

FOOD STORE: DEFINITION AND TYPES

A food store is a clean, well-ventilated, properly illuminated, easy to operate and efficient place used by a catering establishment according to its catering policy. A well-controlled storeroom and cellar provides a daily check on all issues and costs, and helps to lower the cost of raw materials (food beverage cost), by controlling pilferage, wastage, and reducing the possibility of frauds by user department.

Necessity to Have a Store

There are a lot of myths about the store facilities in the Indian catering industry. If we were to exclude large hotel or restaurant chains, then there would be a lot of entrepreneurs in this sector, who are not in favour of having a separate or a dedicated store in their catering organizations or food and beverage outlets. A very simple question they ask is: "Why is it necessary when we can purchase commodities as per our requirement on a daily basis. Why should we keep a storekeeper and waste space and capital in equipment and furnishing of a store?" But they are wrong. It is very necessary to have a store in a catering facility for the following reasons:

1. Successful and smooth operations
2. A storekeeper can save double the amount of his salary by controlling theft, waste, and spoilage by
 - Keeping a track on receiving and issuing control.
 - Maintaining records of shortages/spoilage.
 - Maintaining reasonable par stock as per business volume and popularity of menu items.
 - Psychological impact on various user departments created by a storeroom

Types of Stores

According to the nature of food and beverage commodities, stores may be categorized in the following types:

Perishable food store: These are used to store perishable food items such as meat, poultry, game, fish, dairy products, fats, vegetables, and fruits.

Frozen store: These are used for storing of frozen foods, which must be placed immediately in a deep freeze.

Non-perishable items or dry store (groceries store): These are used for storing pulses, cereals, sugar, flour, jams, pickles, bottled foods, canned foods, breads, cakes, etc.

Cellar: It is a dark and silent room in the purchase department, hidden from public view. It is run jointly by the purchase and food and beverage department. It is an ideal place to store alcoholic beverages as it is dark, airy, and quiet, with a constant temperature, and protected from unpleasant smells. If a true cellar is not available in a catering organization, a dark quiet place where temperature remains constant can be fitted with wine bins and, if necessary with a humidifier.

A large hotel may have additional storage facilities other than for food and beverages. They are:

Linen store for storing of all types of linen used in a hotel.

Stationery store for storing of all types of stationery used in a hotel.

Maintenance store for storing of all types of equipment, tools, fixtures, devices, etc. used in a hotel

Audio-video store for storing of all types of audio video facilities used in a hotel.

Food and beverage store for storage of chinaware, glassware, tableware, etc.

LAYOUT OF A GOOD FOOD STORE

Size

Size and shape of a storeroom varies from establishment to establishment and depends on individual requirement, availability of sources of supply, volume of business, and inventory turnover. Inventory turnover of 3 to 4 times a month is ideal and can be calculated by the following formula:

Rate of stock turnover = Cost of food consumed/Average value of stock at cost price

Illustration: In 28 days trading period the cost of food consumed was Rs 30,000 and opening stock on day I was Rs 10,000 and closing stock on day 28 was Rs 5,000.

$$\begin{aligned}\text{Rate of stock turnover} &= 30,000 / [(10,000+5,000)/2] \\ &= 30,000 / 7,500 \\ &= 4.0 \text{ times}\end{aligned}$$

This means that in the 28 day trading period the total value of stock turnover is four times and that an average of one week's stock was held during the period.

Average Space Required for Dry Storages

Storing food can be a great way to lower down your food costs and also prepare for the possibility that food shortages could occur. Beyond the essentials, exactly how much room do you need for storing food and for how long? Well, there are several factors to take into consideration including the size of catering units, amount of space available for storage, and length of time for storing, for example you want to store for two/three months.

The most important point that determines the space requirement for storage facility is the number of meals served per day in restaurants and clubs or number of employees being served at a particular facility. A rough idea of the space required for storage of dry rations can be made on the basis of these points. Tables 6.1 and 6.2 provide an estimate of the space required for dry storage in various establishments.

Restaurants and clubs

Estimated Area Required for Dry Storage Space Areas in Restaurants and Clubs Based on Number of Meals

Meals per day	100-200	200-350	350-500	500-1000
Square Feet Required	120/200	200/250	250/400	300/650

Employees feeding or staff cafeteria

Estimated Dry Storage Space Area for Employee Cafeteria

Meals per day	400	800	1200	1500
Square Feet Required	350/450	550/650	700/850	950/1050

Location

Location of the store should ideally be near the receiving zone where goods are delivered by various vendors, and should be easily approachable by the person of any section authorized to receive issues. Facing north is right direction for a store so as to maintain a cool temperature and avoid sunshine.

Structural Features, Cleanliness, and Shelving

The following points with respect to the structural features, cleanliness, and shelving may be borne in mind while designing the layout of a store

- Store should be airy and free from moisture (dampness).
- The maintenance of a standard of hygiene requires that the walls and ceilings be free of cracks.
- Floors of the store should be tough enough to hold heavy traffic, and easy to clean and wash.
- There should be no right angle corner in between floor and wall to prevent accumulation of dirt.
- There should be sufficient lighting-natural and artificial-in all the areas and storekeeper's desk should be well illuminated.

- A store should have a separate issuing counter/window.
- The ceiling of store should not be less than 12 feet from floor level.
- The height of issuing counter (reception platform) should not be less than 30" from floor level and length should not be less than 36". It should be well illuminated.
- A make up counter is an essential feature and should be located at the centre of the store for holding commodities before issuing to the user department.
- The recommended height of the racks is 8 feet from floor level and space between shelves may vary from 50-90 cms, and for stacking of small cans or jars it should not be less than 15".
- Racks should be arranged with a minimum distance from wall not less than 3" and the same gap should be maintained between two racks.
- Follow a minimum aisle space of approximately 36" for gangway.
- Space required for turning an average truck is 72".
- Storekeeper should be provided with a suitable working table along with space to keep documents.
- Shelving:

For perishable foods Shelving should be slated to permit maximum circulation of air in refrigerated facilities.

For non perishable food items Solid steel shelving is usually preferred.

Flow of Work at the Store Facility

The basic aim of a food store is to maintain an adequate supply of foods for the immediate needs of the business with the very minimum loss through spoilage and pilferage. This entails establishing standards and standard procedures for storing. In general, the standards established for storing food should address the following principal concerns:

1. Location of storage facilities
2. Layout of storage facilities
3. Condition of facilities and equipment

4. Arrangement of foods
5. Security of storage areas

Recommended Storage Temperatures

Foods must be stored at correct temperatures. The optimum storage temperature varies depending on the nature of the item.

Temperatures for Frozen Food Items

Meat.	-20°C to -16°C (-4 to 3°F)
Fish	-20°C to -15°C (-4 to 3°F)
Frozen foods	-20°C to -16°C (-4 to 3°F)
Ice-cream	-22°C to -18°C (-8 to 0°F)



IHM NOTES

Optimum Storage Period at 0 F

Frozen Food	Maximum Storage period at 0 F
Meat	
Beef	6-12 months
Lamb and Veal	6-9 months
Pork	3-6 months
Sausages and ground meat	1-3 months
Cooked meat not covered with gravy	1 month
Meat sandwiches	1 month
Poultry	
Chicken	6-12 months
Turkeys	6-9 months
Giblets	3 months

Cooked Poultry meat	1 month
Cooked poultry dishes	1 month
Eggs	6-12 months
Vegetables	8-12 Months
French-fried potatoes, par fried	2-6 months
Fruit	8-12 months
Cookies	6-12 months
Cakes- pre-baked	4-9 months
Batters	3-4 months
Fruit pies- baked and unbaked	3-4 months

Storage Temperatures and period for refrigerated items of Foods

Food	Maximum Storage Temperature (in F)	Maximum Storage period
Dairy Products		
Milk (fluid)	40	3 days
Butter	40	2 weeks in waxed cartons
Cheese (hard)	40	6 months tightly covered
Cheese (soft)	40	7 days
Ice Cream	10	3 months in original container covered
Eggs	36	7 days
Fish		
Fresh	36	20 days
Shellfish	36	5 days
Fruits		
Peaches, Plums, Berries	50	7 days unwashed
Apples, Pears, Citrus	50-70	2 weeks
Leftovers	36	7 days
Poultry	36	7 days

Vegetables		
Leafy	45	7 days
Root vegetables, onions, potatoes, etc.	50-70	7-30 days
Meat		
Ground	38	2 days
Fresh meat cuts	38	6 days
Liver	38	2 days
Cold Cuts (sliced)	38	6 days
Cured Bacon	38	1-4 weeks
Ham (tender cured)	38	1-6 weeks
Ham (canned)	38	6 weeks
Dried Beef	38	6 weeks

Best Practices and Storage Procedures

The following points comprise best practices in storage procedures and should be followed scrupulously.

1. Foods should be generally divided into three categories: perishable frozen and dry items from the receiving dock and inspected with respect to quality, quantity, and delivery performance. If any discrepancies are there, they should be reported to the higher authorities for necessary action/documentation.
2. Most frequently used items should be stacked near the entrance area of the store.
3. There should be a definite place for each commodity.
4. Food items like spices, herbs, etc. delivered in unsealed containers such as paper bags, and boxes should be transferred to suitable airtight containers.
5. Stock rotation should be on FIFO (first in and first out) basis.
6. Items should be grouped if they are similar commodities such as bottled or canned items.

7. Items must be stacked by a coding system of numerical bin sequence or alphabetical index.
8. Meat items should be hung on hooks with drip trays underneath to collect any blood.
9. Humidity level should be approximately 90 per cent.
10. Meat and poultry should be stored separately.
11. Cuts of meat may be brushed with oil or wrapped in oiled greaseproof paper.
12. Decayed or spoiled vegetables should not be stored.
13. Vegetables should be stored separately on racks in a cool and dry place.
14. Hard fruits and stone fruits should be stored in cold store.
15. Eggs have a tendency to absorb smells. So store them away from other foods at 1-4°C in refrigerated equipment and use in rotation.
16. Cut pieces of cheese should be wrapped and refrigerated at a temperature below 5°C.
17. Flour bags should be piled off the floor on skids to enable free circulation of air all around the piles. The storage area should be well ventilated and should be kept away from direct sunlight. Temperature of storage area should be 65-75° and relative humidity 55-65 percent. Quality of flour may deteriorate if too low or too high humidity is maintained. Flour has tendency to pick up foreign odours and should be kept away from such ingredients, which may impart odours. While storing, must be ensured that the flour is free from insect infestation.
18. Rotation of dry goods should be on the basis of last in last out.
19. Storeroom should never be left open and unattended.
20. Proper key control should be implemented.
21. Employees' access should be restricted and there should be a time schedule for delivery of goods according to user departments/sections.
22. Check date of packing/expiry before issue.
23. Discard stores of expired date or found unit for consumption.

24. Protect from insects/rodents approach.
25. Store properly and protect items from chances of contamination.
26. Keep storage floor clear.
27. Never use floor for storing food commodities or empties.

Equipment and Utensils Used in a Store with Their Sizes/Dimensions

Shelves: Shelves are integral to a storeroom; more so in the modern age when space has become an extremely rare and expensive commodity. They come in various designs and sizes depending upon the nature of the item to be stored and the available space. The standard sizes of various kinds of shelves that are available in the market are stated in Table

Standard Sizes of Shelves in the Market

Shelf Width (in Inches)	Lengths Available (in Inches)
12-14	24,30,36,42,48,60
18,21 or 24	24,30,36,42,48,60,72

The above units are manufactured as flat or louvered metal shelves and open welded wire shelves. The open wire shelving is recommended where ventilation is important.

All are available in aluminium, galvanized, coated galvanized and stainless steel. Stainless steel (SS) is of course the ultimate finish for both wet and dry storage. Uncoated zinc plated units should be used for dry storage only. The average shelf load limit is 1000 lbs. The height of upright shelves varies from 26" to 86".

Mobile ingredient bins for dry storage Mobile ingredient bins nowadays are available either in plastic or metal and may have sliding or hinged covers. Clear and see through covers are also available in most models of mobile ingredient bin.

Table provides an insight into the standard sizes of ingredient bins generally available in the market and their capacities with respect to various ingredients.

Size (in Inches)	Capacities			
	Cu ft	Gal	Lbs Sugar	Lbs Flour
12*29*28	3.4	26	175	125
21*23*28	3.9	34	195	140
15*29*28	4.4	34.5	220	155
21*23*23	5.1	43	260	185
18*29*28	5.7	44	285	205

Chinaware and glassware carton sizes Chinaware and glassware are among the most important service equipment used in a catering facility and need to be stacked and preserved with great care and caution. They need to be protected from chipping and discolouration, as even minor flaws in their handling can be damaging. Table 6.8 provides the standard carton sizes with respect to various crockery items so as to help in planning storage shelf space sizes of the most commonly used Chinaware and glassware.

Standard Carton Sizes with Respect to Crockery Items

Item	Carton Size(in Inches)
6.25" Plates	9.5*13*6.75 high
9" Plates	9.5*13.5*6.75 high
Cups	13*16*9.5 high
Saucers	10.5*12.75*6.75 high
Bowls	9.5*16*10 high
Monkey Dishes	9.25*10.25*5.5 high
8oz. Bulge Glasses	16.5*16.75*8.5 high
8oz. Stemware	19*18.5*6.25 high

Note: To determine square feet when inches are given, multiply length x width and divide by 144. Example: 12" x 42" shelf-504 square inches or 504/144=3.5 square feet.

Refrigerated storage: Various options are available for refrigeration systems- both indoor and outdoor installations. Indoor units are available in various finishes and with colour panels. Outdoor units require weather caps for the roof and rain hoods for the doors. Walk-in coolers may be set directly on existing concrete or tiled floors. Audio and visual alarm systems are available for both coolers and freezers. Plastic air curtains hung at door openings can cut down running time of the compressor and save money.

Note:

- Ice cream: Figured in rectangular 0.5 gallon packages (per unit)
- Frozen food case (size per unit) size: 12"W x 17" Lx 5"H

All storage capacity for blast freezers allows for working aisles and air space over stored product.

Blast freezer Under ideal conditions, harmful food based bacteria can multiply once every 20 minutes or so. In a span of 12 hours, over 69 million bacteria are capable of growing on food surfaces. Every time you freeze a cooked food product, it must pass through the 'danger zone' as it cools from 150° F to below 41° F. It is crucial that food passes through this stage of freezing as quickly as possible. Blast freezing and chilling is the method of rapid heat removal, typically by means of convection in which cold air is circulated over the product. This method quickly seals the outer layer of food products prohibiting bacteria growth and preventing product dehydration. The process must happen quickly enough to prevent ice crystals from forming (commonly referred to as freezer burn) and also preserves food texture and consistency.

The advantages of blast freezing/chilling are as follows:

1. Damaging bacteria rendered dormant.

2. Food colour, texture and nutritional value sealed in.
3. Prevention of large ice crystals, which can damage food.
4. Reduced kitchen waste, as unused portions can safely be stored for later use.
5. Increased kitchen efficiency lets you prepare large batches and use some portions later.
6. Cost effective operation and maintenance.

Thumb rule for space requirement for walk-in refrigeration A general rule for estimating space for walk-in refrigeration is to allow 0.5 cubic feet of usable space per meal served. Small walk-ins with only one door and a single aisle can have from 50 to 60 per cent of usable space. Larger walk-ins with multiple aisles and doors can have 35 to 45 per cent usable space.

Capacity of Glass Door Display Units

Door	Width	Cubic Feet	No. of shelves	Total sq. Ft. Of shelving	½ gal. Milk Capacity	½ gal. Ice Cream Capacity
3	98"	78	15	78	720	792
4	128"	103	20	104	960	1056
5	159"	128	25	130	1200	1320

Note: All glass display units are 37'6" deep 78'6" high

ROLE OF STOREKEEPER

The primary role of a storekeeper is to store and to maintain adequate stocks of materials with minimum loss through theft and spoilage. A storekeeper must make follow-up checks of the storage facilities and checks of the articles, the storage methods, and the storage temperatures. Immediate corrective action should be taken whenever there is a deviation from the established standard operating procedures. Key functions of a storekeeper are as follows:

Stock Control

Establishing standards and standard procedures for stock control should address the following concerns:

1. Stock taking
2. Determining the value of stock held in stores
3. Comparing actual physical stock value with the book value of the stock
4. Determining rate of stock turnover
5. Establishing stock levels
6. Maintaining stock records

Stock Taking

Stock taking is an important task and should be undertaken by the staff from the control or accounts department together with the members of the food and beverage management team. It is generally undertaken by the following two methods.

Monthly inventory method The process of taking a physical inventory of products on hand in all storage areas at the end of the month or the trading period is called a monthly inventory. The physical inventory would involve physically counting or weighing the goods held in stock and recording the information accurately in the stock taking sheet for management reporting

Perpetual inventory method The process of maintaining a continuous record of all purchases and issues is called a perpetual inventory. The perpetual inventory may be maintained on cards or in books, usually in the control office for each commodity of item held in stock. The perpetual inventory provides the 'book value' of stock for comparison with the physical inventory

Book value of the stock is calculated by the formula:

Value of opening stock + purchases during the period – Requisitions made in the same period = Value of closing stock

Rate of stock turnover is calculated by the formula:

Cost of food consumed / Average value of stock at cost price = Rate of stock turnover in a given period

Maintain Stock Levels

The level at which an item of stock is to be held in stores/cellars at any point in time of the business in a particular trading period is called stock level. The following are determinants of stock levels.

1. The forecasted usage figures for the trading period
2. The Economic Ordering Quantity (EOQ)
3. The reordering time for the item (lead time)
4. The rate of stock turnover
5. The budget available
6. The market trends
7. The storage space available
8. The shelf life of the item

Minimum stock level It indicates the minimum figure of inventory quantity held in stock at any time.

Minimum level = ROL (Reorder level) -(Average usage x Average reorder period)

Maximum stock level It indicates the maximum figure of inventory quantity held in stock at any time.

Maximum level = ROL + EOQ-(Minimum usage x Minimum reorder period)

Reorder level It indicates the level at which fresh orders should be placed for replenishment of stock.

Reorder level = Maximum usage x Maximum reorder period

Average stock level = (Minimum stock level + Maximum stock level)/2

Average reorder period = (Minimum reorder period + Maximum reorder period)/2

Issuing control

Establishing standards and standard procedures for issuing control should address the following concerns:

1. 1.Setting up a requisition system
2. 2.Pricing the requisition

Setting up a requisition system A requisition system is a highly structured method for controlling issues. All storeroom issues should be made against a written requisition signed by an authorized person, often the chef. Whenever practical, it is advisable that requisitions be submitted in advance to enable the storeroom clerk to prepare the order without haste.

The items listed on requisitions fall into two categories:

Directs The food category charged to food cost as received, e.g., perishable food items.

Stores The food category charged to food cost as issued, e-g, staples and tagged items

Pricing the requisitions (pricing of commodities): The various methods of pricing the requisitions are as follows:

Actual purchase price This method involves pricing of commodities at purchased price.

Simple average price This method involves pricing of commodities at a simple average price.

Weighted average price This method involves pricing of commodities taking into account both quantities as well as prices, thus giving a more accurate average price.

FIFO method This method involves pricing of commodities at the earliest purchased price. This may be applied to items, which have a fluctuating market price.

LIFO method This method involves pricing of commodities at the latest purchased price. This also may be applied to items, which have a fluctuating market price.

Standard price This method involves pricing of commodities at a standard price for a specified time period, usually 3-6 months.

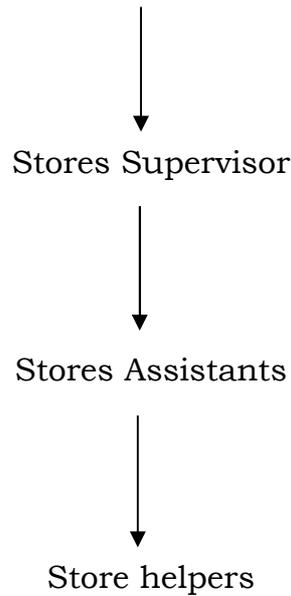
Inflated price This method involves pricing of commodities at an inflated price, i.e., cost plus, say 10 per cent or 15 per cent to recover the cost of handling and storage charges.

Summary of Duties and Responsibilities of Storekeeper

The duties and responsibilities of a storekeeper are summarized in the following points,

1. Maintenance of instructions and duty chart register
2. Safe custody of store materials and ensuring safety of the storing area.
3. Receipt of the store material.
4. Responsibility of arranging the stores layout.
5. Accounting for the materials in, and those that have been issued to the outlets.
6. Maintenance of relevant papers such as stores credit and bin cards.
7. Documentation of relevant papers such as stores credit report daily perishables and presentations and all resuscitations.
8. Maintenance and preservation of material in stores.
9. Giving out necessary information and dates to the departments closely associated with the stores operation.
10. Maintenance of a high standard of hygiene of stores

Stores Manager



Hierarchy of Store Department

Documentation and Procedures in Store

Many different approaches have been taken over the years in an effort to control food and beverage costs. However, the objective has always been the same: to keep costs in line without sacrificing the quality or quantity of the food which goes to the customer.

To control and to maintain highest level of service standards, a storekeeper has to follow certain procedures and document or record all the transactions of the day. The following documents serve as essential tools to keep a check on the storage procedure.

Daily perishable order This is one of the most important documents handled by the stores. All the perishables that are purchased by the hotel are ordered through this format. The Executive Chef of the hotel does the ordering a day ahead of the receipt of the perishables. While ordering the items, the chef takes into account any social functions due to be hosted and the stock level in the stores. The stores department is consulted to know the stock in hand. While ordering fruits, an excess stock is necessary as this

would help in the following day issues. When ordering fruits, it is done in numbers of the item.

An adequate stock of perishables helps to give a speedy issue to the outlets. If there is a remainder for the items, then those are issued once the new supplies arrive. The order form is made in four copies. The original and second copy goes to the Purchase Department, the third copy is sent stores, and the fourth is the book copy. The Purchase Department in turn places the order with the suppliers, and the original is sent to the Receiving Department to receive the items. If an item is short supplied then it is notified to the Purchase Department, Executive Chef, and the store through a shortage report.

The ordering of the perishables by the Executive Chef means that the chef takes responsibility of the items including those that fall short. But in the same way, if the items are short supplied, the chef can hold the Purchase Department responsible for that lapse.

The purchase requisition: Ordering of the storeroom provision on a daily basis is done through the requisition. Reordering of grocery items is done twice a month-normally on the first and the fifteenth of every month. But this may vary as per the consumption. Although ordering is done on two days, the store can send a requisition that it needs the stocks.

At any given time the store should have a grocery stock adequate for 25 days for consumption.

The requisition is made in three copies, of which two copies are sent to the Purchase Department and the third copy is the book copy.

In case of the grocery items, the Purchase Department retains the copy and sends out a purchase order to the supplier of which one copy is sent to the stores for its reference.

The purchase has to be sanctioned by the F&B Controls before it is sent to the Purchase Department. In case of the short supply of items ordered, the

store in turn prepares a shortage report and sends it to the Purchase Department for them to rectify the matter.

Store's credit report When food and beverage items are received by the stores from the receiving department, the items are either weighted or counted as per the requirements and the quantity of the items, date of receipt, serial and the remarks are entered in the receiving tag which is sent to the stores with the items. Generally the items weigh more than what is weighed at the receiving end as there is a margin for shrinkage.

In the mean time these details are entered in the store's credit report that has a receiving Report No., Date, Item, Quantity and Unit, Unit Price and Extension, and the Bin Card No. At the end of the shift, this report is sent to the F&B Controls for their references. The F&B Control day the original copy of the receiving report and the store's Credit Report to look for any kind of discrepancy. In case of one, the tags from both the stores and the receiving department can be tallied to trace the folly.

Store receiving procedures The receiving procedures in the store can be summarized in the following points.

1. When the items are received at the stores, the items are weighed or counted as per the requirements and entered in the store credit report.
2. In case of groceries, they are counted or weighed and entered in the store credit report and in the bin card.
3. In case of perishables, they are stored at the appropriate temperature as per the requirements.
4. Groceries and beverage items are entered into the cards after consulting the stores credit report.
5. In case of smokes (cigarettes/cigars) and liquor, two entries are made in the card.

BEVERAGE STORAGE FACILITIES (CELLAR)

Alcoholic beverages are among the major revenue grosser of any hospitality property. Little wonder, cellars or rooms where beverages are stored form an important feature of any big hotel or restaurant and bar. Like food items, various beverages require different optimum conditions for their storage, which makes the organization and planning of cellars an arduous task that must be executed carefully and meticulously. The security aspect of the cellar is an equally important task.

Guidelines for Planning and Operations of a Beverage Storage Facility

Some useful tips or guidelines that have evolved in the industry pertaining to the operations of beverage storage facilities are as under.

1. **Ensuring safety and security of the beverage facility.** This includes assigning responsibility for the security of stored items to a single person, and keeping the facility locked when required.
2. **Organizing the beverage storage facility** In general, the physical arrangement of a cellar comprises the following:
 - The main storage area held at 13-16°C for the storage of red wines and spirits. This area is also used for general collections and preparations of orders for the various bars.
 - A refrigerated area held at 10°C for storage of white wines and sparkling wines.
 - Another refrigerated area held at 6-8°C for the storage of keg beers only if necessary.
 - An area held at 13°C for the storage of bottle beers and soft drinks.
 - A totally separated area for the stacking empty bottles, crates, etc.
3. **Maintaining appropriate conditions.** It includes maintaining the temperature, humidity, and light in the beverage storage facility to maximize shelf life of the stored beverages.
4. **Maintaining cellar records** This is necessary for the purpose of control.

5. **Ensuring par stock for bars** Par stock is the precise quantity stated control in numbers of bottles or other containers that must be on hand at all times for each beverage in the bar.
6. **Beverage store** This should have only one access and it must be locked and sealed with a print on a tape with time of entry and code of key used to open the door.
7. **Ideal location** This is necessary to provide direct and easy access to bars.
8. **Maximum height of shelves** This should be 7.6' from floor level as it reduces the chances of breakages.
9. **Size of the shelves** This should be according to the size of bins which are approximately 22" wide, 1+ high, and 18" deep.
10. **Space for cleaning** Leave 4 space between the lower shelf and floor to facilitate cleaning and to keep goods dry in case of flooding or spillage.

List of Documents Used in the Cellar of a Five Star Hotel

The following is the list of documents that are generally used in five star hotel beverage storage facilities.

- Cellar control
- Cellar control ledger
- Bin card
- Cellar perpetual inventory control ledger
- Daily beverage inventory sheet
- Beverage requisition book
- Empties outward book
- Ullage (word used to describe sub-standard quality/weeping wine bottles due to loose cork and the air space above the wine and under the cork or screw cap) and breakages book

Checklist of Cellar Tools

A good cellar should have all essentials tools and equipment, which should be stored in one part of the cellar over a workbench. It is a simple task that entails building a rack for taps, mallets, and other larger items.

The minimum cellar tools and equipment are:

- Adequate number of taps
- Vent pegs
- Scotches
- Shivers
- Spiels
- Corks
- Tapping plugs
- Hard wood or rubber mallet
- Gimlet for boring shivers
- Punch for knocking the holes
- Spanners for beer pipes, engines, and unions
- Washers
- Filtering equipment and filtering papers
- Jugs
- Brushes for taps cleaning
- Brooms and scrubbing brushes
- Swabs and glass cloths
- Glasses for sampling and tasting
- Thermometer
- Torch and spare battery
- Vice on bench
- Dipstick
- Washing soda and salt
- Disinfectant (outside the cellar)

Standard Practices and Procedures: Dos and Don'ts of Cellar Management

Dos

- Location: between bar and receiving area.
- Follow FIFO.
- Wines should be laid down.
- Spirits and liqueurs should not be laid down but keep straight.
- Port and sherry should keep upright
- Crusted and vintage port must be binned or moved with the whitewash mark on the top
- Keep separate bin cards for all wines and liqueurs.
- Keep a record of breakage with appropriate evidence
- Unwrap all bottles and destroy the packing.
- Make sure that access to the cellar is controlled.
- Priority should be given to the security of keys
- Keep your beer at even temperature between 56-60°F
- Keep everything clean in cellar: walls, ceilings, drains, pipes, draining boards, and floor.
- Keep the cellar free from smell.
- Keep the cellar free from small and unnecessary gadgets.
- Keep your beer engines free from traces of dirt and yeast.
- Deal with returned beer promptly
- Wash glasses well.
- Cork and peg the casks as soon as they are empty.
- Turn off taps of casks in use and tighten spiles (valves used to control air flow) at each session.
- Sample for all beers for brightness, condition, and flavour at the beginning of each day.
- Learn about the product you are selling.
- Keep your utensils spotless.

Don'ts

- Overstock
- Return stale beer to casks

- Hang a thermometer on the wall.
- Permit warm or cold draughts in the cellar.
- Be afraid of consulting your brewer.
- Clutter up the cellar with lots of rubbish, odds and ends, or anything with a strong smell.

Useful Measures used in Bar/Cellar

Measures	Quantity
1 Barrel	36 Gallons (288 pints)
1 Kilderkin	18 Gallons (144 pints)
1 Firkin	9 Gallons (72 pints)
1 Pin	4.5 Gallons (36 pints)
1 Gallon	8 pints (160 fluid Ounces)
1 Quart	2 pints (40 fluid Ounces)
1 pint	20 Fluid Ounces)
1 Gill	0.25 Pints (5 Fluid Ounces)
1 Magnum	2 Bottles (53.33 Fluid Ounces)