



# No more fishing for bulk container protection

*Unalaska's Westward Seafoods makes a big catch with a 260-gallon corrugated intermediate bulk container for fish oil that reduces strapping costs by at least 40 percent, spillage loss by 25 percent and handling time by more than 25 percent.*



THE SEMI-BULK PACKAGING EXPERTS



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**S**eafood processor Westward Seafoods says it fell for its new 260-gal corrugated intermediate bulk containers (IBCs) from Weyerhaeuser's SpaceKraft Business, hook, line and sinker. To cut costs and waste and to facilitate handling, the company recently made a shift from another bulk tote that required two operators to set up. Westward was also able to lower its strapping costs by at least 40 percent, as well as loss from spillage by 25 percent, and cut handling time by more than 25 percent with the SpaceKraft® IBCs. The new containers can also be stacked higher, allowing 24 totes per sea container, or "seatainer," versus 18.

Founded in 1991, Westward Seafoods is the second largest fishery based in Dutch Harbor, approximately 1,175 miles West-Southwest of Juneau, Alaska, on Unalaska Island in the Aleutians. Since Dutch Harbor is the largest commercial fishing port in the U.S. in terms of millions of pounds landed and processed, Westward has its work cut out for it.

With its product caught by its own Westward Fishing Company trawler fleet, Westward Seafoods, based in Seattle, processes mainly pollock, halibut and cod, Alaskan King, Dungeness and surimi imitation crab, and processes and ships some 65,000 metric tons of seafood a year, says Hisashi Yoshikawa, deputy plant manager at the Dutch Harbor Westward Seafoods location. The company also ships approximately 15 percent of its processed seafood to U.S. markets.

### Waste not, want not

Butch Brown, fish meal plant supervisor, also points out that the tons of seafood Westward ships each year don't include fish byproducts, which are processed in the fish meal plant. In fact, the fish byproducts shipments are on a comparable scale with the edible fish production. In a typical 12-hour shift, Brown says he and his six-man crew process and

package 110,000 lb of fish meal, 6,650 lb of fish bones and 11,000 gal of fish oil.

Replacing other bulk containers, the protective, collapsible IBCs with bulk film liners are easier to handle, quicker to fill and safer to use, says Brown. "You'd never guess that two corrugated totes could be so different in use. We began using the 260-gal SpaceKraft containers last year and it really raised our productivity and made our work easier."

Brown explains that a 20-lb pollock, filleted, will render approximately 27 percent edible food product, while the remaining 73 percent, including fish guts, blood, bones, tail and head, are usually discarded by the average fisherman as waste. "Here in the fish meal plant, we process and convert these waste byproducts into fish meal, fish bones and fish oil, which we bulk-package for shipment mainly to Japan, Korea, Thailand, China and other Asian countries," he points out.

The fish byproducts are actually divided according to use. First, they are conveyed from the filleting plant to the company's fish meal plant by way of a stainless-steel tube and dumped into a stainless-steel silo. From here, the materials are screw-fed through a steam cooker before a twin-screw press separates the solids from the liquids. The solids are then screened to remove bones before the bones and fish meal are transported to separate silos, ready for packaging.

Meanwhile, three-phase centrifuges separate the fish oil from

the remaining liquid. While the company drains the latter back into the sea, it pumps the quality oil into stainless-steel holding tanks. Fish



Fish oil takes only about 15 min tops to fill into the 260-gal IBC using a special articulating arm filling system.



Today, one operator is required to fill an IBC, using a filler that allows the operator to start setting up the next IBC while this one is filling.

bones are filled into 13,000-lb bulk nylon/canvas bags with lifting straps, Brown says, and made into meal used for livestock and fertilizer. The bags are trucked to the port for transfer to ISO containers.

### Gold in oil

It is the fish oil that's most widely used and distributed of the plant's fish byproducts. End users include aquaculture companies, which mix it with fish meal as feed for farm-raised fish. The oil is also used in cosmetics for beauty care products and lotions and in pharmaceuticals for fish oil supplements.

Originally, Westward shipped fish oil to Asian customers in 6,000-gal tanks, but Brown says the big tanks were expensive and somewhat difficult and costly to clean. "It may take five or six weeks before we'd get an emptied, cleaned ISO tank back. Most of our customers preferred receiving fish oil in smaller containers that could be distributed and used without repackaging."

Switching to one-way corrugated bulk containers about three years ago went swimmingly as far as delivering the fish oil in a more customer-friendly container size, Brown says, but the totes were still fishy in the time it took to set up and fill them. "They required excessive, labor-intensive strapping and weren't strong enough to be stacked two-high in a seatainer and they presented occasional spillage problems," he remembers. "Fish oil is a hazardous product up here, and we take extra safeguards to make sure that any spilled fish oil does not get back in the sea."

After a search, just more than a year ago, Westward landed the trophy it was after in a 260-gal corrugated IBC from SpaceKraft. Says Brown, "Productivity increased, our twelve-hour shifts seemed a lot shorter, and we didn't have to scramble around other parts of the



**Less plastic strapping is used on the new 40×48-in. containers—only four straps are needed per load versus eight straps previously.**

plant now and then to 'borrow' extra hands to help us catch up."

Westward receives five to six 40-ft-high sea containers at a time that each hold 192 complete units of flat, 260-gal SpaceKraft IBC totes. The outer sleeve of each collapsible IBC is continuously wound from eight plies of A-flute corrugated in a patented process that eliminates the manufacturer's joint, resulting in a seamless container with superior stacking strength. Each container also includes an easy-to-use corrugated cassette incorporating a large 12-mil film liner from Scholle Corp. of two plies of polyethylene and one ply of nylon. The liner also has a 2-in. top-fill fitment and a 2-in. side-dispensing buttress fitment.

### Easy setup and bottom-up fill

Using SpaceKraft's Articulating Arm Filler, which eliminates even more manual labor associated with the large bulk containers, Westward fills between three and four IBCs with fish oil an hour, depending on the type of fish and time of year. Brown says the filling process basically requires one operator, whereas it previously took two crew members full time to set up, fill and close the former containers.

Since the fish meal plant has limited storage space, Brown says, Westward has 200 totes trucked over at a time from its main receiving dock to keep enough for roughly a five-day supply. An operator brings three of the flat IBC containers and pallets to the filling line by forklift. To set them up, the operator positions the outer corrugated sleeve on a standard 40×48-in. pallet, opens the bag cassette and installs a quick-disconnect fitting on the inner film bag. The bag cassette is then inserted in the bottom of the corrugated sleeve, a drain fitting and hole in the outer sleeve are aligned, and the corrugated outer sleeve is squared up on the pallet, before it's then tared and ready to fill.

Brown tells PD that one of the SpaceKraft container's features he likes best is its ability to be filled from the bottom up. The operator simply uses the optional Articulating Arm filler from SpaceKraft, which includes a three-legged mast and boom to support a 2-in. hose from the fish-oil holding silo to the SpaceKraft container's filling valve. The valve is connected to the container's inner bag liner. A male quick-connect fitting is threaded to the bag and a female quick-disconnect attached to the valve is then connected to the male part threaded into the bag. The filler's counterweight on the rear of the boom allows the arm to rise as product fills without impacting weight. One end of the hose is attached to the filling line and the other is attached to the inner bag liner. The operator opens the valves and filling is automatic until the valves are closed. As a metering pump dispenses the oil, the bag liner opens gently by itself as the fish oil disperses into the liner.

It takes about 10 to 15 minutes to fill a container. While one container is filling, the operator is free to set up the next container and then close the filled container. When filling is

completed, the operator disengages the filling hose and closes the filling valve and the container is capped. The Articulating Arm can be combined with a loadcell-type scale and shut-off valve, in which case filling automatically stops when the tote reaches the desired net weight.

Says Brown, "The liners also tended to get air bubbles. Sometimes the operators would stop the fill, disconnect the hose, and try to flatten the unfilled part of a liner to get air out, then reconnect the filling hose to complete the fill. The liners could tear from the handling or from the air pockets, and we'd have to pump out as much of the oil as we could to recycle it, usually cleaning up some spillage while we were at it. We used to recycle two to four of the totes a day because of this problem."

### 'Steady as she goes'

Today, the only bubbles seen come from the fish or the sea, he says. Once a SpaceKraft IBC is filled, the operator pulls a film sleeve down over the container and applies a corrugated top cap, also both from SpaceKraft, before shipping. "Many of our fish oil customers want antioxidants added to their fish oil, so the operator will mark the percentage on the side of the box. Otherwise, the final closure is completed when the operators strap the IBC to the pallet."

He points out that plastic strapping is used less excessively today. "We now use four straps per pallet—that's all that's needed. Before, it took two operators perhaps twenty minutes to close a filled container. They had to put eight straps on each one—four to clasp it to the pallet and four to wrap the filled container to provide support. Even then, we could only ship eighteen of them in one layer, because they couldn't be



IBC filling system consists of a three-legged mast and boom to support a hose from the fish-oil holding silo to the IBC's filling valve.

stacked two high. We now ship 24 SpaceKraft totes in a sea container, because they can be stacked two-high. Total load weight is the limitation."

As Brown sums up, the move to SpaceKraft containers has made the oil-packing operation ship-shape and has smoothed out a few bubbles in the operation. "The totes add an easy, steady rhythm to our work and make us more productive," he says. "Even without all of the cost savings, the easy handling of these containers is a tremendous benefit."

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