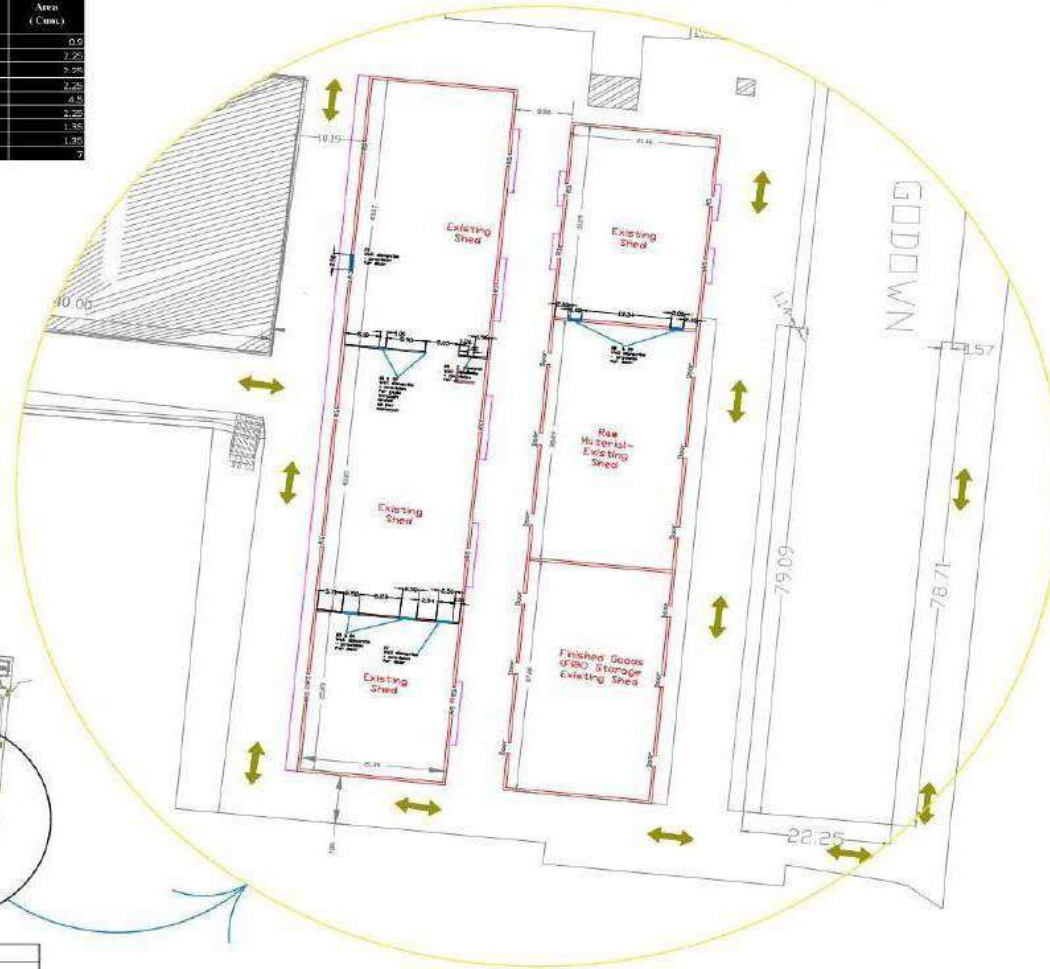
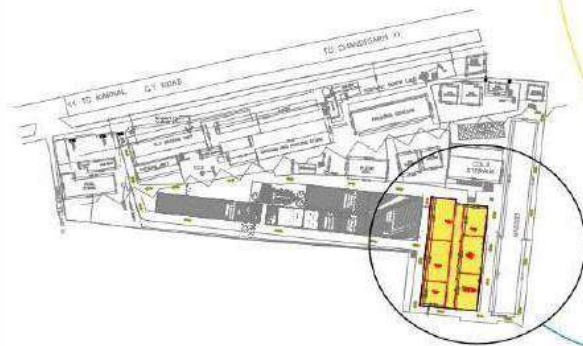
Proposed rectification in existing Plant

S. No.	Particular	Dimensions (Mt.)		Height	Area (Cum.)
1	Wall dismantle-provision for Door	1	0.225	4	0.9
2	Wall dismantle-provision for Door	2.5	0.225	4	2.25
3	Wall dismantle-provision for Door	2.5	0.225	4	2.25
4	Wall dismantle-provision for Door	2.5	0.225	4	2.25
5	Wall dismantle-provision for Door	5	0.225	4	4.5
6	Wall dismantle-provision for Door	2.5	0.225	4	2.25
7	Wall dismantle-provision for Door	2	0.225	3	1.35
8	Wall dismantle-provision for Door	2	0.225	3	1.35
9	Dismantle of Rolling Shutter	NOS			7

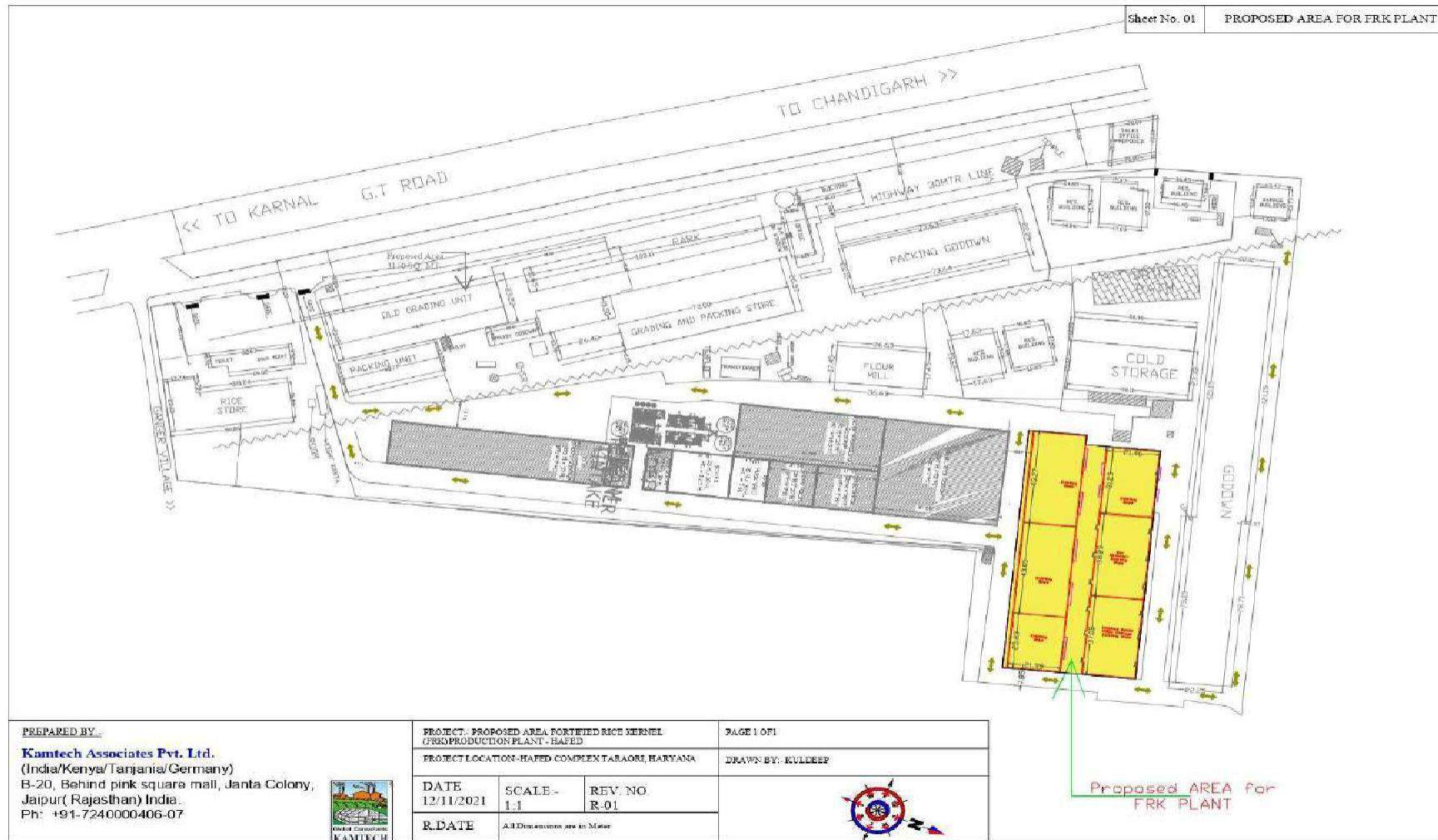
**Proposed Construction:- (As per drawing sheet no.03&4).**

S. No.	Particular	Dimensions (Mt.)		Height	Area (Cum.)
1.	Earth Filling (area Cu. Mt.)	8.58	29	0.6	149.292
2.	New Low height wall construction	22	2.25	2	99.00
3.	New Partition wall	8.58	0.225	4.87	9.40
4.	Brick Partition walls in lieu of shutters	21	0.225	3	14.18
5.	New Partition wall-For AHU, Change room and time office	24	0.225	4.87	26.30
6.	New wall construction -Ro Plant	15.5	0.225	4	13.95
7.	Ramp	3	2	1	6.00
8.	Drain line	Length			150.00
9.	Floor Kota stone	113	52.25	0.225	5904.25
10.	Control Room	4	4	4	16.00
11.	Repairing of surface area after dismantle work				
12.	PEB Roof with Structure	8.58	110	4	943.80
13.	Underground water storage tank-1000ltrforchiller	NOS.			6.00
14.	Underground water storage tank-10000ltr	NOS.			1.00

S. No.	Particular	Dimensions (MM)		Height	Area (Cms.)
1	Wall/diaphragm - provision for door	3	0.225	4	0.9
2	Wall/diaphragm - provision for door	2.5	0.225	4	2.25
3	Wall/diaphragm - provision for door	3.4	0.225	4	3.06
4	Wall/diaphragm - provision for door	3.5	0.225	4	2.25
5	Wall/diaphragm - provision for door	5	0.225	4	4.5
6	Wall/diaphragm - provision for door	3.5	0.225	4	2.25
7	Wall/diaphragm - provision for door	2	0.225	3	1.35
8	Wall/diaphragm - provision for door	2	0.225	3	1.35
9	Diameter of Rolling Shutter	1625			7



<b>DISCLAIMER:</b> Kanchi Associates Pvt. Ltd. (INCORPORATED IN INDIA) 5-25, East at post up road, Tamil Nadu, Chennai 600 009. PE: 491-724000/0406-07		DATE: 15/04/2021 SCALE: 1:1 REV NO: 001 DRAWN BY: J. RAJ	PROJECT: PROPOSED CIVIL RECTIFICATION SHEET: 02 OF 02 DRAWN BY: J. RAJ
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## Civil Work

S. No	Items	Qty	Unit
1	Earth excavation work	50	Cum
2	Carriage and Filling of earth in plinth in layers not exceeding 20cm. in-depth, consolidating each deposited layer by ramming and watering including all lead& lift.	150	Cum
3	Providing and laying in position cement concrete including curing, compaction etc. complete in M15 grade Nominal Mix1:2:4 (1cement: 2coarse sand :4graded stone aggregate 20mm nominal size).	100	Cum
4	Brick work with F.P.S. bricks of class designation 75 in superstructure above plinth level in all shapes and sizes in: Cement mortar 1 :6 (1cement: 6coarse sand)	148	Cum
5	Making the opening in masonry including dismantling in floor or walls by cutting masonry and making good the damages to walls, flooring and jambs complete to match existing surface i/c disposal of mulba/rubbish to the nearest municipal dumping ground. For door/windows/clerestory windows	350	Sqm
6	Kota stone slab flooring 25 mm thick over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1: 4 (1 cement: 4coarse sand)	5905	Sqm
7	Plaster on new surface on walls in cement and mortar 1:6 including racking of joint etc. complete fine finish:	599.82	Sqm
8	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat & Synthetic enamel of approved steel primer all complete:	36000	kg
9	Providing & Fixing 0.5 mm thick MS sheets precoated with high grade aluminumizing coating fixed with self- drilling screws with rubber washers using neutral cure silicon rubber sealant at any height & level for roof and walls complete (up to any pitch in horizontal/vertical or curved surfaces) excluding the cost of purlins, rafter and trusses and including cutting to size and shape & overlap whenever required.	900	Sqm
10	Construction of underground water storage tanks constructed by 230 mm thick brick masonry in 1: 4 cement sand mortar followed by 100 mm lining of M : 20 RCC with 10 mm dia reinforcement @ 150 mm c/c including earth work in excavation , PCC 1:4:8, flooring by 150 mm thick M : 20 RCC with 10 mm dia bars @ 100 mm c/c, 1: 4 CM plaster all around		

S. No	Items	Qty	Unit
	including punning with neat cement complete in all respect. Capacity of;		
	1000 ltrs	6.00	Nos
	10000 ltrs	1.00	Nos
11	White washing with lime to give an even shade including all scaffolding: three or more coats	599.82	Sqm
12	Repairing and making good the various surface area, edge, corners etc.	As per site	
13	Constructing drain line(150mm wide and 300mm deep clear)	350	Rmt.

## Annexure 6: -Proposed Plant and Machinery

S. No.	Particular	Qty
A	<b>Rice Cleaning Plant Capacity- 5 TPH (Broken Rice)</b>	
1	DUMP HOPPER SIZE 2 MTR X 1 MTR WITH AUTO SLIDE GATE	1
1.1	AIR COMPRESSOR	1
2	V.B. ELEVATOR CAP. 7.5 TPH,	1
3	SEED GRADER MODEL	1
3.1	ADDITIONAL SCREENS FOR ALFA	1
3.2	CYCLONE DUST COLLECTOR FOR AFLA	1
3.3	G.I. SPIRAL DUCT FOR ALFA 1 meter long.	3
3.4	FOUNDATION FRAME 1050MM FOR ALFA	1
4	V.B. ELEVATOR CAP. 7.5 TPH,	1
5	DE-STONER MODEL	1
5.1	ADDITIONAL DECK FOR D8-NE	1
5.2	G.I. SPIRAL DUCT FOR D-8-NE 1 meter long.	4
5.3	FOUNDATION FRAME FOR DESTONER D-8-NE	1
5.4	BLOWER WITH BLOWER FRAME	1
5.5	ROTARY AIR LOCK WITH GEARED MOTOR	1
6	V.B. ELEVATOR CAP. 7.5 TPH,	1
7	MAGNETIC ROLL SEPARATOR 6 TPH	1
7.1	FOUNDATION FRAME	1
8	V.B. ELEVATOR CAP. 7.5 TPH, WITH TWO WAY VALVE	1
9	BAGGING BIN WITH MANUAL BAGGING ARRANGEMENT	1
10	COLOR SORTER 5 CHUTES MODEL	1
10.1	UPS CVCF 5KVA	1
10.2	OIL FREE DRY AIR COMPRESSOR 25 HP TO OPERATE COLOR SORTER	1
10.3	RAISED PLATFORM FOR COLOR SORTER WITH LADDER	1

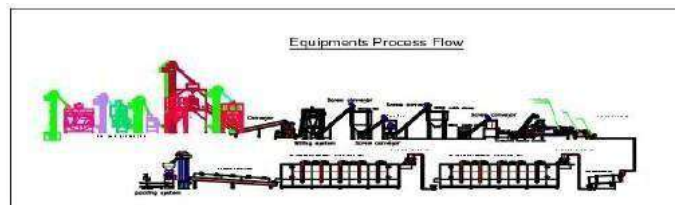
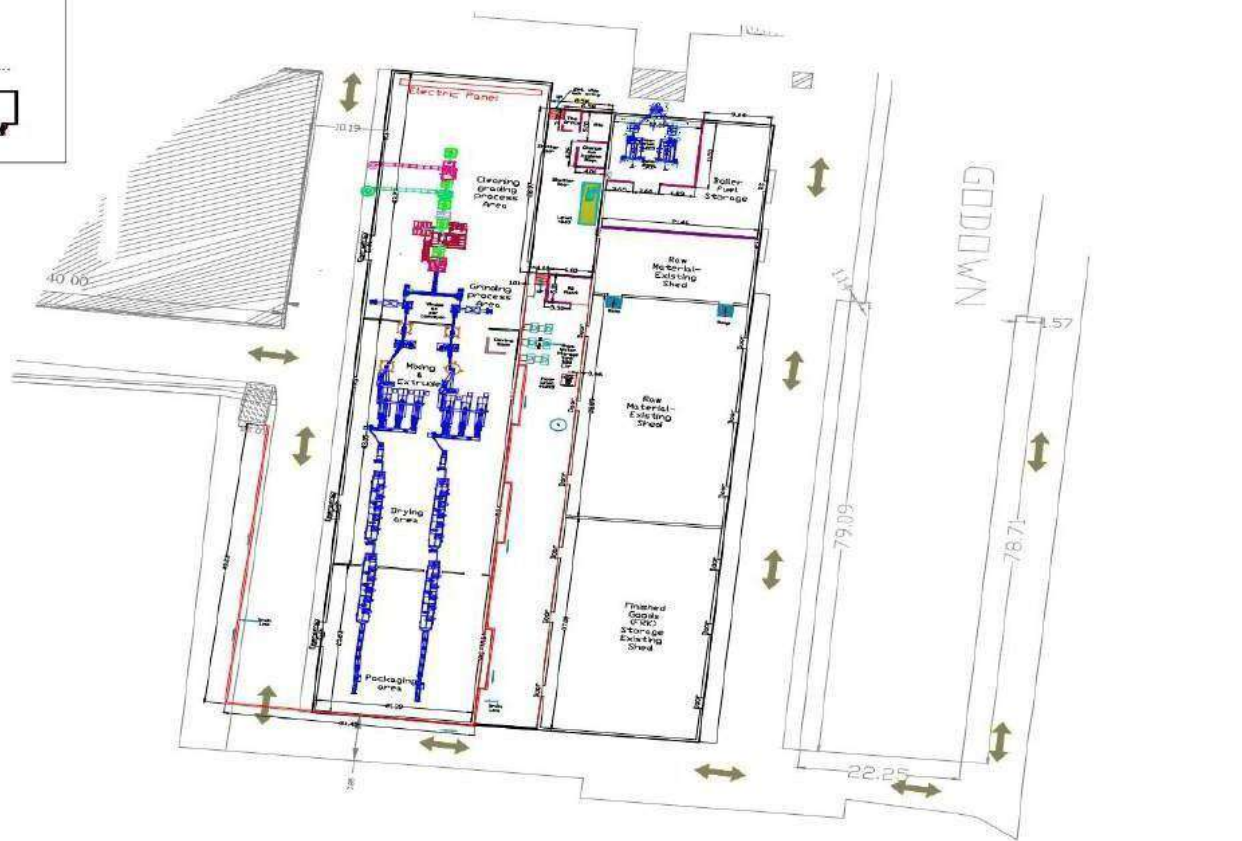
S. No.	Particular	Qty
10.4	CABIN FOR COLOR SOTEX	1
10.5	AIR CONDITIONER 1.5 TON	1
10.6	CONTROL PANEL FOR COLOR SORTER	1
10.7	TECHNOLOGICAL CONNECTIONS FOR COLOR SORTER	1
10.8	PLUMBING JOB FOR COLOR SORTER	1
10.9	CENTRIFUGAL BLOWER 1 HP FOR COLOR SORTER	1
11	V.B. ELEVATOR CAP. 3 TPH, FOR RECYCLING	2
12	V.B. ELEVATOR CAP. 5 TPH, TO FEED BAGGING BIN	1
13	BAGGING BIN	1
14	ELECTRIC CONTROL PANEL	1
B	<b>Crushing Machine with Dust Pelletizing System- LYGW-820</b>	
15	Screw conveyor with two-way discharge (feed clean Rice in to Grinding Mill)	1
16	Milling Machine	2
17	Suction Conveyor Air Locker	2
18	Dust Collector	2
19	Screw Conveyor	6
20	Storage bin (2 Ton)	4
21	Ribbon Blender /mixer (1 Ton)	2
C	<b>Nutrition Rice Process Line</b>	
22	Mixer	4
23	Automatic feeding machine	2
24	Double screw extruder with cooling system	6
25	Vibrate cooler	6
26	Conveyor	2
27	High pressure air conveyor	2
28	Pre-drum dryer	2

S. No.	Particular	Qty
29	High pressure air conveyor	4
30	Hot air circulation oven 7 layers 12 meters steam heating	4
31	Cooling conveyor	2
32	Packaging & sewing Machine with conveyor	2
D	<b>Instrumentation</b>	
33	CRUSHING MACHINE+CONVEYOR +STORAGE BIN+MIXER PLC 10 Inch Touch Screen	1
34	AUTOMATIC FEEDING MACHINE 1 PLC 10 Inch Touch Screen (Standard make)	1
35	AUTOMATIC FEEDING MACHINE 1 PLC 10 Inch Touch Screen (Standard make)	1
36	EXTRUDER 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
37	EXTRUDER 2 PLC 10 INCH TOUCH SCREEN (Standard make)	1
38	EXTRUDER 3 PLC 10 INCH TOUCH SCREEN (Standard make)	1
39	EXTRUDER 4 PLC 10 INCH TOUCH SCREEN (Standard make)	1
40	EXTRUDER 5 PLC 10 INCH TOUCH SCREEN (Standard make)	1
41	EXTRUDER 6 PLC 10 INCH TOUCH SCREEN (Standard make)	1
42	DRYING PROCESS 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
43	DRYING PROCESS 2 PLC 10 INCH TOUCH SCREEN (Standard make)	1
44	PACKING PROCESS 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
45	PACKING PROCESS 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
46	Network switch Gigabit optical fiber (Standard make)	1
47	Remote operation terminal	1
48	Industrial control computer (Standard make)	1
49	computer monitor 24INCH (Standard make)	2
50	AHU- 65000 CUM/hr:-	
E	<b>Utility</b>	

S. No.	Particular	Qty
51	Ro Plant 5000 lpm	1
52	Boiler & pipeline with header, valve & indicators, and other accessories	2
53	Chiller unit with pump	6
54	DG Set 1000 KVA for single line operation	1
55	Electric installation, Panel & Capacitor, cable & tray and Water Pipeline & Fittings for RO. Chiller and raw water. Firefighting equipment & pipelines	Lot
56	Hydraulic Pallet Truck - Hand Operated	2
57	Mobile Roller Conveyor (9x1x1)	2
58	Transformer 2000 KVA	1
59	Fire Fighting equipment	Lot
60	Air Compressor	1

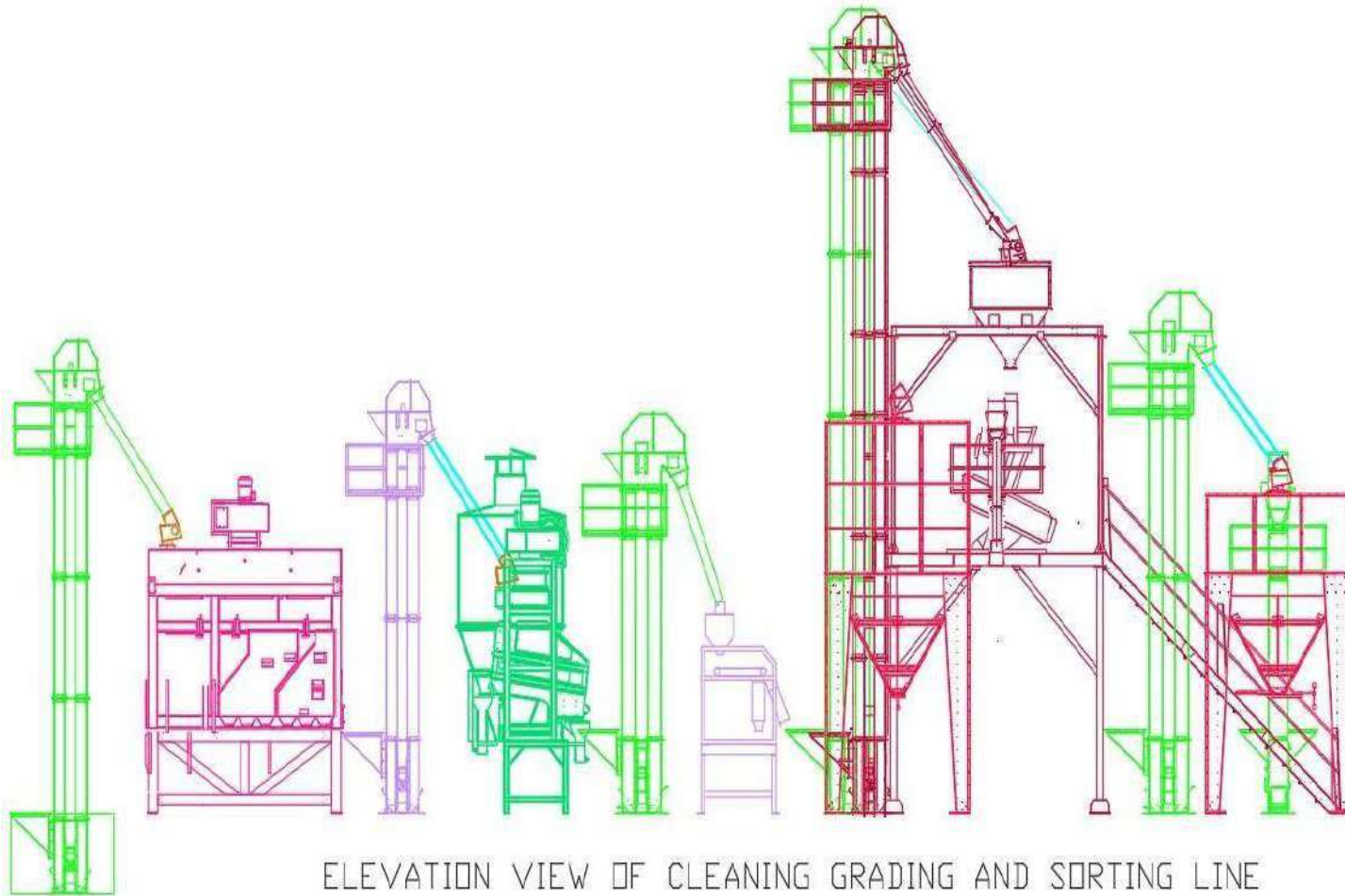


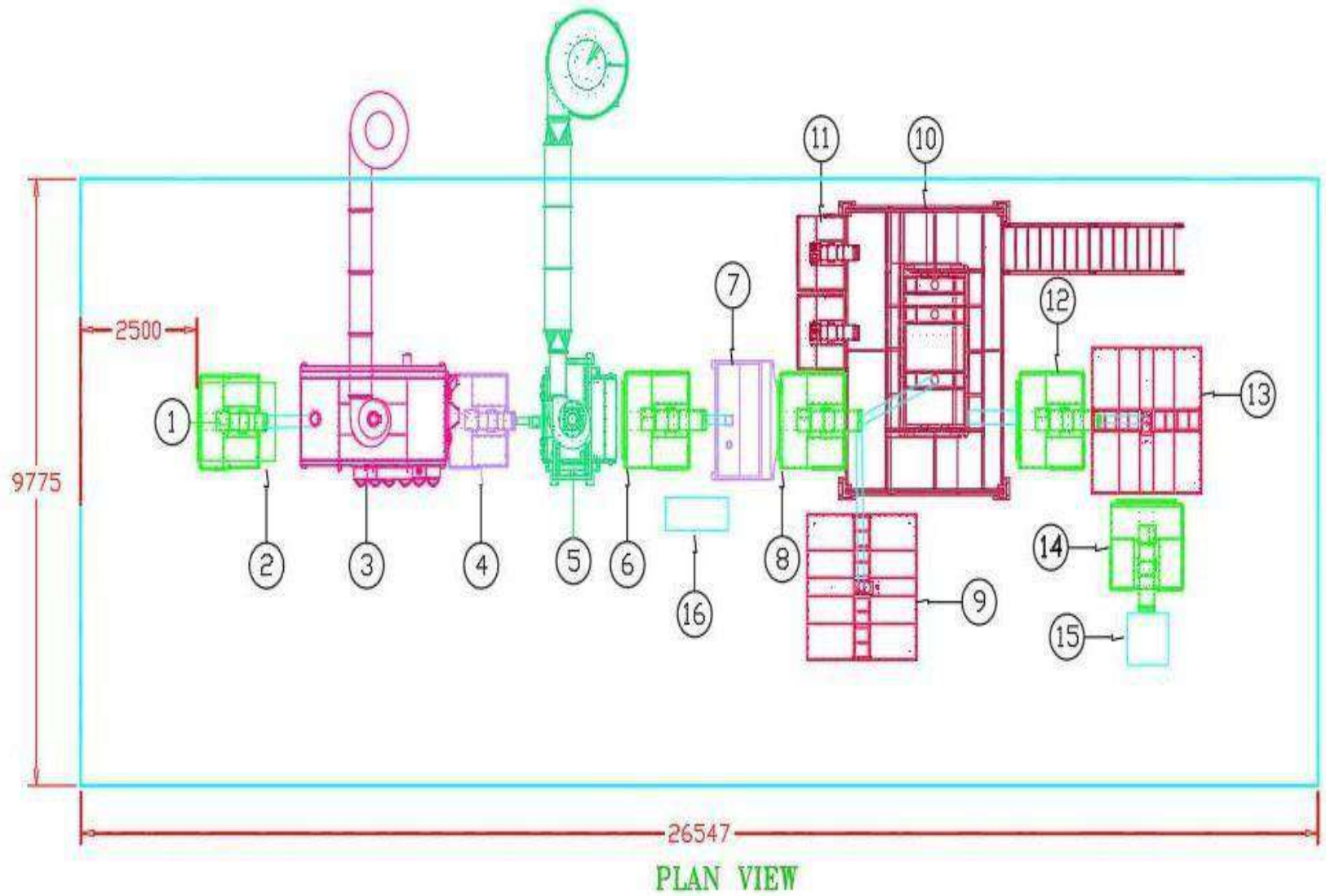
Plant and Machinery:

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**Detailed technical specs of Plant and Machinery: -**

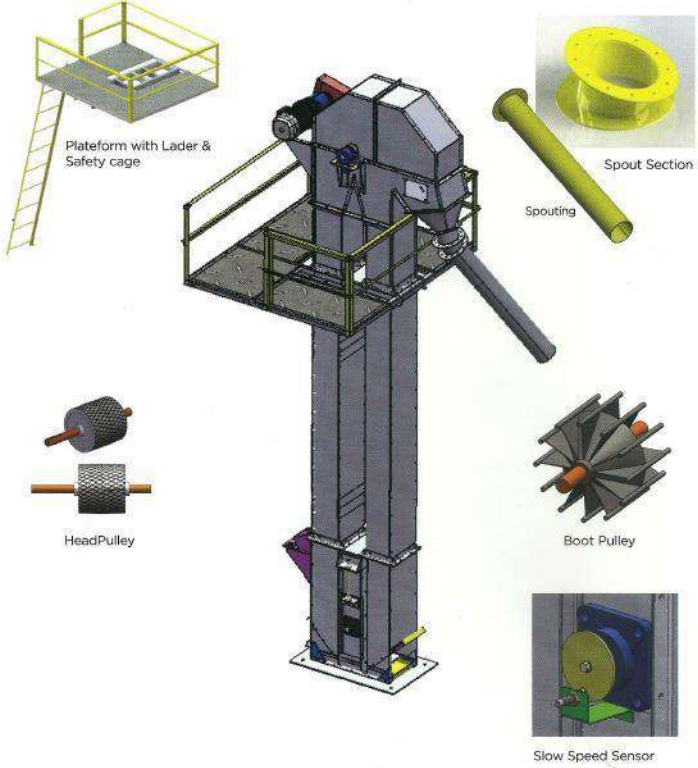
Cleaning grading and sorting line: -



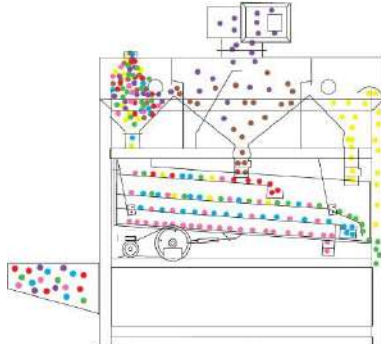




The detailed specifications of the cleaning grading section are given below


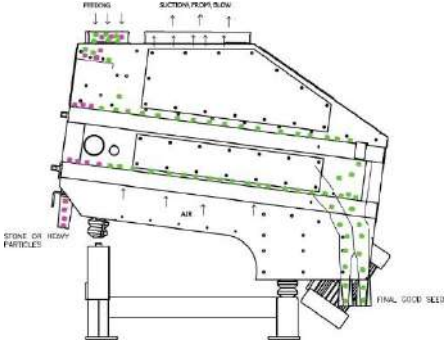
S. N.	Equipment	QTY
1	<p>DUMP HOPPER</p> <p>SIZE 2 MTR X 1 MTR WITH AUTO SLIDE GATE</p> <p>Self-cleaning type installed beneath floor in a pit so that seed can be fed manually brought in bags. While feeding manually by labore, adequate number of laborers shall be deployed to ensure feeding of seeds in the intake pit. Made of M.S. Sheet painted to resist corrosion.</p> <p>Auto slide gate will shut off the discharge of seeds automatically from dump hopper to first bucket elevator in the event of sudden power failure. Auto slide gate will open the gate after the power comes back as soon as 1st V.B. Elevator starts manually. Hence, main purpose of auto slide gate is to prevent damage to motor, chain, belt, sprocket etc. of the elevator.</p>	1
1.1	<p>SUB-ASSEMBLIES &amp; PARTS</p> <p><u>AIR COMPRESSOR</u></p> <p>Motor : 2HP</p> <p>Make : GNET or equivalent</p> <p>No. of cylinders : Two</p> <p>Capacity of air tank : 115 litre</p> <p>Air Pressure : 8 Kg/square cm</p> <p>Complete with 10m air hose, air nozzle, Tee socket, motor, starter and switch.</p>	1
2	<p><u>V.B. ELEVATOR CAP. 7.5 TPH,</u></p> <p>All sheet metal components shall be manufactured on CNC machine.</p> <p>Head casing, boot casing and leg casing made of 2.0 mm, 3.0 mm and 1.6 mm GI. Sheet respectively, spouting and discharge valve made of 1.6mm GI sheet. Complete with 2 H.P. geared motor, service platform, ladder, one length of spouting and all standard features.</p> <p>Belt shall be NN rubber belt, buckets shall be PU/Nylon/HDPE self cleaning type. Spacers shall be provided in</p>	1

S. N.	Equipment	QTY
	<p>between belt and buckets to prevent damage to seeds. Boot pulley shall be wing type to prevent lodging of seed between belt and pulley. Head pulley shall be rubberized and crowned for improved traction. Sprocket shall be TLB type for easy and quick fitting. Belt speed shall not exceed 1 m/sec.</p> 	
3	<p><b>SEED GRADER</b>  Capacity: 6 TPH based on wheat at 12% moisture content &amp; 10% impurities.  Machine is suitable for efficient Cleaning &amp; grading of various spices like Coriander, Cumin, Fennel, Ajwain etc. It is also suitable for cleaning &amp; grading of all types of grains &amp; seeds.</p> <p>SPECIFICATION:</p>	1



S. N.	Equipment	QTY
	<p>No. of Screens layers : Three (flat, oscillating type)  No. of Scalping : One OR Two.  No. of Grading : One OR Two.</p> <p>Size of each Screen :  Top : 125 x 160 cms (WxL) (2 sections of 125 x 80 cms each)  Middle : 125 x 240 cms (W x L) (3 sections of 125 x 80 cms each)  Bottom : 125 x 240 cms (W x L) (3 sections of 125 x 80 cms each)</p> <p>Total Screening Area : 8 square meter  Screen Inclination : Fixed  Screen perforation cleaning device : Rubber Balls. Oscillating speed of  Screen deck : Variable No. of aspirations : Two  Electric Drive: i) 5 HP for Fan. ii) 1.5 HP for Sieve Deck. iii) 0.5 HP for rejections.</p> <p>TEFC tropicalized electric motor of siemens/roto motive/equivalent make for operation on 440V, Ph., 50 c/s. A.C. supply.  O.A. Size (LxWxH.) : 387 x 203 x 400 cms.  The unit is supplied complete with electric motor, fitted with one set of screen and other standard features.</p> <div data-bbox="1417 251 1795 657">  <p> <span style="color: red;">●</span> 1st Screen Oversize    <span style="color: blue;">●</span> Dust  <span style="color: green;">●</span> Final                      <span style="color: grey;">●</span> Aspirator Removal  <span style="color: cyan;">●</span> 3rd Screen Oversize    <span style="color: yellow;">●</span> Lifter Removal  <span style="color: magenta;">●</span> 3rd Screen Undersize </p> </div> <div data-bbox="1297 727 1774 1144">  </div>	3
3.1	<p>ADDITIONAL SCREENS FOR ALFA</p> <p>Screens are made of 0.8 mm CRC perforated sheet and fitted on seasoned hard wood frame, suitably inclined. The screens are free from curvature and burrs.</p>	1



S. N.	Equipment	QTY
3.2	<u>CYCLONE DUST COLLECTOR</u> Complete with dust canopy for outside installation. 	1
3.3	<u>G.I. SPIRAL DUCT</u> As per layout plan	3
3.4	<u>FOUNDATION FRAME 1050MM</u>	1
4	<u>V.B. ELEVATOR CAP. 7.5 TPH,</u> All sheet metal components shall be manufactured on CNC machine. Head casing, boot casing and leg casing made of 2.0 mm, 3.0 mm and 1.6 mm GI. Sheet respectively, spouting and discharge valve made of 1.6 mm GI sheet. Complete with 2 H.P. geared motor, service platform, ladder, one length of spouting and all standard features.  Belt shall be NN rubber belt, buckets shall be PU/Nylon/HDPE self-cleaning type. Spacers shall be provided in between belt and buckets to prevent damage to seeds. Boot pulley shall be wing type to prevent lodging of seed between belt and pulley. Head pulley shall be rubberized and crowned for improved traction. Sprocket shall be TLB type for easy and quick fitting. Belt speed shall not exceed 1 m/sec.	1
5	<u>DE-STONER</u> Capacity: 7-8 Tons/hour based on wheat It is meant for removing foreign impurities like stones, metal pieces, glass pieces, mud balls etc. from grains and seeds of all types and any granular material like seeds, grains, pulses, cereals etc. Negative pressure type, compact and sturdy steel channel frame, dynamically balanced centrifugal fan with adjustable air control variable oscillation speed of deck, deck size : 1220 x 1380 mm, variable inclination angle of deck and regulated feeding.	1



S. N.	Equipment	QTY
	<p>Complete with 0.5 HP x 2 vibratory motors, fan with 10 HP motor, suitable for 440 V, 50 Hz, 3 Ph. AC supply, fitted with deck for wheat and foundation frame.</p>  	
	<b><u>SUB-ASSEMBLIES &amp; PARTS</u></b>	
5.1	<b><u>ADDITIONAL DECK</u></b>	1
5.2	<b><u>G.I. SPIRAL DUCT FOR :</u></b> As per layout plan.	4
5.3	<b><u>FOUNDATION FRAME :-</u></b> <b><u>As per destoner requirements</u></b>	1
5.4	<b><u>BLOWER WITH BLOWER FRAME</u></b>	1
5.5	<b>ROTARY AIR LOCK WITH GEARED MOTOR</b>	1
6	<b><u>V.B. ELEVATOR CAP. 7.5 TPH,</u></b> All sheet metal components shall be manufactured on CNC machine.	1



S. N.	Equipment	QTY
	<p>Head casing, boot casing and leg casing made of 2.0 mm, 3.0 mm and 1.6 mm GI. Sheet respectively, spouting and discharge valve made of 1.6 mm GI sheet. Complete with 2 H.P. geared motor starter and switch, service platform, ladder, one length of spouting and all standard features.</p> <p>Belt shall be NN rubber belt, buckets shall be PU/Nylon/HDPE self cleaning type. Spacers shall be provided in between belt and buckets to prevent damage to seeds. Boot pulley shall be wing type to prevent lodging of seed between belt and pulley. Head pulley shall be rubberised and crowned for improved traction. Sprocket shall be TLB type for easy and quick fitting. Belt speed shall not exceed 1 m/sec.</p>	
7	<p><b><u>MAGNETIC ROLL SEPARATOR 6 TPH</u></b> For separating ferrous mud balls.</p> <p>Cap: 6 TPH based on wheat Magnetic &amp; non magnetic roll:100x1500mm DxL Motor for roll : 1 HP Motor for vibratory feeder : 0.5 HP Hopper size: 1400x500x500 mm LxWxH</p> <p>FEATURES:</p> <ul style="list-style-type: none"> <li>* Robust machine of all steel construction with M.S. Square pipe 40x40 mm, 75x38 mm ISMC.</li> <li>* High intensity rare earth Nd-Feb, Grade N-45 having 13000 gauss value</li> <li>* Feeding Hopper equipped with drawer magnet having 5000 gauss value.</li> </ul> <p>Completely closed construction. Machine is supplied complete with 1 HP motor for magnetic roller and 0.5 HP vibratory motor for vibratory feeder. Suitable for 415V 50 Hz 3 phase supply. Motor make Siemens/Crompton/ABB/Roto motive.</p>	1
	<b><u>SUB-ASSEMBLIES &amp; PARTS</u></b>	



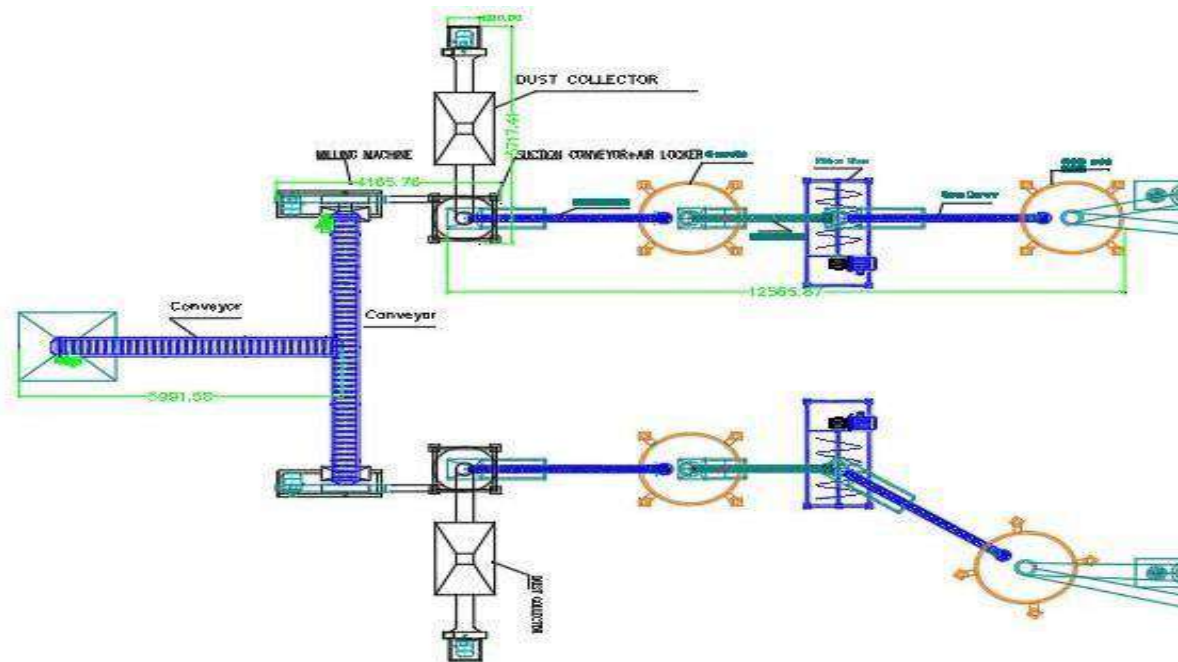
S. N.	Equipment	QTY
7.1	<u>FOUNDATION FRAME:- as per magnetic roller</u>	1
8	<div> <div> <p>V.B. ELEVATOR CAP. 7.5 TPH, WITH TWO WAY VALVE and flow direction controller</p> <p>sheet metal components shall be manufactured on CNC machine. Head casing, boot casing and leg casing made of 2.0 mm, 3.0 mm 1.6 mm M.S. Sheet respectively, spouting and discharge valve made of 1.6 mm sheet. Complete with 2 H.P.geared motor, service platform, ladder, one length of spouting and all standard features.</p> <p>shall be NN rubber belt, buckets shall be PU/Nylon/HDPE self cleaning type. Spacers shall be provided in between belt and buckets to prevent damage to seeds. Boot pulley shall be wing type to prevent lodging of seed between belt and pulley. Head pulley shall be rubberised and crowned for improved traction. Sprocket shall be TLB type for easy and quick fitting. Belt speed shall not exceed 1 m/sec.</p> </div> <div>  <div> All and Belt </div> </div> </div>	1
9	<div> <div> <p><u>BAGGING BIN WITH MANUAL BAGGING ARRANGEMENT</u></p> <p>Capacity: 10 Tons</p> <p>The sides and 55 degree hoppered bottom are made of 1.6 mm, 2 mm and 3 mm thick G.I. Sheet respectively.</p> <p>Supporting legs with suitably reinforced bracings made of GI sheet of suitable thickness with 10 mm thick foundation plate are provided for foundation purpose.</p> <p>metallic surfaces shall be painted with red oxide primer followed by two coats of enamel paint.</p> </div> <div>  <div> All </div> </div> </div>	1
10	<div> <div> <p><u>COLOR SORTER 5 CHUTES</u></p> <p>Capacity: 5 TPH</p> <p>5 chutes, High Speed Imported ejector valve, GIU panel, Altera USA processor, adjustable LED, High resolution CCD Cameras.</p> <p>320 channels, each chute has 64 channels</p> </div> </div>	1

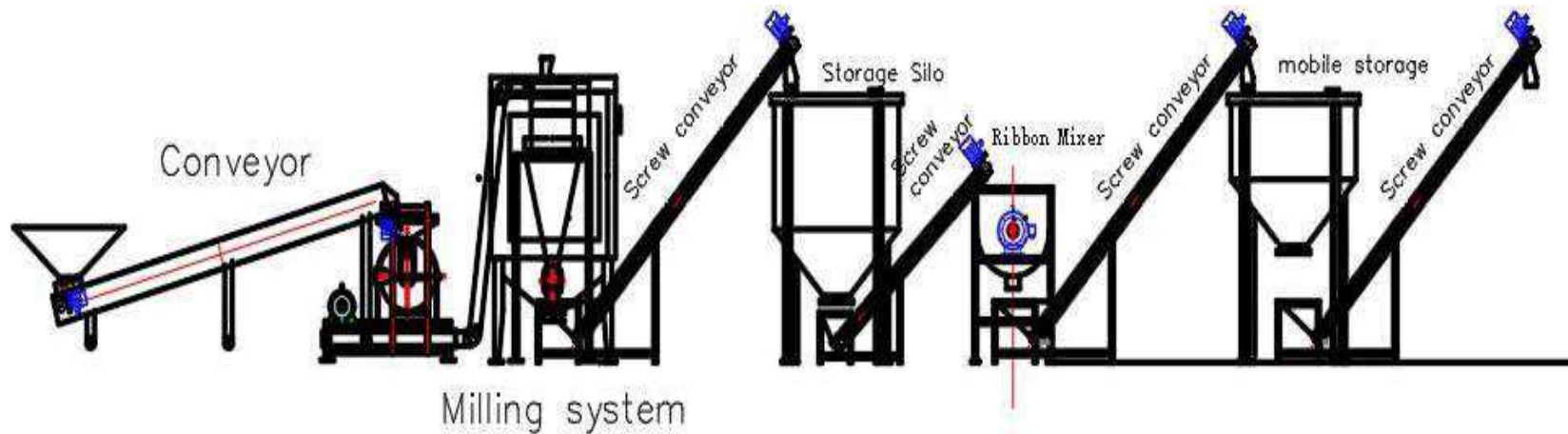
S. N.	Equipment	QTY
	<p>Capacity: 5-6 Tons/hr based on wheat Power: 3kW Three times sorting, 3:1:1 within 5% impurity.</p> 	
	<b><u>SUB-ASSEMBLIES &amp; PARTS</u></b>	
10.1	<p><u>UPS CVCF 5KVA</u> For power supply of colour sorter.</p>	1
10.2	<u>OIL FREE DRY AIR COMPRESSOR 25 HP TO OPERATE COLOR SORTER</u>	1
10.3	<p><u>RAISED PLATFORM FOR COLOR SORTER WITH LADDER</u> M.S. Rigid Structure. Consist of M.S. Channels, angles, pipes of ISI mark with only slipery checkered sheet on the surface of platform with clear height for manual walkway. Complete with railing with vertical support &amp; ladder.</p> 	1

S. N.	Equipment	QTY
10.4	<u>CABIN FOR COLOR SOTEX</u>	1
10.5	<u>AIR CONDITIONER 1.5 TON</u>	1
10.6	<u>CONTROL PANEL FOR COLOR SORTER</u>	1
10.7	<u>TECHNOLOGICAL CONNECTIONS FOR COLOR SORTER</u>	1
10.8	<u>PLUMBING JOB FOR COLOR SORTER</u>	1
10.9	<u>CENTRIFUGAL BLOWER 1 HP FOR COLOR SORTER</u>	1
11	<u>V.B. ELEVATOR CAP. 3 TPH, FOR RECYCLING</u> All sheet metal components shall be manufactured on CNC machine. Head casing, boot casing and leg casing made of 2.0 mm, 3.0 mm and 1.6 mm GI. Sheet respectively, spouting and discharge valve made of 1.6 mm GI sheet. Complete with 1 H.P. geared motor, service platform, ladder, one length of spouting and all standard features. Belt shall be NN rubber belt, buckets shall be PU/Nylon/HDPE self-cleaning type. Spacers shall be provided in between belt and buckets to prevent damage to seeds. Boot pulley shall be wing type to prevent lodging of seed between belt and pulley. Head pulley shall be rubberised and crowned for improved traction. Sprocket shall be TLB type for easy and quick fitting. Belt speed shall not exceed 1 m/sec.	2
12	<u>V.B. ELEVATOR CAP. 5 TPH, TO FEED BAGGING BIN</u> All sheet metal components shall be manufactured on CNC machine. Head casing, boot casing and leg casing made of 2.0 mm, 3.0 mm and 1.6 mm GI. Sheet respectively, spouting and discharge valve made of 1.6 mm GI sheet. Complete with 1.5 H.P. geared motor, service platform, ladder, one length of spouting and all standard features. Belt shall be NN rubber belt, buckets shall be PU/Nylon/HDPE self cleaning type. Spacers shall be provided in between belt and buckets to prevent damage to seeds. Boot pulley shall be wing type to prevent lodging of seed between belt and pulley. Head pulley shall be rubberised and crowned for improved traction. Sprocket shall be TLB type for easy and quick fitting. Belt speed shall not exceed 1	1

S. N.	Equipment	QTY
	m/sec.	
13	<p><u>BAGGING BIN</u></p> <p>Capacity: 5 Tons on wheat</p> <p>The sides and 55 degree hoppered bottom are made of 1.6 mm, 2 mm and 3 mm thick G.I. Sheet respectively. Supporting legs with suitably reinforced bracings made of GI sheet of suitable thickness with 10 mm thick foundation plate are provided for foundation purpose. All metallic surfaces shall be painted with red oxide primer followed by two coats of enamel paint.</p>	1
14	<p><u>ELECTRIC CONTROL PANEL</u></p> <p>The panel shall be equipped with main on/off switch to allow the machines to be powered either from the generator or main supply, voltmeter, ammeter, phase indicators, motor starters with protective relays and fuses, 2 Nos. 15 Amp sockets of 220V single phase are provided for ancillary equipment/lights etc.</p> <p>All motors fitted with the machines shall be tropically rated totally enclosed fan cooled type and current protecting. Suitable for 415 V, 50 Hz, 3 Phase, AC Supply.</p> <p>(Rs. Four Lakh Fifty Seven Thousand Two Hundred only.)</p>	1
15	<p><u>TECHNOLOGICAL CONNECTIONS</u></p> <p>Like pit cover, seed diverting chutes etc. as per requirement</p>	1


**Grinding/milling Line:**






The detailed specifications of the Grinding section are given below


Sn.	Equipment	Specification	Image	Qty
1	Two Way Discharge Screw Conveyor	<p>Equipment Material: Material Contact Surface Is Made Of 304</p> <p>Stainless Steel, The Rest Is Made Of Carbon Steel</p> <p>Material Pipe Size: <math>\phi 168\text{mm} \times 15000\text{mm}</math>;</p> <p>Spindle Diameter: 51mm</p> <p>Blade Thickness: 3mm</p> <p>Motor Power: 3kw-380v-50hz, Four-Level Motor</p> <p>Spindle Speed: 260r/Min</p> <p>Hopper Size: L650*W650*h 700mm;</p> <p>Requirements: Docking Silo.</p>		01

Sn.	Equipment	Specification	Image	Qty
2	(Milling Machine ) Crushing Machine with Suction Conveyor + Air Locker + Dust Collector	<p>Material: - Stainless Steel</p> <p>Function: - Grinding The Extruded Granules Into Required Sizes Of Powder Or Smaller Granules With The Help Of Mesh Screen.</p> <p>Two Mesh Screens Are Provided Extra.</p> <p>Production Capacity: 800-1000kg/H</p> <p>Spindle Speed: 2800r/Min</p> <p>Working Noise: &lt;100 Decibels Crushing Fineness: 20-120 Mesh</p> <p>Main Motor Power: 37kw</p> <p>Turn Off The Fan Power: 1.5kw</p> <p>Power Of Induced Draft Fan: 18.5kw</p> <p>Dust Removal Method: Pulse</p> <p>Dimension: 8300*1500*3800mm</p>		02

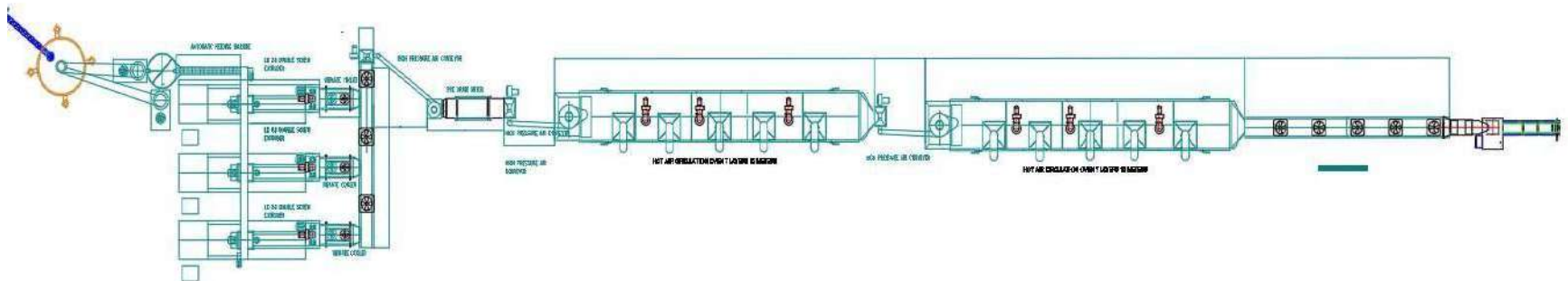
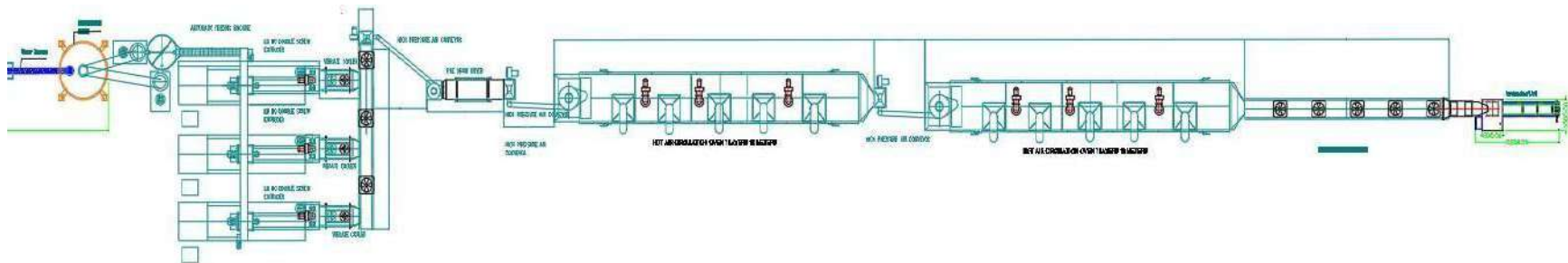
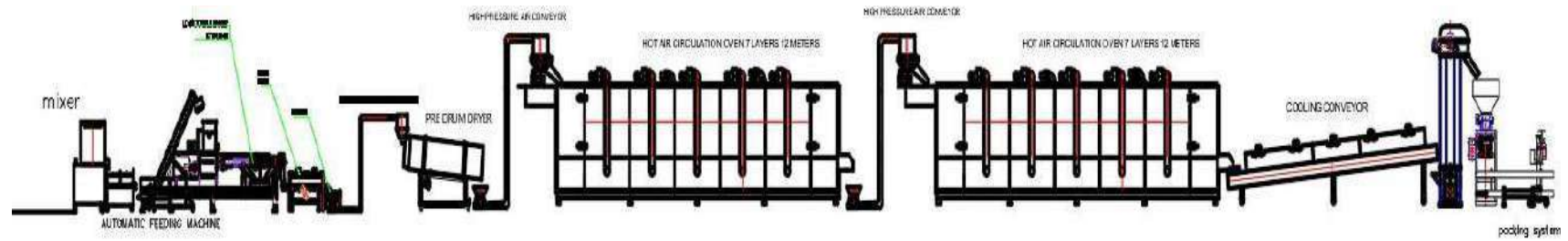


Sn.	Equipment	Specification	Image	Qty
3	Storage Bin	<p>Storage Capacity:- 2 Ton</p> <p>Range Of Use: Suitable For Buffer Storage Of Various Powders And Particles;</p> <p>The Material Contact Surface Of The Equipment Is Made Of 304</p> <p>Stainless Steel, And The Rest Is Made Of Carbon Steel</p> <p>Dimensions: 1900mm*1900mm*3100</p> <p>Equipment Capacity: 6000l (2-3t)</p> <p>The Height Of The Discharge Port: 500mm From The Ground</p> <p>Requirements: Equipped With Vibration Motor (To Prevent Material Bridging)</p>		4


Sn.	Equipment	Specification	Image	Qty
4	Screw Conveyor	<p>Equipment Material: Material Contact Surface Is Made Of 304</p> <p>Stainless Steel, The Rest Is Made Of Carbon Steel</p> <p>Material Pipe Size: <math>\phi 168\text{mm} \times 13000\text{mm} / 13500\text{mm}</math>;</p> <p>Spindle Diameter: 51mm</p> <p>Blade Thickness: 3mm</p> <p>Motor Power: 2.2kw-380v-50hz</p> <p>Spindle Speed: 300r/Min</p> <p>Hopper Size: L650*W650*h700mm;</p> <p>Requirements: Docking Horizontal Mixer</p> <p>Note:- Please Provide one screw conveyor with two way discharge duct to feed blender flour in to dough making machine (mixer)</p> <p>Duct size as per conveyor and mixer size</p>		06



Sn.	Equipment	Specification	Image	Qty
5	Ribbon Blender/Mixer	<p>Scope Of Application: Suitable For Mixing And Stirring Of Solid Particles And Powder Materials</p> <p>Equipment Material: Material Contact Surface Is Made Of 304 Stainless Steel, The Rest Is Made Of Carbon Steel</p> <p>Barrel Size: <math>\phi 1800\text{mm} \times 1100\text{mm} \times 1185\text{mm}</math></p> <p>Tank Volume: 2000l</p> <p>Thickness Of Barrel: 4mm</p> <p>Stirring Spindle: <math>\phi 90\text{mm}</math></p> <p>Blade Form: Double S Type</p> <p>Blade Thickness: 8mm</p> <p>Stirring Power: 11kw-380v-50hz-4 Level</p> <p>Reducer Model: Heavy-Duty Jzq400 Reducer</p> <p>Spindle Speed: 18r/Min,</p> <p>Sealing Method: Nylon Seal + Standard Oil Seal</p> <p>Discharge Method: Manual Butterfly Valve</p> <p>Discharge Height: 700mm Above The Ground</p> <p>Dimensions: l2800mm*w1220mm*h2100mm</p>		02


## FRK Production Line:






The detailed specifications of the FRK production section are given below


S n.	Equipment	Technical parameter	Photo	Qty
1	MIXER	<p>Dimension: 1300×800×1300mm</p> <p>Voltage:380V/50Hz</p> <p>Power:7.5kw</p> <p>Yield:60-80kg/time</p> <p>The mixer is a machine for mixing raw materials, Auxiliary materials, water and other materials to mix Evenly.</p> <p>1. Some materials in contact with the product are Made of stainless steel.</p> <p>2. The discharge hole adopts a new treatment Opening design, which is well sealed to avoid leakage Of materials.</p> <p>3. High motor speed, double-layer stirring rod, uniform</p>		04



S n.	Equipment	Technical parameter	Photo	Qty
		Stirring, short time and low energy consumption.		
2	AUTOMATIC FEEDING MACHINE	<p>Voltage 380V/50HZ</p> <p>Automatic feeder composition: sorter + feeder + Unloader</p> <p>Sorting machine power: 3kw</p> <p>Feeder power: 0.75kw</p> <p>Unload machine power: 0.75kw</p> <p>Three-head unloading port</p> <p>Automatic sensor pneumatic cutting.</p> <p>Configure air compressor: 2.2kw</p> <p>Production capacity: 700-1000Kg</p> <p>Size: 10×0.7×2.5m</p> <p>Material: Contact food are made of SS 304 stainless Steel.</p> <p>Brief Introduction of Equipment</p> <p>This auto feeding machine feeds three extruder feeders.</p> <p>The discharge hole adopts a pneumatic valve to</p>	 	02





S n.	Equipment	Technical parameter	Photo	Qty
		<p>match the sensor probe, and it opens and closes automatically.</p> <p>Automatic feeding system always have raw Materials, and a red sensor probe inside. The probe can automatically detect how much raw material is in the feeder of extruder. When the raw material in the feeder is insufficient, the red probe will Sense it, and then feed valve automatically open and Unload</p>		
3	DOUBLE SCREW EXTRUDER WITH COOLING SYSTEM	<p>Power supply voltage: 380V 50HZ</p> <p>Installed power: 75kw</p> <p>Actual power consumption: 55kw</p> <p>Main motor power: 55kw</p> <p>Rotary cutting motor 1.1kw,</p> <p>Feeding motor1.1kw,</p> <p>Oil pump motor: 0.37kw</p> <p>Output: 240-350kg/h</p> <p>Discharge fan: 0.18kw</p> <p>Temperature control system: water circulation</p>	 <p>Water cooling system as blew picture</p>	06



S n.	Equipment	Technical parameter	Photo	Qty
		<p>Configuration: Screw length:2270mm</p> <p>Screw diameter 80mm,</p> <p>Size: 4.5×1.1×2.1m</p> <p>Transmission form: Motor directly connected to Reducer Directly connected to reducer Directly Connected to twin screw</p> <p>The feeding system, extrusion system, and rotary Cutting system are all adjustable by inverter control.</p> <p>The Extruder is composed of a feeding system, an Extrusion system, a rotary cutting system, a heating System, a transmission system, and a control system.</p> <p>It adopts advanced screw extrusion technology and Uses high temperature and high pressure to mature And expand the material into one-time</p>	  	





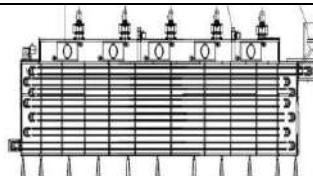
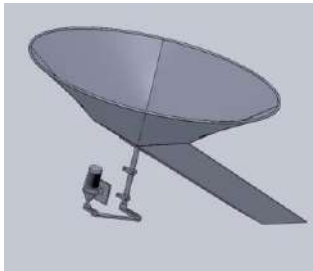

S n.	Equipment	Technical parameter	Photo	Qty
		<p>completion.</p> <p>Features:</p> <p>Use advanced frequency control skills, stable work and less power consumption;</p> <p>The screw is made of 38crmoai alloy steel, which has a longer service life;</p> <p>Automatic heating control system, easy to work and more accurate parameters.</p> <p>The length of the screw is 2270mm. Increase the residence time and mixing time of the raw materials in the screw and increase the maturity of the raw materials.</p> <p>The equipment is equipped with a water circulation temperature control system.</p> <p>The equipment feeding motor, host motor, and rotary cutting motor all adopt frequency conversion speed regulation.</p>	 <p>Molds &amp; cutter</p>	


S n.	Equipment	Technical parameter	Photo	Qty
			 <p>Double screws feeder</p>	
4	VIBRATE COOLER	<p>Power:0.1*2Kw  Size:1600×800×1500mm  Voltage:380V/50Hz  Fan:2 pieces 0.18kw/piece</p> <p>Feature:</p> <ol style="list-style-type: none"> <li>1. Use vibration to separate the product.</li> <li>2. Configure 2 cooling fans</li> </ol> <p>Additional 2 Sets Fan</p>		06



S n.	Equipment	Technical parameter	Photo	Qty
5	CONVEYOR	<p>Power supply voltage: 380V / 50Hz</p> <p>Installed power: 0.75kw</p> <p>Material: 304 stainless steel mesh belt</p> <p>Output: 700-1000Kg/h</p> <p>Size:7000*600*500mm</p> <p>Concentrate the products from the Five extruders to the next equipment.</p> <p>Feature:</p> <ol style="list-style-type: none"> <li>1. Stainless steel mesh belt.</li> <li>2. Configure 4 cooling fans</li> </ol>	 	02
6	HIGH PRESSURE AIR CONVEYOR	<p>Size:2100×600×2500mm</p> <p>Voltage:380V/50Hz</p> <p>Power:2.2kw</p> <p>Pipeline: 304 stainless steel</p> <p>PIPELINE DIAMETER:114mm</p> <p>Features:</p> <ol style="list-style-type: none"> <li>1. Use wind to transport the product to the dryer</li> </ol>	 	02

S n.	Equipment	Technical parameter	Photo	Qty
7	PRE-DRUM DRYER	Size:2600×900×2100mm Voltage:380V/50Hz Driver Power:0.75kw Heating Power: 15KW Air blower: 1.1KW Pipeline: 304 stainless steel		02
8	HIGH PRESSURE AIR CONVEYOR	Size:2100×600×2500mm Voltage:380V/50Hz Power:2.2kw Pipeline: 304 stainless steel PIPELINE DIAMETER:114mm  Features: 2. Use wind to transport the product to the dryer		04

S n.	Equipment	Technical parameter	Photo	Qty
		 <p>Model: LD-HGX7-S</p> <p>Power supply voltage: 380V / 50Hz</p> <p>With Double layers belt-One layer Mesh belt</p> <p>One layer mesh cloths</p> <p>Heat source: Steam</p> <p>Total Power:22.5KW</p> <p>Transmission power: 7 sets 0.75kw/set=5.25KW</p> <p>Dehumidification fan 2 sets 0.75kw/set=1.14KW</p> <p>Can be automatically turned on at regular intervals</p> <p>Steam heat exchanger: 5 group</p> <p>Hot air circulating fans 3kw/set. Total 5sets=15KW</p>		

S n.	Equipment	Technical parameter	Photo	Qty
		Feeding: 0.55KW (swing head distributor) Mesh belt width: 1000mm		
9	HOT AIR CIRCULATION OVEN 7  LAYERS 12 METERS  Steam heating	<p>Number of floors: 7 layer Heating Box size:12000*1600*2400mm Dimensions:13000*1600*3200mm</p> <p>The oven is a multi-layer circulating drying box with good heat preservation effect and high efficiency and energy saving.</p> <p>Features:</p> <p>The hot air-drying box is professionally designed for</p> <p>Nutritious rice after practical experience and product</p> <p>Characteristics.</p> <p>Feature:</p> <p>The oven has a compact structure, a small footprint, and is economical and applicable. The mesh belt and guard plate are all made of food grade stainless steel to ensure that the materials</p>	  	04

S n.	Equipment	Technical parameter	Photo	Qty
		<p>used are qualified.</p> <p>The operating speed of the oven is controlled by frequency conversion, smooth operation, and long-term use.</p> <p>The heating method is steam type. The steam heat exchanger is located on the top of the oven and blows heat into the oven through a fan.</p> <p>The heat enters the oven through the fan and undergoes special treatment, and the heat is evenly dispersed and entered.</p> <p>The mesh belt is driven by chains on both sides, and the mesh belt support rod is thickened to ensure a longer service life.</p> <p>The connecting section of the layer and the layer passes through the stopper device to prevent material leakage, and the lowest ends of both ends are equipped with falling material storage boxes for easy cleaning.</p> <p>The heating device of the drying box is located on the top of the oven, and the heat is blown in by the fan, and indirect heating ensures the essence of the product.</p> <p>Drying is equipped with a dehumidification system, which effectively discharges moisture and air.</p>	 <p>Swing head distributor uniform</p>	

S n.	Equipment	Technical parameter		Photo	Qty
10	COOLING CONVEYOR	Model: LD-SSJ Power supply voltage: 380V / 50Hz Installed power: 0.75Kw Fan: 5 pcs 0.18kw Material: stainless steel mesh belt Output: 100-600Kg/h Size:8000x600x450mmmm Used to transport the product to the next equipment			02
11	Packaging Machine with conveyor and swing machine	MAIN SCALE BODY	Standard configuration: Main scale body (the part in contact with the material is 304 stainless steel), control system (Food or corrosive materials can be made of stainless steel) Feeding method: Three-speed gravity feeding Bag clamping method: Double cylinder belt clamping bag Weighing range (kg): 20-50		02



S n.	Equipment	Technical parameter		Photo	Qty
			Weighing accuracy: $\pm 0.2\%$ Weighing speed (bag/hour) :200~300 Weighing height :2210mm Power consumption and gas consumption: 0.1KW 0.4—0.6Mpa compressed air :1m <sup>3</sup> /h Scope of application: granular materials with good fluidity Silo Material Q235 Size: 1000mm×1000mm Weight: 400-500kg		
		HOISTER	Standard configuration: Bucket elevator (shell material Q235, Bucket is plastic) (food or corrosive materials can be made of Stainless steel) Lifting method: Bucket lifting		02

S n.	Equipment	Technical parameter		Photo	Qty
			Lifting speed :(tons/hour) 5~6 Lifter height: 4300mm Power consumption and gas consumption: 1.5KW Scope of application: granular materials with good fluidity		02
		CONVEYOR	Standard configuration: 3m conveyor under the scale (Q235 Spray paint, PVC belt) Conveyor frame size: width 460mm, length 3000mm, leg		

	Instrumentation	Qty
12	CRUSHING MACHINE+CONVEYOR +STORAGE BIN+MIXER PLC 10 Inch Touch Screen	1
13	AUTOMATIC FEEDING MACHINE 1 PLC 10 Inch Touch Screen (Standard make)	1
14	AUTOMATIC FEEDING MACHINE 1 PLC 10 Inch Touch Screen (Standard make)	1
15	EXTRUDER 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
16	EXTRUDER 2 PLC 10 INCH TOUCH SCREEN (Standard make)	1

17	EXTRUDER 3 PLC 10 INCH TOUCH SCREEN (Standard make)	1
18	EXTRUDER 4 PLC 10 INCH TOUCH SCREEN (Standard make)	1
19	EXTRUDER 5 PLC 10 INCH TOUCH SCREEN (Standard make)	1
20	EXTRUDER 6 PLC 10 INCH TOUCH SCREEN (Standard make)	1
21	DRYING PROCESS 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
22	DRYING PROCESS 2 PLC 10 INCH TOUCH SCREEN (Standard make)	1
23	PACKING PROCESS 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
24	PACKING PROCESS 1 PLC 10 INCH TOUCH SCREEN (Standard make)	1
25	Network switch Gigabit optical fiber (Standard make)	1
26	Remote operation terminal	1
27	Industrial control computer (Standard make)	1
28	computer monitor 24INCH (Standard make)	2

**Utilities:****➤ Air Cooled Chilling Plant**

Sn.	Items	Specification
1	<b>Chiller Capacity</b>	<b>10 TR</b>
2	<b>Ambient Temperature</b>	50 °C
3	<b>Evaporation / Condensing</b>	7°C Evaporation / 55°C Condensing Temp
4	<b>Required Temperature</b>	10-15 °C
5	<b>Outlet Water Temperature</b>	20 °C
6	<b>Inlet Water Temperature</b>	10-15 °C
7	<b>Water Flow Rate</b>	150 LPM
8	<b>Refrigerant</b>	R22 / R407C
9	<b>Compressor</b>	1 Nos. Emerson Copeland / Danfoss make Scroll Compressor
10	<b>Motor</b>	12 HP
11	<b>Displacement</b>	1073 CFH
12	<b>Evaporator</b>	Shell & Tube type: 1 Nos. 12 TR Shell & Tube type Heat exchanger, Manufactured from Pure ½" Copper tubes with M.S. Shell
13	<b>Condenser</b>	Air Cooled Type Condenser: <b>1 Nos.</b> 13.5 TR Air cooled condenser, manufactured from <b>Copper</b> Inner-grooved pipe with aluminium fins
14	<b>Condenser Fan</b>	2 Nos. Hi-cool / Trumaxx Make Suction axial fan
15	<b>Water Pump</b>	1 Nos. Crompton Greaves / Kirloskar make
16	<b>Structure</b>	M.S. Powder Coating ( 1650 x 1000 x 1300 mm) L X B XH MS Structure from MS Channels For The equipment Also complete chilling plant will be Enclosed in closed pre coated MS panel in the package
17	<b>Connected Power Load</b>	440 V/ 50 Hz / 3 phase, 12.75 kw
18	<b>Control Instrument of the</b>	<ul style="list-style-type: none"><li>• Filter Drier (Danfoss)</li><li>• Solenoid Valve (Danfoss)</li></ul>

Sn.	Items	Specification
	<b>System</b>	<ul style="list-style-type: none"> <li>• Suction Accumulator (Emerson/Danfoss)</li> <li>• Thermostatic Ex. Valve (Danfoss)</li> <li>• HP-LP Switch (Danfoss)</li> <li>• Service Valve</li> <li>• Crank shaft heater (If necessary)</li> <li>• Water Flow Switch (Castel)</li> <li>• Anti-Freeze Switch</li> </ul>
19	<b>Electric Control Panel</b>	<ul style="list-style-type: none"> <li>• Electrical cabinet accommodating all necessary power and control components</li> <li>• Easy access for machining operating</li> <li>• Using Micro-controller for machine operation</li> <li>• Electrical precision controlled with digital indication for water temperature</li> <li>• Protection Against MCB</li> <li>• Single Phasing Reverse Phasing Over Current</li> <li>• Overload Protection for Fan and Pump</li> <li>• Overload Relay For Compressor Safety</li> <li>• Fault indicator for all electrical parts</li> <li>• User friendly Temp. indicator Controller</li> <li>• Level electrode as dry running protection</li> <li>• Easily Switched from °F to °C</li> <li>• Timer Delay to Prevent Compressor and Solenoid During Start-up</li> <li>• Make: Schneider, BCH, L&amp;T</li> </ul>

➤ **Boiler & pipeline with header, valve & indicators and other accessories**

The 1.5 ton per hour steam boiler having 10.54 Kg/Sq.cm working pressure has been considered for the project. Looking to the availability of pet coke, other solid fuel -wood scrap and or agricultural waste in the surrounding area. (cv of 2800 to 3000) approx. 120kg/hr pet coke and agriculture waste 348 kg per hour fuel requirement, the boiler considered is solid fuel fired consists of pressure parts such as Shell, Furnace, Wrapper drum, Smoke Tubes & Stay Bars which are liberally designed, robust construction, fusion welded construction of Class-I. All these are X-rayed, Stress relieved, hydraulically tested and inspected in accordance with latest standards of IBR-1950. Completed pressure parts are insulated with high density 75 mm thick LRB mattress and clad in 22-gauge AL sheet. Boiler is directly welded to a sturdy MS base frame.

<b>Technical specifications</b>	
Capacity	1.5 TPH
Type of boiler	Horizontal stationary wetback 3-pass package steam boiler
Bq plates – asme 515/516, boiler tubes – bs 3059 pt 1 gr 320, nozzles – sa 105 gr.b	
Design code	lbr - 1950
Boiler rating (sq.mtr)	70
Grate area (sq.mtr)	1.4
Working pressure (kg/cm <sup>2</sup> )	10.54
Steam condition	Dry saturated upto 98%
Thermal efficiency	72% (+/-2%) for wood @ 2800 gcv
Flue gas temp (°c)	220
Steam temperature (°c)	186
Flue gas opening (mm)	350
Max evap cap f&a 100°c (kg/hr)	1500
Water space (at n.o.w.l) (m <sup>3</sup> )	5.6
Steam space (m <sup>3</sup> )	1.5
Total electrical load (hp)	18.5
Working electrical load (hp)	15.5
Fuel consumption (kg/hr)	Gross calorific value in brackets (kcal/kg)
Wood	348 (2800)
Overall dimensions (in mm)	
Length	3900
Width	2500
Height	2450
Shipping weight (in kg)	9200
Main shell (thk * length * dia)	10 mm * 3250 mm * 2000 mm id

Furnace (thk * length)	14 mm * 2500 mm
Wrapper shell (thk * length)	14 mm * 600 mm
Tubes in 2 <sup>nd</sup> pass (63.5 mm od * 3.66 mm thk)	48 nos (length of tube: 2464 mm)
Tubes in 3 <sup>rd</sup> pass (63.5 mm od * 3.66 mm thk)	54 nos (length of tube: 3214 mm)
Makes of raw material & bought out items	
B.q plate	Sail/amns/jindal/welspun
Boiler tubes	Tata/ti
Valves	Atam
Feed water pump	Runwel
Safety valve	Safecon/brightech/mh valves
Mobray dual controller	Malhotra
Control panel	Boilertech approved vendor
Control panel hardware	Schneider/abb/siemens
Induced draught fan	Boilertech approved vendor
Forced draught fan	Boilertech approved vendor
Motors for i.d & f.d fan	Crompton
Reflex type gauge glass column	Malhotra
Pressure switch	Indfoss
Pressure gauge	Excel

#### Water pump, feed water, boiler water & fuel details

No of feed pump set	2 set
Type	Vertical, multistage
Rpm	2900
Flow (m3/hr)	2.4
Head (mtr)	121
Working pressure (kg/ssq.cm)	10.54
Hydraulic pressure (kg/sq.cm)	15.81

Motor	3 hp
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#### **COMBUSTION SYSTEM – Nozzle Bed**

It consists of combustion furnace fitted with Nozzle Bed System supported in furnace, jacketed type door frame providing primary and secondary air for efficient combustion.

#### **INDUCED DRAUGHT FAN – 7.5 HP/1440**

ID fan of the suitable capacity designed for high temperature service. Unit with a special cooling device for the shaft & bearings. The fan is coupled to the suitable motor with the help of a set of 'V' belts & pulleys.

#### **FORCED DRAUGHT FAN – 5 HP/2900**

MOUNTINGS AND FITTINGS	No (Size in mm)	Material (Make)
Main Steam Stop Valve	1 (80)	CAST IRON
Air Vent Valve	1 (25)	CAST IRON
Mobray Isolating Valve	2 (25)	CAST IRON
Mobray Drain Valve	1 (15)	BRONZE
Angle Type Single Post Spring Loaded Safety Valve	2 (25 x 50)	CAST STEEL
Reflex Type Gauge Glass Column	2 (400)	BRONZE
Feed Check Valve	2 (40)	CAST IRON
Blow Down Valve	1 (25)	CAST STEEL
S.S DCV	2 (40)	S.S
IBR Steam Pressure Gauge	1 (250)	SS 304
Inspector Test Gauge Cock	1 (15)	BRONZE
Fusible Plug	2 (25)	BRONZE
All mountings and fittings are as above		

AUXILIARIES	Qty
Vertical Feed Water Pump coupled with Motor	2
Pressure switch for the Automation of ID fan (IPS-200)	1
Mobray Dual controller for Automatic water level control and low water auto ID fan trip	1



## CONTROL PANEL BOARD

Every Control Panel is pre-wired and undergoes extensive functional test. The Control Panel consists of isolator switch main fuses, for all motor contactors, timer voltmeters, ammeter, indicating lamps, hooter, pressure switch, stack temperature controller and audio-visual alarm for abnormal working conditions.

All these are pre-wired by means of cable duct wiring.

## BATTERY

Main Steam Stop Valve

Gauge Glass with Drain Valve

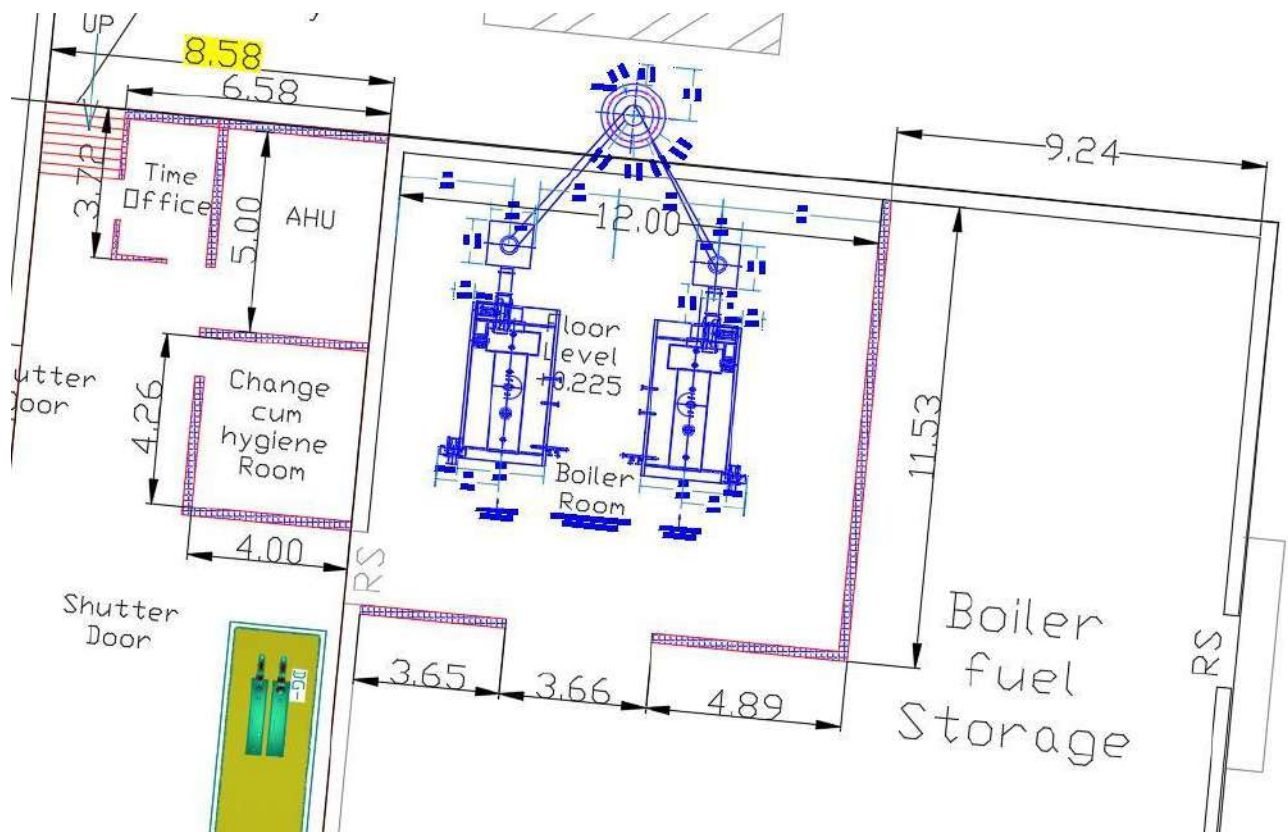
Water Level Header Drain Valve

Safety Valve Discharge Port

Feed Check Valve

Feed Water Pump – Delivery

Electrical Connections – Control Panel & Instruments



➤ **RO Water Plant- 5000 Ltr/hr**

**PROCESS COMPONENTS**

S. N.	Description	Purpose	Quantity
1.	Raw water feed pump Motor rating: 1.5 HP. mono block feed pump. MOC : Cast Iron, Shaft: EN8	To supply raw water to RO plant.	2 no
2.	Pressure Sand filter M.O.C : FRP Capacity : 6000 LPH Min. working pressure : 1.5 Kg/cm <sup>2</sup> Max. working pressure : 3.5 Kg./cm <sup>2</sup> Type of Valve : 40 MM Multiport Single Lever Valve. Filter media : Sand ,Silex, pebbles and gravels. Backwash duration : 35 – 45 mins. Pressure gauges : 1 Set.	To Filter suspended solids	1 no
3.	Carbon filter M.O.C : FRP Capacity : 6000 LPH Min. working pressure : 1.5 Kg/cm <sup>2</sup> Max. working pressure : 3.5 Kg./cm <sup>2</sup>	To Filter any odour	1 no
	Type of Valve : 40 MM Multiport Single Lever Valve. Filter media : Activated Carbon +900 IV pebbles and gravels. Backwash duration : 35 – 45 mins.		

S. N.	Description	Purpose	Quantity
	Pressure gauges : 1 Set.		
4.	Rota meters Rotameter : 2 Nos. Range : 3 M3/hr. Type : Panel Mount Make : Aster India MOC : Acrylic	To Measure Flow/Hr	2 no
5.	Pressure Gauges Glycerin filled MOC : SS	To Measure Pressure	2 no
6.	Micron Cartridge filter Quantity : 1 Nos. Design pressure : 1 Kg. Cartridge details : 5 micron ; 20" long ; Jumbo Housing MOC : PP Cartridge Type : Wound No. of cartridge : 2 Nos.	To filter suspended solids	2 no
7.	Anti scalene dosing system Quantity : 1 No. Type : Electronic diaphragm type Dosing Pump Min. Dosing Flow : 1 lph Max. Dosing Flow : 6 lph Operating Pressure : 1.5 Kg./cm <sup>2</sup> Solution tank : 1 Nos.: HDPE Tank Capacity : 100 Ltrs. Make : I-Dose / Equi.	To improve life of membrane	1 Set with standby dosing pump
8.	High Pressure Pump Quantity : 1 No.	To supply water with high pressure	2 no

S. N.	Description	Purpose	Quantity
	Type : Vertical Multistage Centrifugal Pump Make : CRI / Equi. M.O.C : SS - 304 Capacity : 2000 LPH at 12 Kg/cm2. Motor rating : 1.5 KW Discharge pressure : 10-16 Kgs/cm2.	to RO membrane	
9.	High Pressure Switch	To automise RO plant based on pressure	2 no
10.	FRP housing and membrane of RO plant RO PRESSURE TUBE Housing Quantity : 1 No. M.O.C : FRP composite. Make : Matrix/Equi. Position : Horizontal , series RO MEMBRANE : Quantity : 1 set. Membrane : Spiral wound TFC Membrane Polymer : Composite polyamide Membrane Make : Hydranautics (USA) / Filmtec-Dow (USA).	The main filter to remove TDS, Hardness	1 Set
11.	UV Sterilizer	To disinfect RO product water	1 set
12.	SS piping from High pressure pump to UV sterilizer	Piping material	1 Lot
13.	R.O. Instrumentation & Controls: Low pressure switch : 1 No.		1 Set

S. N.	Description	Purpose	Quantity
	High pressure switch : 1 No. Make : Indfoss , India. Pressure gauge : 1 No. Range : 0 – 21 bar. M.O.C : SS Brine Control Valve : 1 No. MOC : SS Make : Reputed. Digital Conductivity Meter : 1 No. Range : 0 – 999		
14.	R.O. Control Panel : Semi automatic operation is provided with auto stop for feed pressure low with fault indicating lights.		1 Set

➤ **Generator – DG Set : Qty 1**

The proposed plant design considers two production lines from grinding process to finish FRK, the combined installed power requirement is 1736 KW capacity including cleaning grading preparatory and utilities section which will be met through connecting from Discom. However, for backup power requirement 1000 KVA DG set has been considered through which one FRK line can function during the power cut.

**Generator Specifications:**

Genset Rating	Prime Power
Genset Output (KVA/KWe)	1010 / 808
Engine rating or Max. Power at rated RPM in KW(BHP)	880 (1180)
Engine Model	12M26D968E200
Engine Type	TCAC

No. of Cylinders / Cylinder Arrangement	12 / V-Type
Displacement (L)	31.8
Bore & Stroke (mm)	150X150
Compression Ratio	15.7:1
Rated RPM	1500
Governor: Type / Class of Governing	Electronic / G3
Frequency Regulation, No load to full load	Isochronous
Over speed trip (rpm)	1650
Air cleaner type / Qty	Dry / 02
Exhaust system	
Maximum allowable back pressure kPa	7.5

#### Engine Electrical System:

Charging alternator Voltage / Current (DC)	24 V / 55 Amos
Starter Motor rated voltage (DC)	24
Battery Voltage (DC) / Capacity (AH)	24 V, 2 x 180 AH

#### Fuel System:

Recommended Fuel	
Fuel Tank Capacity (Ltr)* for enclosure set	
Fuel consumption- LPH at % load	<b>HSP</b>
100%	<b>990</b>
75%	<b>190</b>
50%	<b>153</b>
25%	<b>106</b>
	<b>58</b>

#### Lubricating Oil System:

Lube Oil Sump Capacity	109
Oil Change Period (Hrs)	0.15
Oil Consumption (% of SFC)	06/Spin on type
Oil Filter Quantity (NOS) / Type	15 W40 Greaves Maxtherm API C14
Recommended Oil Grade	Water Cooled
Oil Cooler	50 Hz


#### Cooling System:

Cooling System is designed for max ambient	50
temp. Deg. C. at rated load	
Radiator System Capacity, including engine (L)	<b>200 Ltr</b>
Water Pump Type	<b>Centrifugal V Type Belt Driven</b>

#### Alternator Specification:

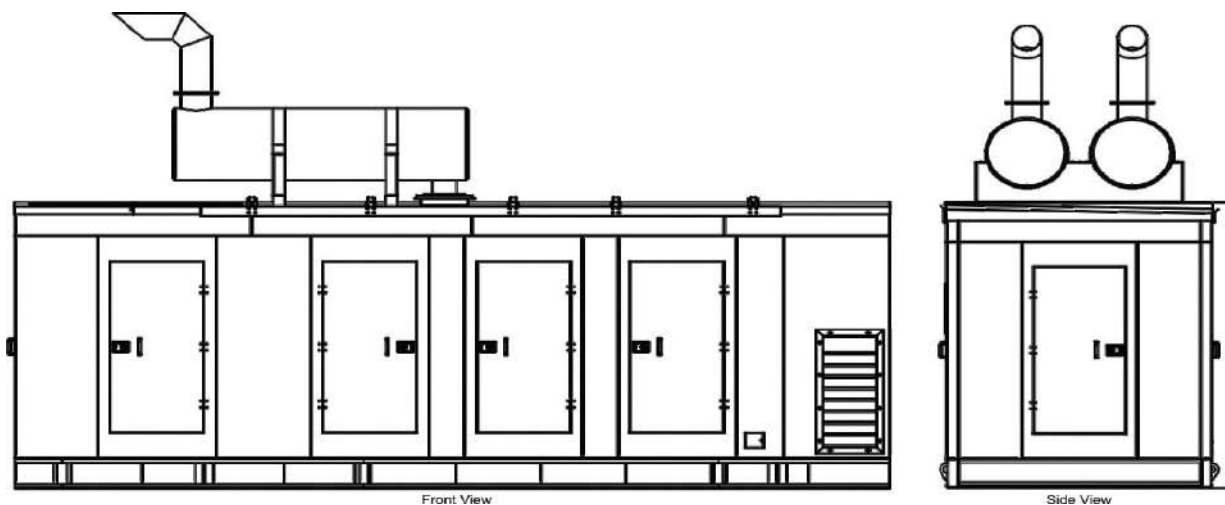
Voltage	380 - 440V
Frequency	<b>1406</b>
Current at 0.8 PF (Amps)	<b>4 Pole, Rotating field</b>
Type	<b>Brushless (Permanent magnet optional)</b>
Exciter Type	<b>6, fixed.12, re-connectable (Optional) Solid State</b>
Leads: Quantity type	<b>Solid State</b>
Voltage regulator	<b>Class 'H'</b>
Insulation	<b>125 °C (Class 'H')</b>
Temperature rise	<b>1 Sealed</b>
Bearing: Quantity type Coupling	<b>Flexible disc closed coupled 2 Phase sensing ±1% 100% of rating</b>
Voltage regulation: No load to full load One step load acceptance	<b>100% of rating</b>
Unbalance load capability 500	<b>25% of rated current</b>

## Generator Controller

CONTROLLER TYPE	FEATURES	DISPLAY PARAMETER	AUDIO VISUAL WARNING	SHUT DOWN WITH AUDIO VISUAL ANNUNCIATION
	Compact and Microprocessor based fully configurable control unit	Engine oil Pressure	Low Oil Pressure	High Coolant Temperature
	4 Line LCD display	Coolant Temperature	High Coolant Temperature	Engine Over Speed
	The unique Integrated DG set Controller	Fuel Level Indication %	Low Battery Voltage	Engine Under Speed
	Incorporate both Engine & Alternator Parameter in One Console	Battery Voltage	Low Fuel Level	High Canopy Temperature
	Fully Configurable are Settable and Password Protected	Engine RPM		Low Fuel Level
	AMF Ready	DG set Running Hours		Under Voltage
		Generator Volts-		Over Voltage
		Phase-		Under Frequency
		Neutral & Phase -		Low Coolant Level
		Phase Generator		High Canopy Temperature



		Current (Amps)		
		Power Factor		
		KWHR		
		KW		



➤ **Hydraulic Pallet Truck - Hand Operated:**

For material handling from one section to another these pallets are very convenient and safe. These are manual and easy to operate.

- Capacity: Up to 200 Kg
- Specification: As per OEM.



➤ **Mobile Roller Conveyor**

- Equipment should be able to carry 1000 Kg load,
- SS Roller placed 150mm CC
- Mobile type conveyor
- One end height Approx. 1 meter and another end height 0.5 Meter (inclined Type)
- Overall size Approx. 9-meter length X 0.9 mt Wide and height as specified above
- Equipment can be supplied in 2 or three piece (2 or 3 QTY.) but must be easy to handle and connectable to each other at site