

**HARYANA STATE WAREHOUSING  
CORPORATION**

**HEAD OFFICE PANCHKULA**



***TECHNICAL BRANCH***

## LIST OF WORK INSTRUCTIONS

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**WORK INSTRUCTIONS FOR SAMPLING, ANALYSIS, MOISTURE DETERMINATION, CLASSIFICATION CATEGORIZATION & GRADING OF STOCKS ON RECEIPT / ISSUE**

S. No	Activity	Description	Responsibility	Reference														
1	<b>SAMPLING</b>	<p>i) Sampling shall be done for fumigable stocks except certified seeds, Viability certificate is to be checked in case of seeds. ii) representative samples shall be drawn in case of</p> <p><b>A) BAGGED CUSTOM</b></p> <p>i) Sample shall be drawing with "PARKHI" in case of foodgrains only. In case of other commodities sample shall be drawn as per the <b>CODE OF STORAGE PRACTICES</b>.</p> <p>ii) bags shall be selected at random in zig-zag position from all sides and top layer of the stack after removing one or two bags.</p> <p>iii) the number of bags to be sampled shall be as given below:</p> <table border="0"> <tr> <td><b>LOT SIZE</b></td> <td><b>NO OF BAGS</b></td> </tr> <tr> <td>Upto 100</td> <td>10% or minimum 5 bags</td> </tr> <tr> <td>Above 100</td> <td>5 % or 50 Bags</td> </tr> </table> <p><b>B) BULK CUSTOM</b> Sample shall be collected at random from different sides, points and depth as per the lot size given below</p> <table border="0"> <tr> <td><b>LOT SIZE</b></td> <td><b>NO OF BAGS</b></td> </tr> <tr> <td>Upto 300 MT</td> <td>30% different sports</td> </tr> <tr> <td>Over 300 MT</td> <td>50% different sports</td> </tr> <tr> <td>Over 1000 MT</td> <td>100% different sports</td> </tr> </table> <p><b>C) PACKED COMMODITY</b> Non foodgrain cartons, wooden chest, sealed tins, lined gunnies, drums shall be accepted on "SAID."</p> <p><b>D) Preparation of representative sample</b></p> <p><b>A) DURING RECEIPT OPERATION</b></p> <p>i) 2 Kg. sample shall be drawn from all sides of each lot/stack with the help of Parkhi on an</p>	<b>LOT SIZE</b>	<b>NO OF BAGS</b>	Upto 100	10% or minimum 5 bags	Above 100	5 % or 50 Bags	<b>LOT SIZE</b>	<b>NO OF BAGS</b>	Upto 300 MT	30% different sports	Over 300 MT	50% different sports	Over 1000 MT	100% different sports	<b>Technical Incharge</b>	<b>ID/TECH/CSP</b>
<b>LOT SIZE</b>	<b>NO OF BAGS</b>																	
Upto 100	10% or minimum 5 bags																	
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Upto 300 MT	30% different sports																	
Over 300 MT	50% different sports																	
Over 1000 MT	100% different sports																	

		<p>enameled plate. It shall be mixed up thoroughly to prepare composite homogeneous representative sample and divided in to four parts weighing 500 gm each.</p> <p>ii) one sample shall be analyzed for infestation, categorization, grading and moisture contents and other three samples shall be filled in 3 sample bags having details of stock and signature of depositor and shall be sealed. One sample should be handed over to the depositor along with analysis report and other sample shall be preserved as a reference sample.</p> <p>iii) Sample shall be returned to the depositor at the time of delivery of full lot in case there is no dispute regarding quantity.</p> <p><b>B) DURING STORAGE</b> Only one representative sample shall be drawing for analysis, classification. Categorization by Technical Incharge in Fortnightly Inspection/ I.O. from R.O. / C.O.</p>		<p><b>F/TECH/32</b></p>
<p>2</p>	<p><b>DETERMINATION OF MOISTURE</b></p>	<p>i. Moisture content shall be recorded promptly for each LOT (At the time of receipt each lot shall comprise of the number of bags received in one vehicle – Wagon, Truck, Trailer bullock cart etc. and weighted average of moisture content of all the lots received in a stack shall be taken as receipt moisture of that particular stack.</p> <p>At the time of issue each lot shall comprise of number of bags delivered per day from each stack.</p> <p>ii. Moisture content shall be determined by using moisture meter conforming to IS specifications and by following the prescribed procedure given in the moisture meter manual.</p>		<p><b>F/TECH/32</b></p>

		<p>iii. Average receipt moisture content of the particular stack will be calculated as per following method: -</p> $\frac{n_1 m_1 + n_2 m_2 + \dots + n_r m_r}{n_1 + n_2 + \dots + n_r}$ <p><b>Where</b>  <b>n1 = Nos. of bags received in lot no. 1.</b>  <b>m1 = Moisture content of lot no. 1.</b>  <b>nr = Nos. of bags received in lot No. r.</b>  <b>mr = Moisture content of lot no.r</b></p> <p>iv. Similarly average moisture content at the time of delivery will be calculated in the same way mentioned above.</p> <p>v. Moisture content of each lot will be recorded in the moisture content register both at the time of receipt and issue.</p>								
		<p>iv Moisture content of each lot received/issued on a particular date will also be got authenticated from the depositor's representative whenever in position. In other cases, where depositor's representative is not available and or stock having abnormal moisture content laid down procedure shall be followed.</p>		ED/TECH/01						
3	CLASSIFICATION	<p>The sample shall be checked to know if any live infestation is present therein with the help of sieve set. The result shall be classified as given: -</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">NIL</td> <td style="width: 50%;">CLEAR</td> </tr> <tr> <td>UPTO 2</td> <td>FEW</td> </tr> <tr> <td>ABOVE 2</td> <td>HEAVY</td> </tr> </table> <p>Stocks received in infested condition shall be fumigated in the line with the procedure for fumigation.</p>	NIL	CLEAR	UPTO 2	FEW	ABOVE 2	HEAVY	Technical Incharge	
NIL	CLEAR									
UPTO 2	FEW									
ABOVE 2	HEAVY									
4.	CATEGORIZATION	<p>To analyze the sample the equipment required are physical balance, ruler sieve set, scoops, enamel plates, brushes etc. Categorization of the stock shall be</p>	Technical Incharge	ID/TECH.CSP						

		<p>done on volume or weight basis.</p> <p><b>a) WHEAT / MILO . JOWARD / PADDY</b></p> <p>i) Take 20 gms of representative sample for analysis.</p> <p>ii) Spread the sample evenly on the enamel tray.</p> <p>iii) Segregate all different refractions as given in ODE OF STORAGE PRACTICES.</p> <p>iv. Calculate the percentage of each refraction.</p> <p><b>(FORMULAE)</b>  <b>Weight of each refraction x 100</b>          -----  <b>20</b></p>		
<p>5</p>	<p>GRADING</p>	<p>i) The sample of 500 gm, shall be poured over the sieves. the sieve with the largest perforation at the top.</p> <p>ii) The sieve shall be agitated to strain out the foreign matter at various level.</p> <p>iii) After separating the sieves foreign matter shall be picked up and the foreign matter collected on the bottom pan shall be added to work out the percentage of foreign matter.</p> <p>iv) The contents of the sieves may then be mixed together and spread out evenly on a glass surface in thin layer.</p> <p>v) From this exactly 50 gm shall be scooped out from different sides and middle.</p> <p>vi) Then different refractions shall be separated and graded as per CSP Uniform Specifications decided by Government every year.</p>	<p>Technical Incharge</p>	<p><b>Uniform Specification by Govt.</b></p>

<b>WORK INSTRUCTIONS FOR STANDARDIZATION OF NON STANDARD BAGS</b>				
<b>S. No</b>	<b>ACTIVITY</b>	<b>DESCRIPTION</b>	<b>RESPONSIBILITY</b>	<b>REFERENCE</b>
1	DEPOSITOR'S CONSENT	Standardization shall be done with the written request of the depositor.	Warehouse Manager	
2	DE-STACKING	i) Non standard bags shall be de-stacked neatly to maintain the countability of the balance stock.  ii) Sufficient number of bags for days operation will be taken for standardization.	Godown Incharge	
3	WEIGHMENT	i) Check weighing scale before carrying out standardization.  ii) Gunny will be changed if unserviceable.  iii) Weighment of the bag will be done on weighing scale. Each bag is standardized to ensure no variation in weight.	Godown Incharge	
4	STACKING	Stacking of standardization bags shall be done properly.	Godown Incharge	
5	STANDARDIZATION	Standardization loss is obtained by deducting the total net weight of the standardized bags obtained from the total receipt / branded weights of the bags issued for standardization.	Godown Incharge	
6	AUTHENTICATION	Authentication of depositors representative may be taken on standardization report.	Warehouse Manager	F/TECH/23

**WORK INSTRUCTIONS FOR SPRAYING**

<b>S. No</b>	<b>ACTIVITY</b>	<b>DESCRIPTION</b>	<b>RESPONSIBILITY</b>	<b>REFERENCE</b>
1	Calculation of insecticidal Chemical	<p><b>(A) Malathion (50% EC): -</b>                      a) Dilution: 1: 100 (in water)                      b) Dosage: 3 litres/100 sq.mt for surface treatment on stocks.                      c) Frequency: 2 weeks</p> <p><b>(B) D.D.V.P. (76% EC)</b>                      a) Dilution 1:150 (in water)                      b) Dosage                      i) 3 litres/100 sq.mt for walls and vacant areas.                      ii) 1 litre/100 cu.mt for air charging.                      c) Frequency: Once in 3 weeks.</p> <p><b>(C) Deltamethrin (2.5% WP): -</b>                      a) Dilution: 120 gms in 3 litres of water.                      b) Dosage: 3 Litres/100 sq.mt for surface treatment, walls etc.                      c) Frequency: once in three months.</p> <p><b>For Pest Control Services</b></p> <p><b>(D) Baygon Conc. / Blattanex / Propoxur</b>                      a) Dilution : 1.40 (in water)                      b) Dosage: 3 Litres /100 sq.mt for surface treatment.                      c) Frequency: As &amp; when required for controlling cockroaches, flies and mosquitoes etc.</p> <p><b>(E) Chloropyrifos</b>                      a) Dilution: 1:19 (in water)                      b) Dosage: 3 litres/100 sq.mt                      c) Frequency: as &amp; when required for termite control.</p> <p><b>(F) Cyfluthrin</b>                      a) Dilution: 8 ml/litre (in water)                      b) Dosage: 40 ml/100 sq.mt for surface treatment.                      c) Frequency: As per agreed terms with the client.</p> <p><b>(H) Deltamethrin Flow</b>                      a) Dilution: 20 ml/litre (in water)                      b) Dosage: 3 litres/100 sqmt                      c) Frequency: As per agreed terms with the client.</p>	Warehouse Manager	



S. No	ACTIVITY	DESCRIPTION	RESPONSIBILITY	REFERENCE
2	PREPARATION FOR SPRAYING	i) Before undertaking spraying the area for treatment shall be swept cleaned and spillage collected to avoid contamination.  ii) The nozzle delivery pipe etc. of spraying machine should be checked for blockage, leakage etc.  iii) Spray solution shall be prepared by mixing chemical in water.	Technical / Pest Control Incharge.	
3	SPRAYING PROCESS	Spraying shall be carried out by the experienced personal by using spraying machines preferably in the afternoon.	Technical / Pest Control Incharge.	
4	POST SPRAYING ACTIVITY	i) Excess/unused chemical solution shall be used outside on verandah. ii) The exit doors shall be closed & sealed after spraying. iii. After use delivery pipe, nozzle etc. to be cleaned with running clean water through it.	Technical / Pest Control Incharge.	

**PRECAUTIONS: -**

1. Personal protective equipments like eye-shield, hand gloves etc. should be used during handling of chemicals & spraying operations.
2. Before spraying the sprayer and their nozzle should be checked thoroughly. Nozzle and lance should not be blown with mouth.
3. Spraying against the direction of wind should not be done and movement shall be backward while spraying to avoid body contact with treated area.
4. No chewing, smoking or drinking be done while spraying.
5. Spraying should not be done alone.
6. Hands and other parts of the body should be thoroughly washed with soap & water after treatment is over.
7. The containers used for keeping food materials should not be used for mixing the chemicals.
8. Empty pesticide containers should be crushed and disposed off as per the prescribed guidelines.
9. Godowns / rooms should be kept open for few hours before entry so that accumulated chemical fumes are diffused out.

10. In case of giddiness/ headache etc. the affected person shall be taken out in fresh air and shown to physician if needed.

11. First aid in cases of Poisoning: -

11.1 Symptom of chemical poisoning

- a) Dizziness & headache
- b) Vomiting
- c) visual disturbances
- d) Fatigueness
- e) Laboured breathing
- f) Suffocation
- g) Diarrhea

11.2 **First aid measure**

If necessary the patient should be taken to physical.

i) **Inhaled Positioning**

- a) Patient shall be carried to fresh air.
- b) All tight clothing shall be loosened.
- c) Artificial respiration shall be resorted to if breathing is stopped or irregular.

ii) **Skin Contamination**

- a) The skin shall be drenched with water.
- b) Stream of water shall be applied while removing contaminated clothing.
- c) The skin shall be cleaned rapidly with thoroughly with water.

iii) **Eye contamination**

- a) Eye lids shall be opened and washed with gentle stream of running water until physical arrives.
- b) No chemical shall be used as they may aggravate the injury.

**DESCRIPTION**

<b>WORK INSTRUCTIONS FOR FUMIGATION WITH ALUMINIUM PHOSPHIDE</b>				
<b>S. No</b>	<b>ACTIVITY</b>	<b>DESCRIPTION</b>	<b>RESPONSIBILITY</b>	<b>REFERENCE</b>
1	Calculation of fumigant	Dosage of Aluminium Phosphide a) @ 90 gm /MT for cover fumigation b) @ 360 to 420 gm / MT cubic meter for shed fumigation	Technical Incharge.	
2	Minimum Exposure period	7 days	Technical Incharge	
3.	Application of fumigant	<p>(A) Cover Fumigation</p> <p>a) Distribute the pre-calculated dosage in 6 to 8 enameled / paper plates of at least 9” diameter (nor overlapping) and keep them beneath the crates &amp; sides. More attention is need to ensure proper sealing to avoid gas leakage at any cost. There is no need to put any tablets on top of the stacks. The places where crates / pallets are not being used as dunnage, distribution of tablets can be done on four sides of the stack using paper plates / paper bag / cloth bag with flat surface in a manner that tablets are not overlapping. In no case tablets should be kept directly on the bags.</p> <p>b) Spread the fumigation cover on the top of stacks and then cover the stacks.</p> <p>c) Seal the fumigation cover on the floor level using sand snakes only to prevent leakage of gas.</p> <p>d) check the gas leakage if any by appropriate method.</p> <p>e) Monitoring of Phosphine gas be done so as to ensure availability of lethal concentration till termination of the fumigation.</p>	<p>Technical Incharge</p> <p>Technical Incharge</p> <p>Technical Incharge</p> <p>Technical Incharge</p> <p>Technical Incharge</p>	

S. No	ACTIVITY	DESCRIPTION	RESPONSIBILITY	REFERENCE
4	<b>Post Fumigation</b>	<p><b>(B) Shed Fumigation</b>                      Sealing by paper pasting on ventilators and gates on both sides except exit door shall be done followed by application of fumigant (Aluminium Phosphide). Then exit door shall also be closed and sealed by paper pasting from outside.</p> <p>i) Remove the cover after completion of exposure period and fold properly.</p> <p>ii) Brush the bags thoroughly and clean the godown to remove dead insects and remove paper, enamel plate containing residue of ALP within 2 days.</p> <p>iii) Post fumigation spray of Malathion shall be given.</p>	<p>Technical Incharge.</p> <p>Technical Incharge.</p> <p>Technical Incharge.</p>	

**Precautions: -**

1. Personal protective equipments (PPE) like eye shield, hand gloves, etc. should be used during handling of fumigants.
2. Check the fumigation covers for cuts, holes, etc. and resort to repairing, if needed before putting on the stack.
3. Leave the site of fumigation as soon as the process is over.
4. Display "**DANGER**" symbols on the fumigated stack and exit door of the shed.
5. Entire operation of fumigation should be carried out in the presence of Technical Incharge.
6. After exposure period leave open the shed for few hours before entry of any person so that accumulated gas diffuses out.
7. Operators / Technical staff while handling chemicals shall not work with empty stomach.
8. Do not smoke/light match stick during entire fumigation operation and near the fumigated stack.
9. In case of gas leakage indicated by characteristic smell, strengthen the sealing.
10. Keep the fire-fighting equipment ready as gas is inflammable during the process of fumigation.
11. **First aid in case of Poisoning**

**11.1 Symptom of chemical poisoning**

- a) Dizziness & Headache
- b) Vomiting
- c) Visual disturbance
- d) Fatigueness
- e) Laborer breathing
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- c) The skin shall be cleaned rapidly and thoroughly with water.

**iii) Eye Contamination**

- a) Eye lids shall be opened and washed with gentle stream of running water until physician arrives.
- b) No chemical shall be used as they may aggravate the injury.

**WORK INSTRUCTIONS FOR SALVAGING**

S. No	ACTIVITY	DESCRIPTION	RESPONSIBILITY	REFERENCE
1	Intimation	i) The concerned depositor shall be informed of the fact in writing with copy to Regional / Corporation office / District Manager.  ii) In case the affected stock is under insurance claim Insurance Company shall be informed.	Warehouse Manager	
2	Segregation	Segregated bags should be kept in a single layer on tarpaulins or black polythene sheets with damaged portion on the upper side.	Technical Incharge / Godown Asstt.	
3	Process	i) The damaged portion shall be cut open along the water mark.  ii) The damaged stock then shall be carefully removed by suitable means to avoid mixing up with good stock.  iii) The salvaged good stock and damaged stock shall be spread in thin layers and thoroughly dried before rebagging Rice should be dried in shade only.		
4	Rebagging	i) Rebagging of damaged and caked stock and loose stock shall be done separately.  ii) Rain damaged gunnies shall not be used for rebagging of stock.  iii) Loss in quantity and its value during salvaging shall be intimated to HO/DO for onward submission to Insurance company and posting shall be done in internal Handling report.		F/TECH/24
5	Storage	Rebagged stocks shall be stored separately and distinctly from sound stocks.	Godown Asstt.	

WORK INSTRUCTIONS FOR DISPOSAL OF DAMAGED STOCKS				
S. No	ACTIVITY	DESCRIPTION	RESPONSIBILITY	REFERENCE
1	Sampling	<p>i) In case of damaged foodgrains 500 gm representative sample of identified stock shall be sent to Regional Lab within 7 days of receipt / detection in warehouse.</p> <p>ii) In case of fertilizer, sample shall be drawn by an appropriate officer of State Govt. and the same shall be tested as per FCO.</p>	Warehouse Manager, Technical Staff	WI/TECH/01  ED/TECH / (FCO 195)
2	Analysis & categorization of sample	<p>i) In case of foodgrain, sample shall be analyzed in Joint Technical Committee immediately and result shall be recorded as per FCI manual Chapter IV.</p> <p>ii) In case of fertilizer, on receipt of analysis report, the same shall be communicated to the depositor.</p>	Joint Technical Committee  Warehouse Manager	ED/TECH/02
3	Disposal	<p>i) In case of foodgrains, disposal of damaged stock shall be done as per prescribed guidelines.</p> <p>ii) In case of fertilizer, disposal of damaged stock shall be done as per prescribed guidelines under FCO.</p>	District Manager & Manager  District Manager & Manager	ED/TECH/02  ED/TECH (FCO 1985)

**Precautions: -**

1. All damaged stocks shall be stacked separately and marked as "NOT FOR ISSUE".
2. Intimation to the depositor shall be given immediately on receipt of damaged stocks.
3. Record of sampling / analysis shall be maintained at warehouse / RO level.
4. Time schedule of sampling / analysis and disposal shall be followed at warehouse / regional office.

**WORK INSTRUCTIONS FOR INVESTIGATION OF ABNORMAL STORAGE LOSSES**

S. No	ACTIVITY	DESCRIPTION	RESPONSIBILITY	REFERENCE
1	Study of the case	<p>The loss-gain documents, statements have to be examined on the following main aspects.</p> <ul style="list-style-type: none"> <li>a) Period of storage – Duration between receipt and issue dates.</li> <li>b) Moisture content: - The moisture percentage at the time of receipt and issue shall be examined and it should also be ascertained whether the same has been authenticated by the depositor’s representative.</li> <li>c) Mode of weighment: - The mode of weighment at the time of receipt and issue shall be specified. It should be further stated as to whether the weight at the time of receipt/issue has been authenticated by the depositor’s representative. It should also be examined whether any lapses have been noticed while recording the weight during receipt/ delivery. If there is any change in the mode of weighment during receipt / delivery the reasons shall also be ascertained and reported.</li> <li>d) <b>Avg. weight during receipt &amp; issue.</b>  The average weight per bag during receipt and issue of stock shall be calculated from the storage loss and gain statements. simultaneously, the stocks of the similar period may be analyzed in the godown on the basis of test weighment and physical verification.</li> <li>e) Estimation of loss: - On the basis of observation on the above aspects, the storage loss can be estimated which may be compared with the reported loss and gain to arrive at justified/unjustified loss. In case of unjustified loss, the quantity of undeclared loss pertaining to prior period may also be estimated.</li> </ul>	Investigation Officer	



		<p>f) <b>Gunny addition / release:</b> - From the storage loss and gain report, it should be verified from the stackwise register and gunny register.</p>		
<p>2.</p>	<p><b>Verification in godowns</b></p>	<p>a) The refractions for analysis classification, condition of stocks at the time of receipt and issue shall be indicated. In case if the stocks have been received under quality complaint, a copy of complaint lodged with the depositor may also be furnished alongwith investigation report.</p> <p>b) <b>Physical verification of stock &amp; stack discipline-</b></p> <p>i. Whether proper dunnage is used and was there damage due to seepage to the bottom layer bags.</p> <p>ii. Whether spillage/spilled grains have been properly collected and accounted for with the mother stack.</p> <p>ii. Whether there was any rodent, bird monkey and pig problem in the godowns.</p> <p>c) <b>Test weighment of the stock-</b> Test weighment of the balance stocks shall be conducted in order to ascertain whether the losses reported are in tune with the stacks available in the godown and in case any abnormality is noticed the same should be pointed out,</p> <p>d) <b>Accounting of spillage, sweeping in godown-</b> The spillage and sweeping accounts has to be verified from the relevant register from which the gunny consumed/ released can be linked and cross-checked with the <b>gunny register,</b></p> <p>e) <b>Assessment of trend of loss on the following points-</b></p> <p>i. The storage losses with reference to the storage period should be examined.</p> <p>i. The trend of storage losses noticed as a result of test check weighment during the various inspections, carried out by technical and general inspecting officers should also be taken into account.</p>	<p>Investigation Officer</p>	<p>F/CD/04</p> <p>F/TECH/21</p> <p>F/CD/30</p>

		<ul style="list-style-type: none"> <li>iii. The trend of the storage losses at the warehouse should also be compared with the nearby warehouses where the climatic conditions and the godowns are almost similar,</li> <li>iv. The trend of storage losses for the last 3 years may also be examined and furnished.</li> <li>v. It may also check whether loss / gain is according to the parameters fixed by FCI in case of central pool stocks.</li> </ul>		
3	<b>Record Verification</b>	<ul style="list-style-type: none"> <li>a) <b>Receipt/Issue records-</b> <ul style="list-style-type: none"> <li>i. Gate Register.</li> <li>ii. Gate Pass</li> <li>iii. Depositor's signature specimen card,</li> <li>iv. Deposit Application.</li> <li>v. Delivery order</li> <li>vi. Lorry Weighbridge Register</li> <li>vii. Stock Register</li> <li>viii. Depositor's ledger</li> <li>ix. Analysis Report – the refractions for analysis classification, condition of stocks &amp; moisture percentage at the time of receipt and issue shall be indicated.</li> <li>x. Stack wise register.</li> </ul> </li> <li>b. <b>Storage records</b> <ul style="list-style-type: none"> <li>i. Register for Fortnightly Technical Inspection and operation of stocks.</li> <li>ii. Stack card</li> <li>iii. Consumable stock report</li> <li>iv. Indent</li> <li>v. Statement showing loss /gain in storage</li> <li>vi. Dead stock register.</li> <li>vii. Weather register</li> <li>ix. Moisture Content register</li> <li>x. Daily Transaction Diary</li> <li>xi. Daily Transaction register</li> </ul> </li> </ul>	Investigation Officer	<p>F/CD/02 F/CD/17 F/CD/01 F/CD/03 F/CD/16 F/CD/05 F/CD/12 F/CD/13</p> <p>F/CD/07</p> <p>F/TECH/18</p> <p>F/TECH/16 F/TECH/03 F/TECH/15 F/TECH/07</p> <p>F/TECH/20 F/TECH/25 F/TECH/19 F/TECH/27 F/CD/08 F/CD/14</p>
4	<b>Calculation of abnormal losses</b>	The storage losses with reference to the all points mentioned above should be calculated. It may also check whether storage loss is according to the parameters fixed by FCI in case of central pool stocks.	Investigation Officer	
5	<b>Collection of statements</b>	The statement of the staff and officers at the warehouse may also be recorded to corroborate this fact.	Investigation Officer	
6	<b>Preparation of report</b>	Investigation report shall contain the observation of the following points- <ul style="list-style-type: none"> <li>i. Introduction/Brief of the case.</li> <li>ii. Loss &amp; gain trend in the centre &amp; in the locality also.</li> </ul>	Investigation Officer	

		<ul style="list-style-type: none"> <li>iii. Justified/Unjustified losses.</li> <li>iv. Analysis of statements.</li> <li>v. Review of records.</li> <li>vi. Individual lapses for fixing responsibility</li> <li>vii. Observation of Investigation Officer.</li> <li>iii. Drawing Conclusion</li> <li><b>ix. Fixing up of responsibility-</b></li> <li>a) The name of the officials who are responsible for weighment shed incharges, technical incharges and the Warehouse Manager at the time of receipt during storage and at the time of delivery be also indicated. It should also be specified whether the responsibility for storage losses can be fixed on any of the officials</li> <li>b) In case the losses are due to lapses on the part of staff, the responsibility for such lapses should be fixed.</li> <li>x. Suggestion for improvement / corrective actions.</li> </ul>		
<p>7</p>	<p><b>Submission of the report</b></p>	<p>Investigation report should be submitted within one month after completion of the investigation.</p>	<p>Investigation officer</p>	

## WORK INSTRUCTIONS FOR INVESTIGATION OF ABNORMAL STORAGE LOSSES

## WORK INSTRUCTIONS FOR RODENT CONTROL

S. No	ACTIVITY	DESCRIPTION	RESPONSIBILITY	REFERENCE
1	PRE-BAITING	Bait without poison is to be kept for one or two days in their runways to make them habitual of taking bait.	Technical Incharge	
	POISON BAITING	<p><b>i) Single dose Rodenticide (Acute Poison)</b></p> <p>a) Zinc Phosphide is used as acute poison by mixing 3/4 of tea cup of bait material like crushed wheat, Maize, Bajra, Rice flour etc with 1/2 tea spoon of groundnut or mustard oil and 2 gms of Zinc Phosphide thoroughly. This quantity shall be sufficient for 1500 MT capacity godown. The bait shall be placed at 4 to 5 places after pre-baiting for atleast two days.</p> <p>b) Bromodioline is also a single dose anti-coagulant which causes internal haemorrhage in rodents used at 0.005 % concentration in bait.</p> <p><b>ii) Multi dose Rodenticide (Chronic Poison) –</b></p> <p>Available in concentrate, ready to use and soluble form. Marketed under different trade names Rodafarin. Ratafin &amp; Rodeth etc</p> <p>a) Dry baits with Multi dose anti - coagulants shall be prepared by mixing 5 tea spoon of anti-coagulant, 4 tea cup of crushed grain or atta, 3 tea spoon sugar, 2 tea spoon of oil thoroughly. This quantity shall also be sufficient for 1500 MT capacity godown. The baits shall be placed at 4-5 places in one compartment and after every two or three days bait should be re-placed again and the process continued as per requirement.</p> <p>b) Wet baits with Anti-coagulant shall be prepared by mixing 5 tea spoon anti-coagulants, 500 ml (3 tea cup ) of water mixed thoroughly and divided into 4 equal parts and shall be placed like dry bait.</p>	Technical Incharge	
3	FUMIGATION	All rat burrows in and outside the warehouse shall be closed by mud. On second day the closed burrows shall be checked for live burrows. These burrows	Technical Incharge	

		shall be fumigated by putting 1 - 2 tablets of Al Phosphide. After putting the tablets the burrows shall be closed with mud. On the third day the burrows which are found to be opened may again be given the same treatment.		
4	<b>TRAPPING</b>	Rat cages, gum boards shall be used for trapping rats.		

**PRECAUTION -**

1. Bait containers should be set aside for this particular use and should be thoroughly washed with water after every usage.
2. Rubber gloves shall be worn while preparing and laying baits.
3. Wash hands before eating, drinking or smoking.
4. Do not prepare or use baits where there is risk of contaminating food, animal feeding stuffs or drinking water.
5. Bait containers shall be clearly marked "**POISON**". Liquid baits should be placed in suitable container.
6. Remove and destroy all remains of baits. Burn or bury all poisoned rodents.

<b>WORK INSTRUCTIONS FOR MONITORING FARMERS EXTENSION SERVICE SCHEME</b>				
<b>S. No</b>	<b>ACTIVITY</b>	<b>DESCRIPTION</b>	<b>RESPONSIBILITY</b>	<b>REFERENCE</b>
1	<b>Village Visit</b>	<p>i) Technical staff deputed for FESS work shall visit the villages surrounding the warehouse in a radius of 45 to 50 kms</p> <p>ii) He shall visit the villages (where required) frequently and meet farmers sarpanch and Block Development officer to make them aware of the warehousing facility provided by CWC.</p>	<p>Technical Staff</p> <p>Technical Staff</p>	
2	<b>Educating the Farmers</b>	<p>i) Farmers shall be educated by contacting them in groups or individually</p> <p>ii) Publicity material shall be distributed among them to make aware of scientific storage and pest control.</p> <p>iii) Demonstration of spraying, fumigation and rat baiting shall be done free of cost in new locations.</p>	Technical Staff	

**WORK INSTRUCTIONS FOR STACK PLANNING AND STACK LINING & STACKING**

S. No	ACTIVITY	DESCRIPTION	RESPONSIBILITY	REFERENCE
1	<b>Stack Planning</b>	i. Stack Plan shall be prepared in such a manner that the stacks shall not obstruct light and free flow of air into godowns.  ii. A minimum of 2½ feet wide space between stacks, 2 ft between wall and stack and 4 ft. between door points as haulage alleyway should be provided for operational purpose.  iii. The total space provided for alleyways/operational purpose shall not exceed 27% of the total floor area of the godown.		
2	<b>Stack Line</b>	i. Preferable width of stack line -5 cms or 2"  ii. Colour of stack line = Yellow or white.  iii. Stack line shall be drawn on all four sides to full length  iv. Each stack shall be given stack number neatly painted on the floor/wall/pillar in front of each stack		
3	<b>Stacking</b>	i. Stacking of commodities in bags/containers/packages shall be done in the identified stacks on a suitable available dunnage (Bamboo mats / Polythene film / crates etc.)  ii. Commodities shall be stacked upto their prescribed height only.  iii. Stacks shall be built in straight line uniformly within the stack area earmarked by stack lines. Stack card with necessary entries shall be provided on every stack on haulage alleyways side.	Technical Incharge	

**WORK INSTRUCTIONS FOR CALIBRATION OF ANALOG / DIGITAL / PORTABLE / STANDARD MOISTURE METERS**

1	<b>Purpose</b>	i. To maintain accuracy of moisture testing instrument.
2	<b>Scope and periodicity</b>	Related to all moisture meters both digital and analog / portable/ standard moisture meters. Calibrations of Moisture Meters are required to be <b>done atleast once in a year</b>
3	<b>Responsibility</b>	i) Technical head at Regional Office ii) Warehouse Managers at Warehouses.
4	<b>Definition</b>	Calibration is a method to check and correct any measuring instrument by any prescribed method.
5	<b>Decryption</b>	

S. No	Activity	Description	Responsibility	Reference
5.1	Calibration of Moisture Meters	Moisture Meters shall be done once in a year by adopting any one of the following methods and calibrations record shall be maintained in every warehouses  a) <b>Hot Air Oven Method:</b> the calibration of the instrument shall be done with reference to the basic Hot Air Oven Method as prescribed under IS 4333 Part –II – 1967 with upto date amendment  b) <b>Calibration through already calibrated instrument.</b> Calibration of the Moisture Meters shall be done with reference to the already calibrated instrument available in the WH or in the nearby FCI Depot.  c) Calibration of instrument by periodically sending the same to the manufacturer/supplier under agreed terms & conditions	DM, Manager, Incharge & Technical Staff Incharge in the Warehouse.  DM, Manager, Incharge & Technical Staff Incharge in the Warehouse.  DM, Manager, Incharge & Technical Staff Incharge in the Warehouse.	Annexure-I

1. The method is intended to serve as a standard method for checking the moisture meters, which is particularly suitable for routine determination of moisture.
2. Principle: The loss in mass of the ground test material after drying at 130 to 133° C in an oven is determined and expressed as percentage of moisture in the sample.
3. Samples of different commodities may be collected in the laboratory. Wheat, Rice, Paddy, Whole Pulses, Split Pulses, Oilseeds and any of the Spices may be taken for these trials. The samples should be kept in a container like polythene bag, so that no absorption of moisture from the atmosphere takes place.
4. From each sample, the required quantity (not less than 5 grams of ground sample) may be drawn for determination of moisture content in the moisture meter. Three identical samples from the composite



sample of the same commodity may be drawn, ground in a grinder, transferred to petri dishes and kept in the Hot Air Oven after taking the weight of the petri dishes as well as petri dishes plus the ground sample.

5. The dishes may be left in the Hot Air Oven for two hours reckoned from the moment when the Oven temperature reaches 130°C. On expiry of this period of two hours with 130°C temperature, the electricity may be disconnected, the sample shall be removed from the Hot Air Oven and shifted to a desiccator for cooling. The dishes should not be kept one over the other.
6. After the samples cool down to normal temperature, the petri dishes with the sample be weighed. It takes 30 to 45 minutes after the dishes are put into the desiccator.
7. The loss in weight will be the loss of moisture and from the data collected, the percentage of moisture in the sample be worked out as under:-

i)	Weight of petri dish	= W1
ii)	Weight of petri dish and sample	= W2
iii)	Therefore, the weight of the sample	= W2-W1= W3
iv)	Weight of petri dish with sample after cooling in the desiccator	= W4
v)	Therefore, the weight of the sample after heating and cooling	= W4 - W1 = W5
vi)	Loss in weight = Loss of moisture	= W3 - W5 = W6
vii)	Therefore, the percentage of moisture	= $W6 \times 100$ ----- W3

8. Now compare the difference between the moisture content determined in the moisture meter and that determined by the Hot Air Oven method. While doing this, the average result obtained in the three identical samples of the same commodity dried in the Hot Air Oven method should be taken as the actual moisture content. If the moisture content determined in the moisture meter is 16% and that obtained by the Hot Air Oven method is 15.5%, the calibration will be done as - 0.5. Similarly, if the percentage obtained in the meter is 15% and that obtained in the Hot Air Oven is 15.3%, the correction will be + 0.3 and so on. In other words, if the percentage of moisture is 13.5% in a moisture meter which has been calibrated as + 0.3, the actual moisture content will be recorded as 13.8%.

**PART III TECHNICAL ASPECTS**

a) Strength of Technical Staff and their distribution of work: -

Sr. no	Name & Designation	Date of Posting	Job assigned
1			
2			
3			
4			
5			

b) Whether the Technical staff is adequate?

- (i) Yes                      (ii) No

If no, please Comment: -

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2. Which commodities are stored in the Warehouse?

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3. Please give the following details about Dunnage being used in the Warehouse: -

a) Types of dunnage under use.

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b) Whether any stock is stored without dunnage? Give details.

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c) Is the dunnage provided adequate>

- (i) Yes                      (ii) No

d) Report on surplus dunnage, if any available for shifting to other warehouse/additional requirement, if any.

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4. Please give the following details about Stacking:-

a) Are the stack plans for all the godowns duly approved and stacklines drawn accordingly?

From \_\_\_\_\_ to \_\_\_\_\_ by Shri \_\_\_\_\_

- (i) Yes (ii) No  
If not, give details and reasons for variations.

\_\_\_\_\_

b) Whether stacks built are proper and stable as per approved stack plan and specified height?

- (i) Yes (ii) No  
if no, please comment: -

\_\_\_\_\_

c) Give details of mixed stacking of different commodities keeping in view the commodities that cannot be stored together.

i) In the same stack

\_\_\_\_\_

ii) In the same compartment

\_\_\_\_\_

d) Are there any packages / bags in damaged condition and require repacking? Give details. (Comment on steps taken by the WHM in this regard).

\_\_\_\_\_

\_\_\_\_\_

e) Are all the stacks provided with stack cards with upto date entries and displayed?

- (i) Yes (ii) No  
if no, please comment: -

\_\_\_\_\_

\_\_\_\_\_

f. Is the Analysis of Stocks carried out as per procedure>

g. Are the Analysis slips/ Register maintained properly?

h. Are there any stocks, which don't have Analysis procedure? If so please give details.

\_\_\_\_\_

\_\_\_\_\_

From \_\_\_\_\_ to \_\_\_\_\_ by Shri \_\_\_\_\_

5. Comment on to the cleanliness (hygienic condition) of godowns and its surroundings; and improvement needed.  
\_\_\_\_\_
6. Are there any damaged or sub-standard stocks, stored in the godown? If yes, please give a detailed statement. What action is proposed to dispose off these stocks.
7. Give the details of Storage Loss cases which are not regularized. Give reasons for not regularizing and the efforts made by Warehouse Manager to regularize the pending SL cases.  
\_\_\_\_\_  
\_\_\_\_\_

Based on random check of weight, do you anticipate huge Storage loss accumulated in stacks? Please compare the average weight of bags in stacks with actual weight. If so please give details and action that is required.  
\_\_\_\_\_  
\_\_\_\_\_

8. Comment on the collection of spillages /sweepings cleaning and their disposal.
9. Give the details of quantity of fumigable stocks stored as on date of inspection.

	Name of Commodity	Bags	Weight
A	RICE		
B	WHEAT		
C	PADDY		
D	PULSES		
E			
F			
G			

From \_\_\_\_\_ to \_\_\_\_\_ by Shri \_\_\_\_\_

10. Give the details of chemicals.

NAME	QUANTITY	DATE OF EXPIRY	REMARKS

11. Comments on Fire Fighting and protective equipments.

\_\_\_\_\_

\_\_\_\_\_

I. Are the fire extinguishers placed at strategic position outside the godowns?

(i) Yes

(ii) No

if no, please comment: -

\_\_\_\_\_

\_\_\_\_\_

II. Are the fire buckets filled with sand and water placed at vantage points for emergency use?

(i) Yes

(ii) No

if no, please comment: -

\_\_\_\_\_

\_\_\_\_\_

III. Is the static tank provided and adequate water supply available in warehouse premises for firefighting operations?

(i) Yes

(ii) No

if no, please comment: -

\_\_\_\_\_

\_\_\_\_\_

IV. Is the fire extinguishers maintenance register posted upto date?

(i) Yes

(ii) No

if no, please comment: -

\_\_\_\_\_

\_\_\_\_\_

From \_\_\_\_\_ to \_\_\_\_\_ by Shri \_\_\_\_\_

V. Whether sufficient protective / safety equipments like eye shields, respirator / canister, nose filters, hand gloves etc. are available?

(i) Yes

(ii) No

if no, please comment: -

\_\_\_\_\_

\_\_\_\_\_

12. What is the action taken for the disposal of unserviceable technical equipments?

\_\_\_\_\_

\_\_\_\_\_

13. Whether weighing scales / LWB are being serviced regularly and stamped as per law? Please enclose a statement showing the details of weighing equipment and the date of last stamping.

(i) Yes

(ii) No

if no, please comment: -

\_\_\_\_\_

\_\_\_\_\_

14. PCS

i) What is the target and achievement for PCS for last 3 years and Current year.

YEAR	TARGET	ACHIEVEMENT

ii) Comments of IO regarding performance under PCS.

15. FESS

i) What is the target for FEES for Last / Current year?

YEAR	TARGET	ACHIEVEMENT

ii) Comments of IO regarding performance under FESS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**LIST OF REGISTERS TO BE CHECKED**

<b>Sr. No</b>	<b>Details</b>	<b>Remarks</b>
1	Stack –wise Registers	
2	Consumable Register	
3	Dunnage Register	
4	Technical Deadstock Register	
5	Loss/ Gain Register	
6	PCS Performance Register	
7	FESS Register	
8	Fumigation / Spraying Register	
9	Priority Register	
10	Analysis Register	
11	Fornightly Inspection Register	
12	Spillage/ Sweepings Register	
13	Damaged / Sub-standard stock Register	
14	Fire Extinguisher history sheet register	





**STATEMENT SHOWING STOCK POSITION OF CHEMICALS AS ON \_\_\_\_\_ AT CW \_\_\_\_\_**

<b>Sl. No</b>	<b>Name of Chemical</b>	<b>Quantity in Hand</b>	<b>Batch No.</b>	<b>Expiry Date</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>

**Signature of WAG-I/II**

**Signature of WH Manager**

**Signature of Inspecting Officer  
(along-with Designation)**

**STATEMENT SHOWING STOCK POSITION OF DUNNAGE AS ON \_\_\_\_\_ AT CW\_\_\_\_\_**

<b>Sl. No</b>	<b>Dunnage</b>	<b>Serviceable</b>	<b>Unserviceable</b>	<b>Total</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>

**Signature of WAG-I/II**

**Signature of WH Manager**

**Signature of Inspecting Officer  
(along-with Designation)**

**STATEMENT SHOWING THE GENERAL DEAD STOCK ITEMS AS ON ----- AT CW**

<b>S. No</b>	<b>Name of the Item</b>	<b>Purchased or transferred from WH/RO</b>	<b>Cash Memo No. and date of transferred from WH / RO</b>	<b>Serviceable</b>	<b>Unserviceable</b>	<b>Total</b>	<b>Reasons for un-serviceability</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>

Signature of WAG-I/II

Signature of WH Manager

Signature of Inspecting Officer  
(along-with Designation)