Standard Operating Procedures (SOP)

April 2022

Food Corporation Of India
Headquarters, New Delhi-110001

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Preface

Third party assessment of all FCI owned and hired Warehouses was under taken by Quality Council of India. Based on feedback of QCI, a need was felt for standardising physical aspects of warehouses. In addition, there has been number of instances when visiting officers/dignitaries complained of wide variation in the operating practises (OPs) at various Depots of FCI causing lot of confusion, inadequacies, duplicity and delay. To obviate all these, attempt has been made to bring out standard Operative Practices (SOPs), most of the items being reiteration/compilation of existing instructions. In some cases like first aid box, signage, security equipment's, electrical lighting, visitor's gate-pass etc. new SOPs have been framed.

Committee constituted for the purpose held consultation with field officers and incorporated suggestion for improvements. Although, every care has been taken to align the SOPs with the existing instructions. In case of conflict of interpretation the instructions will prevail over SOP.

The SOPs shall be updated every six month based on feedback received from the field. So, SOPs be widely circulated to all depots and agencies. The SOPs shall function as guide book for up-gradation/ modernisation of depots which is underway

Index for Standard Operating Procedures

Security

SOP to be followed at FCI depots in respect of Security Surveillance

I. 'WHAT' (Exact definition of Activity)

For the purpose of security and prevention of damage from fire, the following appliances as suggested in the SoP are for immediate use to extinguish fire or to keep it at bay till arrival of fire engines from the local fire brigade office. The number, capacity and location of fire-fighting equipment has been stated to be as per the nature of fire-fighting equipment that is to be decided in consultation with local fire officers who are specialized in this field.

The following appliances have been considered to be minor fire-fighting equipments:

- Soda Acid Extinguisher
- Foam Extinguisher
- Chemical Compound Extinguishers
- Chemical Extinguisher (Co2 or methyl Bromide)
- Water Buckets
- Sand Buckets
- Axes(hand)
- Axes(felling)
- Shovels
- Axes(pick)
- Crow bars
- Hooks(fires)
- Beators(fires)

Note: Installation of number/type of fire- fighting equipment and location of such equipment should be made in consultation with local fire officer who are specialist in this field. The fire-fighting equipment be strictly of BIS specification.

For the purpose of Security and its prevention Major fire-fighting equipments and the details are as follows.

- All the persons employed in the warehouse should be familiar with the basic principles of Fire-fighting and know exactly where the Fire-fighting equipments are kept and how to use these equipments in case of emergency.
- The address and telephone No. of Fire Station, Police Station should be promptly displayed at the depot office and also on the duty register of the Security forces so that in case of any emergency the authorities can be contacted without any delay.

II. 'HOW MUCH/MANY' (Quantities required as per the size of the depots)

The under mention statistics may clarify the number of the fire extinguisher and the fire bucket required against the capacity of godown, the installation and location of which is to be made in consultation with the local fire officer who are specialist in this field.

S. No.	Capacity of Godown	No.of Fire extinguishers to be provided	No. of fire Buckets to be provided.
1.	Upto 1,500 MT	3	15
2.	Above 1,500 MT and upto 3,000 MT	4	20
3.	Above 3,000 MT and upto 5000MT	6	30
4.	Above 5,000 MT and upto 10000MT	8	40
5.	Above 10,000 MT and upto 15000MT	10	50
6.	Above 15,000 MT and upto 25,000MT	15	75
7	Above 25,000 MT	25	125
Note: Installation of number/type of fire- fighting equipment and location of such equipment should be made in consultation with local fire officer who are specialist in this field. The fire-fighting equipment be strictly of BIS specification.			

III. 'WHO' (Competent Authority to sanction the activity and execution)

The competent authority for sanctioning the purchase of fire-fighting equipment as deliberated in the DoP is extracted here under:

Nature of powers	District level		Regional level		Zonal Level		HQrs Level		Remarks
	Authority	Power	Authority	Power	Authority	Power	Authority	Power	
Purchase of fire Fighting equipment*	Area Manager	Full Power@	DGM/ GM	Full Power	GM	Full Power	ED	Full Power	*Introduction of any new type of such items will require prior sanction of FCI Hqrs. ii) Subject to scale laid down from time to time by the FCI Hqrs. @ Limited to conventional items namely fire beaters, buckets, hand operated extinguisher pumps only

IV. 'WHEN' (Exact timeline & frequency of repetition)

The SoP too deliberates that the inspections of Fire-Fighting Equipment are to be carried out quarterly to verify the work-ability and refilling of the extinguishers. It

has also been stated that a drill is to be conducted once in a year in presence of the fire-fighting officer of local fire station to get acquainted about its operation at the time of need.

V. 'WHERE' (Location as per terrain, installation point)

It has already been stated that installation of number of fire-fighting equipment and location of such equipment is to be decided in consultation with the local fire officers who are specialist in this field keeping in view the layout/design/capacity/topography of Godown.

Fire alarm (manual/electronic/electrical etc): The fire alarm will be located in the main admin office/depot office and the additional fire alarms can be installed in the shed/Godown areas depending upon the topography/geographical /conditions, numbers of sheds & size of the depot in consultation with local fire officer/department in such a way that all the staff/labourers available in the depot are alerted immediately.

In view of what has been explained above the SoP drawn for following in the FCI depots in respect of the security surveillance vividly delineates, the action to be taken in case of fire hazards as a prevention and safety measures for safe guarding of man and materials.

Safety Sign(s):

Safety being one of the important measures to be followed inside the depot premises, the following safety signs may be display in and around the depot premises.

- Prohibited Area
- No Smoking
- Safety First
- Work Safely
- Use of Mask & maintenance of COVID protocol
- Under CCTV surveillance
- RISK of Electric Shock/High Voltage
- Emergency Exit
- Railway line

Deployment of Security Personnel:

As per the Establishment Policy Sanction Order No. 01/2016/04 dated 27.06.2016, the staff strength for FCI Hqtr/North Zone/South Zone/East Zone/West Zone/North-East Zone, in respect of the Departmental watch and ward posts and outsourced watch and ward post has been fixed.

In cases of shortage watch & ward staffs, Security forces from external agencies are to be hired/put into force from the DGR empanelled agencies so as not to compromise with the security lapses, as per the order of Ministry of DPE.

The tender for recruitment procedure is to be carried out at the level of GM(Regions)/respective ZO in accordance to the need but not over ruling the total sanctioned strength.

Installation of Electronic Surveillance System:

Installation of CCTV cameras is an added feather on the cap of surveillance system to be maintained in the office as well as the depots of the FCI holding in store the valuable foodgrains.

Installation of the CCTV cameras is to be executed at the vulnerable points inside the depots premises to avoid theft/pilferage/misappropriation of stocks and any untoward incidents.

As per the usual mandate, the CCTV cameras of different specifications are to be installed at both the sides of the sheds, at the weighbridge point, at the entry/exit gate, at the loading/unloading point and at other important points which are felt to be vulnerable and emergent as per the requirement of the field.

The tender for such installation of CCTV cameras are to be carried as per the order of the MHA.

The following SOPs is to be followed & maintained in the field level:-

1. Backup of the CCTV recording shall be regulated as follows: -

a) Backup of recording shall be taken on external USB Hard Disks every month with the help of Vendor.
b) Area Manager shall provide two 5 TB external USB Hard Disk to Depot Manager for the purpose of keeping backup.
c) In the first month, the backup of recording of a month to be taken on a Hard Disk by the respective District Office.
d) On completion of the second month, the backup of second month recording to be taken on the hard disk by respective District Office and the one with District Office to be brought back to respective Depot. This process to be repeated at the end of subsequent months.
e) District Office and Depot office to keep the 5 TB hard disk in safe custody and view the footage randomly.
f) The Vendor will maintain the proper functioning of entire CCTV Surveillance System.
g) The footage backup is to be kept by Depot/district office for 30 days. Before deleting footage for a month, depot manger will certify that there was no incidence of theft, pilferage etc during the relevant period.
h) If there is any case of theft, malpractice etc, footage slot of concerned day at the unit is to be identified and copy of said footage is kept in external USB device for evidence purposes. This USB device is to be kept by District Offices concerned.

2. Display Boards, showing message **"you are under CCTV Surveillance"** English and Local language, to be displayed at atleast 5 prominent places in the Depot. It may be more based on the capacity of the depot.
3. Speed breakers shall be laid at appropriate distance from the gate for restricting speed of vehicles for capturing the number plate of the truck by the camera while entering & leaving the Depot.

4. During General, Technical and other type of inspections of the Depot, the Inspecting Officer shall inspect the working of all the CCTV cameras and also record the same in the inspection report.
5. During regular security inspection the Inspecting Officer shall see the CCTV footage randomly pertaining to previous one month and record the same in his inspection report. Inspecting officer shall also indicate slot of footage seen by him/her in inspection report. If any untoward incident is noticed, it shall be reported to GM(R) immediately despite recording in the inspection report.
6. Remote viewing of the footage, if feasible through internet shall be viewed randomly by GM(R) at RO and ED (Zone) at concerned Zonal Office.
7. Campus shall be illuminated sufficiently by providing adequate campus lighting and whitewashing for proper recording of footage.
8. Depot Manager shall regularly check working of each and every camera and the problem if any, in working is noticed, Vendor shall be called immediately through e mail/telephone etc and get it rectified within 48 hours. Depot Manager shall also check regularly the obstructions, if any in front of the camera and get it cleared for proper recording.
9. The alerts in the night hours shall be observed by security personnel so that the person involved in such activity can be questioned for further Assessment.

Action to be taken in case of fire/general fire practice-

- **Action taken by person discovering fire.**

- He will shout at the top of his voice "FIRE, FIRE, FIRE", and keep on shouting" FIRE, FIRE, FIRE", until it is taken up by other around him and assistance arrives.
- Simultaneously he will do his best to extinguish the fire by means of the most suitable First Aid Fire- fighting appliance in the vicinity. The selection of extinguishers will depend on nature, on material, on fire and the possible reaction caused by application of a fire extinguisher. Water is generally used for materials like gunny, food-grains, wood, paper, straw, cloth. Foam type/Carbon-di-oxide extinguisher or sand buckets are in use for dealing with inflammable liquids, gases etc.
- Non-conducting and vapourising medium light methyl-bromide are used for fires involving electrical current.
- In case, he finds that assistance is not forthcoming and fire cannot be brought under control by him, he will run to the nearest fire gong and create enough noise to attract attention of other employees and obtain their assistance.
- In the event of fire in a locked building/ shed he may break open the door in the effected building without waiting for the formal orders provided such an action is the only means available to reach the scene of fire and extinguish it and that the door is nearest to the scene of fire.
- In case of an electrical fire or a fire in a generator or a vehicle he will switch off the electric current/main feed cocks of the installation and turn of petrol.

- **Action by persons next arriving on the scene of fire.**

- Persons hearing the shout/alarm of fire will also take up the shout "FIRE, FIRE, FIRE" and run at once to the scene of fire, picking up the fire- fighting appliances nearest to them and help to put out fire.
- The senior-most person present will take charge of the fire- fighting operation and immediately take the following action.
  - Detail a person to beat the nearby fire gong or raise the alarm system as applicable to the depot.
  - Form parties from the men available as soon as they arrive on the scene to rescue people, if any, trapped in building or sheds on fire. To attend to cases of burns and render other first aid and dispatch essential messages.
  - Telephonic message or message by other fastest means to be sent to the nearest fire brigade if fire is of serious nature.
  - Arrange to switch off the main electric switch if the fire is located in a shed/building if not already done.
  - To form water/sand bucket party, fire extinguished party and salvages party and ensure that each party does its allotted task promptly and efficiently without any noise or confusion.
  - Gate doors/windows of the affected shed/building closed, keeping open only the barest minimum of doors absolutely essential to fight the fire (this prevents the spreading of fire to the nearby shed/buildings and also decreases supply of fresh air to the burning fire which in term smoother the fire to a great extent.)
  - Ensure that the nearby building, shed not affected by fire are immediately locked up.
  - Arrange to salvage important documents stocks & stores on fire either by removing the nearby stores to a safe place or by removing items actually on fire in order to localize the fire.
  - To post men on unaffected building/sheds front and rear to watch for any possible spread of fire.

SOP on Visitor Pass in the depot.

- As per the security manual, all visitors on verification of identity should be issued passes when they visit FCI offices and Food storage depots. The Guard/Gateman after satisfying himself/herself with the confides of the visitors, should contact the officers who is to receive the visitors, issue the pass and have him escorted to the office concerned, who, after the visit is over, should see the visitors is escorted out. This is the responsibility of the person visited to see that the visiting person is escorted back to the gate and while within the office and that before leaving he surrenders his temporary pass to the watchman on duty at the gate. Such visitors should not be permitted to generally loiter around the office. Loiterers when checked by security staff should be asked to produce their pass. Specimen signature of the signatory authorized to sign passes should be available to security staff to counter cases of forgery. This is particularly important in case of gate passes for stores which may be issued by a number of authorized signatories. Reception/gate office should be set up near the outer main entrance of the depot for this purpose. This should be

manned by the Security guards & provide telephonic communication to the main office.

- A visitor's register should be maintained at the reception/gate offices in which the following information in respect of the visitor should be entered: -
  (a) Full name & address
  (b) Date & time of entry
  (c) Purpose of visit
  (d) Person to be visited
  (e) Specific area of the office/FSD to which admittance is desired
  (f) Time of exit
- Entry of the offices/FSD's should be allowed only to person holding valid identity card or passes/tokens issued under the signature of the officers/staff authorized to do so who would exercise due care and caution while issuing the passes/tokens.
- All persons irrespective of rank & status, whether they belonging to FCI or otherwise should be required to show their identity card/passes/tokens to the security staff at the entrance of the office/ FSDs. Staff members who forgot to carry their identity card should obtain a pass from reception officers to be able to enter the office. Identity card issued by government officers and organizations other than FCI will not automatically be valid for entry to the offices/FSDs of the Food Corporation of India.

Information Technology

Contents

1. Document Control

1.1. Document Statistics

Sr. No	Type of Information	Details
1.	Title	Standard Operating Procedure for IT Systems at FCI
2.	Document Revision No.	1.0
3.	Last Update	08-03-2022
4.	Document Owner	Food Corporation of India (FCI)
5.	Document Author(s)	IT Division, FCI HQrs
6.	Document Change Reviewers	

2. SOP for IT Hardware

2.1 Eligibility

All officers/officials of Food Corporation of India are eligible for Desktop PCs/Printers for day to day operations. In addition, AGM (up to 50%) and above level officers are eligible for Laptops. However, the procurement and maintenance of the IT assets is an important and significant part of the IT expenditure in the corporation. The policy has been framedto ensure that the resources are optimally allocated and utilized.

The work load on the various levels of officers/officials in FCI can be used as a reference to gauge the requirement and specifications of the IT systems and accordingly be used to allocate IT assets. Most of the computer related work in FCI is mainly related to typing of noting, drafting of letters, preparation of presentations, record keeping in worksheets etc. Keeping in view the workload at different organizational position, the policy of allocation of IT assets to various levels of officers/officials in the corporation have been defined herein under.

2.2. Desktop PCs (including printers and scanners) and Laptops

The rank wise eligibility (up to Cat-III) for desktop PCs is as follows:

S. No	Item	AG-I to III	Manager	AGMs & DGMs	GMs & CGMs	EDs and above
1.	Processor	Intel Core i3 or equivalent	Intel Core i5 or equivalent	Intel Core i3 or equivalent	Intel Core i3 or equivalent	As per actuals
2.	RAM	4 GB	4 GB	4 GB	4-8 GB	As per actuals
3.	HDD	Up to 500 GB	Up to 1 TB	500 GB –1 TB		As per actuals
	Monitor	18.5" LCD Monitor	18.5" LCD Monitor	18.5" LCD Monitor	22" LED Monitor	22'' LED Monitor
4.	Operating System	Windows or other licensed OS; Latest Version				As per actuals
5.	Office Software	Windows or other licensed office software				As per actuals
6.	Speaker	As per actuals on approval of Competent Authority				

Detailed Desktop policy (alongwith eligibility for printers and scanners) which has already been issued from FCI HQrs vide circular IT/01/2020 dated 12.02.2020 is enclosed as **Annexure 'I'** for kind reference.

2.3. Laptops

All Category-1 officers (DGM & above) of Food Corporation of India are eligible for the laptop. 50% of the total strength of AGMs may be allowed for the laptop, on the need basis.

For this purpose, the Competent Authority to decide will be respective GMs for Region,EDs for Zones and C&MD for Head Quarters.

S. No.	Eligibility	Cost Ceiling* (all incl. costs in INR)
1	CMD, EDs and CVO	As per actual
2	General Managers and above and equivalent but below CMD, EDs and CVO	70,000
3	DGM/AGM & equivalent	50,000

*including all accessories and standard software

Detailed Laptop policy which has already been issued from FCI HQrs vide circular IT/01/2017 dated 10/20.03.2017 is enclosed as **Annexure 'II'** for kind reference.

2.4. Depot Level ICT Hardware

Keeping in mind the various operations of the depots, following hardware requirement should be followed:

1. Each LWB (Lorry Weight Bridge) should have one desktop which will be connected to existing weigh system and thus the process of weighting will be completely automated.
2. Each depot gate will be given one desktop and one thermal printer where in gate in-charge can access and verify the records of the truck to be allowed to enter. The printer shall be used to print tokens and gate passes (in cases where LWB is not in Depot) for truck drivers.
3. Each quality lab will be given one desktop and one laser printer for undertaking there operational activities like generation of quality certificate. Technical assistant will also be working on the same desktop and no separate desktop is provisioned for technical assistance.
4. One desktop and one laser printer is provisioned for undertaking day to day depot operations like report generations etc. at depots level. For depots, where the capacity is more than 25K MT but less than 50K MT, 2 desktops and 1 printer will be considered and for depots with capacity of more than 50K MT, 3 desktops and 1 printer will be considered to estimate the hardwarenumbers.
5. Handheld device per 50,00MT capacity:
    i. One tablet will be allocated for each 5000MT capacity, which is roughly equal to the total number of shed-in-charge and Shed Assistant put together for FCI owned depots.

ii. This ensures the future increase in manpower, and take care of operations at the good shed/railhead.

6. One tablet is provisioned for each of the QC Managers.

2.5. Internet at Depot Level

1. The Desktops/Tablets installed at the depot level should have 128 kbps bandwidth uploading and downloading, which is minimum requirement for successfully conducting depot operations via DOS application.
2. The speed can be checked using Speedtest by Ookhla-The Global broadband speed test. The URL is https://www.speedtest.net .
3. All the tablets will have a SIM Card for network connectivity. 3G/4G/5G SIM cards have to be provided for the depots located in areas having 3G/4G/5G network, while for depots in the remaining areas 2G/3G cards will be allowed.
4. All the supplied desktops will have to be provisioned for network connectivity. For depots with existing broadband connection, the desktop(s) provided to depot office will continue to use the broadband connection to access the Depot Online System.

3. SOP for Internet Speed and Optimal Utilization

The purpose of the guidelines is to ensure the optimal utilization of internet and bandwidth across all FCI offices. For ensuring smooth network connectivity at all the FCI offices, it may be ensured to take internet connectivity in compliance to Ministry of Communications, DoT, DO No. 19-1/2019(Part)-SU-I dated 12.01.2022 and OM dated October 2020. **(Annexure 'III').**

3.1. Present Bandwidth availability

At present, point to point lease line connectivity b/w FCI offices and corresponding NIC offices up to district offices is placed as below:

Office	Existing Infrastructure in place
Link between FCI HQ & NIC	34 Mbps (At present at 100Mbps temporarily) + 34 Mbps (redundant) (P2P Lease line link between FCI and NIC local office and VPN over NICNET)
Zonal Offices (5)	10 Mbps (P2P Lease line link between FCI and NIC local office and VPN over NICNET)
Regional Office (24)	10 Mbps (P2P Lease line link between FCI and NIC local office and VPN over NICNET)
District Office (166)	2 Mbps/4 Mbps (P2P Lease line link between FCI and NIC local office and VPN over NICNET). Internet Broadband connection by the local ISP at the optimum downloading/uploading speed for the applications such as FAP/HRMS DoS and others.

Depot Level	The Desktops/Tablets installed at the depot level should have 128 kbps bandwidth uploading and downloading, which is minimum requirement for successfully conducting depot operations via DOS application. The speed can be checked using Speed test by Ookhla-The Global broadband speed test. The URL is https://www.speedtest.net . All the tablets will have a SIM Card for network connectivity. 3G/4G/5G SIM cards have to be provided for the depots located in areas having 3G/4G/5G network, while for depotsin the remaining areas 2G/3G cards will be allowed. All the supplied desktops will have to be provisioned for network connectivity. For depots with existing broadband connection, the desktop(s) provided to depot office will continue to use the broadband connection to access the Depot Online System.

3.2. Optimal Utilization of Bandwidth

- Timely update of windows/software patches to ensure good speed of internet should be done.
- Regular update of antivirus and periodic scanning of computers should be done to detect and remove malware from the system.
- Any files downloaded from emails/websites and such applications should be scanned before opening.
- Any 3rd party storage devices such as USB, External HDDs should be properly scanned with antivirus to keep the network clean.
- Bloatware/applications for personal use should not be installed on computers.
- In general, the internet provider NIC restricts websites at its level to ensure justified utilization of bandwidth. In addition to this, NIC may be requested to block (unnecessary/non-related to official work) websites which can avoid unwanted burden on bandwidth.
- NIC may be requested for bandwidth utilization details on periodic basis (monthly or more) to ensure monitoring and optimum utilization of the bandwidth.

4. SOP for creation of e-mail IDs

The purpose of the guidelines is to ensure the SOPs to be followed for creation of emailids on pan India basis,

1. The request for creation of new email id for officers/officials should be forwarded concerned DO/RO/ZO to HRMS Division, FCI Hqrs.

2. HRMS division will further verify the details of the concerned officers/officials to ensure that the details are in prescribed format (already provided by IT Division). Further, any redundancy/duplicity must be removed by the HRMS.

3. The verified details sent by HRMS division will be uploaded on the NIC server by IT Division through delegated admin (backend) for the creation of email id.

4. The details of the email id once created will be forwarded to HRMS division for their record keeping as well.

5. SOP for usage of Name base official e-mail ID's

1. Detailed guidelines for "usage of name based official email id's for official communication purpose" has been circulated vide IT Division letter FCI HQ-IT029(11)/1/2021-IT-Part (1)/434 dated 10.02.2022 is being enclosed as **Annexure 'IV'.**

Electrical Engineering

Standard Operating Procedure (SOP) in 'Modern Warehouse' with respect to the areas identified for Electrical installations: -

(The following points are not exhaustive and are meant to serve as guidelines. Compliance of instructions as issued by the Hqrs as well as CPWD is to be ensured in all cases.)

1. **Detailed SOP for Providing new or Renovation and maintenance of Electrical installations in the depot.**

Providing new or Renovation

Electrification / electrical installations to be provided by the items defined for Godowns & external lighting as per "Annexure-A" and for Ancillaries as per "Annexure-B" and drawing as per "Annexure-D". Service connections may be provided with providing main LT panel in electric room / MV Room, Feeder pillars for bunching of block wise distribution system with adequate capacity XLPE insulated aluminum conductor armoured cable of 1.1. KV Grade of IS:1554 Part-1 or as per latest amendments from CPWD and IE rules.

Number/Quantity of lighting points inside godown, office block, lavatory blocks, ancillaries etc. As well as outside lighting arrangement, lighting fixtures and safety switch gears should be provided as per CPWD specifications for internal electrification.

The estimate of the work has to be prepared by JE/Manager and TS & AA&ES to be accorded based on the DOP. The tenderers will have to be invite through CPP portal and work to be carried out under the supervision of JE/Manager. The check measurement has to be made and Measurement book prepared on the basis of the same. Necessary supervisory inspections are also to be performed based on the DOP.

Works are to be performed on an annual basis based on FY. All the work relating to a depot will have to be clubbed together and estimate prepared. Separate tenders have to be invited for separate classification of works (as mentioned in "Annexure-C").

The works have to be planned well in advance and performed in own FCI depots. The works to be carried out in a FY has to be included in the priority list and gotten approved from the CA. If the priority list is prepared based on actual estimated value, no separate AA&ES to be obtained, else AA&ES will have to be obtained from Competent Authority (CA).

Maintenance of electrical installations

Electrical maintenance of office building, Food grain storage godowns and other related ancillary building, pump houses etc as applied in one case mean that all Electrical and Mechanical services are kept in healthy condition and wherever operation is called for, the same is also carried out.

Original work carried out on Capital / Minor capital fund and repairing, renovation & AMC work is to be carried out from ARMO fund available for the appropriate financial year through the CPP Portal. Steps are as below:

- First preparing of estimate on the basis of standard drawing, design and required quantities of items for replacement as well as repairs.
- Obtain AA&ES from the General Manager (Region) post concurrence from finance.
- Accordance of Technical Sanction by Asstt. Genl. Manager (EM) / Dy. Genl. Manager (EM) / General Manager (Engg) as per power to accord TS as per DoP.
- Approval of Draft NIT by the competent authority as per DoP.

- Floating of tender as per standard format and MTF.
- Opening of Technical Bids and evaluation and acceptance of technical bid by CA.
- Opening of price bid of technically qualified bidders.
- Submission of price bids along with comparative statement along with justification of rates.
- Acceptance of price bid and award of tender acceptance letter.
- After deposition of PG by the contractor, award of work commencement letter.
- Work should be supervised and executed as per CPWD Works manual & specifications and registers to be maintained accordingly (AA&ES and TS Register; Bill & Expenditure Register; Work Order Register; Agreement Register; Contractor Ledger; Site Order Book; Hindrance Register; Material-at-site Register).

Specific details of maintenance activities required to be carried out by engineering staff with regard to each service are detailed under:-

a) Attending day to day complaints of electrical installations and carrying out addition/alteration of minor nature as directed by engineer-in-charge.

b) Regular inspection by JE (EM) in quarterly and by Manager (EM) in half yearly of electrical installations with a view to ensure that entire installations are in healthy working condition.

c) In case of power failure same should be restored on priority by attending to the fault or contacting the Manager (Depot) to approach Electricity Department.

d) Maintaining lighting fixtures / fans / switch boards etc. in clean and working condition.

e) Maintaining of electrical lighting fixtures, fans, switch boards (Main Board, Sub-main Board and control switch boards etc.) and to keep them in clean condition. This includes ensuring proper inscription / sign boards also as directed by Engineer-in Charge.

f) Carrying out tests and measurements whenever required **as per attached schedule** or as directed by Engineer in Charge.

i) Operation, maintenance and attending day to day routine complaints of compound / street lighting systems/OH and cable system (including cable jointing) and maintenance of internal electrification of godowns / ancillary buildings including checking / attending / replacing the lamps, tube rods, chocks, condensers, time-switches, MCBS , control boxes, feeder pillars, ignitors, holders, starters, starter base as per the list of material under sub-head 2 & 3 and as per the directions of Engineer-In-Charge within reasonable time by observing EI Rules, Safety Measures and CPWD Specifications to avoid any accident / damage to human life / assets etc.

ii) Measuring earth resistance value of each earth station and also checking entire earthing system for continuity and proper connections. Results should be recorded & shown to the Engineer-in Charge and corrective measure should be taken if required.

iii) Testing and inspection of main boards, SDBs, CSBs for any **(a)** Loose Connection **(b)** Putting proper re-wire-able fuse ratings and **(c)** Cleanliness, corrective measures as required should be taken to set things right.

iv) Insulation test of main board, SDBs. & CSBs be carried out and results should be recorded & shown to the Engineer-in Charge. In case proper values are not available fault segments should be identified and necessary corrective action be taken.

SCHEDULE FOR PREVENTIVE MAINTENANCE E.I. PROPER/LIGHT PLUS FANS AND COMPOUND LIGHTING.

MAIN, SUB-MAIN AND CONTROL SWITCH BOARDS:

a) Contact checking cleaning and replacement : Monthly
b) Earth Continuity : Monthly
c) Insulation Test : Quarterly

To attend day to day routine complaints of the electrical / installations including all required T&Ps with checking / attending of switch boards, fans/fixtures plugs of all types / DBs / SDBs / MBs / Wiring etc. incl. dismantling of the items requiring repairs / rectification of the same and re-installing (Including departmental supply) with all connections etc. to put the installation / part of the faulty installation back in proper working condition with in a reasonable time observing IE rules and taking all safety precautions to avoid any accidents/damages to human life, assets etc. i/c supply of materials as per sub-head 2 as required.

The works are to be carried out in own depots of FCI for which separate estimates are to be prepared by the concerned JE/Manager. To ensure preventive maintenance, AMC has to be invited through the CPP Portal. (If major ARMO or special repair work is to be carried out in the depot, the AMC should be adjusted accordingly to minimize expenditure since the same will have to be included in the guarantee period).

2. Detailed SOP for number of tube lights / High Mass lights / fans in the office block and depot campus as per capacity of the depot.

- To maintain adequate internal (~100 lux through combination of natural daylighting and artificial lighting) & external lighting required numbers of lighting fixtures inside godown as well as office & ancillary buildings.
- For open area lighting required capacity and numbers of LED Flood lighting fixtures or if open area is required lighting arrangement by the way of High Mast, the same may be provided.
- Appropriate distance between two high masts to be kept so that proper illuminance is available.
- Maintaining numbers of lighting fixtures and required type must be maintained in working condition.
- Required spares and material for routine day to day maintenance must be kept in depot. Safe custody and record to be maintained by the depot (Dead stock in charge under supervision of Manager Depot).
- Steps to be followed as mentioned in **"maintenance of electrical installation" vide point No.1**.

The works are to be carried out in own depots of FCI for which separate estimates are to be prepared by the concerned JE/Manager.

3. Detailed SOP for lighting inside the depot complex.

To maintain illumination level for efficient operation, lighting fixtures inside and outside of godowns same are to be kept in working condition at all time.

The maintenance work may be done by qualified wireman / electrician by way of Annual Maintenance Contract also.

The repairs and maintenance work (with emphasis on preventive maintenance) are to be carried out by way of contract and as per DoP in vogue.

FANS, PLUGS & FITTINGS

a) Cleaning of Lighting Fixture / Fan : Quarterly

b) Over hauling of fans/ Exhaust fans wherever required : Yearly

c) Earth continuity and polarity Test : Half Yearly

In the case of non-repairable / missing lighting fixtures / Fans, same may be replaced / provided with new, immediately in co-ordination with Depot Officer w.r.t. appropriate procedures.

The works are to be carried out in own depots of FCI for which separate estimates are to be prepared by the concerned JE/Manager.

4. Detailed SOP for Electrical fittings inside the sheds.

Electrical maintenance of the building consisting of office building, Food grain storage godowns and other related ancillary building, pump houses etc as applied in one case mean that all Electrical and Mechanical services are kept in healthy condition and wherever operation is called for, the same is also carried out. Specific details of maintenance activities required with regard to each service are detailed under:-

a. Attending day to day complaints of electrical installations and carrying out addition/alteration of minor nature as directed by engineer-in-charge.

b. Regular inspection by JE(EM) in quarterly and by Manager (EM) in half yearly of electrical installations with a view to ensure that entire installations are in healthy working condition.

c. In case power failure same should be restored on priority by attending to the fault or contacting the Manager (Depot) to approach Electricity Department.

d. Maintaining lighting fixtures / fans / switch boards etc. in clean and working condition.

e. Maintaining of electrical lighting fixtures, fans, switch boards (Main Board, Sub-main Board and control switch boards etc.) and to keep them in clean condition. This includes ensuring proper inscription / sign boards also as directed by Engineer-in Charge.

f. Carrying out tests and measurements whenever required as per attached schedule or as directed by Engineer in Charge.

i) Operation, maintenance and attending day to day routine complaints of compound / street lighting systems/OH and cable system (including cable jointing) and maintenance of internal electrification of godowns / ancillary buildings including checking / attending / replacing the lamps, tube rods, chocks, condensers, time-switches, MCBS , control boxes, feeder pillars, ignitors, holders, starters, starter base as per the list of material under sub-head 2 & 3 and as per the directions of Engineer-In-Charge within reasonable time by observing EI Rules, Safety Measures and CPWD Specifications to avoid any accident / damage to human life / assets etc.

ii) Measuring earth resistance value of each earth station and also checking entire earthing system for continuity and proper connections. Results should be recorded & shown to the Engineer-in Charge and corrective measure should be taken if required.

iii) Testing and inspection of main boards, SDBs, CSBs for any **(a)** Loose Connection **(b)** Putting proper re-wire-able fuse ratings and **(c)** Cleanliness, corrective measures as required should be taken to set things right.

iv) Insulation test of main board, SDBs. & CSBs be carried out and results should be recorded & shown to the Engineer-in Charge. In case proper values are not available fault segments should be identified and necessary corrective action be taken.

The maintenance work is to be done by qualified wireman / electrician by incorporating provisions for the same in the Annual Maintenance Contract.

SCHEDULE FOR PREVENTIVE MAINTENANCE E.I. PROPER/LIGHT PLUS FANS AND COMPOUND LIGHTING.

MAIN, SUB-MAIN AND CONTROL SWITCH BOARDS:

a) Contact checking cleaning and replacement : Monthly

b) Earth Continuity : Monthly

c) Insulation Test : Quarterly

To attend day to day routine complaints of the electrical / installations including all required T&Ps with checking / attending of switch boards, fans/fixtures plugs of all types / DBs / SDBs / MBs / Wiring etc. incl. dismantling of the items requiring repairs / rectification of the same and re-installing (Including departmental supply) with all connections etc. to put the installation / part of the faulty installation back in proper working condition with in a reasonable time observing IE rules and taking all safety precautions to avoid any accidents/damages to human life, assets etc. i/c supply of materials as per sub-head 2 as required.

The works are to be carried out in own depots of FCI for which separate estimates are to be prepared by the concerned JE/Manager.

5. SOP for Annual maintenance of electrical installation.

Complete electrification, installations & fixtures installed in depot and or in office building, ancillaries etc. may be maintained under AMC.

By way of AMC: with provision of man power as well as required minor and emergency type material; Minimum staff required to be deputed by the AMC contractor may be as below:

Sr. No.	Capacity of Depot	Req. No. of Wireman	Req. No. of Helper/Khallasi	No. of days in a week
1	Up to 10000 MT	01	01	2 days per week
2	Above 10000 MT and Below 25000 MT	01	01	4 days per week
3	25000 MT and below	01	01	All week days

	50000 MT			
4	50000 MT and above	02 01	02 01	All working days Sunday and holiday

In the event that maintenance work is not attended timely by the contractor, a proportionate/appropriate amount should be deducted from the AMC amount. All the installations should be under AMC or under guarantee period.

Maintaining the following records (depot wise): -

(a) Inventory record of electrical installation
(b) Operational performance report of E.I. - Fortnightly to all concerned.
(g) Complaint register

Master complaint & compliance register and store material should be kept & maintained by Manager (Depot) at Depot level.

The works have to be planned well in advance and performed in own FCI depots/offices. The works to be carried out in a FY has to be included in the priority list and gotten approved from the CA.

6. Detailed SOP for power backup in case of power failure, whether generators / invertor are to be used along with detailed guidelines for maintenance and diesel filling.

- Adequate capacity (following capacity or connected load (KW)/0.9 x 1.25, whichever is higher) of silent type AMF panel (Auto Main Failure Panel) DG set with acoustic enclosure to be provided with automatic change over and start may be provided in the depot as well as offices for uninterrupted lighting and power supply to maintain operational efficiency of the depots/offices.

Depot capacity	Generator Capacity	Depot capacity	Generator Capacity
5000 MT	10 KVA	20000 MT	25 KVA
10000 MT	15 KVA	25000 MT	30 KVA
15000 MT	17.50 KVA	30000 MT	35 KVA

- S/I/T/C work of DG-Set may be carried out from the budget of Regional head (other equipments) in competency with GM (R) and Technical competency as per the DoP.
- Generally, in big size depot, DG set w.r.t. feeder pillars may also provide for economical operation and run.
- As far as possible, installation of DG Set should be avoided in basement. In Cases where installation of D.G. Set in basement is unavoidable, due care of supply of adequate amount of air required for proper operation of D.G. Set shall be taken.
- Care should be taken to ensure that no carbon particles emitted due to exhaust leakage enters and deposits on alternator windings and on open connections.

- All necessary statutory permissions are to be obtained by the Contractor and necessary fees may be paid to the contractor on production of payment receipt in the name of FCI.
- Guarantee period should be 1 (one) year and after completion of guarantee period, 4 (four) year Comprehensive AMC may be applicable.

The works have to be planned well in advance and performed in own FCI depots/offices. The works to be carried out in a FY has to be included in the priority list and gotten approved from the CA.

7. Detailed SOP for air-conditioning of office complex.

Air conditioning system and equipment's are to be kept in working condition by way of preventive maintenance for efficient working and saving of electrical consumption load. Maintaining the following records: -

(a) Inventory record of Air-conditioning machines and capacity.

(b) Fortnightly Operational performance report to be maintained.

(g) Complaint register

Master complaint & compliance register should be kept & maintained by office concerned.

The maintenance of air conditioning systems in office complexes are to be covered under Comprehensive Annual Maintenance Contract (AMC) through Original Equipment Manufacturer (OEM) or as per the instructions in the CPWD Manual (as updated from time to time) includes minor parts, gas refilling etc.

8. Detailed SOP for availability of Weigh Bridge, type of Weigh Bridge with capacity.

I) FCI's all own depot should have lorry weighbridge.

II) Minimum capacity of LWB should be 40 MT or above as per operational requirement.

III) LWB provided fully electronic (computerized) and to be integrated with DoS.

IV) LWB should be pit less or shallow pit type as per requirement of site condition.

V) Two LWBs provided where depot capacity is more than 20000MT or as per actual requirement with special justification.

VI) Each depot should be provided with standard weight stone (check weights) for calibration and testing of LWB as per legal metrology standards.

VII) Sufficient capacity of UPS to be provided for power backup for LWB as well as WB cabin.

VIII) For dust free environment WB cabin should be kept clean.

IX) To make LWB temper proof, the digitizer, junction box etc. should be kept sealed intact.

X) Records pertaining to Sr. number of load cells, specification of load cells, date of installation & replacement of load cells have to be recorded in the WB register in first page duly signed by the Manager (Depot) and Manager (EM).

LWBs are to be kept functional at all times and annual stamping of by the Legal Metrology Department is to be ensured before due date. AMC of LWB is to be engaged through GeM Portal. The DoP for AMC of LWBs lies with the Divisional Manager.

Weighbridge should be tested by standard weight stone available in the depot by the WB in- charge & should be verified once in a month and accuracy ascertained. Weighing a truck by entry from both the directions of the platform and weight is to be verified in both the cases. (all observations are to be recorded in the register maintained at the depot for the purpose)

The WB should be tested by the following method by Manager (Depot) & the AMC Contractor, and certified once in a quarter: -

Step 1: Weighing by standard weight stone of 500 kg and then gradually increasing by 500 kg upto available weight stone at corner-1, corner-2, corner-3, corner-4 and center of the platform.

Step 2: Weighing a tare truck placed on the platform, and then following the process as mentioned in Step 1 placing weight stone at corner-1, corner-2, corner-3 and corner-4 with the tare truck being on the platform.

Step 3: Weighing a loaded truck placed on the platform, and then following the process as mentioned in Step 1 placing weight stone at corner-1, corner-2, corner-3 and corner-4 with the loaded truck being on the platform.

The maintenance of the weighbridge is entrusted to the equipment suppliers including spares. However, it may not be possible for the supplier to regularly check the condition of the battery. For this FCI's operators should be instructed to do the needful i.e. keep the battery terminals clean and ensure proper electrolyte level by adding filtered water as and when required. Similarly, care should be taken to maintain the equipment as much clean as possible as ingress of dust particles is harmful for the electronic components.

Whenever an engineering officer visits the depot, they should invariably ensure that the LWB is functioning properly and that the maintenance thereof is carried out with compliance to statutory provisions.

9. Detailed SOP for water supply pump in the depot complex.

PUMP - DETAILS:-

There are different types of pumps to be provided for Water Supply arrangement in the depot/depots. (Monoblock pump/Monoblock submersible pump/Submersible pump as Applicable)

The inventories for the details of mono-block pump, mono-block horizontal submersible pump and bore well submersible pumps of all FSDs are to be prepared and kept in office.

To attend the pumping system including its panel board to keep the water supply of the depot intact, the same may also be incorporated in the contract of Annual Maintenance of electrical installation.

GENERAL

I) Checking of Pumps suction and delivery line as well as the control panels.

II) Contractor to arrange rectification of all types of faults, Mechanical / Electrical for the different types of pumps i.e. Submersible, Mono-block, centrifugal, Ejecto /Jet pumps. This includes dismantling of pumps (any type)for repairs and re-commissioning after repairs and the cost of Mechanical repairs and Electrical repairs (rewinding etc.) as per sub-heads.

III) Maintenance of different types of pump sets as mentioned above are to be maintained for regular water supply in the depot to ensure smooth depot operation. The preventive maintenance by checking / attending routine complaints for control panel board, E.I. Distribution Board, switches, safety

system etc. are to be attended to avoid any accident / damage to human life / assets including minor civil work like foundations / painting etc. He is also to attend the cleaning of installation in and around the pump room beside repair of minor leakage in pipes (suction / delivery), proper working of wheel valve, gate valve, N.R. Valve, lubricating the mechanical system etc. In general the regular water supply should remain unhampered all the time.

PREVENTIVE MAINTENACE:

1. To check the electrical parameters in reference to normal load	:	Monthly
2. Starter/Control Panel Board	:	Monthly
3. Earthing	:	Quarterly
4. Leakage Test of Foot Valve	:	Monthly
5. Cleaning of Fittings	:	Quarterly
6. Water/Air leakages in suction/delivery Pipe line	:	Monthly
7. Excessive Noise/Vibration in Pump sets (Motor and Pumps)	:	During visit (daily at duty point)

The works have to be planned well in advance and performed in own FCI depots by inviting tenders through CPP Portal. The works to be carried out in a FY has to be included in the priority list and gotten approved from the CA.

SAFETY PROCEDURE

- Electricity has become the lifeline of Modern society. Homes, Offices, Industry, Schools, Hospitals, Transportation, Communication, Road Lighting, Markets all depend on reliable Electric Supply. Life comes to a standstill without electricity. Electricity has become an integral and inevitable part of every body's life.
- It is also necessary to remember that electricity becomes destructive and dangerous, if not handled with care, safety conforming to laid down safety standards and norms.
- "Code of Safety Procedures and Practices in Electrical Works" shall be strictly followed.
- Rubber or insulating mats should be provided in front of the main switchboards or any other control equipments of medium voltage and above.
- Protective and safety equipments such as rubber gauntlets or gloves, earthing rods, linemen's belt, portable artificial respiration apparatus etc. should be provided in each sub-station, service center/enquiry office and important installations. Where electric welding or such other nature of work is undertaken, goggles shall also be provided.
- Necessary number of caution boards such as "Man on Line, Don't switch on", "Danger Notice Plate" should be readily available in each sub-station, enquiry office and important installations.
- Standard first aid boxes containing materials as prescribed by the St. John Ambulance Brigade or Indian Red Cross should be provided in each sub-station, enquiry office and important installations and should be readily available.
- Charts (One in English and another one in the regional language) displaying methods of giving artificial respiration to a recipient of electrical shock should be prominently displayed at appropriate places.
- A chart containing the names, addresses and telephone numbers of nearest authorized medical practitioners, hospitals, fire brigade and also of the officers in executive charge shall be displayed prominently along with the First Aid Box.

Schematic diagram:

- It shall be responsibility of the JE (EM)/Manager (EM) to ensure that for each building, a comprehensive schematic diagram is prepared starting from the main board up to the final DBs. All such boards are to be duly marked and numbered.
- Similarly, for each campus consisting of substation/substations and a number of buildings, a comprehensive power distribution schematic diagram for the entire campus shall be prepared.
- Based on additions/alterations such diagrams should be updated from time to time.

Protected premises:

- All premises like substation, pump house etc. to be maintained as protected area, admission allowed to authorized persons only.
- Also, the frontage of such areas shall be kept free and parking etc. in front shall not be allowed.
- No inflammable materials shall be stored in places other than the rooms specially constructed for this purpose.

Civil Engineering

PREFACE OF ENGG. DIVISION

The Standard Operating Procedures (SOPs) for Engineering is the collection of Standard Operating Procedures and the work flows for the Engineering works being carried out by Food Corporation of India. All the civil Engineering works are being carried out as per CPWD specifications or as per the guidelines issued by the Hq/Z.O time to time

Relaxation of any provision of the SOPs in the interest of requirements of work in keeping with the provisions of the Delegation of Powers and, would be allowed by the next higher authority not below the rank of General Manager (Engg.) with recorded reasons. It shall always be open, where authorities of one or more levels may be missing, for a higher authority to exercise the powers delegated to a lower authority. Similarly, whenever any lower authority fails to take action(s) or exercise his/ her delegated powers, it will always be open to the higher authority to exercise the powers of the lower authority, but with recorded reasons, if the requirements of the work so demand. In case of any conflicting provisions in the SOPs and General Conditions of Contract of CPWD, The provisions made in the GCC shall prevail in contract management. Similarly, Acts, Laws as notified by the government, GFR provisions and CVC guidelines shall prevail over provisions of the CPWD Manual and the SOPs.

INDEX OF SOPs & ANNEXURES

Specifications for godowns Civil Structures.

While selecting the construction of New Godown, the following points should be taken into consideration:

1. The decision for construction of the godown at a particular site is taken by Ministry of CA, F&PD depending on the storage gap in the particular Region on the basis of information provided by Storage Division of FCI and accordingly the process for construction of New Godown is initiated by FCI. The land for construction of Godowns is allocated by the State Govt. or on lease basis from a private party through State Govt. and is inspected by a team of senior officers of FCI headed by GM(Region) who after looking into all the major factors issues the suitability certificate for the final approval by ED(Engg.),FCI.

2. The land should be sufficiently high in level so as to be immune from floods, inundations and is not in depression involving large expenditure on leveling, filling and foundations. It should be on a well dried ground with good firm soil and shall, as far as possible, not have odd shaped boundaries in which case optimum use of the land cannot be made. The godown shall be located on a raised well- drained site not liable to flooding or inundations and it shall be away from a place likely to be affected by seepage water.

3. It should have communications by road and should be in close proximity of a railhead so as to admit the provision of a railway siding, which is necessary in most cases to save recurring expenditures on local transport and additional handling charges and to avoid loss of grain attendant on these operations. Security considerations are also kept in view and sites should not suffer from domination by criminal/hostile environment. Proximity of police station and Revenue headquarters is a consideration. Where possible the site should be near a Mandi, with the possibility of disposal of the depots, sale or hire, if the same are at any time, not required by the corporation.

4. Preference is given to land belonging to the government, railways, etc. over private land. Where, however, it becomes necessary to acquire private land, this should be acquired with the help of the state government and an application under the relevant provisions of the Land Acquisition Act should be made to the collector and other authorities concerned. Also the state authority should be approached to secure advance possession of the land, immediately after issue of the necessary notifications and by invoking the emergency provisions of the Land Acquisition Act, wherever necessary. It shall be the duty of the Regional Manager to obtain possession of the land expeditiously on behalf of the corporation.

5. In selecting the location, maximum attention should be paid to the hygienic and sanitary conditions of the area and the construction in residential areas shall be avoided, as far as possible. The following minimum distances shall be maintained from:

(a) Bone crushing mills, garbage dumping Grounds, slaughter houses, tanneries and hide curing centers, sewage treatment plants, or such other places, the vicinity of which is deleterious to the safe storage of non- perishable agricultural commodities. (500 m)
(b) Kilns, dairies (processing units) and poultry runs. (300 m)

(c) Factories and other sources of fire and environmental hazard such as workshops, hay stacks, timber stores, petrol pumps, CNG stations and LPG bottling plants. (150 m)

6. The godown should be free from passing over of any high-tension electric line and in the event of such lines passing over, then the relevant Electrical Code provisions should be taken into account while planning the storage godown. The godown should be free from gas/ oil pipe lines.

7. There shall be no tree, the roots of which affect the foundation, near the godown. The godown shall always be kept clear of branches of trees, poles etc., by at least 3m by which rats and squirrels would otherwise find access into it. Necessary precautions for preventing attacks by termites shall be taken.

8. The godown may preferably be situated near transport heads or a main road. If the godown is located the interior, then it must have accessibility through an approach road.

9. At the site of the godown, there shall be sufficient parking and maneuvering space for vehicles. If the godown is situated at a ferry head, railway station, airport etc., sufficient berthing, loading and unloading facilities shall be made available.

10. The construction of new Godowns should be started only after accord of AA&ES and Technical Sanctions as per D.O.P

11. All the construction work should be carried out as per FCI drawings as well CPWD specifications.

Specifications of conventional type Road/Rail fed godowns (considered for standard 5000 MT capacity)"

Godown dimensions should be:

1.	Centre to Centre		125.55m x 21.80m 130.20mx21.80m
2.	Outside to outside		126.01m x 22.26m 130.66mx22.26m
3.	Road side verandah width: Height of the verandah platform Rail fed Verandah Width Height of the verandah platform		2.44 m on both side of the godown 0.60m to 0.80m 3.05m 3.05m 0.91m to 1.06m
4.	Plinth Height:		
	i) For Road fed	:	0.60m to 0.80m
	ii) For Rail fed	:	0.91m to 1.06m
5.	(i)5,000 MT godowns		Each Compartment C/C length 41.85m

	consisting 3/4 Compartments (ii)Mini godown		x21.80m 32.55mx21.80m Each Compartment C/C 41.85X7.62 and capacity: 640 MT
6.	Size of stacks		6.10m x 9.15m (20' x 30')
7.	Godown height in respect of road-fed		5.60 m
	Godown height in respect of road-fed		6.35 m
8.	Verandah truss height in respect of road-fed		3.35 m
	Verandah truss height in respect of rail-fed		3.95 m
9.	No. of rolling shutters		12/16 Nos. of size 1.83 m X 2.44 and 2.44mx2.44m each
10.	No. of collapsible gates		12/16 Nos. or as per availability of capacity/size.
11.	Size of collapsible gates		2.44m x 2.44m (8'x 8')- As per site requirement
12.	Top Ventilators size		1.50m x 0.60 m 54/108 Nos. in both long walls or as per the size of godown.
13.	Bottom outer side Ventilators size		0.62m x 0.62 m (2' x 2')
14.	V8 ventilators		0.39 m X 0.80 and 062mx0.62m m (Bottom inside air entrant) and Expanded metal on outer walls 0.62 m X 0.62 m (Bottom outside air entrant)
15.	R.C.C Column		To be provided at 4.65 meter cc. in long wall & 4.36 m c/c in GW & P.W.
16.	Roofing		The Food Storage Godown should have, A.C sheets, Profile Roof Sheeting CGI Sheet or Truss-less galvalume sheet**.**
17.	Tubular Trusses:		As per the wind zone classified in the relevant latest BIS code in the normal wind

			zone: 200 kg/Sq. m and 150 kg/Sq. m. or as per site requirement.
18.	Ancillaries Required		Office Block, Weigh Bridge, Toilets (Male/Female) Compound wall with barbed wire fencing, Water supply arrangements as per site requirement.

Note:

1. **Besides above some of the different size twin type valley gutter godowns exist in FCI depots. These godowns have been taken over by the FCI from the Food Department in the year 1964. Many Godowns have been converted into single span godowns and further is in process for conversion as per the conditions of the godowns.**
2. **All the required repairs/upgradtion works of existing structures should be carried out as per guide lines issued by H.Q time to time and CPWD specifications after accord of necessary approvals as DOP.**

2. Specification for Internal Roads

The heavy trucks are required to ply in the godown to carry the food grains hence it is mandatory that the quality of the Internal Roads of the Godown and the approach road is very good. The standard specifications of the Internal Roads which are either Cement Concrete or Bituminous Roads are as follows: -

The approach road and peripheral road of godown should be 6.70 meter wide and the road width between the godowns may vary from 12.00 meter to 15.00 meter. They should be accompanied with proper drainage systems which may be saucer drains along with the length of the roads and the platform. The proper gradient/slope while constructing the roads should be kept in mind to avoid any accumulation of water.

The construction of Cement Concrete Roads and Bituminous Roads comes under the CC Road and ARMO Head of Expenditures respectively and the Administrative Approval & Expenditure Sanction is granted by the General Manager (Region) on the basis of the Estimate prepared by the Engineering wing. The technical sanction and the approval of Draft NIT is as per the DoP clause 24(ii). The work is awarded by calling of e-tenders through e-procurement portal.

3. Specifications for platform

Initially for road fed verandah platform having width 2.44 mtr with height 0.80 mtr and For Rail fed, the width of verandah should be 3.05 mtr with height as 0.91 mtr. However, with the passage of time the platform height has been reduced due to routine maintenance. The scientific storage height of platform may be considered 0.60 mtr to 0.80 mtr.

4. Specification for godown floors, type of floor

The flooring in the storage godown should be damp proof, rigid, durable and free from any cracks or crevices.

The following types of flooring may be provided in the godown:

(a) Selected earth/locally available material filling as per requirement, well consolidated and stabilized to avoid possibility of settlement and cracks ;

(b) A layer of sand filling, 230 mm thick , thoroughly watered and well consolidated;

(c) A layer of cement concrete [(1:4:8)(1 cement: 4 coarse sand : 8 stone aggregate of 40 mm nominal size)], 100 mm thick; and

(d) A top wearing course of 50 mm thick cement concrete flooring in 1:2:4 mix (1 cement: 2 coarse sand: 4 stone aggregate of 20 mm nominal size), finalized with a floating coat of neat cement shall be provided. The cement exceeding 2.0 m^2 in area and not more than 2.0 m in any direction. Such panels shall be suitably adjusted so as to avoid transfer if any uneven load at the joints under the stacking bays and alleyways.

Paneling in the cement concrete flooring shall be provided with glass strip having thickness 4 mm and depth as per the thickness of the floor, as per the general arrangement of glass strips or as per the approval of Technical Sanctions as per site conditions.

The repair of the flooring is generally carried out along with the other maintenance works of the godown and ancillaries that include the painting, plastering repair of the walls etc. and the expenditure for the same is incurred from the ARMO Head.

The technical sanction and Draft NIT for the estimate prepared for such ARMO works by Engineering Division of is accorded by the Competent Authority as per DOP (Clause no.24(ii) of Engineering works depending upon the estimated cost and the work is awarded through call of e-tenders which is published on e-procurement portal.

5. Specifications for Roof

The Food Storage Godown should have ACC Roof Sheeting/Profile Roof Sheeting CGI Sheet or Truss-less galvalume sheet**.**

In case of GI Profile sheet , the roof of the godown shall be of single span structural steel or tubular trusses which shall be fixed on the RCC columns or RS joists at a height not less than 5.60m from the plinth level to the tie level at the column ends, both for the road-fed and rail-fed storage godowns The roof of the platforms shall be of a cantilever structural steel of tubular trusses fixed on to RCC columns at a height approximately 4.00m mm from plinth/ floor level for rail-fed godowns with broad gauze railway line. The height shall be measured from the floor level of the godown to the bottom tie of the truss. Outer edge of the truss including valley gutters should not go beyond the line of the edge/RCC coping of the platform. The minimum width of platforms for rail side and roadside shall be as per standard drawing, which shall be measured from the face of the columns.

The design of the trusses is in accordance with the general constructional practices and relevant Indian Standard codes for loading standards. Trusses made of mild steel (MS) structural like angle and channels may also be used as per structural designs. The trusses shall be connected by suitable sets of wind bracings and longitudinal runners etc. at the levels as per the recommendations of the structural designer of the truss.

The expenditure for replacement/repairs work of roofing is covered under the ARMO Head.

The technical sanction and Draft NIT for the estimate prepared for such ARMO works by Engineering Division of is accorded by the Competent Authority as per DOP(Clause no.24(ii) of Engineering works depending upon the estimated cost and the work is awarded through call of e-tenders which is published on e-procurement portal.

6. Specification for Office Block

There may be one or more ancillary structures at each site depending upon the storage capacity and scope for future expansion. A small compact block consisting of an office room, a store room and a separate room for keeping pesticides shall be provided at each site with proper aeration. For small capacity godowns. The following sized of room are suggested which may be modified as per the actual requirements:

a)	Office room	4.5 m x 3.5 m	Approximately
b)	Store room	3.5 m x 3.5 m	Approximately
c)	Chowkidar/Sentry room	4.0 m x 2.22 m	Approximately

The above size may be changed as per site conditions at the time of construction.

The area of the office block would depend upon the staff pattern while that for store room would be on the basis of the storage capacity, the anticipated turnover of work, the quantity of dead stock articles, equipment and chemicals that may have to be kept at each center. A room preferably separate with a suitable verandah may be provided for watch and ward purpose. For larger capacity 5000 tonnes and more, the following minimum areas are recommended for office block:

		Plinth Area
a)	Upto 10000 MT	100 m^2
b)	Above 10000 and upto 25000 MT	250 m^2
c)	Above 25000 MT	500 m^2

The above Plinth Area may be changed as per site conditions at the time of construction.

7. Specification for labour rest room along with size as per depot capacity/ labour Strength

It may vary from Depot capacity and strength of labour posted in the depot, however FCI approved drawings may be followed.

The Expenditure for construction of same is incurred from the Minor Capital Works.

8. **Specification for boundary wall along with fencing**

The brick work/stone work boundary wall should be 1.98 mtr heights with 60 cm high barbered wire fencing on its top.

9. Specification for Gender friendly toilets along with numbers as per capacity

For labourers and staff working in the premises of the storage godown, sufficient number of bathrooms, urinals, lavatories and washing places shall be provided. The following yard- stick for provision of lavatory block may be suggested:

Storage Capacity	WC	Washing Places	Drinking Places
1. Up to 5000 MT	1	2	1
a) Above 5000 and up to 10000 tonnes	2	3	2
b) Above 10 000 and up to 25000 tonnes	3	6	4
c) Above 25000 tonnes	The number may be suitably increased		

Note:- The above nos. of places may be changed as per the requirement as staff strength

10. SOP for cleaning/ clearing vegetation in vacant area

Periodically cleaning of wild vegetation and bushes may be cleared by Manager Depot level.

11. SOP for clean drinking water for staff labour/ truck drivers / State Govt. officers.

Water supply and the firefighting arrangement shall be made in accordance with the bye-laws of the local fire department.

For the staff and labourers working in the storage godown, facilities for drinking shall be provided at suitable locations.

For firefighting purpose, a network of water supply pipe lines with fire hydrants at suitable locations may be provided to ensure supply of water at any time.

Potable drinking water received through RO and refrigeration system is maintained in the Depot as per norms.

12. SOP for canteen as per depot capacity

It is recommended that the amenity of a canteen/ tiffin room may be provided at each centre having a capacity of 5000 tonnes or more. The size of canteen may be proportionately increased for godowns of higher capacities.

13. SOP for drainage and sewerage system

Drainage system is provided all around the godown along with storm water drain up to the disposal point. However in case of non-feasibility of drain out the water outside the premises it should be disposed of through rain water harvesting system. In case of stagnated Rainy water proper disposal be made by water collecting sump and drain out through pumping system from Depot premises.

14. SOP for Annual maintenance of Civil Structure.

Refer Engg. Circular No.3/2000 dated 07.07.2000 " for repair and maintenance of Civil Engg. Works."

15. Detailed SOP for clearance of standing water in the depot.

By pumping, Rain water Harvesting or as per site conditions.

16. SOP for types of gate in the depot.

Depot should have single main gate of sufficient size for movement of Trucks

17. SOP for Sentry post.

3.4 mtr X 2.4 mtr area may be considered or as per the site conditions.

Quality Control

(1) Standard Operating Procedure (SOP) for quality control lab along with number of equipments as per capacity of the depot

In order to ensure Quality in all major transactions, processes leading to improved customer satisfaction level, laboratories are required. Procurement of foodgrains are done in agricultural produce Markets and quality assessment is generally made by the Technical Assistant on the spot. Reference samples, samples relating to Disputes, samples for opinion, samples of food grains purchased from rice mills and secondary sources, samples of imported grain and samples of grain to be exported are analyzed in the laboratories set-up by the Corporation. Laboratories at Zonal/Regional and Divisional Headquarters are suitable for undertaking routine analysis of food grains handled by the corporation. Sample so drawn are analyzed at QC lab for their physical and chemical specification as fixed by Govt. of India.

QC Laboratories:-

To ensure effective monitoring of Quality of foodgrains Food Corporation of India (FCI) is having laboratories at the Headquarters, Zonal, and Regional and Divisional level. **Each of the FCI storage depots shall be equipped with quality control laboratory for analysis of foodgrains. District and Depot level labs are headed by the respective Manager(QC) under the overall supervision of AGM(QC) of the concerned division.**

Coding and decoding of samples-

Following procedure is followed where coding/decoding is done:-

1. The District/Regional Manager will nominate a Coding Officer not below the rank of Manager. The coding Officer shall be other than the Officer Incharge of the Laboratory.
2. All the samples received by the Coding officer shall be entered into a register and each sample given a code number.
3. After giving the code number and checking the seal, the coding Officer shall open one of the two samples received for analysis. The sample slip from the opened sample shall be removed and retained by the Coding Officer. The sample, opened for analysis shall be passed on to the laboratory with no other marking except the code number and the class of the stock in which it was purchased.
4. The laboratory shall prepare the analysis report giving only the code number.

Preservation / Disposal of samples:-

1. The samples received in the Divisional /Regional laboratory for analysis shall be retained and preserved in glass jars or polythene bags for future reference and for checking the quality of each consignment in the event of complaint from recipients. The glass jar/bags be suitably numbered, labelled and registers relating to these be maintained segment wise for reference. The samples shall be suitably fumigated to preserve the condition of the grain, as and when required.
2. Samples received in the Divisional and Regional laboratories shall be disposed off only after their retention period. Regarding samples pertaining to purchase operations from rice mills and custom mills, out of two samples received in the laboratory, one sample shall be opened and analyzed for the purpose of analysis and the second sealed sample shall be preserved for a period of three months and disposed of provided no complaint is received from the recipients in respect of this lot. The samples for which any complaints are received shall be kept till finalization of the complaint.
3. The grain in the sample when no longer required in the laboratory shall be bagged according to variety / condition and transported to the nearest Corporation Depots.

This grain shall be weighed on receipt at the depot and taken on the ledger and issued/disposed in accordance with disposal instructions.

4. Samples of Mandi purchase operations will also be disposed of after analysis, in the normal manner.
5. Though sampled grain may be disposed of after analysis, sample slips will be retained and destroyed only with orders from competent authority.

Instruments required for sampling & analysis: [IS 14818: 2000]

A. Instruments required for Sampling of cereals/ pulses/ milled products:

1. Instruments for sampling from static bulk, bins & rigid containers: There are various types of instruments for sampling from static bulk, bins and rigid containers. For details, please refer IS 14818: 2000.
2. Instruments for sampling from stacks and bags including bulk bags: These include:
   a. Dynamic sack spears
   b. Walking stick type (open handle or with compartment)
   c. Conical samplers
   d. Gravity spears
   e. Screw augers

   (For details, please refer IS 14818: 2000)
3. Sampling with 'Parkhi': [IS 2816: 1964 (R 1994)] In FCI, 'Parkhi' is commonly used for sampling. Parkhi shall be inserted in the bag in a diagonal position and the sample is collected by gentle turning and sample are taken out in a plate.

B. Instruments for division of samples: There are various types of instruments for division of samples. For details, please refer IS 14818: 2000.

i. Coning and Quartering /Quartering iron
ii. Conical dividers (Boerner type)
iii. Multiple slot (Riffle or blade type)
iv. Centrifugal (Rotary divider)

In FCI, most commonly used sample divider is conical divider (Boerner type) and it should be made available in all QC laboratories.

Conical Sample divider (Boerner type): [IS 4940: 1968]

Conical divider (Boerner type) is the instrument to divide the sample into two equal half. The divider is calibrated to provide accuracy of 1 % between pans on a 1000 gm sample. The grain is poured into the hopper and then released down in to the cone which is directly under the center of the opening. Around the base of the cone are 38 openings or pockets. The grain falling down the sides of the cone is cut into 38 separate streams, rejoining into two streams, which empties into the two pans. Two equal sub-samples are separated in the bottom receptacles. Sample from one receptacle is used for duplicate sample. Pour the content of the second receptacle into the hopper again. Repeat procedures as many times as necessary to obtain the required weight of laboratory sample.

C. Instruments for analysis of samples:

i. **Physical balance**: sensitivity should be minimum 5 mg.
ii. **Sieves:** The following four IS sieves of round holes shall be used:
   a. Top 4.00 mm.
   b. Second from top 3.35 mm
   c. Third from top 1.70 mm.
   d. Fourth from top 1.00 mm.
   e. A solid bottom pan at the bottom.

iii. **Enameled plates**: Flat type, 30 cm in diameter with raised rims.

iv. Small scoop set: The scoop should be with handle, of mild steel and may be in any of the following sizes

Length (mm)	Width (mm)	Height (mm)
105	100	25
75	65	25
25	20	25

v. **Forceps**: of about 10 cm in length

vi. **Magnifying glass**: With a handle of 7.5 cm length and having magnifications of 10X.

vii. Dehusk test kit: It consists of the following:
   a. Methylene blue
   b. HCl
   c. Methanil yellow
   d. Distilled water
   e. Petri dish
   f. Forceps
   g. Measuring test tube/measuring cylinder

viii. Mixed Indicator Method (MIM): chemical and reagent required
   a) Glassware
      1. Volumetric flask amber coloured 02 no. of 200 ml each
      2. Graduated measuring cylinder (100ml)
      3. Beaker
      4. test tube with stopper (5 no. of 25 ml)
      5. glass stirrer
      6. measuring pippete (2ml)
   b) Apparatus
      1. Balance with 0.01 gram accuracy
      2. Test tube track
   c) Chemical reagents
      1. Methyl red (AR Grade)
      2. Bromothymol Blue (AR Grade)
      3. Ethyl Alcohol(Absolute Grade)
      4. Distilled water

ix. **Moisture meter**: A suitable moisture meter shall be used. In comparison with basic reference method, the moisture meter under use shall have a maximum sensitivity of ± 0.2 percent.

x. **Grain Vernier**: For measurement of length and thickness of grains. It helps in determination of Grade A (Paddy /Rice).

D. Specifications for Sample bag:

a. The bags shall be made with unbleached coarse long cotton cloth (IS-187:1978
b. Dimension: 30 cm × 25 cm (To hold 2 Kgs of sample).
c. The wrap thread shall run parallel to the length of bags.
d. At the side of bag, the raw edge shall be sewn with lock stitches through two layers of cloth. The number of stitches per 10 cm shall be 34 to 36.

e. At the mouth, the raw edge shall be turned to a depth of 5 mm and then to a depth of 8 mm and the three layers thus formed shall be sewn with lock stitches. The number of stitches per 10 cm shall be 42 to 44.
f. The cotton thread used for sewing shall be of adequate strength.

E. Specifications for Polythene Sample bag for moisture sample:

a. The material for the manufacture of sample bag shall be polyethylene tubular film conforming to the grade 001 of IS 2508-1984.
b. The thickness of the polythene film to be used for the manufacture of sample bag shall be between 0.075 mm and 0.100 mm (300 to 400 gauge).
c. Dimension: 150 mm × 100 mm
d. The bag shall remain open at one end and bottom shall be effectively heat sealed so as to withstand the pressure exerted by the weight of the sample when it is filled completely.

F. Labelling of sample (Sample slip): The sample slip should contain particulars like Name of the Commodity & Variety, Crop Year, Lot / Contract Number/supplier name, Number of bags/ Quantity of lot from which sample taken, Date & Place of sampling, Stack/Wagon/Truck number etc. as well as Name, designation & signature of the person who sampled along with name designation & signature of the witness (technical person), if required so.

G. List of equipments required to be available in a depot.

Sr. No.	Name of the Equipment	No. of Equipments Required	
		Up to 10,000 MT	Above 10,000 MT up to 25,000 MT
1	Parkhi	4	8
2	Bag Trier	2	4
3	Enamel Plate	4	8
4	Measuring Cylinder	4	8
5	Dial Thermometers	1	1
6	Gas Masks	10	20
7	Foot Sprayers	1	2
8	Power Sprayers	1	2
9	Bird Scarers	1	2
10	Air Gun	1	2
11	Rat Cages	12	24
12	Grain Cleaners	1	2
13	Sample Divider	1	2
14	Sieve Set	1	2
15	Magnifying Glass	2	4
16	Grain Dial Caliper	1	2
17	Scoop Set	4	8
18	Counter Scale (Cap. 1 Kg	1	2
19	Portable Balance with Weight Box	2	4
20	Digital Balance	1	1
21	Conical Flask	5	10
22	Pipette	5	10
23	Test Tube with stopper	10	20
24	Phosphine gas detector	1	1

Remarks: For every additional 25000 MTs storage capacity, equipments @ 0.5 times should be enhanced proportionally.

In addition to the above equipments, following equipment shall also be available in depot

1. **Brass seal**: Each quality control staff posted in the depot shall have brass seal with separate seal number.

2. **Moisture meter**: The moisture meter shall be available as under:

S. No.	Capacity of operational depot	Procuring Region	Consuming Region
1	Up to 10,000 MTs	2	1
2	Above 10,000 MTs up to 25,000 MTs	3	2
3	District lab	2	1
4	Regional Lab	2	1
5	Zonal Lab	1	1

Refer Hqrs letter no QC.19/FCI- Lab/DMM/2016 dated 25/09/2017.

3. **Fumigation cover**:

   i. 12 covers per 10,000 MTs for the godowns capacity below 50,000 which are not located in the city/residential areas.
   ii. 14 covers per10,000 MTs for the godowns capacity below 50,000 which are located in the city/residential areas.
   iii. 14 covers per 10,000 MTs for all godowns of capacity 50,000 MTs and above irrespective of the location of the godowns.

H. Labelling of sample (Sample slip): The sample slip should contain particulars like Name of the Commodity & Variety, Crop Year, Lot / Contract Number/supplier name, Number of bags/ Quantity of lot from which sample taken, Date & Place of sampling, Stack/Wagon/Truck number etc. as well as Name, designation & signature of the person who sampled along with name designation & signature of the witness (technical person), if required so.

Remarks: For every 25,000 MTs additional storage capacities, equipments should be enhanced as per accordingly.

List of Equipments In Divisional Office / Regional Office /Zonal Office							
		District Lab		Regional Lab		Zonal Lab	
Sr No	Name of the Equipment	No. of Equipments Required In Procuring Regions	No. of Equipments Required In Consuming Regions	No. of Equipments Required In Procuring Regions	No. of Equipments Required In Consuming Regions	No. of Equipments Required In Procuring Regions	No. of Equipments Required In Consuming Regions
	Moisture Meter	2	2	2	2	1	1
	Hot Air Oven	1	1	1	1	1	1
	Sample Divider	2	1	2	1	1	1
	Enamel Plates Round 30cm	20	10	20	10	10	10
	Sample Scoops sets	10	5	10	5	10	5

	Counter Scale - Cap. 1 Kg with weight Box	1	1	1	1	1	1
	Potable Balance with weight Box	3	1	2	1	2	1
	Physical Balance 5 mg sensitivity	1	1	1	1	1	1
	Digital Balance with Accessories	1	1	1	1	1	1
0	Hectoliter Weight Apparatus (IS:4335.156)	1	1	1	1	1	1
1	Parkhi	8	4	6	3	4	2
2	Sampler/Bag	2	1	1	1	1	1
3	Magnifying Glass	5	2	5	2	2	2
4	Hot Plates or Electric Stove	1	1	1	1	1	1
5	Degchi with Cover	1	1	1	1	1	1
6	Polythene Sample Bags Size - (i) 4.5"x7"x300 gauge (ii) 6"x8.5"x300 Gauge	200	100	100	100	100	100
7	Sample Slips (Book)	4	2	2	1	2	1
8	Cloth Sample Bags	200	100	100	100	100	100
9	Sieve Set	2	1	2	1	2	1
0	Conical Flask	10	5	10	5	10	5
1	Pipette	10	5	10	5	10	5
2	Measuring cylinder	10	5	10	5	10	5
3	Dial Thermometer	1	1	1	1	1	1
4	Rat Cage	2	2	2	2	2	2
5	Grain Dial Calipers	4	2	2	1	2	1
6	Test Tube with stopper	20	10	20	10	20	10
7	Measuring Flask	10	5	10	5	10	5
8	Desiccator	1	1	1	1	1	1
9	Grinder Stone	1	1	1	1	1	1

0	Dry & wet Thermometer	1	1	1	1	1	1

Analysis kit (equipments) required at procurement centres (Moisture meters, Parkhi, Enamel Plates, Potable Balance with weight Box, Sample Scoops sets Sample Slips (Book), Cloth/polyphone Sample Bags, brass seal, magnifying glass etc.) should be made available in accordance with the number of procurement centres.

Respective heads at RO/ZO will ensure availability of adequate equipments at the QC laboratories under their control. In exigencies, DM may also purchase minor QC equipments to make available required equipments at QC laboratories under their control, with prior approval of GM(R).

ED(Zone)/ GM(R) may exercise their DOP and ensure availability of QC requirements in all the DO/RO/ZO laboratories.

(2) Standard Operating Procedure (SOP) for Prophylactic and Curative Treatment of Stock

Stored foodgrains are attacked by various kind of insect pests. The insect pests infest stored grains to fulfil their food and shelter requirements resulting in qualitative as well as quantitative losses of stored foodgrains. The tropical climate of India is highly favorable for continuous occurrence of storage insect pests

FCI is nodal agency for procurement, storage and distribution of food grains and lakhs of metric ton of foodgrains is procured, stored and distributed through NFSA/OWS. To store such huge quantities of foodgrains, proper storage protocols should be followed so as to maintain the quality and quantity of foodgrains. FCI issues instructions for preventive and curative measures to be followed for the stored grain pest management. These operations are performed by Dusting Operators/Ancillary Labourers under the supervision of Technical Assistants/Manager (QC) of concerned Depot and monitoring of the same shall be done by AGM (QC) of Divisional Office. Overall monitoring should be ensured at RO level as well.

Sources of Infestation: Infestation can come from a variety of sources like-

i. Field infestation (hidden infestation); e.g. pulse beetles and paddy moths infest crops in the field itself by laying eggs on the grains to be harvested;
ii. Cracks and crevices: insects remaining in cracks and crevices from old stock infest fresh incoming stock (cross-infestation);
iii. Leftover /spilled seed grains under the stacks;
iv. Old Gunny bags;
v. Uncleaned Truck /platform,/ trollies and bullock carts;
vi. Entry of insects from neighbouring stores/breeding grounds;
vii. Old infested stores;
viii. Un-cleaned processing plants etc.
ix. Receipt of Inspected stocks through rail/ Road

1. Good storage practices to avoid insect pests activities:

The most effective way to manage stored grain pests is to avoid them. Important storage practices to avoid attack of insect pests during storage in a Depot include the following:

- Good hygiene at storage depot is the most important in maintaining grain quality.
- Individual sheds should be kept clean by sweeping the floor, removing cobwebs, dust and collecting spilled grains in Palla bags on daily basis.
- Alleyways & Gangways should always be kept free for adequate aeration.
- Unserviceable articles and old gunnies be shifted to isolation sheds once found redundant.
- Godowns should be properly cleaned before storage of new Stocks. All cracks, crevices and holes in the floors, walls and ceilings should be properly sealed.
- Godown/Shed should be water/ seepage proof.
- Walls, crevices and wooden pallets should be sprayed with an insecticide before re-use.
- Proper dunnage materials like wooden /plastic crates or other suitable material must be used.

- Food grains should be kept in stores that are rat proof. All rat burrows should be closed with a mixture of broken glass pieces and mud and then plastered with mud/cement.
- Trucks or trollies used for transportation of food grains should be free from insect infestation.
- Proper stacking of bags helps in grain protection from attack of insect pest.
- Inspect the stored grain once in a fortnight for signs of insect infestation like adult insect, larvae, grubs, eggs, pupa/ pupal cases, faecal materials, webbings, frass and holes on the grain. Under good conditions, the duration of the development cycle from egg to adult is 18 - 25 days for beetles and 28 - 35 days for moths. In unfavorable conditions, this period may be extended to several months.
- Aeration of stored food grains dissipate heat given out by respiratory activity of the grains. It also changes the ecology and disturbs insect growth and development and insect activity is suppressed. During bright sunny days and clear weather, all the gates of the godowns should be kept open.
- Insect activity and fertility are also affected by the change in light. Moths are most active at dawn and at dusk. Inspections to check and control flying insects are best made at these times. Artificial light can help to reduce the movement and fertility of moths.
- Light traps can also help in early detection of insect pest attack/ population.

2. **Factors Affecting Insect Infestation in Stored Food grains:** Major factors affecting population growth of most insect species are temperature, relative humidity and moisture content of the food grains. Several other factors such as source of insects, aeration, condition of the food grain, presence of other organisms /insect pests and 'efforts to keep the food grain pest free' also decide occurrence and development of insect population in stored food grains. The nutritive content and certain physical properties of food grains will also determine the vulnerability of such materials to attack. High moisture content (16 percent or more) renders food grains soft and susceptible to attack. The suitable temperature & relative humidity for some common storage grain pests are as under –

Species	**Minimum for growth for increase to epidemic numbers**		**Optimum range for increase**
	Temp, °C	Relative Humidity %	Temp, °C
Sitophilus spp.	15	50	26-30
Rhizopertha dominica	23	30	32-35
Trogoderma granarium	24	*	33-37
Sitotrogacerealella	16	30	26-30
Tribolium spp.	21	*	30-33
Cryptolestes spp.	21	50	30-33
Oryzaephilus spp.	21	10	31-34

* Species breeds rapidly even in driest conditions.

The optimum conditions of temperature and relative humidity (RH) for the rapid growth and multiplication of stored grain insect pests range from 25 to 35 °C and 60 to 65% respectively. Insect infestations sometimes cause excessive heating of grain. When the insect population reaches a certain density, their metabolic activities release more heat than can be dissipated. In localized areas where the insect population is extremely dense, the temperature may reach 45°C. Associated micro-organisms, mainly fungi, may raise this to nearly 75 °C causing extensive spoilage and occasionally, spontaneous combustion.

3. A . Prophylactic treatment at storage depots in FCI:

Prophylactic treatment is given on the peripheral surface of the bagged grain as well as on the inner four walls & floor of the storage structure to control surface/crawling infestation and cross infestation of stored grain pests from one place to another.

- Chemicals:-

Currently, two chemicals i.e. Malathion 50% EC and Deltamethrin 2.5% WP are being used in FCI godowns as prophylactic treatment and sprays with these two chemicals are done on surface of bags only. 80% of the stocks are to be treated during the month are treated with Deltamethrin 2.5% WP and remaining 20% stock are to be treated with Malathion 50% EC. No chemical should be sprayed on naked grains.

Name of the chemical	**Dilution**	**Dosages with diluted solution**	**Periodicity**
Malathion* 50% EC	1:100	3 Ltrs per 100 m^2	Once in 15 days (March to Nov) Once in 21 days (Dec to Feb)
Deltamethrin 2.5% WP	40 gms / L	3 Ltrs per 100 m^2	90 days (As well as post fumigation spray)

Remarks- (*) malathion is to be discontinued as per the Government directions by Mar

- Brushing of bags before spraying: Before spraying Emulsion/Pyrethrum products, bags shall be cleaned as this helps in the removal of collected dust, webs, cocoons, eggs etc. that might be sticking to the bags. Insecticides used on cleaned bags are relatively more effective and long lasting.

B. Curative treatment at storage depots in FCI:

Control of stored grain insect pests through curative treatment requires fumigation. The stored grains to be fumigated must be properly sealed so that fumigants can reach a lethal concentration and, once the required level is reached, the same is maintained for a specified period for better results.

- Fumigation: Fumigation is a process of exposing the grain infested with insects to the fumes of a chemical in all enclosed space at a lethal dose: This is a curative method to control infestation in the grain and is resorted as soon as pest infestation is noticed.
- Aluminium Phosphide is most widely used as fumigant. It is in the form of tablets each weighing about 3 (three) grams and emanating 1(one) gram of Phosphine gas during its disintegration. Its low molecular weight and low boiling point increase its effectiveness in that it is able to rapidly diffuse and penetrate in the grain mass to give the necessary lethal concentration. Phosphine has garlic like odour.

- The doses of ALP tablets currently used in FCI covered godowns (bag storage) is 9 Gms (3 Gms × 3 tablets) per MT of food grain. Usually 50% ALP tablets are spread on the top of the stack while remaining 50% are kept on all sides of the stack to ensure that phosphine gas liberated from ALP tablets is distributed throughout the fumigation system and its concentration gets built up higher than the entrapped air concentration to achieve the lethal doses to kill the entire living pest population. Immediately after the spreading of ALP tablets, stack should be air tight with polythene covers and sealed with mud /sand snakes/cello tap.

Sr. No.	Storage type / Nature of fumigation /infestation	Dosages	Remarks
1	Covered godown	9 Gms /MT	Exposure period 5 to 7 days
2	CAP storage	9 Gms /MT + 20% extra dose	
3	Shed fumigation	63 Gms/ 28 m^3	
4	Khapra beetle infestation	9 Gms /MT + 50% extra dose	

- The exposure period for ALP fumigation is 5 to 7 days. Exposure for a longer duration will give a better result. Achievement and maintenance of concentration of the fumigant for the required period throughout the system will help in getting cent percent mortality of pest population.
- To achieve and maintain the concentration of the fumigant, the stacks under fumigation must be made air tight by mud plastering or placement of 'sand snakes' (double row) or by sealing with cello tap to retain the phosphine liberated to the maximum extent.
- Also fumigation covers (CLTF covers) under use must be completely free from holes and should not be cut or torn. In case of any minor holes/cut, it should be repaired before use. Complete air-tightness is the essence of success of fumigation operation.
- After fumigation, the stacks should be cleaned/ brushed to remove the residual powder of Aluminium hydroxide.
- After exposure period, the stocks should be aerated for some time before issue/dispatch.
- A post fumigation spray should be given with Deltamethrin.

4. <u>Precautions during spray of pesticides on stored foodgrains:</u>

- Before spraying with pesticides, bags shall be properly cleaned as it helps in removal of dust, webs, eggs of insects etc. which might be sticking to the bags. Insecticides, if used on cleaned bags, are relatively more effective & long lasting.
- All spillages of food grain around stacks must be collected and should be bagged after proper cleaning before spraying the stacks so that naked grains should not be contaminated with pesticides.
- The operator should use the protective devices / clothing to avoid exposure of insecticide into human body through mouth, skin & respiration. Protective clothing / water proof clothes, dust mask, hand gloves, rubberized shoes and safety goggles should be used by the operator during spraying of pesticides.

- Care should be taken to ensure that all screw threads or unions of spraying machine are tight and free from leakage so that liquid does not seep over the clothing of the operator.
- Diluted WP (wettable powders) like Deltamethrin, should be used immediately after preparation and the sprayer must be shaken at intervals during the spraying to ensure even distribution of the powder throughout the spray and to prevent settling. If solution is prepared in small tank, it should be stirred with some wooden rod so that pesticide should not settle in the bottom. The shaking of the sprayer or manual stirring of tank may not be necessary if it is fitted with a constant agitation device.
- When using hand sprayers, the nozzle should be held about 30 cm from the surface to be sprayed and it should be moved at about 60 cm per second to give the desired output. Successive bands of spray should overlap slightly. Additional lengths of hose to hose and extension tube may be fitted to hand sprayers so that the reach may be extended. Heavier dosages of spray should be applied to cracks, crevices, holes and other places likely to harbour insects.
- Care should be taken to avoid hazards in the areas like electrical equipment, low light areas and steep /slippery places. Water based sprays should not be applied directly to electrical equipment as it may result in short circuit. The solvents in some emulsion can damage rubber or plastic or stain boxes or packages.
- When spraying with a motorized power sprayer, care should be taken not to run the engine faster than required speed for distributing the spray on surface. The engine speed should be varied with the angle of the spray. High engine speed produces excessive airflow, causing spray to bounce off surfaces and possibly contaminate the operator when the spray is directly horizontal against wall.
- Proper care should be taken when climbing on stacks or ladders to treat high places because the weight of sprayer on the back can upset balance.
- Motorized knapsack sprayers must be correctly maintained. Particular attention should be paid to ensure that air filter and sparking plug are regularly cleaned and that only clean petrol and oil mixed in correct proportion are used for the engine. On completion of spraying, the petrol supply should be switched off and the engine allowed running until the carburettor is empty. If this is not done, carburettor may become clogged with oil. Spare plugs, nozzles, plug spanners and other tools should be kept as per requirement.
- While spraying, a check should be made to ensure that all areas have been treated and that correct amount of spray has been applied. Any surplus remaining in the spray should be sprayed on the walls. For wettable powder, little left out solution with high concentration of powder may be discarded properly as pumping it may clog the sprayer. The empty sprayer should be washed thoroughly with clean water. Nozzles should be dismantled and cleaned properly. Nozzles should not be poked with wire or pins. Spray tanks, hoses and lances should be drained and dried. A check should be kept for rust, which could do blockage. All seals, washers and springs should be periodically checked.
- Empty insecticides containers must be disposed of safely. Partly used containers should be securely closed and all insecticide concentrates should be kept in lock & key and away from foodstuff.
- A return visit should be made to confirm that the treatment was effective.

- Prepare spray solution from concentrated pesticides in deep bottomed vessels with the help of long mixing handles. This is to protect the operator from the splashes of the pesticides and to make it easy to stir it in standing position.
- Wash hands thoroughly with soap and water after the operation.

5. **Do's and Don'ts for Safe use of pesticide:**

	Do's	**Don'ts**
During purchase	a. Purchase pesticides/ bio-pesticides only from registered pesticide dealers having valid License. b. Check approved labels on the containers/packets of pesticides c. Check Batch No., Registration Number, Date of Manufacture/ Expiry on the labels d. Purchase pesticides well packed in containers	a. Do not purchase pesticides from foot path or from un-licenced person. b. Do not purchase pesticides without approved label on the containers c. Never purchase expired or near to expiry date pesticide. d. Do not purchase pesticides whose containers are leaking/loose/ unsealed.
During Storage	a. Store the pesticides away from house premises b. Keep pesticides in original container c. Pesticides/weedicides must be stored separately. d. Where pesticides have been stored, area should be marked with a warning sign e. Storage place should be well protected from direct sunlight and rain	a. Never store pesticide in house premises. b. Never transfer pesticides from original to another container. c. Do not store insecticides with weedicides. d. Pesticides should not be exposed to direct sunlight or rain water.
While Handling	Keep pesticides separate during transportation. • Bulk pesticides should be carried carefully to the site of application.	a. Never carry/transport pesticides along with food/ fodder/other eatable articles b. Never carry bulk pesticides on head, shoulder or on the back.
While Preparing Spray Solution	Always use clean water. a. Use protective clothing viz., hand gloves, face masks, cap, apron, full trouser, etc. to cover whole body, b. Always protect your nose, eyes, ears, hands, etc. from spill of spray solution. c. Spray shall always be alongside wind current so that it may not return to the face / body of	a. Do not use muddy or stagnant water. b. Never prepare spray solution without wearing protective clothing c. Do not allow the pesticide/its solution to fall on any body parts. d. Spray shouldn't be applied opposite the wind current as it may reach to the face/ body of

	person spraying. d. Read instructions on pesticide container label carefully before use. e. Prepare the solution as per requirement. f. Avoid spilling of pesticides solutions while filling the spray tank g. Always use recommended dosage of pesticide. h. No activities should be carried out which may affect your health while spraying.	person spraying e. Never avoid reading instructions on container's label for use f. Do not use overdoses as it may result in higher pesticide residue affecting health and environment. g. Do not eat, drink, smoke or chew during whole operations involving pesticides.
Selection of Equipment	Select right kind of equipment. a. Select right sized nozzles. b. Use separate sprayers for insecticides and weedicides.	a. Do not use leaky or defective equipments. b. Do not use defective/non-recommended nozzles. c. Do not blow/clean clogged nozzles with mouth. Instead use brush to clean the nozzle of sprayer d. Never use same sprayer for both weedicides and insecticides.
While Spraying	a. Spray should be applied only with recommended dose and dilution. b. Spray operation should be conducted on cool and calm day. c. Spray operation should be conducted on sunny day in general. d. Use recommended sprayer for each spray. e. Spray operation should be conducted in the wind direction. f. After spray operations, sprayers and buckets should be washed with clean water using detergent/soap. g. Avoid the entry of animals/ workers in the godown immediately after spray.	a. Never apply over-dose and high concentrations other than recommended b. Do not spray on hot sunny day or strong windy conditions c. Do not spray just before rains and immediately after the rains d. Emulsifiable concentrate formulations should not be used for spraying with battery operated ULV sprayer. e. Do not spray against wind direction. f. Containers and buckets used for mixing pesticides should never be used for domestic purpose even after thorough washing. g. Never enter in the treated godown immediately after spray without wearing protective clothing.
After Spray	a. Left over spray solutions should be disposed-off at safer place viz.	a. Left over spray solution should not be drained in or near ponds

Operation	barren isolated area. b. The used/empty containers should be accounted for and kept separately. c. Wash hands and face with clean water and soap before eating/drinking. d. On observing poisoning symptoms give the first aid and show the patient to doctor along with the empty container.	or water lines etc. b. Empty containers of pesticides should not be re-used for storing other articles. c. Never eat/drink before washing clothes and taking bath after each operation. d. Do not take the risk by not showing the poisoning symptoms to doctor as it may endanger the life of the patient.

6. **Aeration-** Regular aeration is required to maintain the health of stored foodgrains. Aeration to the foodgrains shall be imparted on clear sunny days. Aeration of godowns on all clear days during July-March is essential for controlling the activities of Moths, Mites and Psoccids. All the ventilators provided in modem godowns shall be kept open for facilitating aeration during this period. During April-June godowns will be kept open as required for operations, inspections and pesticide treatments.

Further, in case the stock is stored in CAP, there is possibility of damages of stocks due to condensation at the top and sometimes at the sides. Condensation will continue to occur when daily variation in temperature is in excess of 10^{o} C. In order to reduce the damages due to condensation, aeration is taken as below:

i. MC less than 12 per cent –Once in a week in early cool hours only.
ii. MC 12 per cent to 14 per cent - Once in every three days in the early cool hours only.
iii. MC above 14 per cent---continuous till M.C. is brought down to 14 per cent and thereafter as at (ii) and (i) above

(3) Standard operating procedure (SOP) for Rodent Management

Rodents have been obvious pests of foodgrains in storage. Rat not only consumes food grains, but it contaminates them. Additionally, their habit of nibbling of bags leads to collapsing of stacks. The gnawing tendency of rodents causes structural damage to buildings and may even initiate fires when insulation from the electric wires is chewed. Hence, it is very essential to follow an effective rodent management practices. Signs indicating the presence of rodents are droppings and burrows including other signs such as gnawing, rat hairs, urine spots and rat body odour.

1. Preventive measures: Maintenance of hygienic conditions and rat proofing of godowns are the two most effective steps to avoid rat menace.

1.1. All the rat burrows inside the godown should be closed by filling them with broken glass pieces and stone and then cemented at the mouth.

1.2. In order to eliminate breeding places rubbish/ trash/ refuse in and around the godown premise must be collected, stored and disposed following proper solid waste management practices.

1.3. Dumping/ storing of any items in the godown premise must be done with a ground clearance of 1.5 feet and not directly on the ground.

1.4. All the holes and cracks, especially holes wider than ¾-inch and holes around pipes and conduits in the exterior of the building must be sealed.

1.5. The height of the plinth of the godown must be 0.80 m above the road/ finished ground level and the same must be maintained even after laying new roads. Protruded platform with iron railings should be provided to avoid entry of rats. Permanent steps/ stairs must not be set up to reach the plinth/ platform, instead temporary/ movable steps/ stairs must be used.

2. Fumigation: Fumigate the rat burrows in the godown premises with Aluminium phosphide tablets at the rate of 2 tablets/ burrow followed by sealing with wet mud.

3. Trapping: Treadle type traps and cage trap must be set on the rat run close to the wall, runways and burrows with some attractive food as bait.

3.1. Bait: During winter months, fried substances may be used, whereas during the summer months, green vegetables and fruits may be used. Soaked rice as bait attracts more rats.

3.2. Effective trapping: The trap must be kept open during the first 3 to 4 days so that the rat can conveniently get in, consume the bait and escape; this enables the rats to overcome bait shyness. Traps should not be laid at the same place continuously for more than two weeks. Traps must be monitored and emptied/ removed, else other rats may avoid traps in future. Traps must also be cleaned and washed frequently.

4. Poisonous baits: One part of Zinc phosphide with 49 parts of popped corn/ rice. It may also be prepared in the form of pellets. 3 g of Zinc phosphate, 100 g of wheat flour, 5 g of jaggery and 5 g of edible oil are required. The pellets must be prepared by mixing water in wheat flour - Zinc phosphide mixture, followed by coating of oil and jaggery. These baits are placed in burrows.

5. Commercial bait: Ready to use bait (anti-coagulants), commercially available in the market in the form of cakes/ cubes/ bars may also be used following manufacturer's instruction.

6. Pre-baiting: Initially baiting without poison must be done in order to avoid bait shyness.

7. Disposal of rats: The purpose of trapping the rat would fail if the trapped rats are released at a short distance away from Godown. The trapped rats can be killed by submerging the trap in water. Dead rats should be buried immediately to avoid secondary poisoning.

8. Glue pads: Ready to use Glue pads commercially available in the market may also be used following manufacturer's instruction.

9. Precautions: All chemicals used for control of pests are highly poisonous and hazardous. They should be, therefore, stored in isolation sheds, away from food grains and from the reach of untrained hands, under lock and key. Like all the fumigants, phosphine is highly toxic to all forms of animals and human life. Although, multi-dose anticoagulants are not very hazardous, it is desirable to take ordinary precautions as we do in case of all other pesticides. While handling chemicals, gloves, face mask and safety goggles must be used. Disposable gloves and mask must be disposed appropriately after use. Hands must be washed with soap properly after use.

At the depots where rodent menace is high, adequate quantity of rodenticides should be purchased by Depot Manager/ Manager (QC) under their DoP using contingency fund.

(4) Standard Operating Procedure (SOP) for Inspection, Sampling and analysis of Food grains:

Drawing a representative sample is an important and essential part of quality assessment of foodgrains at various stages. If the sample obtained is not representative, no amount of care in further analysis will establish true quality of grain. The sampling of food grains as stipulated in Bureau of Indian Standards (BIS) is accepted as the national standards and forms the base for sampling procedure to be followed in the operations of FCI. For sampling of food grains, IS14818: 2000 and amendment thereof is followed and for analysis of foodgrains, IS-4333 (Part-I): 1996 & IS4333 (Part-II): 2002 and amendment thereof are followed

Quality of foodgrains is to be analyzed with respect to the specification/ refractions fixed by Government of India. For this analysis, samples have to be homogeneous so as get accurate result. **All processes have to be carried out by technical assistants/ Manager (QC) of respective centres**. As such, it is important that proper sampling procedure as prescribed below is followed.

1. Sampling from Bags: [IS 14818: 2000]

Unless otherwise specified, increments shall be taken from different parts of the lot (for example top, middle and bottom) by means of a sack / bag spear from the number of bags specified in the table below:

Number of bags in the consignment	**Number of bags to be sampled**
Up to 10	Each bag
10 to 100	10, taken at random
More than 100	Square root (approx.) of total number

Example with consignment size of 580 bags-

- The square root of 580 = 24.166
- Number of groups (n) = 24
- Make 24 groups of 24 bags (Total bags = 576)
- Cross out one number, example number 7
- Sample the 7th bag from each group of 24 bags.
- The remaining 4 bags (580 minus 576) will form a separate group.
- Sample one bag out of remaining four random.
- So, sampling in case of 580 bags is done from 25 bags total.

2. Sampling from Rail or Road Wagons, Lorries, Barges or Ships: [IS 14818: 2000]

Unless otherwise specified, each laden wagon, lorry, barge or ship shall be sampled. Increments shall be taken throughout the whole depth of lot. The grain should be sampled using a grid system.

Tonnage	**Sampling points**
Up to 15 tonnes	5
15 to 30 tonnes	8
30 to 500 tonnes	11
Above 500 tonnes	Next whole number of square root of tonnage/2

3. Sampling from Silos, Bins or Warehouses: [IS 14818: 2000]

Increment shall be taken throughout the whole depth of the lot. A suitable instrument must be used to achieve the requirement. The grain should be sampled using a grid system. Sufficient increments should be taken to satisfy the requirement. Take the square root of tonnage (in static bulk). Divide by two and round up to the next whole number. This is the minimum number of increments that is to be obtained.

Tonnage	Square root	Number of increments
500	22.4	12
1000	31.6	16
2000	44.7	23
4000	63.2	32
6000	77.4	39
8000	89.4	45
10000	100.0	50

4. Sampling in Produce Market (Mandi): [IS 14818: 2017]

In view of large magnitude involved in the purchases to be made in produce markets, it is of paramount importance that the pricing is correctly done in relation to the specifications in force. The aim should be to sample and check maximum number of lots for purchase in the market.

At the time of procurement of food grains in procurement centres, technical Assistant shall ensure, offered lots of stocks is properly cleaned, dried and in sound marketable condition. The TA shall draw the samples from each heap from multiple points so that homogenous samples are drawn for analysis. The bulk sample shall be followed by combining increments and mixing them thoroughly.

In view of large magnitude involved in the purchases to be made in produce markets, the aim should be to sample and check maximum number of lots for purchase in the market. The sampling of purchased stocks shall be done and samples shall be sent to FCI divisional QC laboratory as under-

Number of lots purchased	Number of lots to be drawn and sent to FCI DO lab	Remarks
Up to 100	Four (4) samples with a minimum of one sample from each grade or variety purchased	It may be ensured that samples from different lots drawn on the basis of heaps purchased in a 'Mandi' are not less than the number indicated.
100 to 199	Seven (7) samples with a minimum of one sample from each grade or variety purchased	
200 to 399	Ten (10) samples with a minimum of two samples from each grade or variety purchased	
400 and above	Twelve (12) samples with a minimum of three samples from each grade or variety purchased	

The samples which is to be sent to DO lab shall contain a sample slip having particulars like Name of the Commodity & Variety, Crop year, Lot / Contract Number, Number of bags/ Quantity of lot from which sample taken, Supplier Name, Date & Place of sampling, Stack/Wagon/Truck number etc. as well as Name, designation & signature of the person who sampled along with name designation.

All collected/ received samples are to be analyzed at Divisional lab and results should be communicated to field offices within 3 days by Manager (QC) lab of Divisional office.

Inspection norms

- The foodgrains stocks shall be accepted /purchased as per specifications, laid down by the GOI. Periodical inspections of covered godowns as well as CAP units is carried out as per the inspection norms issued by FCI HQrs vide **circular no.1/2020 vide file no.QC.7/2/SIR/2018 dated 07/02/2020.**
- Since, the moisture is a very important quality parameter which affects shelf life and quality of foodgrains, the officers /officials assigned with the mandatory inspections should verify correct recording of moisture content of foodgrains. Therefore, it is imperative to record correct moisture content at the time of receipt, during storage/preservation and at the time of issuance of food grains by duly calibrated moisture meter. This should be done as per the SOP for correct recording of moisture content in depots /storage points issued by **FCI HQ letter No.QC.6(1)/Stg.Instructions/2021 dated 17.11.2021.**
- In view of adverse weather conditions or unseasonal rains, adequate precautionary measures are to be taken for proper maintenance and upkeep of the stocks which will be inspected regularly at all levels i.e., fortnightly by TA, monthly by M(QC) and quarterly by AGM(QC). Necessary measures have to be complied by all the field functionaries as per the instructions issued by FCI vide **HQ letter No.QC.6(1)/Storage instructions/2021/ dated 16.04.2021.**
- In order to have a proper check of procured rice stock, the representative of GM (Region) (RO)/ Divisional Manager (DO) will draw samples from the 5% and 10% of stack accepted by each TA in triplicate associating concerned TA/ Manager(QC) on monthly and fortnightly basis respectively. Out of the three jointly sealed samples, one sample shall be kept in depot for future reference. The period of retention of sample in the depot should be three months. The stacks from which samples have been drawn by District / Regional lab should not be moved till the receipt of analysis results from the respective labs. District/Regional office should convey the results to concerned centers/depots invariably within a week's time from the date of receipt of sample in Lab. Inspection sampling and analysis procedure to be followed in procurement of paddy and custom milled rice has been issued in detail by FCI HQrs before start of every procurement season. The latest being **HQ letter No.QC 2(1)/KMS/2021-22/Policy dated 29.09.2021.**

Analysis and Quality management of Fortified rice

- To address the anaemia and micro-nutrient deficiency in the country, Government of India approved centrally sponsored pilot scheme on "Fortification of Rice and its distribution under Public Distribution System". In view of this it is important to fix minimum threshold parameters for quality standards of FRK. In this regard , a detailed guidelines has been issued by DFPD vide **letter dated 15.03.2022** and circulated by FCI, Hqrs letter no. **QC 34(2)/Fortification of Rice/2021/ Dated 23.03.2022**
- In procuring region where the fortified rice is accepted, samples from a minimum of 10% of stocks accepted miller wise on monthly basis shall be referred to FSSAI approved NABL accredited labs for testing of Fortificants in fortified rice as per the

standards of FSSAI. Testing of samples should be completed within 45 days from the date of acceptance of the stock from where the sample is drawn.

- Copy of analysis results shall be shared with the consignee depot/ Divisional offices at the time of dispatch of fortified rice from procuring region to consuming regions.
- In this regard, a detailed guidelines has been issued by FCI, Hqrs vide letter no. **QC 19/R&D/ Fortification of Rice/2019/Pt Dated 22.02.2022** should be followed scrupulously.

Monitoring of foodgrains quality procured under DCP scheme

- Under DCP scheme, foodgrains (Wheat, paddy and Rice) are procured by the respective state governments at Minumum Support Price from farmers of the state. The state governments concerned is responsible for quantity and quality of foodgrains procured under DCP mode.
- The General Manager (R) in consultation with State Government / its nodal agency shall work out district wise inspection plan for every month. FCI and State Government has to conduct 2% joint inspections of foodgrains procured in DCP states as per the guidelines issued by FCI in detail vide HQ letter No.**Q.C. 2(1)KMS/DCP operation/2016/ dated 24.05.2016.**
- A joint team shall be constituted which consists of Quality control cell(DFPD) representatives, nominated officer/officials of State Government and FCI to facilitate inspection of DCP stock. Team shall inspect minimum 15% of total rice or wheat stock procured per season (KMS & RMS respectively) as per the DFPD guidelines **dated 16.07.2021** and circulated by FCI vide HQ letter **No.QC.7/26/ joint inspection /D/P.C.2020 dated 27.07.2021** and amendment thereof**.**

Standard Operating Procedure for Analysis of Food grains:

1. Preparation of Test Sample: [IS 4333 (Part-I):1996]

- A "Composite Sample" of about 2500 gms shall be drawn complying **IS 2814: 1978 & IS 3714: 1978.**
- The composite sample shall be reduced to about 500 grams by dividing on a sample divider.
- In case sample divider is not available, coning and quartering method may be used alternatively. Composite sample should be mixed thoroughly and should be spread on a flat, non-obserbant smooth surface. Draw the grain into a conical heap flatten the top of the heap in a circular layer of about 12 mm to 25 mm thickness. From this layer, 500 gms sample should be scooped out from centre, sides and different points taking care that no foreign matter is left over from the portions from where grains have been scooped out.

2. Visual Examination of Test Sample: [IS 4333 (Part-I):1996]

- Examine the test sample as a whole for its general condition, including odour and infestation.
- Report whether sample is wholesome, clean, dry and in sound marketable condition.
- Examine the sample for any deleterious material hazardous to human health rendering the grain inedible.

3. Determination of Foreign Matter: [IS 4333 (Part-I):1996]

- Foreign matter is determined from the "Test Sample".
- Mass of sample should be recorded first.
- Pour the complete test sample in top layer of sieve sets arranged in a manner so that sieve with the largest perforation comes at the top and those with smaller perforation are placed one below the other in order of their decreasing aperture size.
- Agitate the sample thoroughly to strain out the foreign matter at various levels. As a result, other foodgrains and foreign matter like bolder piece of clay, chaff etc. would remain on the first three sieves according to their sizes.
- The top most sieve would contain bold grains, big pieces of clay and other big sized foreign matter while lower sieves would contain smaller, shrivelled & badly insect infested grains and smaller foreign matter.
- Separate the sieves after straining and pick up all foreign matter by hand or forceps from each of sieves and transfer the foreign matter collected from each sieve onto the bottom pan.
- Weigh the total foreign matter and calculate the percentage

Commodity	**Test sample weight (Approx.)**
Rice & millets	250 grams
Other food grains	500 grams

3) Determination of Refractions other than Foreign Matter: [IS 4333 (Part-I):1996]

- Mix the content of the four sieves freed from foreign matter and spread out evenly on a flat smooth surface.
- From the spread, scoop out from centre, sides and different points exactly the specified quantity for the analysis of grains under test as indicated below:

Commodity	**Scooped sample weight (Min)**
Wheat	50 Gms
Paddy	50 Gms
Rice	20 Gms
Fortified Rice	50 Gms
Maize	50 Gms
Barley	50 Gms
Millets	20 Gms
Gram	50 Gms
Other pulses	25 Gms

Place the weighed quantity on an enamel plate. Then pick out the various items of refractions by hand with the help of magnifying glass in the order-

Care should be taken that each item of refraction as specified in FAQ parameters of foodgrains is accounted.

- Each separated item of refractions should be weighed on the physical balance and percentage of individual refraction should be calculated separately on the quantity taken for actual analysis as given in the table above.
- In rice, for the refractions (except foreign matter), analysis to be carried out in duplicate and average should be taken.

[**In FCI, for field /lab/ joint analysis, result of single analysis of rice is also valid & final for all purpose. (FCI Hqrs circular No QC / 2(1) / 2002 /Vol-I date 09.12.2002)]**

4) Determination of Insect damaged (weevilled) grains: [IS 4333 (Part I): 1996]

- **Bigger size grain:** From sieved sample, measure 20 ml of the representative sample with the help of a measuring cylinder. First count the total number of kernels in measured sample. Then weevilled grain should be picked out and should be counted separately. The insect damaged grain (weevilled grain) can be calculated as –

- **Smaller size grain:** For smaller size grains, there are two methods of calculating Weevilled %age i.e. volumetric method & Gravimetric method (Weight method) and either of them can be used. The methods used shall be declared while reporting the result.

  1) **Volumetric method:** From sieved sample, measure 20 ml of the representative sample with the help of a measuring cylinder. Weevilled grain should be picked out and volume of weevilled grain should be measured in same measuring cylinder which was used for measuring representative sample.

  2) **Gravimetric method:** From sieved sample, weigh 20 gm of the representative sample in a chemical balance with least count of 0.1 mg. Weevilled grain should be separated and weight of weevilled grain should be measured in same chemical balance which was used for weighing the representative sample.
  3) For calculation of weevilled grains in wheat, volumetric method is adopted upto 3.5% weevilled grains and then by count is adopted.

5) Determination of Moisture Content: [IS 4333 (Part 2): 2002]

- This method is applicable to most of the cereals food grains (except Maize), milled grains etc. For international standards, the reference method is **ISO-711** 'Cereals and cereals products-Determination of moisture content-Basic reference method'. For Maize, a separate method is specified in **ISO-6540.**

- Principle: The sample is ground, after pre-conditioning, if required. A test portion is dried at a temperature of 130°C ± 3°C, under condition which enables a result to be obtained which is in agreement with that obtained by the basic reference method (**ISO 711).**

Preparation of test sample:

- Products not requiring grinding
  - Suitable for particle size < 1.7 mm (Not retained on 1.8 mm sieve)
- Products require grinding:
  - Grinding without pre-conditioning: For products which are not likely to undergo variations in moisture content in the course of grinding [In general products with moisture content between 7% and 17% (15% in oat, paddy & rice)].
  - Grinding with pre-conditioning: For products which are likely to undergo variations in moisture content in the course of grinding [In general products with moisture content more than 17% or less than 7%] shall be preconditioned so as to bring their moisture in between 7% to 17% (if possible, in between 9% to 15%) before grinding.

Procedure:

- **Number of determinants**: It is required to carry out two single determinants. If the absolute difference between the two results is more than repeatability limit, repeat the determinants until the results meet the requirement.
- Test portion: Rapidly weigh 5gms± 1 gm of sample to the nearest 0.001 gm (= 1mg) in the dish (previously dried and tared together with lid to the nearest 0.001 gm).
- Method of determination: Adjust the air-oven to a temperature of 130 ± 3°C. The petri dishes containing about 2 gms. of the flour be put inside the oven and remove their lids. The lids should also be kept separately inside the oven. Close the air-oven and keep the samples exactly for 2 hours for drying, maintaining the oven temperature at 130 ± 3°C. The oven should not be opened within the two hours (two hours-drying period begins when the oven temperature is actually 130°C). Put on the lid over the petri dishes. While in the oven, transfer all the petri dishes to dessicator and weigh soon after room temperature is attained.
- **Weighing**: When the dish has cooled to laboratory temperature (generally 30 min to 45 min after it has been placed in desiccator), weigh it to nearest 0.001 gm (= 1mg).

Calculation and expression of results:

- For samples without pre-conditioning: (Paddy, Rice, Wheat, Pulses)

$$\%age\ moisture = \frac{M0 - M1}{M1} \times 100$$

(M0= Original sample mass in gm, M1= Sample mass after drying in gm)

- **Precision:** The difference between two determinants made on the same sample should not exceed 0.1 gm (or 100 mg) per 100 gm of sample. If it does so, the determinant should be repeated in duplicate. The mean of the result of duplicate test, rounded to the nearest 0.05 gm (or 50 mg) of moisture per 100 gm of sample, represents the moisture content of the sample.

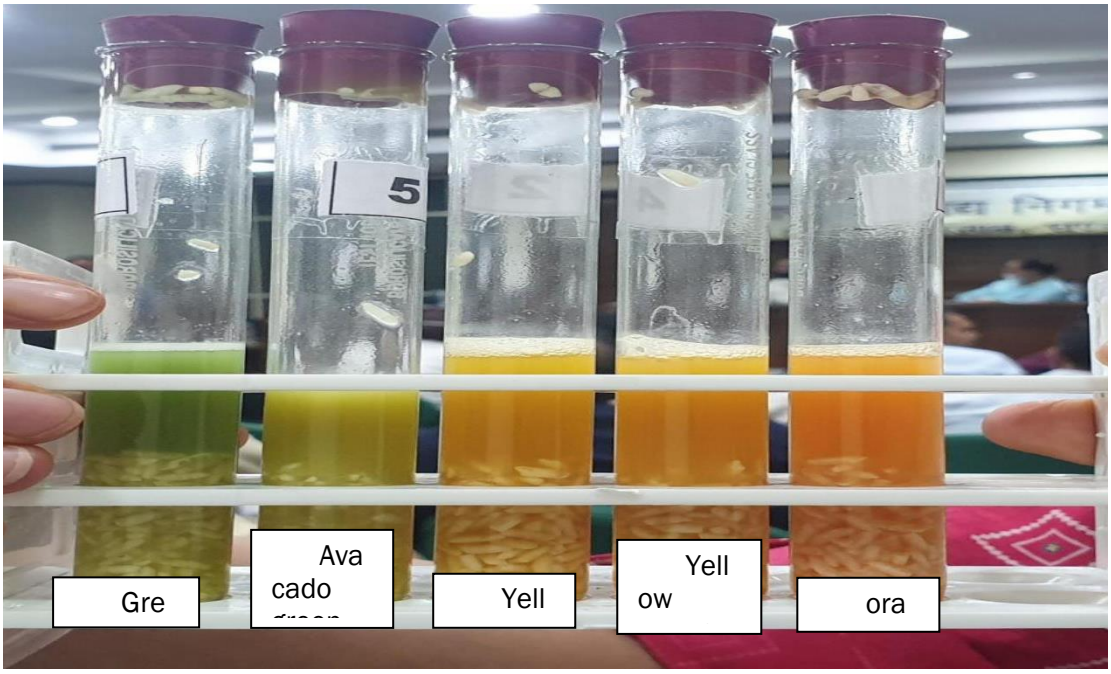
6. **Determination of age of Milled raw rice**

The age of milled rice stocks during acceptance of Custom Milled Rice for central pool procurement is determined by Mixed Indicator Method in which age of the rice is based on the resulting colour of the solution as detailed below.

Color change	As per standard	Result
Green	Stocks freshly milled	Accepted
Avacado Green		
Yellow	Stocks not freshly milled	Rejected
Yellow orange		
Orange		

(Colour chart is enclosed)

Chemicals and reagents required and method of analysis to be followed in Mixed Indicator Method is issued in detail by FCI, Hqrs vide letter no. QC.19/R&D/ Mixed indicator /2021-22 dated 01.10.2021.



Procedure for appeal against the rejection of rice lots by FCI during acceptance of custom milled rice

1. The checking of delivered lots of rice for acceptance should be completed within 24 hours of dumping by concerned Technical Assistant /Manager (QC).

2. In case of rejection by Manager (QC) and appeal lodged by the supplier in writing on rejection of lots, 4 sealed joint samples will be drawn by Manager (QC) associating the representatives of the agency concerned /rice millers. Three samples will be sent to district lab immediately along with the appeal. 4th sealed sample will be given to State Government or its representative. In case State Government requests for review of analysis results of third appeal at CGAL, 4th sample with State Government will act as review sample for analysis by CGAL.

3. On first appeal at district lab, AGM(QC) will analyse one of the sealed samples jointly with the representative of the State Government /rice miller within three working days and shall inform them outcome of the analysis.

4. The representative of State Government /rice miller will submit a letter to AGM(QC) indicating either acceptance of analysis results or his intention to prefer an appeal in case of dispute with the results; the same day. In case of non- acceptance of results, 2nd sealed sample should be sent to regional office on next working day alongwith the letter of appeal given by the representative of State Govemment/rice miller.

5. In case no representative of State Government/ rice miller is present for joint analysis, the outcome of the analysis shall be informed to the agency concerned /rice miller through e-mail and in writing by AGM(QC) on the day of analysis itself. The concerned State agency /rice miller shall have two working days time to respond and communicate to regional office whether they intend to avail the option of next level of appeal under intimation to AGM(QC).

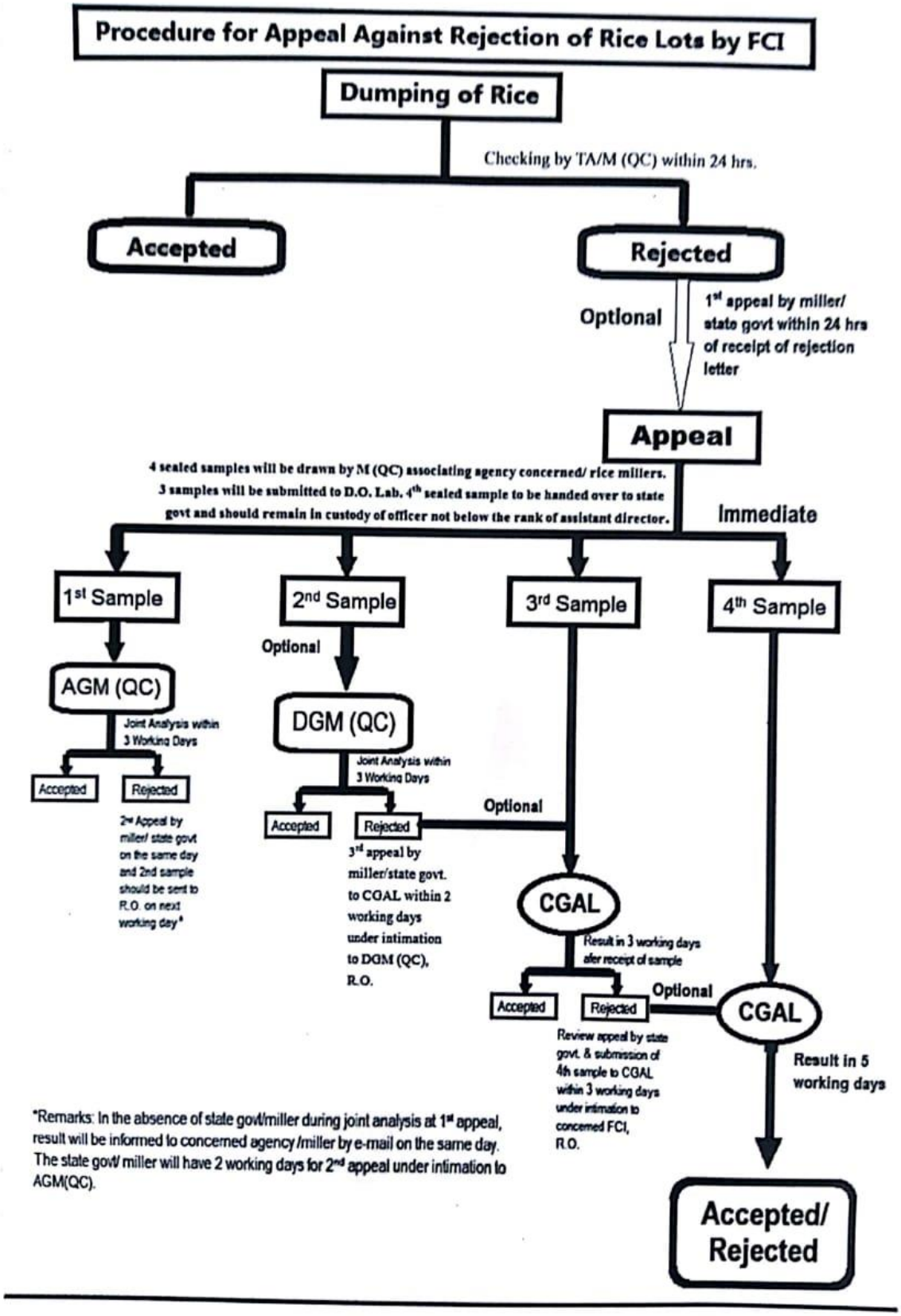
6. At regional level DGM(QC) of Regional Office, FCI will decide the appeal by analyzing

the second sealed sample associating representative of State agency/rice miller within 3 working days. The outcome of the analysis shall be infonned to the agency concerned /rice miller through e-mail and in writing by DGM(QC) on the day of analysis itself. In case of non-settlement of objection/dispute, the State Government shall have two working days time to respond and communicate to CGAL, Krishi Bhawan, New Delhi of their intention to avail the option of referring the matter to CGAL alongwith third sealed sample under intimation to DGM(QC) regional office of J'Cl.

7. On receipt of sample, the CGAL will communicate the results to State Government and FCI within 5 working days. In case State Government wants to request for review of analysis results of CGAL, they should communicate and provide review sample to CGAL for analysis with in 3 working days under intimation to concerned FCI Regional/ District office. CGAL will communicate the results of review sample to State Government and FCI within 5 working days.

8. In case Manager (QC) from district office have been deputed in the depots for acceptance of rice, the concerned Manager (QC) will be considered as the depot staff for acceptance /rejection of rice and in case of an appeal the concerned Manager (QC) will not be associated in analysis of samples at district office.

9. During the pendency of appeal against the rejection of a particular rice lot, the rice miller will be allowed to deliver rice till final out- come of the appeal i.e. within the stipulated mandatory period. If the appeal is upheld at any level, FCI will accept the stock and separate departmental action will be initiated against the delinquent officers. In case appeal is rejected at all the 3 levels, the storage charges will be levied by FCI from the date of delivery of lot of rice for acceptance as per their procedure. Further, the miller will have to lift the rejected stock within 24 hours, if he fails to do so, his further delivery of stocks will be stopped. In order to avoid frivolous appeals a caution notice may be issued to the concerned rice miller in the event of rejection of appeal at all levels as above and for repeated occurrence of such appeal, other punitive action can be considered against the concerned rice miller.



Recycling of rice

- Keeping in view of ongoing welfare schemes and issuance of free rice, it is of utmost importance to keep strict vigil that no diversion of such stocks takes place. Divisional Manager and AGM(QC) would be responsible to check incidence of recycling of rice stocks in FCI depots and caution the field functionaries to take corrective measures.

- Similarly, State Government and its agencies shall be responsible to avoid any diversion of PDS stocks in DCP states during procurement of CMR stock.
- Therefore to detect recycling by field functionaries while doing procurement operations certain precautionary steps are to be taken as per the guidelines issued by FCI vide HQ letter **No.QC.2(1) /KMS/2021-22 dated 25.06.2021.**

Movement / issue of food grain stocks

To ensure timely liquidation of old crop stocks, "First In First Out principle" should be followed. A centralized priority list shall be drawn based on the guidelines on FIFO issued in detail by FCI in circular **No.1/2014** vide file no.**QC.6(1)//Stg.Inst/FIFO-2013 dated 13.03.2014** at the beginning of each month and shall be strictly followed at the time of issue of stocks from depot as well as at the time of drawing liquidation plans for central pool stocks by the district and regional offices.

Quality complaint procedure

- On receipt of food grains by truck or wagons ,the representative samples of the stocks truck-wise /wagon wise will be drawn by the consignee. The sample thus drawn will be analysed with reference to specifications and standards. If stocks donot confirm to specifications an intimation will be sent to consignor District manager. After lodging the complaint, stocks under complaint should be inspected by AM(QC)[Now Manager(QC)] and he should prepare general assessment report of quality and condition of stocks.
- The consignor District manager on receipt of assessment report allow QC officials who dispatched the stocks to visit destination for joint inspection which should be completed within 25 days.
- There will be no joint inspection for Infestation and moisture complaints. ICCS (Independent consignment certificate squad) in which Manager (QC) being one member may be asked to ensure strict supervision/verify the infestation and moisture content at the time of both loading and unloading and send the report to consignee/consignor area manager for information and taking appropriate action.

Loss assessment statement

- The LAS shall be prepared on the basis of quality cuts to be imposed for the refractions exceeding the limits specified in prescribed specifications
- The loss assessment statement shall be prepared after the expiry of period of 25 days from the date of unloading of stocks and it should be submitted by the consignee region within 30 days of unloading the stocks
- For quality complaints against the stocks stored in CWC godowns Fci representative should authenticate the condition of stocks,if he is not available warehouse manager will take the action.
- In this regard a detailed procedure for lodging quality complaints has been issued by FCI in the office circular no.**12/2002 vide file no.QC.5(22)Proc.Qlty.comp./2001 dated 03.06.2002 dated 07/02/2020.**

(5) STANDARD OPERATING PROCEDURE (SOP) FOR PROVIDING OF NECESSARY INFRASTRUCTURE FOR PROPER UP KEEP OF HEALTH OF FOODGRAIN STOCKS IN GODOWNS AT WAREHOUSES:

The availability of following Chemicals/Equipments are required to be ensured in the godowns to provide for necessary infrastructure for proper up keep of health of foodgrains stocks in godowns:

Name of Chemical:	**Malathion 50% EC***
BIS Specification	**BIS-2567-1978 with up-to-date amendments**
Preparation (Dilution)	(a)One litre of emulsion with 100 litres of water (1:100).
Dosage	(a) Surface treatment 3 litres of prepared solution for every 100 Sq metres. (b)Aerial spray 1 litre prepared solution for 270 cubic meter.
Mode of application	Applied in the form of spray with the aid of Foot Operated/ Power Sprayers or Fog Generators.
States	A. J&K, Punjab, Haryana, Chandigarh, Delhi, UP, Bihar, Rajasthan, M.P. B. Rest of State/ Union territories.
Frequency	For Area "A" above: (1) Once in 3 weeks in November to February. (2) Every fortnight during March to October. For Area "B" above: Every fortnight throughout the year.
Availability of chemical	Minimum three months requirements should be available at any point of time.

Remarks (*) As per the GoI guidelines, Malathion has to be discontinued by March, 2023

Name of Chemical:	**Deltamethrin 2.5% W.P.**
BIS Specification	**BIS-13457-1992 with up-to-date amendments**
Preparation (Dilution)	40 gms / litre
Dosage	Surface treatment 3 litres of prepared solution for every 100 Sq metres.
Mode of application	Applied in the form of spray with the aid of Foot Operated/ Power Sprayers or Fog Generators.
Frequency	90 days (3 months)
Availability of chemical	Minimum three months requirements should be available at any point of time.

Name of Chemical:	**Aluminum Phosphide Tablets**
BIS Specification	**BIS: 6438-1980 with upto date amendments**
Dosage	a. Covered godowns (bag storage) is 9 Gms (3 Gms × 3 tablets) per MT of food grain. b. CAP Storage: 9 Gms /MT + 20% extra dose c. Shed fumigation: 63 Gms/ 28 m^3 d. Khapra beetle infestation: 9 Gms /MT + 50% extra dose
Exposure period	5 to 7 days
Availability of chemical	Minimum three months requirements should be available at any point of time.
Name of Covers: LDPE Cover	

BIS Specification	BIS 2508-2016 with up-to-date amendments.
Cover Specification	a. Type: " I " b. Size of Cover: 32' x 21' x 17' (feet) (with five sides) c. Thickness: 250 micron d. Color: Black e. Minimum Weight of Cover: 54 kgs f. Minimum Average Weight of Cover per lot: 55 kgs
Precautions while using	a. To achieve and maintain the concentration of fumigant, the stacks under fumigation must be made air tight by the mud plastering /placement of 'sand snakes' (double row)/ cello tapes to retain the phosphine gas liberated to the maximum extent. b. Also, if LDPE covers were used for fumigation, it must be completely free from holes and should not be cut or torn. Complete air tightness is the essence of success of fumigation operation.
Availability of Covers	a. 12 Covers per 10000MTs for the godown capacity below 50000MT which are not located in city/ residential area. b. 14 Covers per 10000MTs for the godown capacity below 50000MT which are located in city/ residential area. c. 14 Covers per 10000MTs for the godown capacity 50000MT and above irrespective of locations of godowns. d. For CAP Storage: LDPE Covers 10% extra of CAP capacity.

Name of Covers: CLTF Covers	
BIS Specification	**BIS Specification No. 14611-2016 with up-to-date amendments.**
Cover Specification	a. Type: "Heavy Duty"(HN) b. Size of Cover: 32' x 21' x 17' (feet) (with fiv-e sides) c. Minimum Mass per Unit: 200 Gram per Sq Mt (GSM) d. Color: Sky Blue e. Minimum Weight of Cover: 50.2 kgs f. Thickness: 200 GSM g. Fumigation Retention Test: As per 13217-1991 with up-to-date amendments
Precautions while using	a. To achieve and maintain the concentration of the fumigant, the stacks under fumigation must be made air tight by the mud plastering /placement of 'sand snakes' (double row) to retain the phosphine liberated to the maximum extent. b. During fumigation, CLTF covers must be completely free from holes and should not be cut or torn. Complete air tight condition is the essence of success of fumigation operation.
Availability of Covers	a. 12 Covers per 10000MTs for the godown capacity below 50000MT which are not located in city/ residential area. b. 14 Covers per 10000MTs for the godown capacity below 50000MT which are located in city/ residential area. c. 14 Covers per 10000MTs for the godown capacity 50000MT and above irrespective of locations of godowns.

Remarks: Please refer FCI HQrs instructions issued vide letter no QC-7/2(10/Misc/NZ/08/ Vol.II dated 09.04.2009.

Name of Equipment: Power Sprayer (Fuel/ Electric operated)	
Engine/ Pump Specification	a. 2 HP (4 stroke engine petrol operated/ Electric operated power sprayers) b. The pump should consists brass dye casting Horizontal Gear/ Belt driven with a suction capacity of 6-10 liters/minute and should generate a pressure of 350-600 psi and the fog spray should reach a height of 25 feet. c. The delivery hose pipe should be of PVC with 7-10 mm diameter and minimum 45 meters length to cover the length and breadth of the godown. Suction hose pipe should be of 3 meters length. d. Nozzles and lances should be of brass / non-corrosive to Malathion and Deltamethrin. e. A Trolley should be of Tubular mono MS frame or Angular or C Channel MS frame suitable for fitting the pump, motor, PVC drum/ Tank, Hose pipe and suction hose. It should be provided with two each of front and back wheels with rubber tyres with easy movement. The front wheel should have turning facility with a handle. f. The silencer exhausts of the engine should have sizable length with bent and to be fitted vertically/ horizontally as per the manufacturing standards so as to avoid brass suction parts being affected from emission of smoke / hot wave. g. Chemical flow slow / high speed indicator required. h. PVC Drum/ Tank should have capacity minimum of 100 Liters to be fitted on the trolley along with other equipment. i. Drum/ Tank should have filter apart from lid to close. j. Reinforced hose is to be provided. k. Governor mechanism to indicate the required pressure is to be set up. l. Pump should have a filter mechanism to reduce the tip clogs and provide a quality finish of fog spray.
Availability of Power sprayer	At least one power sprayer in working condition should be maintained at all times.

Name of Equipment: Moisture Meter	
BIS Specification	**IS: 8824(PART I), 1978 with up-to-date amendments.**
Moisture Meter Specification	a. Steel body, alphanumeric LCD displaying moisture percentage, temperature , Range 8.0-40%, Accuracy: 0.2%, Membrane keypad, auto calibration, weight not more than 24 kg, commodity calibration-foodgrains pulse, oil seeds etc. The moisture meter should have printing facility of Moisture percentage, temperature other details and also have facility for transferring recorded data to PC, Data storage capacity should be 200 readings. b. Provision of auto calibration.
Performance	c. Calibrations as per BIS 4333 part II: 2002 / and instructions published by DFPD.

Name of Equipment: Hot Air Oven	
BIS Specification	a. **BIS: 3119:1978 with up-to-date amendments.**
Oven Specification	b. 900X900X900 mm-Universal double walled of S.S. inner chamber with adjustable shelves, 220-230 volt AC Temperature range ambient to 250 degree Celsius should be with P.I.D. Temperature indicator/ controller and with Air circulatory fan. With glassware drying.

General manager(R) shall ensure availability of adequate quantity of chemicals and necessary equipments in all the divisional offices under his jurisdiction. Availability of chemicals equivalent to three month requirement in accordance with the foodgrains stored in the region/ all divisional offices of the region be ensured at all times.

(6) Standard Operating Procedure (SOP) for calibration of Quality Control Equipments.

1. Calibration of moisture meter with hot air oven method:

A. Moisture determination by hot air oven method:
   i. Take minimum 6 replicas of test samples of 10 grams each.
   ii. Grind each sample to fine powder/flour form which may pass through 40 mesh sieve. (Grinding should not generate much heat which would result in loss of moisture)
   iii. Weigh the empty petri dish with lid (w1).
   iv. Immediately take 2 grams (up to 2 decimal places) of this flour in clean dried and previously weighed petri dishes and cover it with its lid (w2)
   v. Adjust temperature of air oven to 130±3°c.
   vi. Place petri dishes containing 2 grams samples inside the oven and remove their lids and keep the lids inside the oven.
   vii. Maintain temperature for 2 hours.
   viii. Put on the lids and transfer the petri dishes to desiccator.
   ix. Weigh the petri dishes when room temperature is attained (w3).
   x. a. %age of moisture = (w2-w3/w2-w1) x 100
      b. *w2-w1 = weight of sample
      c. W2-w3 = loss in weight due to moisture
   xi. Average the results of replicas.

B. Moisture determination by digital moisture meter:
   i. Determine moisture of test samples in minimum 6 replicas.
   ii. Average the results of replicas

Compare the results: If there is difference between the results obtained, the average difference will be the correction factor (+ve or -ve). Moisture meter shall have a maximum sensitivity of ± 0.2 percent.

Moisture metre calibration shall be undertaken before start of every procurement seasons. Calibrated Moisture metres shall be fixed calibration factor slip on each moisture metre and shall be properly sealed to avoid any tempering with the Moisture metre.

2. Calibration of Counter Scale with weight Box, Potable Balance and Physical Balance 5 mg sensitivity along with weight Box:

Calibration of Counter Scale, Potable Balance with weight Box and Physical Balance along with weight Box should be calibrated and properly stamped from the Weight and Measurement Department as per the provisions before onset of procurement seasons and certificate of calibration shall be kept for record.

Remarks: Divisional Manager/ AGM(QC) of the concerned divisional office shall ensure calibration of all the moisture meters, counter scales, potable balance & physical balance with weight box before the start of procurement season.

(7) Standard Operating Procedure (SOP) for Personal Protective and Safety Equipment for Pesticide Operators

Immense care should be taken while handling and spraying pesticides. Pesticides can enter the body through four routes of exposure including skin, eyes, mouth and inhalation. Skin contact is the most common cause of pesticide poisoning for applicators and some pesticides enter the body through the skin quite readily. At the time of mixing, pesticides are more concentrated and the likelihood of injury is increased during this time. Some parts of the body absorb pesticides extremely fast (within a few minutes) and need extra protection. Two such areas are the head and body area between the navel and about mid-thigh. If any pesticide is spilled in this area, wash it off immediately and change clothing. It is best to avoid direct contact with pesticides by wearing the proper Personal Protective Equipment (PPE) as specified on the label of the pesticide intend to use.

- All personnel involved in the mixing, application, storage and cleanup of pesticides should be properly trained and authorized for the job.
- Equipment used in the application of the pesticides should be inspected and calibrated before use.
- Personnel mixing and applying the pesticide should wear appropriate protective clothing and safety equipment.

Personal Protective Equipment

Gloves for Handling Pesticides: IS 6994: Part 8: 2021/ISO 18889: 2019

Properly protecting the body when handling pesticides can decrease the risk a pesticide poses to health and safety. Pesticide handling includes mixing, loading, or applying pesticides, all of which could expose hands to chemicals. Using the right gloves is essential because the majority of pesticide exposure occurs through the skin.

- Always wear unlined, **elbow-length** gloves when handling pesticides.
- Glove Materials: materials often used or considered for use when handling pesticides should be **chemical resistant** and **waterproof**, if possible, use **Barrier laminate** or **Butyl Rubber** ≥ 14 mils thickness (1 mil = 0.001 inch) are resistant to most pesticides and offer the greatest protection. They consist of two or more different materials that are laminated or blended together.
- Never use **leather or cotton gloves**. These types of gloves can be more hazardous than no protection at all because they absorb and hold the pesticide close to skin for long periods of time.
- When finished, wash gloves with detergent and water thoroughly before removing them and dry properly before storing.

Body Covering

Personnel handling pesticides should always wear long pants and a long-sleeved shirt, face mask, shoes, and socks. Applicators should reserve one set of clothing for pesticide use only. Launder and store separately from all other clothing. The hair and skin on your neck and head must be protected too. This is most important in situations where exposure from overhead dusts or sprays is possible, such as hand-spraying uphill or when flagging for aerial applications.

Goggles or Face Shield: IS:5983

Always wear shielded safety goggles or full-face respirator when handling pesticides. In high exposure situations when both face and eye protection are needed, a face shield can be worn over goggles. Clean them after each use.

Respiratory Protective Equipment: IS:9623: 2008

The purpose of respiratory protection is to ensure that the workers are adequately protected from inhaling excessive airborne contaminants or air, which is oxygen deficient. Workers should not be exposed to airborne contaminants in excess of their permissible exposure levels, where possible.

Appropriate respiratory protection shall be used by workers when exposed to oxygen deficient atmospheres or to airborne concentrations of contaminants in excess of or likely to exceed the permissible exposure levels. Where the airborne contaminants exceed half the permissible exposure levels, the use of appropriate respirators is advisable.

General manager(R) / Divisional Manager concerned shall ensure availability of adequate nos of Safety Equipment for Pesticide Operators in all the depots.

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Signage

STANDARD OPERATING PROCEDURE FOR SIGNAGE

A depot should have proper signage, so that a visitor in the depot can navigate to his desired place. Every Depot is different, so signage consisting of clear navigation signs is important in view of large campus area of the depot.

1. **Every depot should have map of the depot campus pasted on a board at a prominent place near the entry gate.**
2. **Signage should clearly navigate a visitor to common places like toilet, drinking water, office block and weighbridge etc.**
3. **The pictograms to be used for various utilities are also given below.**
4. **Trucks entering the depot should get clear direction of the shed allotted to them. One-way signboard could be placed at congested areas were passing of two trucks is not possible/ advisable.**
5. **Appropriate signs must be placed were hazardous chemical are stored.**
6. **All statutory notice boards like RTI, EPF compliance, labour laws compliance etc. should be positioned at prominent places as per the mandate of the extant statue (act).**
7. **Signage should comply Official Language Act (Rajabasha Adhiniyam) 1976 amended from time to time.**
8. **Clear and bold marking of damaged food grain storage area be done in the depot so that it does not get mixed up with sound grains.**
9. **Contact details of important officers of corporation may also be displayed prominently.**
10. **Quality inspection procedure and the appeal procedure in the case of rejection should be prominently displayed in the depot.**
11. **Details of refraction must be displayed in the lab and at the prominent place of the depot so that there is no confusion in the quality parameters.**
12. **Emergency contact numbers in case of fire hazards, accidents, theft and pilferage should be visible at multiple places inside the depot.**

Storage Division (Depot Map, Annexure-XIII)

Annexure XIV (Standard Signs)

International Organization for Standardization technical standard for graphical hazard symbols on hazard and safety signs (ISO 7010)

FIRST AID

EMERGENCY CONTACT

FIRE EXTINGUISHER

FIRE ALARM

WEARING MASK

NOT LITTERING

NO SPITTING

FLAMABLE PRODUCTS

NO SMOKING

NO OPENN FIRE

GENERAL STOP

Other signage with source

Restroom signage
From clipart library
google

Drinking water sign
From clipart library

Weigh bridge sign
From
shutterstock.com

Staff room or labour
restroom
From pininterest

shutterstock.com · 210860863

Toilet rooms
Shutterstock.com

Maintenance room
From 5s today.com

CCTV surveillance room
S5.today.com

shutterstock.com · 1810738033

OFFICE BLOCK
Shutterstock.com

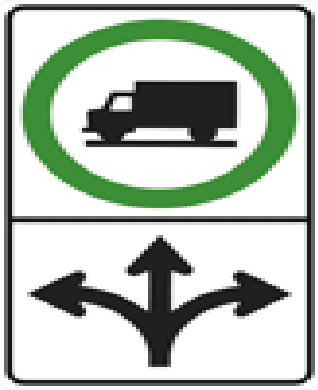
CHEMICAL STORAGE ROOM
Shutterstock .com

Quality control lab
International laboratory

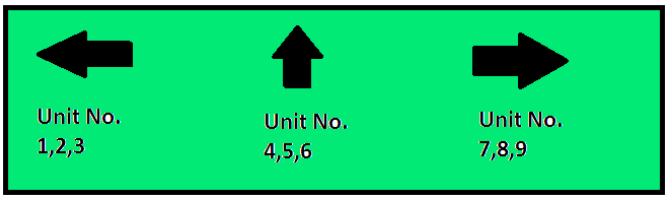
TOXIC CHEMICAL

SIGNAGE OF PARKING AREA

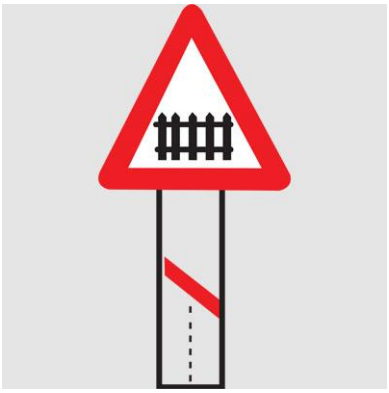
SIGNAGE OF SPEED LIMIT



SIGNAGE OF PARTICULAR DIRECTION FOR TRUCKS



SIGNAGE FOR UNITS/SHEDS



SIGNAGE FOR Railway Crossing

General Division (Housekeeping)

Dustbins for Organic and In-organic Waste

1. **Purpose**:

The purpose of the Standard Operating Procedure (SOP) for Solid Waste Management (SWM) in Organisation is to provide a practically implementable procedure and direction for scientific management of waste generated, to maintain a clean campus and transform 'waste' into 'wealth'.

2. **Scope**.

This Procedure applies to all units of the organization, both Hqrs., Zonal Offices, Regional Offices, Divisional Offices and Depots, including the campus. These are all hereinafter collectively referred to as the 'Organization'.

The intent of the SOP is to enable create cleanest, hygienic and environment-friendly working and living conditions for everyone on the campus and adopt the principles of Solid Waste Management that are 'Refuse, Reuse, Recycle, Recover and Regenerate (5R s)' for managing the waste

3. **Responsibility**

- **Personnel Involved in Waste Management in a Campus**: A sanitation team along with a Team leader or the sanitation in-charge which will be nominated by the Head of the Institution/ Office/ Depot of the campus is the owner of this SOP and is responsible to maintain the campus in accordance with the SOP guidelines.

- **Managers and Supervisors**: The head of the Institution/Office/Depot or the designated authority will also nominate a suitable person who is responsible for ensuring their staff's compliance and regular auditing with the procedure. He will also be responsible for liaising with concerned local civil department for disposal of waste from Institution/Office/ Depot.

4. **Planning**

The team leader in consultation with the members should identify the sources of waste, its type and quantity generated along with its present system of disposal, shall draw a 'plan' for scientific SWM.

5. **Awareness Generation:**

Awareness creation by Displaying adequate sign boards at appropriate places across the Institution/depot/office to prompt action.

1) There should be three types of dustbins – wet waste in the **green** bin, recyclable waste in the **blue** bin and hazardous waste in the **red** bin.

2) The dustbins should be positioned in convenient locations for easy access which would facilitate in maximum utilization.
3) Banners should be in position in English, Hindi and local language to create maximum public awareness.

6. **Waste Segregation and Collection**

Segregation of the waste at source i.e. primary segregation by putting the waste in the appropriate bins i.e. wet waste in the green bin, recyclable waste in the blue bin and hazardous waste in the red bin. Appropriate segregation of the type of waste and collection of the same in separate bins for processing is crucial.

7. **Waste Treatment and Disposal**

There should be a robust mechanism for disposal of the waste. Solar compost machines may be installed to decompose the organic waste to manure. Further, disposal of waste may be done in collaboration with local municipal authorities.

- Use source segregation mechanism at the source of the waste to separate organic, inorganic & recyclable.
- Use composting method to compost the organic waste at source , within the campus.
- Send the recyclable waste to scrap dealer or reuse it if possible.
- Only send the wastes which are not recyclable or compostable to the landfill.

8. **Reporting Mechanism**

- **Daily entry has to be made** by each team of sanitation workers in the record placed at a common location.
- The inspecting officer shall verify such works, randomly**.**

9. Best maintained offices/ premises should be identified & rewarded on regular basis.

First-Aid and Medical Incidental Management

1. **Purpose**.

The purpose of this SOP is to ensure availability of First Aid Facility in FCI units of every level. It is prepared taking inspiration from provisions of Health and Welfare at Work (General Application) Regulations 2007.

2. **Scope**.

This SOP applies to all units of the organization, Hqrs., Zonal Offices, Regional Offices, Divisional Offices and Depots, including the campus. These are all hereinafter collectively referred to as the 'Organization'.

The Scope of the procedure includes:

- Responsibilities
- Provision of First Aid Supplies
- How to access Occupational First Aid
- How to request an ambulance
- Non-emergency injury response
- Reporting of Incidents
- Maintenance of First Aid Equipment and supplies
- Records

3. **Responsibilities**.

(a) The Divisional Manager of the corporation shall;

- Will identify the suitable persons (preferably 12th with science stream) who will be imparted first aid training. The persons should be identified Institution/Office/ Depot wise so that after imparting training, they will be deployed at their place of posting.
- Ensure there are an adequate number of personnel trained in Occupational First Aid from organisations like St. John's Ambulance or any near Govt. Hospital which are providing such type of training.
- Provide and maintain suitably marked, easily accessible first-aid equipment, as is adequate and appropriate in the circumstances for enabling first-aid to be given to persons.
- Maintain records of all qualified FCI/Departmental Occupational First Aiders and list same on the Webpage.
- refresher training/periodical training to Occupational First Aiders on regular basis.
- Be responsible for updating all health and safety policies in response to changes in legislation and local developments.

- It would be the responsibility of the Head of the Office of the FCI Unit to ensure the above parameters for the offices higher than Divisional Office.

(b) The units shall be responsible for identifying appropriate personnel to attend Occupational First Aid training and to respond to first aid incidents. If a First Aider leaves FCI or no longer wishes to participate in the FCI first aid Team. They should seek a replacement from among their staff and forward that name Medical officer.

(c) Occupational First Aid Trained Personnel shall:

- Respond to incidents requiring First Aid.
- Report any incidents requiring First Aid to the Health and Safety Office/ Medical unit as is practicable after the event.

4. **<u>Provision of First Aid Supplies</u>**.

(a) Fully stocked First Aid Boxes are typically provided in the foyer of each building within the campuses.

(b) All qualified First Aiders are provided with a key to access the wall mounted first aid boxes on their Units. The keys for each units are keyed alike so the First Aiders can open boxes in any building across their campus.

(c) First Aid boxes not under the control of the Health & Safety office/ medical units are the responsibility of the local Campus In-charge and should be managed to ensure contents are appropriate to the risk and within expiry date.

(d) Defibrillators are provided at various locations on all campuses,

5. **<u>How to Access Occupational First Aid</u>**.

A qualified First Aider is defined as a person having successfully completed a first aid course, or equivalent refresher course.

(a) A list of qualified First Aiders and their telephone numbers is typically displayed next to the first aid box in the foyer of each building. In the event that a first-aider is required, the injured party or their helper should call the number listed giving clear details of the location of the accident/ incident and a brief description of the nature of the injuries. If no first-aider is available, then Head of the Office can be informed.

(b) The caller or other by-standers should remain with the injured party until the arrival of the first-aider.

(c) After office hours, a member of the security team, trained in Occupational First Aid will respond to the call.

6. **<u>How to request an Ambulance</u>**.

Where, in the opinion of a First-aider, a member of staff should attend a Hospital A&E Department/ Rapid Injury Clinic the following procedures apply:

(a) **Where Emergency Ambulance Assistance is required**:

First Aider should immediately contact Emergency Services directly and call for ambulance as time is a crucial factor in such situation. The same may be intimated to administrative head of the FCI Unit and to security guard for streamlining transportation process to hospital.

There should be wide display of phone numbers of Emergency services in the public area with convenient display for all.

7. **Non-Emergency Injury Response**.

Where, in the opinion of the First Aider, the injured party does not require ambulance assistance, they should be advised to attend the Medical Clinic in the associated Unit/ Zonal/Hqrs. Office.

It is preferable that the clinic has facility for x-ray, laboratory tests and provides a full range of urgent care services.

The office should provide vehicle for transporting the patient from work place to the clinic.

8. **Reporting of Injuries/ Incidents**.

In the case of a fatality, the Administrative Authorities must immediately inform the concerned local authorities.

9. **Maintenance of First Aid Equipment and Supplies**.

Health & Safety Office/ Medical Cell manage First Aid Boxes are typically located in foyers of office buildings.

Typical contents of First Aid Box are given at Appendix-1.

10. **Records**.

Written records of the dates of all first aid training, including refresher training are kept by the Medical officer of the corporation.

Records of all cases treated by the first aider are kept in the Health & Safety Office/ Medical Unit, respecting their confidential nature. These records are retained for a maximum period of 10 years.

11.

a) There should be a First Aid box/Medical Kit in every depot to address immediate preliminary medical needs that may arise due to operational activities or other reasons. Manager (Depot) or Depot in-charge would be custodian of the First Aid Box/ medical kit and would ensure that it remains accessible at all time as requirement for the same may arise at any time. The medical kit may be put inside a transparent box so the one need not wait for keys in case of emergency use. There should be provision for stretcher in Depots and offices.

b) Stretchers should be available in Depots and offices so that same may be put in use in case of any medical emergency.

c) Divisional Manager should ensure the same for Divisional Office and Depots under his jurisdiction. Further, Divisional Manager should comment in depot inspection report about status of provision for First Aid box/Medical Kit in the depots so that SOP may be implemented in letter and spirit.

d) First aid requirement for Administrative Units and Food Storage Depots are given at Appendix II and III respectively.

Appendix-I

TYPICAL CONTENTS OF FIRST AID BOX

Materials	First Aid Box Contents		
	1-10 Persons	11-25 Persons	26-50 Persons
Adhesive Plasters	20	20	40
Sterile Eye Pads (No. 16) (bandage attached)	02	02	04
Individually Wrapped Triangular Bandages	02	06	06
Crepe bandage Flesh Colour	01	02	03
Safety Pins	06	06	06
Individually Wrapped Sterile Un-medicated Wound Dressings Medium (No. 8) (10 x 08 cms)	02	02	04
Individually Wrapped Sterile Un-medicated Wound Dressings Large (No. 9) (13 x 09 cms)	02	06	08
Individually Wrapped Sterile Un-medicated Wound Dressings Extra Large (No. 3) (28 x 17.5 cms)	02	03	04
Individually Wrapped Disinfectant Wipes	10	20	40
Paramedic Shears	01	01	01
Examination Gloves Pairs	05	10	10
Sterile water where there is no clear running water	01 x 500 ml	02 x 500 ml	02 x 500 ml
Pocket Face Mask	01	01	01
Water Based Burns Dressing Small (10 x 10 cms)	01	01	01
Water Based Burns Dressing Large	01	01	01
Crepe Bandage (7 cm)	01	02	03
Scissors	01	02	03
Ice Packs	02	04	06
Stretcher	02	04	06
Soframycin/ Betadine Ointment	01	02	03

Note:-

1. Where mains tap water is not readily available for eye irrigation, sterile water or sterile normal saline (0.9%) in sealed disposable containers should be provided. Each container should hold at least 20 ml and should be discarded once the seal is broken. Eye bath/ eye cups/ refillable containers should not be used for eye irrigation due to risk of cross infection. The container should be CE marked.

2. Where mains tap water is not readily available for cooling burnt area.

3. The requirements for sterile water and water based burns dressings as per note 1 & 2 above are only where there is not a wholesome supply of tap water available.

4. Strip of Disprin tablets to be present in all the kits.

Appendix-II

FIRST AID REQUIREMENTS FOR LOW HAZARD WORK (ADMINISTRATIVE UNITS)

Number of Workers at Work Site per Shift	Close Work Site (Upto 20 minutes)	Distant Work site (20 – 40 minutes)	Isolated work site (more than 40 minutes)
01	Basic First Aid Kit	Basic First Aid Kit	Basic First Aid Kit
02 – 09	No. 1 First Aid Kit	1 Emergency First Aider No. 2 First Aid Kit	1 Standard First Aider No. 2 First Aid Kit
10 – 49	1 Emergency First Aider No. 1 First Aid Kit	1 Emergency First Aider No. 2 First Aid Kit	1 Standard First Aider No. 2 First Aid Kit
50 – 99	1 Emergency First Aider 1 Standard First Aider No. 2 First Aid Kit	1 Emergency First Aider 1 Standard First Aider No. 2 First Aid Kit	2 Standard First Aiders No. 2 First Aid Kit
100 – 199	1 Emergency First Aider 2 Standard First Aider No. 3 First Aid Kit Designated area for first aid services	1 Emergency First Aider 2 Standard First Aiders No. 3 First Aid Kit 3 blankets, stretcher, splints Designated area for first aid services	2 Standard First Aiders No. 3 First Aid Kit 3 blankets, stretcher, splints Designated area for first aid services
200 or more	1 Emergency First Aider 2 Standard First Aider Plus 1 Standard First Aider for each additional increment of 1 to 100 workers No. 3 First Aid Kit Designated area for first aid services	1 Emergency First Aider 2 Standard First Aiders Plus 1 Standard First Aider for each additional increment of 1 to 100 workers No. 3 First Aid Kit 3 blankets, stretcher, splints Designated area for first aid services	2 Standard First Aiders Plus 1 Standard First Aider for each increment of 1 to 100 workers No. 3 First Aid Kit 3 blankets, stretcher, splints Designated area for first aid services

Note:- Contents for Basic First Aid Kit is given at Appendix-I.

Appendix-III

FIRST AID REQUIREMENTS FOR HIGH HAZARD WORK (FIELD STORAGE DEPOTS)

Number of Workers at Work Site per Shift	Close Work Site (Upto 20 minutes)	Distant Work site (20 – 40 minutes)	Isolated work site (more than 40 minutes)
01	Critical Care First Aid Kit	Critical Care First Aid Kit	Critical Care First Aid Kit
02 – 04	1 Emergency First Aider No. 1 First Aid Kit	1 Standard First Aider No. 2 First Aid Kit 3 blankets	1 Standard First Aider No. 2 First Aid Kit 3 blankets
05 – 09	1 Emergency First Aider 1 Standard First Aider No. 2 First Aid Kit	2 Standard First Aiders No. 2 First Aid Kit 3 blankets	2 Standard First Aiders No. 2 First Aid Kit 3 blankets
10 – 19	1 Emergency First Aider 1 Standard First Aider No. 2 First Aid Kit 3 blankets	2 Standard First Aiders No. 3 First Aid Kit 3 blankets, stretcher, splints	2 Standard First Aiders No. 3 First Aid Kit 3 blankets, stretcher, splints
20 – 49	2 Emergency First Aiders 1 Standard First Aider No. 2 First Aid Kit 3 blankets	2 Standard First Aiders No. 3 First Aid Kit 3 blankets, stretcher, splints	2 Standard First Aiders No. 3 First Aid Kit 3 blankets, stretcher, splints
50 – 99	2 Emergency First Aiders 2 Standard First Aiders No. 3 First Aid Kit 3 blankets	2 Emergency First Aiders 3 Standard First Aiders No. 3 First Aid Kit 3 blankets, stretcher, splints	2 Standard First Aiders 1 Advanced First Aider No. 3 First Aid Kit 3 blankets, stretcher, splints
100 – 199	2 Emergency First Aiders 2 Standard First Aiders 1 Advanced First Aider First Aid Room	2 Standard First Aiders 1 Advanced First Aider First Aid Room	2 Standard First Aiders 1 Advanced First Aider First Aid Room
200 or more	2 Emergency First Aiders 2 Standard First Aiders 1 Nurse or 1 ACP Plus 1 Standard First Aider for each additional increment of 1 to 100 workers First Aid Room	2 Standard First Aiders 1 Nurse or 1 ACP Plus 1 Standard First Aider for each additional increment of 1 to 100 workers First Aid Room	2 Standard First Aiders 1 Advanced First Aider 1 Nurse or 1 ACP Plus 1 Standard First Aider for each additional increment of 1 to 100 workers First Aid Room

Note:

1. Number of First Aiders indicated is for a shift at all times.
2. Besides, contents of Basic First Aid Kit as given at Appendix-I, the following items to be included in Critical Care First Aid Kit:-
   (a) Ambu's Bag.
   (b) Cardio-Pulmonary Resuscitation (CPR) Kit.
   (c) O_2 Cylinder (Small Size) – 01 No.

Right to Information

SOP For Standard Notice Board

The detailed SOP regarding above for statutory compliance alongwith the direction for languages is as under:

1. CPIO/FAA at FCI, Hqrs/IFS/RO/Divisional Office is to be nominated as per EP Circular No. EP-25-2017-15 dated 13.06.2017 to ensure timely information and uniformity all over India.

2. Details of CPIO/FAA nominated at Hqrs/ZO/RO/Divisional Office/Depot (Prototypes enclosed) level to be displayed on Standard Notice Board. The size of the board be standardized as 3ft x 2ft or in the proportionate ratio of 3:2 incase of insufficient space and to be displayed at prominent space.

3. Background colour of the board should be **bright sobre blue**.
4. Font Color should be **white.**

3. Details of CPIO/FAA should regularly be updated consequent upon transfer/superannuation/resignation etc. of CPIO/FAA.

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<tr><td colspan="2">भारतीय खाद्य निगम
मुख्यालय, नई दिल्ली
सूचना का अधिकार अधिनियम-2005</td></tr>
<tr><td>केंद्रीय सूचना अधिकारी (CPIO)</td><td>प्रथम अपीलीय अधिकारी (FAA)</td></tr>
<tr><td>नाम: संजीव कुमार
पद: उप- महाप्रबन्धक (सूचना का अधिकार)
दूरभाष: 011-43527393
ई-मेल: dgmrti.fci@gov.in
पता: 16-20, बाराखम्बा लेन, नई दिल्ली-110001</td><td>नाम: कुमुद कुमार बरुवा
पद: महाप्रबन्धक (सूचना का अधिकार)
दूरभाष:011-43527493
ई-मेल: dgmrti.fci@gov.in
पता: 16-20 बाराखम्बा लेन, नई दिल्ली-110001</td></tr>
<tr><td colspan="2">FOOD CORPORATION OF INDIA
Headquarters, New Delhi
Right to information Act-2005</td></tr>
<tr><td>Central Public Information Officer (CPIO)</td><td>First Appellate Authority (FAA)</td></tr>
<tr><td>Name: Sanjeev Kumar
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Email: dgmrti.fci@gov.in
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Designation: General Manager (RTI)
Contact Number:011-43527493
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Address: 16-20, Barakhamba Lane, New Delhi 110001</td></tr>
</table>

भारतीय खाद्य निगम

मुख्यालय, नई दिल्ली

सूचना का अधिकार अधिनियम-2005

केंद्रीय सूचना अधिकारी (CPIO)	प्रथम अपीलीय अधिकारी (FAA)
नाम: उप- महाप्रबन्धक (सू.का अ.) का नाम पद: उप- महाप्रबन्धक (सूचना का अधिकार) दूरभाष: ई-मेल: आंचलिक कार्यालय का पता:	नाम: महाप्रबन्धक (सू.का अ.) का नाम पद: महाप्रबन्धक (सूचना का अधिकार) दूरभाष: ई-मेल: आंचलिक कार्यालय का पता:

FOOD CORPORATION OF INDIA
Zonal Office, North
Right to information Act-2005

Central Public Information Officer (CPIO)	First Appellate Authority (FAA)
Name: Name of AGM (RTI) Designation: Asst. General Manager (RTI) Contact Number: Email: Address of Regional Office:	Name: Name of DGM(Region) Designation: Dy. General Manager (Region) Contact Number: Email: Address of Regional Office:

भारतीय खाद्य निगम

मुख्यालय, नई दिल्ली

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केंद्रीय सूचना अधिकारी (CPIO)	प्रथम अपीलीय अधिकारी (FAA)
नाम: सहायक महाप्रबन्धक (सू.का अ.) का नाम पद: सहायक महाप्रबन्धक (सूचना का अधिकार) दूरभाष: ई-मेल: क्षेत्रीय कार्यालय का पता:	नाम: उप- महाप्रबन्धक (क्षेत्र) का नाम पद: उप- महाप्रबन्धक (क्षेत्र) दूरभाष: ई-मेल: क्षेत्रीय कार्यालय का पता:

FOOD CORPORATION OF INDIA
Regional Office, Delhi
Right to information Act-2005

Central Public Information Officer (CPIO)	First Appellate Authority (FAA)
Name: Name of AGM (RTI) Designation: Asst. General Manager (RTI) Contact Number: Email: Address of Regional Office:	Name: Name of DGM(Region) Designation: Dy. General Manager (Region) Contact Number: Email: Address of Regional Office:

भारतीय खाद्य निगम
मुख्यालय, नई दिल्ली
सूचना का अधिकार अधिनियम-2005

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FOOD CORPORATION OF INDIA
Divisional Office, Mayapuri
Right to information Act-2005

Central Public Information Officer (CPIO)	First Appellate Authority (FAA)
Name: Name of Manager (RTI) Designation: Manager (RTI) Contact Number: Email: Address of Divisional Office:	Name: Name of Divisional Manager Designation: Divisional Manager Contact Number: Email: Address of Divisional Office:

भारतीय खाद्य निगम

मुख्यालय, नई दिल्ली

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FOOD CORPORATION OF INDIA

Depot: Mayapuri

Right to information Act-2005

Central Public Information Officer (CPIO)	First Appellate Authority (FAA)
Name: Name of Manager RTI Designation: Manager (RTI) Contact Number: Email: Address of Divisional Office:	Name: Name of Divisional Manager Designation: Divisional Manager Contact Number: Email: Address of Divisional Office: