

## Chapter 3 Receiving and Put-away

- A crucial process in the warehouse.
- Supplier compliance: correct product in the right quantity, in the right condition at the right time. 供應商配合
- Once goods have arrived, it's too late to rectify most issues.  
規格錯誤、品質不佳、或數量不符  
人手與設備不足、作業程序有漏洞、人員訓練不足
- Many steps need to be taken before receiving.

Receiving and Storing  
<https://www.youtube.com/watch?v=lrV6EYeaRGE>

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## Pre-receipt

進貨前準備工作

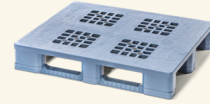
- Buyers may not have knowledge of the goods-receiving operation. 採購
- Must ensure products ordered are compatible with the storage facility. 進貨包裝規格
  - ✓ size and type of cartons.
  - ✓ type of transit packaging – cardboard, plastic, totes, metal stillages, roll cages, pallets.
  - ✓ palletized or non-palletized delivery of product.
  - ✓ size (length, width and height) and type of pallets, e.g. euro pallet, four-way entry.
  - ✓ specific labelling such as product description, barcode and quantities.
  - ✓ position of label on carton and pallet.
  - ✓ carton quantities (inner and outer carton quantities).
  - ✓ mode of transport, delivery quantity and frequency of delivery.

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## Pallet

- 木製棧板 (Wooden Pallet) 重量重、不易清潔、滋生細菌
- 塑膠棧板(Plastic Pallet) 適用於食品、易清潔、壽命長
- 瓦楞紙製棧板重量輕、較不能承重、亦難防水



four-way entry

- 鋁製與鐵製棧板可承受較大重量、造價最貴
- slip sheets  
不占空間、重量輕、可堆疊  
需專用堆高機



<https://www.youtube.com/watch?v=ZMVTDjsPzxE>

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## Benefits of Palletizing

Floor Loaded Container

Palletized Load Container

tation  
ad

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## Pallet Dimensions (ISO)

Dimensions in mm (W x L)	Dimensions in inches (W x L)	Country of use
1219 x 1016	48.00 x 40.00	North America
1000 x 1200	39.37 x 47.24	UK and Asia; pallet commonly referred to as a UK or industrial pallet
1165 x 1165	44.88 x 44.88	Australia
1067 x 1067	42.00 x 42.00	Most countries
1100 x 1100	43.30 x 43.30	Asia
800 x 1200	31.50 x 47.24	Europe; pallet commonly known as a euro pallet

- The size of pallet determines the rack configuration

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## Carton Marking

QTY: 48 PCS

N.W.: 11.1 KGS

G.W.: 12 KGS

MEAS: 35X25X45CM

C/No.: 169-188



## Pack Quantities

- Products delivered in outer cartons need to be labelled in such a way that they can be easily identified.
- pack quantities supplied, pack quantities stored, pack quantities sold. 供應商包裝、儲存包裝、販賣包裝
- Pack quantities depend on the value, weight and volume of the product.
- Cartons should not weigh in excess of 20 Kg (44 lbs) from a health and safety point of view. 重量限制
- There needs to be consistency by product line to ensure accuracy during stock counts and reduce picking errors. 10 or 12

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## Preparation

### Advanced Shipping Notice (ASN) 預先出貨通知

- ❖ 內容包含出貨與預計到達時間、車輛資訊、貨品資訊，直接送進WMS
- ❖ 應要求供應商事先預約時間並提供ASN，以預先準備進貨碼頭、人員、設備、儲位，減少擁擠與進貨等待時間。

Advance Shipping Notice													
To:			Ship To:			Ship From:			From:				
Demo Buyer Inc 1212 Las Vegas Boulevard Las Vegas, Nevada 89109 tel: 800 555 5555 fax: 877 555 1002 purchasing@demobuyer.com			Demo Buyer Inc - LA Warehouse 1111 S. Figueroa Street Los Angeles, California 90015 United States tel: 1 800 555 5555			Demo Supplier Inc - San Pedro 555 Channel Street San Pedro, California 90731 United States tel: 310 121 1234			Demo Supplier Inc. 555 Channel Street San Pedro, California 90731 tel: 310 555 1002 fax: 310 121 1237 fulfill@demosupplier.com				
Buyer Name: Chris Adams Buyer PO: 111306CAA System POP: 06 Project: Required Delivery Date: 02/14/2008 Product for Resale: Yes			EDI Advance Ship Notice <a href="https://www.youtube.com/watch?v=_8jGK5Eklsk">https://www.youtube.com/watch?v=_8jGK5Eklsk</a>			Page: 1 of 2 Shipper: QUEBECOR - FedEx Freight West Ship Date: 07/16/2007 Custom Shipper: Supplier Name: Kelly Smith							
Line	Buyer Part#	Product Description	Service	Supplier Part#	Manuf. Part#	QTY ordered	QTY shipping	Date available	Dimensions	Weight	BULK Unit Price	Tax and Tariffs	Ext. price
1	111306CAA	Deluxe thermo dispenser with gauge glass, 2.5 liter, 6 pack	No			10	10	11/23/2008	20 Inch x 10 Inch x 15 Inch	15 Pound	No	\$799.00 per	\$0.00 \$15,980.00
Commodity													
			Class			Special Instructions							
			250										
Hazardous	Hazardous Code	UNNO	Schedule H Code	Freight Terms	Event Service	Transportation Service Level	Type of shipment	Domestic/Intl/Air	Equipment Grade				
No				Domestic- FOB Origin	Inbound Freight	UPS Ground	TL (less than truck load)	Door to Door	No Special Regs.				

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## Unloading and In-handling

- ❖ Need appropriate labour and equipment.
- ❖ Unloading times will vary depending on the equipment used  
包裝與設備影響卸貨與理貨時間 · 影響後續車輛卸貨
- ❖ In-handling: One of the main challenges for a warehouse manager is to match labour hours with work content.
- ❖ 生鮮與低溫食品的時間控制

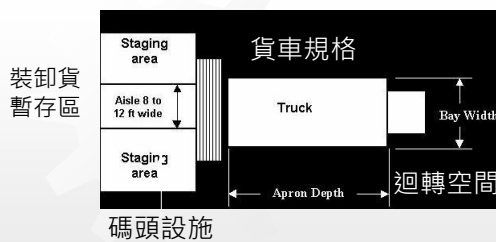
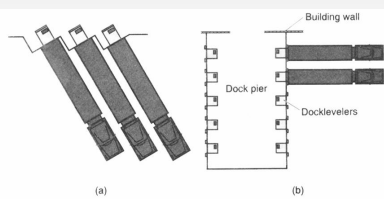


<https://www.youtube.com/watch?v=Mc-1C1yclgU>

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## Loading Dock Design

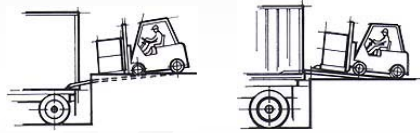


Flexibility  
Economy  
Safety  
Durability

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## Loading/Unloading Equipment

dock leveler(月台架橋、校平器) 解決月台與貨艙上下落差的機械設備，可讓搬運車輛順利進出貨艙



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## Recording and Quality Control

- Recording 入庫紀錄

Ex. product code, description, quantity on arrival, batch or lot numbers and serial numbers.

- Quality control

**More checking:** new suppliers, high-value items, food, hazardous goods, temperature-sensitive product and pharmaceuticals. 需特別檢驗

檢驗人員應使用行動裝置，確認檢驗方式與驗收標準，以及退貨的處理方式，檢驗後將檢驗結果上傳WMS，並通知供應商。

Most WMSs are able to block access to products on the system, making them unavailable for picking until cleared for sale.

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## Consumer's Risk vs. Producer's Risk

假設某產品的不良率不得超過1%

如果進貨數量不多而且人手充足 ⇒ 全部檢驗

如果無法全部檢驗 ⇒ 抽驗多少個？通過的標準是甚麼？

1. 進貨10000個，神明知道不合格品有20個  
抽驗50個，發現5個不良品，整批拒收 ⇒ 生產者(賣方)風險
2. 進貨3000個，神明知道不合格品有100個  
抽驗60個，未發現不良品，整批允收 ⇒ 消費者(買方)風險

good faith receiving

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## Sampling Inspection

1. 確定品質檢驗標準–良品與不良品如何區分
2. 依據貨品決定允收水準高低–Acceptance Quality Level (AQL)
3. 根據時間或成本決定檢驗程度–減量、正常、增量檢驗
4. 決定檢驗水準(I, II, III)–控制檢驗誤判的機率，保障使用者
5. 查表找出檢驗的代碼 (code letter)–因檢驗水準不同而異
6. 決定抽樣計劃–導出抽樣數量與允收標準

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Sample size	減量檢驗 (reduced)				正常檢驗 (normal)		
	S-1	S-2	S-3	S-4	I	II	III
2-8	A	A	A	A	A	A	B
9-15	A	A	A	A	A	B	C
16-25	A	A	B	B	B	C	D
26-50	A	B	B	C	C	D	E
51-90	B	B	C	C	C	E	F
91-150	B	B	C	D	D	F	G
151-280	B	C	D	E	E	G	H
281-500	B	C	D	E	F	H	J
501-1200	C	C	E	F	G	J	K
1201-3200	C	D	E	G	H	K	L
3201-10000	C	D	F	G	J	L	M
10001-35000	C	D	F	H	K	M	N
35001-150000	D	E	G	J	L	N	P
150001-500000	D	E	G	J	M	P	Q
500001以上	D	E	H	K	N	Q	R

### Single Sampling Plan (normal inspection) 單次正常檢驗

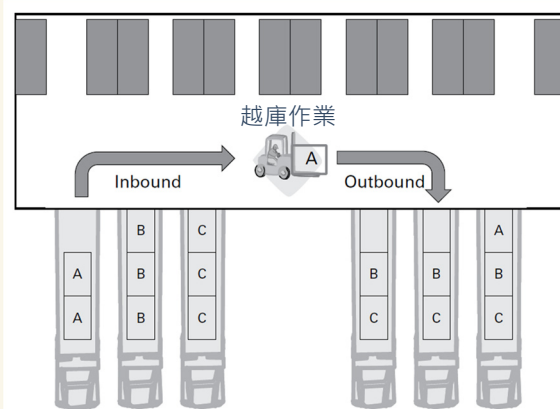
Sample size code letter	Sample size	Acceptable quality levels (normal inspection)														
		0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5
		Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re
A	2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
B	3	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
C	5	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
D	8	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E	13	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
F	20	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
G	32	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H	50	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
J	80	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
K	125	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
L	200	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
M	315	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
N	500	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
P	800	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Q	1250	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓





## Cross Docking

- Receive products from multiple suppliers and **sort** and **consolidate** them for onward shipment to different stores



一批貨物到達時，必須區分並標示各收件者資訊，以便與同一收件者的其他貨物合併裝載出貨

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## Cross Docking

<p><b>Process</b></p> <p>products are moved directly from goods-in to the despatch bays.</p>	<p><b>Goal</b></p> <p>increase throughput rates and reduce the amount of stock held.</p>
<p><b>Application</b></p> <p>perishable goods, Just-in-time systems.</p>	<p><b>Support</b></p> <p>Ex. clear labelling, advance notice of arrival, on-time delivery... Sufficient space is key to moving products quickly and safely.</p>

Cross-Docking: Receiving Dock Direct to Shipping Dock  
<https://www.youtube.com/watch?v=OS5CrureJoE>

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## Put-away

一般進貨為入庫儲存或直接補貨到揀貨區，作業人員可由行動裝置與WMS雙向聯繫。

Information needs to be programmed into WMS : 入庫資料

- size, weight and height of palletized goods
- results of an ABC analysis or slotting
- current order data
- family product groups
- actual sales combinations
- current status of pick face for each product
- size of pallet locations
- weight capacity of racking

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## Storage Location Assignment

儲位指派

依照貨品的數量、體積、重量、價值、化學性質、出貨頻率、有效日期等特性設定儲位指派法則，進貨前即可指派儲位，以加速入庫作業。

- **fixed locations** : designate a specific location for a particular product.
  1. enable the picker to memorize the actual location.
  2. speed up the picking process.
  3. reduce storage utilization.

**random location:** the pallet is placed in the most efficient slot available.

**fastest-moving items:** should be placed in the middle row of shelving

**Slower-moving items:** should be placed in the lowest and highest shelves.

Items should be stored in groups by similarity. 關聯性

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## Receiving Checklist

- 貨物是否準時送達？文件是否齊全？
- 規格與數量是否正確？ 防止誤收、短缺、偷竊
- 品質與有效期限是否符合規範？ 防止誤收
- 送貨文件是否正確處理？
- 不合格貨物是否正確處理？
- 車輛離開時是否經過檢查？
- 貨物是否正確入庫？ 防止誤置或偷竊

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## Summary and Conclusion

- Ensure that you have booked arrival slots for the majority of your suppliers. 預約進貨時間
- Reduce the amount of checking required on inbound deliveries 減少檢驗
- Have a system in place to prioritize inbound goods, eg. prioritize low-stock items and promotional items. 優先處理順序
- Plan your put-away meticulously and ensure product is located accurately and efficiently. 入庫規劃
- Cross dock as much as possible.
- 無紙化、行動傳輸

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