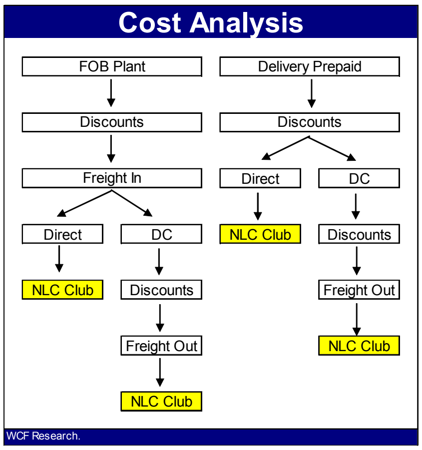
Product Distribution

The warehouse club business model is simple: offer its paid members savings well in excess of that membership fee. To do that, the low retail prices that each club offers are based on lower gross margins and lower operating expenses. A key component of club operating expenses is product distribution.

This chapter examines how merchandise is moved from the manufacturer to the club location. It includes seven sections: buyer approach, buyer opinions, financial data, club distribution methods, pallet overview, pallet rental programs and assorted product distribution information.

Buyer Approach



Although there are different ways to analyze the delivered cost of an item, the following example is typical of how a club buyer determines an item's distribution method (see flow chart on the left).

The buyer compares four net landed costs (NLC) options at the club location. To get there, he will first look at the cost of picking an item up at the manufacturing facility (freight on board plant, or FOB Plant). After factoring in the discounts, such as terms or spoilage allowance, the buyer will determine the freight cost that the club must pay to get the product to the club location or distribution center.

If delivery is direct to the club location, there is no other cost to factor in. However, if delivery is through a club's crossdock distribution center, the buyer must factor in any additional distribution discounts that may be available from the manufacturer, as well as the distribution and freight cost to get the product from the crossdock distribution center to the club.

The club buyer will do the same analysis for a product that the manufacturer pays to deliver (delivery prepaid) to the club or crossdock distribution center. Now the buyer has four different cost scenarios. The buyer will analyze what affect either direct delivery or distribution center delivery has on the inventory level of an item. If the costs are similar, but the inventory effect is different, the buyer will lean toward the method that reduces inventory. If the costs are different and the inventory effect is the same, the buyer will lean toward the method that reduces the cost.

Buyer Opinions

In 2012 and 2014, club buyers and vendors were asked what role a vendor's distribution and logistics systems play in a meeting and what vendors should be prepared for when discussing this topic. A Sam's Club buyer summed up the overall importance of distribution and logistics. He said, "Logistical efficiencies are critical to providing our members with the best prices possible. No matter what item, a big part of the transaction is logistics-based."

Sourcing – A PriceSmart buyer said that distribution and logistics play a very important role in meetings with suppliers. PriceSmart's primary distribution point to its clubs in the Caribbean and Latin America is in Miami. The buyer discussed the effect of where an item is shipped from on its net landed cost. He said, "Sourcing form the southeast to our Miami distribution center is a huge net landed cost savings to those countries compared to in general, west coast sourcing."

Storage – BJ's distribution centers, depending on the product and category, may store merchandise instead of acting as a crossdock. This places more responsibility on the vendor. A BJ's buyer said, "The vendor needs to manage their own inventory in the distribution centers. It is a huge deal if they cannot manage this process. They need capable people that are on top of this process every day especially for event driven programs."

Vendor Knowledge – Salespeople should also be very familiar with their own distribution and logistics systems and be prepared to talk about it with a club buyer. A Sam's Club buyer said, "Make sure that the vendor knows where their product is being made and how it travels through the supply chain."

Direct Shipments – A Costco buyer said vendors should always be prepared to discuss shipments from their manufacturing facilities directly to the club locations avoiding distribution, storage and/or crossdock charges. A Sam's Club buyer discussed a situation where they saved money by going direct. He said, "We worked [with a vendor] to ship truckloads to certain high volume clubs cutting out the cost of the distribution center."

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A Costco buyer described another situation. He said, "We are better at logistics than most vendors. I don't want to pay storage and other charges for the vendor to use with his small customers." In some cases, a vendor may produce a product in one facility but send it to a central facility that concentrates on distribution. The Costco respondent could be discussing this type of situation, which from their perspective, is an opportunity to eliminate a cost.

Club Knowledge – A BJ's buyer discussed a very important point that applies to every club operator. Each vendor needs to have a clear understanding of each club's logistics and distribution systems since each is different. Without that knowledge, product supply problems can occur that can potentially damage sales.

Buyers want vendors to seamlessly manage product distribution but if problems arise that could affect sales, buyers will get involved and, if it occurs frequently, can negatively affect a long term relationship. The BJ's respondent said, "The goal is that the vendor understands how our distribution centers work … Without this knowledge, the vendor cannot understand how to replenish. We do not want to chase product."

Partnering – A Sam's Club buyer stated that vendors need to be willing to have open discussions about distribution and logistics. He said, "It is becoming more important. As we look for ways to cut costs out of the system, we need to partner with suppliers that can ship merchandise efficiently passing those savings onto members … It would be good to get the supplier's logistics team in the same room as Sam's logistics team to allow them to come up with ways to cut logistic costs"

Key Program Component – A food vendor believes distribution and logistics should be included as a primary topic and can influence a buyer's decision. He said, "The role played by logistics comes into play much later in the conversation than it should. If we went in with a program of product, price, pallet configuration and distribution logistics, we would be more successful."

Manageable – A Costco dry grocery and candy buyer commented that whatever issues he faces with distribution and logistics, if it is an item he wants, he will figure it out. He said, "Everything is negotiable! I can usually work around their distribution or logistics if it's an item I really want."

Financial Data

Company (millions)	Fiscal Year	Merchandise Sales	Margins		Op. Expenses w/o COGS		Op. Income w/o Membership		Membership/ Other Revenues		Operating Income	
Costco	2015	$113,666	$12,601	11.1%	$11,510	10.1%	$1,091	1.0%	$2,533	2.2%	$3,624	3.2%
PriceSmart	2015	$2,754	$401	14.6%	$304	11.0%	$97	3.5%	$49	1.8%	$146	5.3%
Walmart	2015	$482,229	$117,143	24.3%	$93,418	19.4%	$23,725	4.9%	$3,422	0.7%	$27,147	5.6%
Kroger	2014	$108,465	$22,953	21.2%	$19,816	18.3%	$3,137	2.9%	$0	0.0%	$3,137	2.9%
Target	2014	$72,618	$21,340	29.4%	$16,805	23.1%	$4,535	6.2%	$0	0.0%	$4,535	6.2%

WCF Research. Company annual reports. * Gross margin includes buying, occupancy costs in cost of goods.

The chart on the left details merchandise sales, gross margins, operating expenses, operating income and membership and other revenues for five retailers from each company's most recent fiscal year.

Walmart's information includes Sam's Club. Costco's and PriceSmart's gross margins and operating expenses as a percent of sales are well below the other retailers. The chart shows the importance of membership revenues to club profitability as Costco's membership revenues far exceed operating income (PriceSmart's model is slightly different with a greater emphasis placed on merchandise margins). In general, in most years, the clubs will generally do slightly better than break-even on merchandise sales and company profits before interest expense and taxes are primarily from membership fees.

The charts on the next page show how quickly Costco, PriceSmart, Sam's and Walmart manage inventory. The Sam's Club chart shows sales and operating income data only as Walmart consolidates detailed financial data for Sam's into its overall company information. The Walmart chart provides data from all divisions including Sam's.

Weekly Sales per Location (thousands) – This figure is derived by dividing fiscal year merchandise sales by the average number of locations for the current and most recent fiscal year. The resultant number is divided by 52. An average Costco location generated $3.24 million in sales per week. This is 3.9 times the average Walmart location ($0.8 million per week in sales), 2.2 times greater than the average PriceSmart location ($1.50 million per week in sales) and 2.1 times the average Sam's Club ($1.55 million per week in sales).

Weekly Operating Income per Location (thousands) – This data point is derived by dividing operating income by the average number of locations for the current and most recent fiscal year. The resultant number is divided by 52.

Average Inventory per Location – This figure is derived by dividing the average inventory of the current and previous fiscal year by the total number of locations at the end of the current fiscal year.

Inventory Weeks Supply – This figure is derived by dividing the average inventory per location by the average weekly sales per location. Costco (3.9 weeks) had fewer weeks supply than Walmart (4.9 weeks) and PriceSmart (4.4 weeks).

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Inventory Turns – This figure is derived by dividing the current fiscal year cost of goods by the average inventory of the current and previous fiscal years. Costco (12 turns) and PriceSmart (10 turns) rotate their inventory faster than Walmart (eight turns).

Days in Gross Inventory – This figure is derived by dividing 365 (days per year) by the number of inventory turns per year.

This figure represents the average inventory that a location has on hand for a given period of time. In its 2015 fiscal year, Costco's average inventory per building of $12.67 million was sold in 31 days.

Accounts Payable Percentage – This figure is derived by dividing the average accounts payable number for the past two fiscal years by the average inventory for the past two fiscal years.

A retailer is operating very efficiently when its accounts payable percentage approaches or exceeds 100%.

Costco	Weekly Per Club *(thousand)*			Weeks Supply	Inventory Turns	Days in Inventory	AP Percent
	Sales	Operating Income	Average Inventory				
FY 2013	$3,186	$95	$11,821	3.7	12	30	101%
FY 2014	$3,268	$96	$12,043	3.7	12	30	100%
FY 2015	$3,241	$103	$12,666	3.9	12	31	101%

WCF Research, Company annual reports.

PriceSmart	Weekly Per Club *(thousand)*			Weeks Supply	Inventory Turns	Days in Inventory	AP Percent
	Sales	Operating Income	Average Inventory				
FY 2013	$1,450	$81	$6,365	4.4	10	38	92%
FY 2014	$1,469	$82	$6,476	4.4	10	37	93%
FY 2015	$1,495	$80	$6,549	4.4	10	38	91%

WCF Research, Company annual reports.

Sam's	Weekly Per Club *(thousand)*			Weeks Supply	Inventory Turns	Days in Inventory	AP Percent
	Sales	Operating Income	Average Inventory				
FY 2013	$1,556	$58	n/a	n/a	n/a	n/a	n/a
FY 2014	$1,554	$57	n/a	n/a	n/a	n/a	n/a
FY 2015	$1,553	$59	n/a	n/a	n/a	n/a	n/a

WCF Research, Company annual reports.

Walmart	Weekly Per Store *(thousand)*			Weeks Supply	Inventory Turns	Days in Inventory	AP Percent
	Sales	Operating Income	Average Inventory				
FY 2013	$894	$53	$3,808	4.3	9	42	91%
FY 2014	$858	$51	$4,172	4.9	8	44	88%
FY 2015	$834	$47	$4,113	4.9	8	45	84%

WCF Research, Company annual reports.

The following example and chart above explain the relevance of accounts payable percentage.

Background – The product used in this example is toilet tissue, one of the club industry's highest volume items. We assume that a club generates $55,000 in sales for every $50,000 of toilet tissue it purchases. This is a 9.1% gross profit margin ($5,000 profit divided by $55,000 in sales). We also assume that the club generates weekly toilet tissue sales of $27,500.

Day One – The club has $50,000 worth of toilet tissue inventory that will cover sales for the next two weeks. The inventory was purchased on 30 day terms, so the club has $50,000 in accounts payable. During the next two weeks, the club generates $55,000 in sales. Since it will deplete its inventory of toilet tissue over the next two weeks, the club orders $50,000 more inventory to arrive on day 15.

Day 15 – The club has $50,000 in inventory, $55,000 in total sales, $100,000 in accounts payable and $55,000 in cash and $5,000 in profits. During the next two weeks, the club generates $55,000 in sales and orders another $50,000 of inventory to arrive in two weeks.

Day 30 – The club has $50,000 in inventory, $110,000 in total sales, $100,000 in accounts payable ($50,000 has been paid to the vendor for the toilet tissue inventory that arrived on day one), $60,000 in cash (the club used $50,000 of the $55,000 sales total from weeks three and four to pay the vendor) and $10,000 in profits.

The accounts payable (A/P) percentage of 200% on Day 30 is calculated by dividing the accounts payable figure of $100,000 by the inventory figure of $50,000. By selling the toilet tissue quicker than it has to pay for it, the club in this example is able to generate cash, profits and sales before merchandise has to be paid for. Therefore, it is good when a club increases its accounts payable figure while keeping its inventory figure from increasing at the same rate.

Distribution Methods

One aspect of the club buyer's job is to understand the distribution method used by each product and/or vendor. The buyer reviews those product distribution methods to ensure they are efficient financially and effectively manage inventory. However, club vendors should also review their own distribution networks to make sure their system meets club buyer needs.

In the end, club buyers want to increase sales through lower prices and one way to do that is to lower distribution and inventory costs. Any avenue to achieve those goals needs to be evaluated and possibly implemented. This section includes distribution information on dry grocery, general merchandise and perishable products.

Dry Grocery and General Merchandise Distribution – The most cost efficient way for the clubs to purchase dry grocery and general merchandise items is to have vendors deliver the products directly to the clubs at truckload pricing. However, a truckload of tin foil would be too much inventory for most locations.

Time	Inventory	Sales	Accounts Payable	Vendor Payment	Cash	Profits
Day 1	$50,000	$0	$50,000	$0	$0	$0
Day 15	$50,000	$55,000	$100,000	$0	$55,000	$5,000
Day 30	$50,000	$110,000	$100,000	$50,000	$60,000	$10,000
A/P Percentage - 200% Gross Margin - 9.1%						

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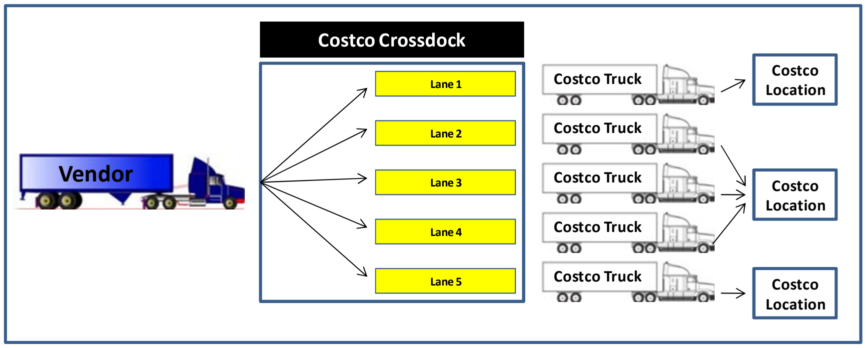
Instead of storing a large number of pallets of tin foil or green beans at each location, a truckload of each item is delivered to a club distribution center and is immediately shipped to a number of club locations. This method of distribution is called crossdock which all three clubs employ (see picture below).

The crossdock facility has receiving doors on one side of the building and shipping doors on the other. When product is received, it is immediately tagged with a number that corresponds to a particular club location. A pallet of that product is immediately put in a shipping lane for its destination club. On the shipping side, forklifts are constantly taking merchandise from the shipping lanes and putting it directly into outbound trucks for delivery to the club locations.

The clubs electronically track the weight and cube of each outbound truck and when the truck reaches its maximum weight and cube, it is sealed and is ready to deliver. This process is so efficient that a pallet can be taken from a vendor's inbound truck and immediately placed on an outbound truck for delivery to a club in the same day. Crossdocking enables the clubs to reduce inventory, increase inventory turnover, reduce transportation costs, improve product quality and increase responsiveness to changing market conditions.



Perishable Distribution – Crossdock – The crossdock program for perishable product (refrigerated, frozen, deli and produce SKUs) is similar to the program for dry grocery and general merchandise items. The quick-ship characteristics of a crossdock operation are appropriate when considering the short shelf life of refrigerated products.

Perishable Distribution - Consignment – Typically, the consignment center program for club perishable products is a short-term inventory and distribution system. The manufacturer owns the product that is stored and shipped by the third party consignment center. The club does not take possession of the product until it is received at their location. The manufacturer generally pays the consignment center 4.5 cents per pound of product that is shipped into the facility. This usually covers 21 to 30 days of storage and the outbound distribution and shipping costs. The club issues consignment center orders. That information is forwarded by the consignment center to the vendor for billing and replenishment purposes.

Pallets

Pallet management in the club industry is important. Merchandise delivered on good-quality pallets is more likely to arrive at the location in the same condition as when it left the manufacturing facility. Merchandise delivered on poor-quality pallets will increase distribution costs as damage, product re-palletizing and refused deliveries make club labor charges more likely. The following are facts and information regarding club pallet specifications:

Grocery Manufacturers Association (GMA) Standards – The GMA established pallet standards for the retail industry to follow. Up until January, 2011, all three clubs supported the following GMA pallet standards. As you will see, Costco no longer does. GMA pallets are 48-inches long by 40-inches wide and have stringers running along the 48-inch side and in the middle of the pallet. These stringers are used to support the deck components. GMA pallets can be entered from four different directions. Generally, GMA pallets weigh between 45 and 60 pounds and support between 1,500 and 2,800 pounds of merchandise.

Costco and Block Pallets – Beginning January, 2011, at all its locations in Canada, the United States and Mexico, Costco no longer accepts product shipped on stringer/GMA pallets and is no longer accepting pallet exchange deliveries. Costco will accept the following pallet types: product shipped on rental block pallets from iGPS (plastic), PECO (wood) or CHEP (wood), pallets that are built for a specific purpose (these must be approved by Costco), pallets shipping from regions of the world where PECO, CHEP or iGPS do not operate and equivalent one-way block pallets that are a better value than renting from iGPS, PECO or CHEP (these must be approved by Costco).

The specifications for non-rental equivalent one-way block pallets include: the performance and structure must be similar to the rental pallets from iGPS, PECO and CHEP, the size must be 48-inches by 40-inches, it must offer four way entry and it must be a machine built new pallet using new (not recycled) lumber.

Merchandising – Product should be stacked on the pallet to merchandise from both the 48-inch and 40-inch sides of the pallet. Costco requires the 48-inch side, while BJ's and Sam's prefer the 40-inch side. By using the smaller 40-inch side, BJ's and Sam's, compared to Costco, are able to merchandise more pallets in the same space.

Club Standards – Generally, a pallet should be 95% hardwood, it should not have any lead boards broken past the first nail and all the nails should be flush or countersunk. The pallets should not have protruding nails on any sides, should not have any boards overhanging the stringers, should not have any odors, grease, dirt or oil on them and should not have boards that are too thick or too thin.

Height – Pallet and product height must come close to, but not exceed 58-inches (this includes 5.5-inches for the height of the pallet). This allows the club to maximize the number of pallets on outbound trucks. Adhering to this height requirement helps to ensure the product and pallet will easily slide under the steel in the club locations.

Pallet Supported Weight – Each pallet under 750 pounds must be capable of withstanding an additional 1,500 pounds of weight on the bottom product layer without incurring any damage through the supply chain. Each pallet over 751 pounds must be capable of withstanding an additional 2,500 pounds of weight on the bottom product layer without incurring any damage through the supply chain.

Pallet Details – With the pallet footprint of 48-inches by 40-inches, product should not hang over the edge and should fill a minimum of 44-inches by 37-inches on the pallet. In many cases, the pallet must have a four-inch pallet cap to protect the pallet from damage and corner posts to provide stability. Shrink wrap of 0.79 gauge or greater must be used from the bottom of the pallet to the pallet cap. Manufacturers should not shrink wrap on top of the pallet.

Pallet Management - As a warehouse club vendor, one of the most challenging parts of the business is pallet management. In the club industry, in particular, pallet integrity is of utmost importance. Since club inventory is stored in the steel above where members shop, each and every pallet must be properly constructed and maintained so product can be supported and members protected. For this reason alone, club receiving departments pay close attention to the pallets they receive. Manufacturers have three choices when deciding how best to manage their club pallet supply:

1. ***Pallet Exchange*** –Pallet exchange might be the most cost effective scenario for manufacturers. When merchandise is delivered to the club location or crossdock facility, the trucker receives the same number of empty pallets as was used to deliver product. However, pallet quality and pallet tracking make this option difficult to manage. Please note, as of January, 2011, Costco no longer accepts pallet exchange deliveries in the United States, Canada and Mexico.

2. ***Include in Cost*** – Including pallets in the cost is the easiest scenario for vendors, but is also the most expensive. Manufacturers who follow this route buy new or used GMA pallets that meet club specifications. The cost of these pallets is included in the cost of goods and when the merchandise is delivered, the clubs keep the pallets.

3. ***Pallet Leasing or Rental*** – There are three club knowledgeable pallet rental companies: CHEP, iGPS and PECO.

Pallet Rental

The following are summaries of the three primary pallet rental companies: CHEP, iGPS and PECO. In its simplest form, pallet rental or pooling is the shared use of pallets by multiple customers. Companies that use pallet pooling avoid capital expenditures and can focus day-to-day operations on their core business.

Rented pallets are delivered to the manufacturer's production facility. The merchandise along with the rented pallets are delivered to the clubs. The clubs generally do not have any issues with the quality of rented pallets (especially from CHEP, iGPS and PECO) and, therefore, pallet issues at the receiving door are completely avoided. When a sufficient supply of empty rented pallets are accumulated in the club, the pallet rental company picks them up or the club returns them. After receipt, the rented pallets will be inspected and repaired and placed back into the system.

CHEP – Blue Pallets – www.chep.com – CHEP began operations after World War II in Australia as the government created an enterprise that rented surplus war equipment. That enterprise was called the Commonwealth Handling Equipment Pool. After its privatization in the 1950's, the pallet pooling concept began and the organization was referred to as its acronym, CHEP. Today, CHEP is a subsidiary of Brambles. CHEP services companies in many categories including consumer goods, produce, meat, home improvement, beverage, raw materials and the automotive industries.

CHEP pallets at 48-inches by 40-inches are the same size as a GMA pallet and constructed in a much sturdier block design. This helps protect the unit load and reduces unsalable product due to damage. In contrast to stringer pallets, the CHEP block pallet has full four-way entry, enabling pin wheeling of pallets on trucks.

iGPS – Plastic Pallets – www.igps.net – iGPS began operations in March, 2006. A plastic pallet offers a competitive advantage when it comes to employee and club member safety. A plastic pallet does not have missing wood, protruding nails or wooden shards sticking out. Commenting on the environmentally friendly benefits of plastic pallets, Rex Lowe, president of iGPS said, "In terms of sustainability, the plastic pallet really shines. A plastic pallet avoids trips to a repair center eliminating those transportation costs and is 100% recyclable."

iGPS pallets are embedded with RFID tags. Lowe said, "A vendor places a pallet of product on an iGPS pallet and links that unit load to the RFID tag on the pallet. Advance ship notices are electronically sent to the club who can accurately and efficiently receive it into their inventory. Then, when the product is sold and the pallet is left empty, the club will scan the empty pallet at the club location or cross dock facility. iGPS is electronically notified and guarantees that it will pick up its empty pallets within 24 hours."

PECO – Red Pallets – www.pecopallet.com – PECO began operations in 1997 with a strict focus on pallet quality and excellent service. The company's growth during its first eight years was conservative with its primary business with private label vendors supplying the warehouse club industry. According to the company's web site, PECO pallets are produced using "high quality #2 grade douglas fir and southern yellow pine lumber that is 100% sustainably forested in the United States". Every PECO pallet that is returned to its depot is rigorously inspected, fixed and cleaned.

Product Distribution Information

The following is assorted product distribution information.

Lower Profile Pallets – BJ's asks vendors to provide it with pallets at approximately half the height of pallets shipped to Costco and Sam's Club. With approximately 6,700 items in its clubs, BJ's stocks approximately 1,700 to 2,900 more SKUs than do Costco or Sam's. To find space for the extra items, in many categories, BJ's created a half-pallet high space on the floor and a half-pallet high space in the steel above. This way, in the same space that Costco and Sam's stock one item, BJ's is able to stock two items.

Proactive Distribution – One manufacturer who distributes a number of physically small slower moving items to the clubs offered a unique approach that efficiently uses the crossdock system. This manufacturer palletizes the orders by club location. Each pallet has multiple SKUs that are stacked on the pallet and shrink-wrapped together. A bill of lading is attached to the front of the pallet, along with the club location where it will ultimately be going. The product is "blind received" at the crossdock facility and the club location checks the order when it arrives. By doing up front work, this manufacturer is able to efficiently (both operationally and financially) distribute its product to the clubs.

Mechanical Clamping – For perishable or non-perishable merchandise that is distributed by layer, the clubs could use a mechanical clamping system that moves product by layer from an inbound pallet to an outbound pallet. To prevent product and display case damage by the clamping machine, the display case should be turned to the center of the pallet and should not face the 48-inch side of the pallet. The display case must be able to withstand 2,500 pounds of side compression on the 48-inch side of the pallet from the clamping machine.

Corner Posts – For perishable or non-perishable merchandise that is distributed by layer, corner posts are not required. However, if they are going to be used, the manufacturer should wrap the pallet in shrink-wrap before putting the corner posts on. The corner posts can be put on before wrapping the last layer of shrink-wrap. This allows the club to remove the corner posts easily.