



 **TOFORD**
AQUACULTURE



RESPECT THE SEA

As a member of a coastal community that largely depends on the sea, we've learned to respect the power of the sea for what it provides and what it can take away, and our respect is reflected in our works, in what we designed and in what we make.

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At Toford Aquaculture, our cages are built on the foundation of our extensive knowledge and experience in HDPE pipe manufacturing since 1990. Building on our HDPE pipe expertise we manufactured our first aquaculture cage in 1995. Over the years as customers demand larger and stronger cages, our capability have also grown with our customers.

OVER 1200+ CAGES DELIVERED!

Since 1995 our professional teams have built, assembled and delivered over 1200 cages across most parts of Asia - notably Japan, Taiwan, Philippine, Malaysia and Indonesia - and to customers as far as Mexico and Russia. The scope of our projects has grown from small 15m-diameter cage projects that need only a small crane to today's projects with 80m-diameter cages that require several large cranes to lift.

TYPHOON READY!

We are trusted by our customers worldwide, especially by ones in areas with frequent typhoon activities for our typhoon ready cages with unmatched strength and durability delivered by Toford.

ABOUT OUR CAGES

A GOOD CAGE STARTS WITH GOOD PIPES. At Toford Aquaculture, we insist on using only the top quality HDPE100 materials for the manufacturing of our pipes, brackets and cages.

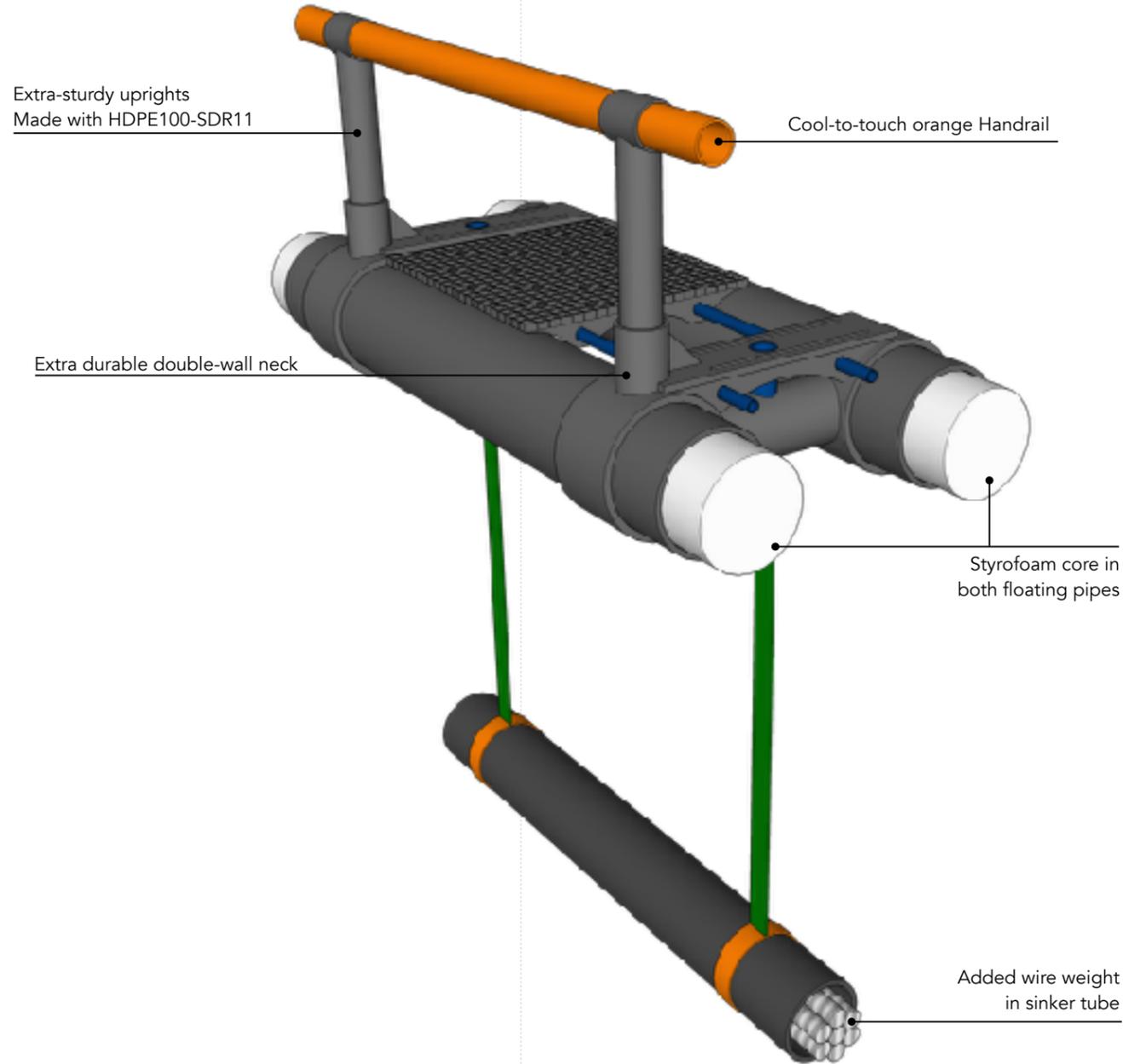
UNMATCHED DESIGN FLEXIBILITY! We offer a wide array of cage stanchion choices to meet various cage design requirements - our stanchion options includes both injection-moulded stanchions and fabricated stanchions. Our fabricated stanchions are constructed and welded from top quality HDPE100 pipes and materials for their superior strength and design flexibility, and are proven for continuous use in harsh environments.

Because fabricated stanchions are not constrained by moulds, we can easily cater to the design needs of our customers without the lengthy and complex process of mould design.

To manufacture Toford's fabricated brackets, the HDPE pipes are cut to shape and butt-fused together by computer-controlled machines to ensure consistent heating temperature during the melting process; precision timing to minimize temperature loss when joining pipes together after the initial melting; constant applied pressure during the fusing process to ensure pipes are properly fused together. Our extensive experience has taught us that these are the critical control points for the strongest butt-fused joints and consistent quality, making Toford's brackets superior in terms of strength and durability, and most importantly, making our cages typhoon ready.

Quality is in the Details. In addition to the computer controlled butt-fusion process that ensures the strength and durability of our brackets with consistency, every one of our brackets is hand-finished with additional welding for extra reinforcement by our certified welders. Every visible edge of our brackets is carefully trimmed and routed with the finest craftsmanship; the routed edges are not only for the aesthetics but also to eliminate potential sources of chafe and net damage which could lead to fish escapes.

Professional Installation Service. To ensure the highest quality possible, all cages are assembled by our team of certified professionals with years of international field experience.



Double-Wall Neck. Our specially designed double-wall neck, a standard for all our fabricated brackets, has the handrail upright securely butt-fused together with the handrail socket at our facility. This eliminates any wiggle movements between the handrail upright and the socket - the extra wiggle space for inserting handrail upright would lead to the widening of the handrail socket, eventually development of cracks and ultimately the collapse of the handrail circle.



Signature Cool-to-Touch Orange Handrails. Orange handrails are our signature and standard feature for all our cages since our very first cage back in 1995, and has since been adopted by many in the industry. The orange handrails are highly visible out on the sea on darker or stormy days, making the cages easily spottable by ships from afar thus reducing the likelihood of collisions, safeguarding valuable fish stocks and investments. The bright color also does not absorb heat as much as the conventional black pipes, making our orange handrails cooler to touch - up to 20° cooler, making them safe for the farmers to touch barehanded.

Polystyrene Fillings. All our cages come with styrofoam fillings inside one or both floating pipe as a standard feature for a virtually unsinkable cage.

Sinker Tubes. For controlling the shape and volume of the net under strong current and for when there is a need to crowd the fish stocks for assessment, treatment, or harvest. Choices of water, steel wire cable or chains are available for the required weight and rigidity. The tube is secured by choices of rope strops, stainless steel or HDPE brackets.



CAGE SELECTIONS

WIDE SELECTION OF CAGE OFFERINGS. From the early days of 200mm brackets to today's 630mm brackets, Toford has continued to invest in research and development to serve the evolving needs of our customers, enabling our customers to focus on raising fish and not worry about the structural integrity of the cages. Today we have the most comprehensive cage offerings on the market. Our stanchions can be used to construct cages in either 1, 2 or 3 floating pipe configurations, forming cages in circular or square shape, or as a platform.



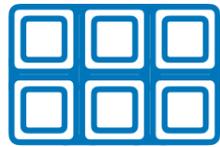
Standard Circular Cages remain the most popular configuration demanded by our customers. They are built using our fabricated or injection-moulded stanchions with collars for two equal-size floating pipes that are 200mm in diameter to the largest 630mm in diameter, forming cages as small as 13m in diameter to as large as 80m.



Balanced Cages are specially designed to address the issue of uneven walkways/platform and handrail deformation as the result of unbalanced loading of the floating pipes. The balanced cages are circular in shape and are built using fabricated balanced stanchions for a larger inner floating pipe and a smaller outer floating pipe. This configuration is especially ideal for use with copper net or cages with heavy sinker tube loads.



Extra-Wide Predator-Proof Cages are specially designed to safeguard farms that are constantly under attack by predators. Built using our extra-wide triple collar stanchions, this cage is equipped with anti-seal net pole and anti-flyer carbon fiber net support; the 2-3m extra-wide distance keeps the seals from reaching the holding net from above and below the water surface.



Blue Ocean Platforms are composed by our triple and/or standard double collar stanchions for more moderate and sheltered waters, it features an extra-wide center aisle walkway and optional walkway around the outer perimeter of the cages for maximum operational flexibility and easy access from cage to cage.



Square Cages are available in various sizes and configurations as a standalone cage from 7x7m to 31x31m, or can be grouped together. They are built using our double collar injection-moulded stanchions or fabricated stanchions.



Single Collar Cages are constructed with stainless-steel stanchions for low-cost value option. Each stanchion is made with high-quality hot-dipped galvanization stainless-steel for corrosion protection and maximum strength. These brackets offer maximum design flexibility in small batches.



From the early days of small-scale project to the large-scale project of today, our capability has also grown to serve the growing demands of our customers.





Standard 20m diameter cage with 250m stanchions - Amakusa, Kyushu, Japan

CIRCULAR CAGES

- Available with our injection-mould stanchions or fabricated stanchions: Standard, Balanced, Skid Guard
- Standard signature cool-to-touch orange handrails
- Manufactured only with Top-quality HDPE100 material, SDR-11 or SDR-17 pipes
- Double-Wall Neck for extra strength and durability on all fabricated stanchions
- Standard styrofoam fillings in one or both floating pipes for unsinkable cage

Circular Cage Specifications

Cage Models	250	315	355	400	450	500	560	630
Cage Circumferences	40-70m	70-90m	90-120m	110-140m	140-180m	160-210m	190-250m	230-315m
Cage Diameters	13-22m	20-30m	30-38m	35-45m	45-56m	50-66m	60-80m	70-100m
Standard Circulars Cage								
Inner & Outer Floating Pipe	Ø 250mm	Ø 315mm	Ø 355mm	Ø 400mm	Ø 450mm	Ø 500mm	Ø 560mm	Ø 630mm
Stanchion Options	⊕◆	⊕■	⊕■	⊕■	⊕■	⊕◆	⊕■	⊕■
Balanced Circular Cage								
Inner Floating Pipe	-	Ø 315mm	Ø 355mm	Ø 400mm	Ø 450mm	Ø 500mm	Ø 560mm	-
Outer Floating Pipe	-	Ø 250mm	Ø 315mm	Ø 355mm	Ø 400mm	Ø 450mm	Ø 500mm	-
Stanchion Options	⊕■	⊕■	⊕■	⊕■	⊕■	⊕■	⊕■	⊕■
Number of Stanchions	20-35	35-45	45-60	44-56	56-72	64-84	76-100	92-120
Stanchions Separation	2m	2m	2m	2.5m	2.5m	2.5m	2.5m	2.5m
Handrail Pipe (Orange, SDR11)	Ø 110mm	Ø 110mm	Ø 110mm	Ø 125mm	Ø 125mm	Ø 140mm	Ø 140mm	Ø 160mm
Handrail Upright	Ø 125mm	Ø 125mm	Ø 125mm	Ø 160mm	Ø 160mm	Ø 160mm	Ø 160mm	Ø 180mm
Handrail Upright Height	0.82m	0.82m	1m	1m	1m	1m	1m	1m
Mooring Brackets	8	12	12	12	16	16	20	20
Polystyrene Filling	△ 1 or 2							
Net Hooks	○	○	○	○	○	○	○	○
Skid Guard Walkway	○	○	○	○	○	○	○	○

△ Standard, ○ Optional, - Not Available

◆ Injection Moulded, ⊕ Fabricated, ■ Skid Guard

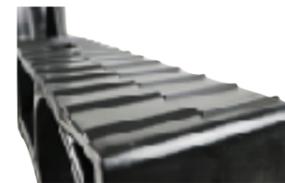
One of the earlier farms we built in Penhu, Taiwan, still in operation today after 15+ years.



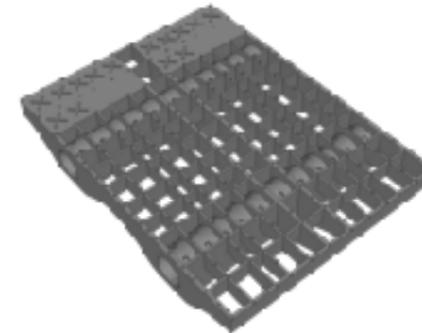
OUR STANCHIONS



Injection-Moulded Stanchion. Designed with safety in mind, this stanchion features a recessed box hole for securing sinker rope without having the peg or shackle protruding on the footboard, thus reduces tripping hazard. The alternating angled slip resistant grating provides additional traction in all directions.



Skid Guard Stanchion. Designed with safety in mind, our Skid Guard Stanchion has gratings designed to keep water from accumulating on the stanchion footboard and has additional deposits on the gratings for extra grips with the outsole of the shoes even under the most extreme conditions. Additionally, Skid Guard Stanchion is designed to work with our Skid Guard Walkway, providing the safest working condition for the farm workers.



Skid Guard Walkway Deck. Designed to be sturdy and guard against skid, our Skid Guard Walkway provides the best and safest working condition for the farm workers, allowing them to work safely and efficiently with solid footing under all kinds of weather conditions.

This HDPE100 injection moulded walkway is designed to fit securely between two floating pipes and fixed in place with Ø50mm or 30mm retainer pipes. The extra-strength 10mm backbones ensure minimum bending when loaded, whether it is farm personals, bags of feed, or heavy equipment, providing a solid surface for work to be carried out.



Standard Double Collar. Our classic, still very popular, fabricated design with the extra-sturdy double-wall neck. Available for 225-630mm floating pipes.



Balanced Stanchion is designed to secure a larger diameter inner floating pipe and a smaller diameter outer floating pipe. This design is to address the issue of uneven loading between the inner and the outer floating pipe commonly seen at farms, which leads to unlevelled walkways and warped caged, making it less safe for workers to work on.

The balanced stanchions are ideal for cages with extra heavy loading such as metal nets or heavy sinker tube.



450mm standard double collar stanchions.

355/315mm Balanced stanchions with Kikkonet.



PREDATOR SERIES CAGES

The predator series cages are built with stanchions that are developed to suit the special protection and safety requirements of the farmers with different protection needs in different geographical locations.

Factory Welded Bird-Net Pole Supports

Each of our Predator Series stanchions is manufactured with a pole support - made with durable HDPE100 pipe - securely welded onto the double-wall handrail upright for extra strength and durability.

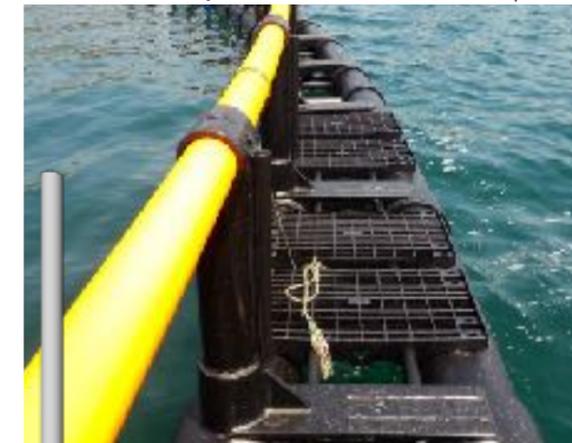
Virtually Maintenance Free

Additionally, unlike most pole extension solutions - poles tied loosely with ropes or wires to the uprights - seen at farm sites with cages built using moulded stanchions, our pole supports are virtually maintenance free. The farmers no longer need to look for loose poles and retie them one by one, thus freeing up more time to attend the needs of the fish.

Pole support tied to handrail uprights with ropes.

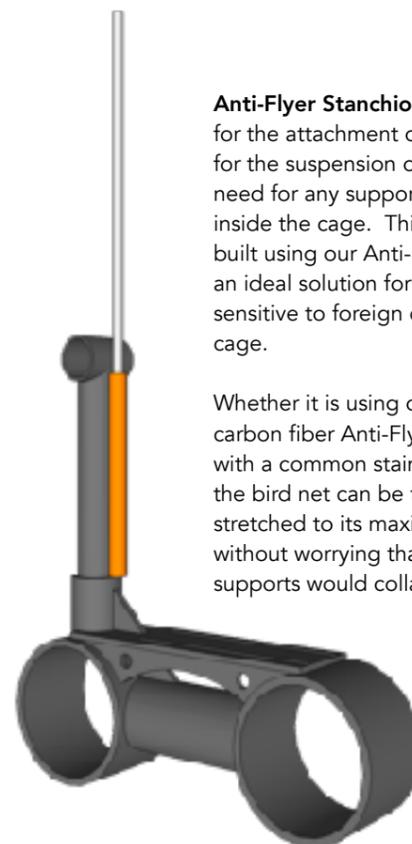


Toford's Anti-Flyer Stanchion without the bird net pole



Anti-Flyer Stanchions are designed for the attachment of bird-net poles for the suspension of nets without the need for any supporting structure inside the cage. This makes cages built using our Anti-Flyer Stanchions an ideal solution for fish that are sensitive to foreign objects inside the cage.

Whether it is using our light-weight carbon fiber Anti-Flyer Net Pole or with a common stainless steel pipe, the bird net can be tightened and stretched to its maximum tension without worrying that the pole supports would collapse.



Anti-Seal Stanchions are designed to keep the seals out and to sustain repeated attacks by seals when they attempt to jump into the cage. To handle the repeated abuse by seals, our Anti-Seal Stanchions are equipped with a welded 110mm-HDPE100 pipe to the handrail upright for the attachment of a steel pipe that is 3in in diameter and 3m tall.



EXTRA-WIDE PREDATOR-PROOF CAGES

- Designed to protect valuable fish stocks against predators from above and below the water surface
- Fully enclosed walkways for extra protection of operators and temporary equipment
- Single durable HDPE pole for the placement of anti-flyer bird net and predator net

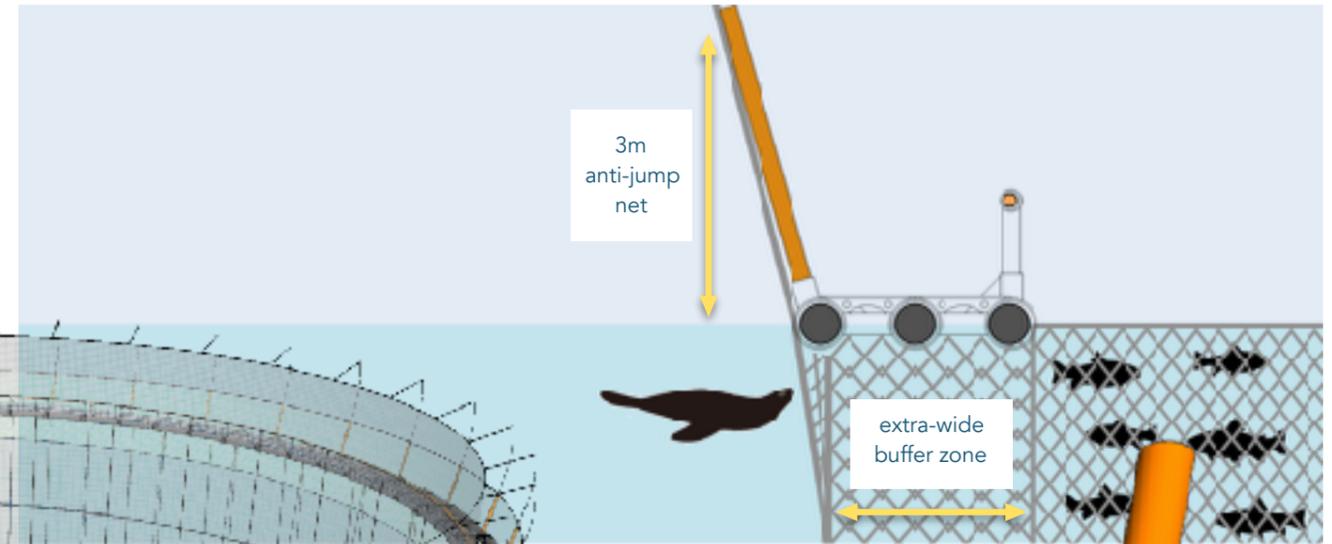
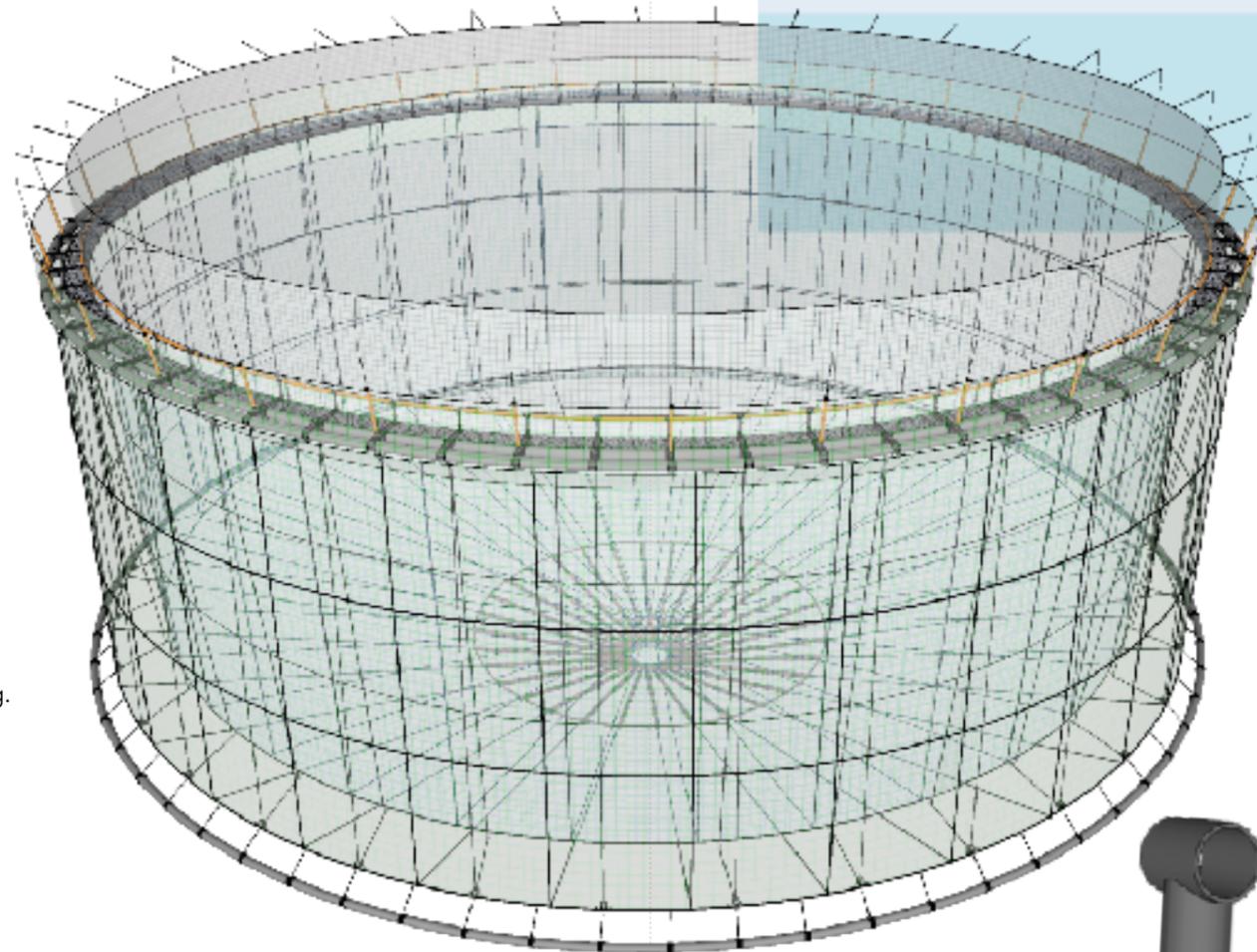
This cage is developed specially for farms that are constantly under predator attacks from above and below the water surface. The cage is built using our triple-collar brackets that feature 2m+ extra-wide separation for all-around protection from above and below.

Above the water surface, each of the triple-collar brackets is equipped with a single 3m-tall HDPE pole for both the anti-jump fence around the outer perimeter to keep seals from jumping into the cage and for holding a carbon fiber pole for the anti-flyer net to prevent birds attacking from above.

Underneath the surface, an extra layer of protective net attached to the outermost floating pipe encloses the holding pen and acts as a buffer zone that keeps predators from reaching to the holding net even when attacked by predators at full speed. This extra layer of protective net not only eliminates direct fish loss from attacks, it also reduces the indirect production losses from loss of appetite, thus stunted growth, as the result of shocks from attacks.



An adult male elephant seal could weight as much as 2,000-5000kg, measuring 4.2-5.8m long. Some seals could jump as high as high as 1.5-2.5m



Extra-Wide Triple-Collar Stanchions are designed with a 3m anti-seal pole for the attachment of anti-jump net above the water, predator net below the water, and anti-flyer pole for the attachment of the bird net without the use of additional support inside the cage pen. The 3m-tall anti-jump net prevents the seals from jumping into the pen by riding the wave.

Extra-Wide Cage Specifications

Cage Models	400	450	500	560
Cage Circumferences	110-160m	150-190m	180-240m	230-310m
Cage Diameters	35-50m	45-60m	55-75m	75-100m
Floating Pipes	Ø 400mm	Ø 450mm	Ø 500mm	Ø 560mm
Number of Stanchions	48	68	80	112
Distance Between Brackets	2.5m	2.5m	2.5m	2.5m
Bracket Depth	2.16m	2.38m	2.64m	2.52m
Handrail Pipe	Ø 125mm	Ø 125mm	Ø 140mm	Ø 140mm
Handrail Upright	Ø 160mm	Ø 160mm	Ø 160mm	Ø 160mm
Handrail Upright Height	1m	1m	1m	1m
Mooring Brackets	12	16	16	20
Polystyrene Filling	△	△	△	△
Net Hooks	○	○	○	○
Walkway	○	○	○	○

△ Standard

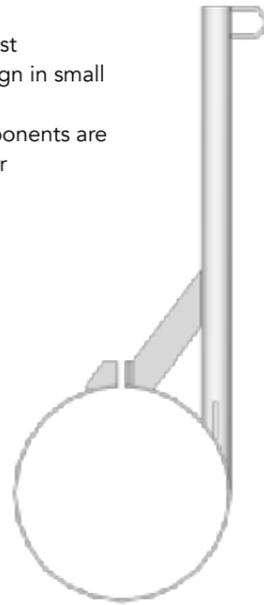
○ Optional



SINGLE COLLAR CAGES

For a low-cost solution, single floating pipe cages are available with our single-collar stainless steel stanchions. Like our welded HDPE stanchions, these stainless steel stanchions offer maximum design flexibility and strength. Each stanchion is made with high-quality stainless steel material and is finished with hot dip galvanization for corrosion protection. A fitted rubber pad is included and placed between the bracket and the floating pipe for additional grip and prevents the steel bracket from turning and cutting into the pipe.

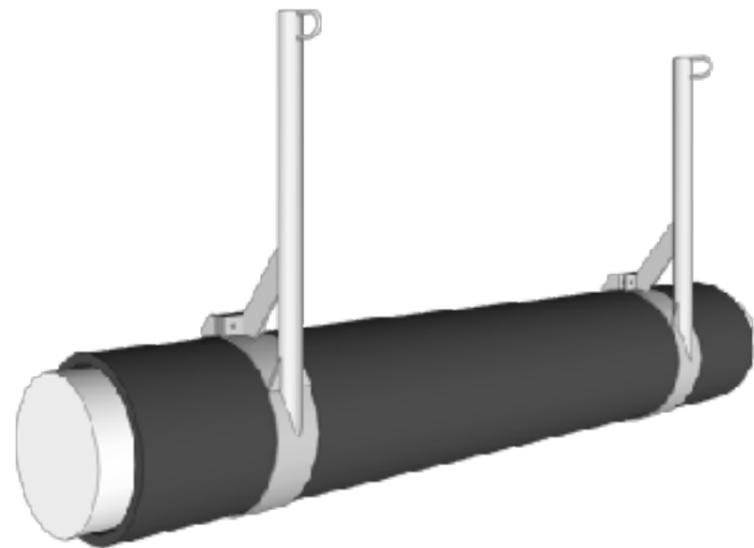
- High strength & low cost
- Available with any design in small batches
- All stainless steel components are hot dip galvanized after manufactured



Single Collar Cage Specification

Cage Models	400	450	500	560
Cage Circumferences	110-140m	140-180m	160-210m	190-250m
Cage Diameters	35-45m	45-56m	50-66m	60-80m
Floating Pipe	Ø400mm	Ø 450mm	Ø 500mm	Ø 560mm
Number of Steel Stanchions	44-56	56-72	64-84	76-100
Stanchions Separation	2.5m	2.5m	2.5m	2.5m
Polystyrene Filling	△	△	△	△

△ Standard ○ Optional



Compact size for easy low-cost shipment



Fitted rubber pad for added grip and protection



SQUARE CAGES

Although square cages are usually for more moderate waters and sheltered sites, Toford's square cages are constructed to have the same quality, strength, and durability as our typhoon-ready circular cages. These square cages are ideal for use as nursery cage or harvest cage.

Square Cage Specification

	FY-250SC7	FY-250SC9	FY-315SC11	FY-315SC13
Standard Cage Size	7x7m	9x9m	11x11m	13x13m
Floating Pipe	Ø 250mm	Ø 250mm	Ø 315mm	Ø 315mm
Stanchion Options	◎◆■	◎◆■	◎■	◎■
Number of Stanchions	12	16	20	24
Stanchions Separations	2m	2m	2m	2m
Handrail Pipe	Ø 110mm	Ø 110mm	Ø 110mm	Ø 110mm
Handrail Upright	Ø 125mm	Ø 125mm	Ø 125mm	Ø 125mm
Handrail Upright Height	0.82m	0.82m	0.82m	0.82m
Polystyrene Filling	△	△	△	△
Net Hooks	○	○	○	○
Walkway	○	○	○	○

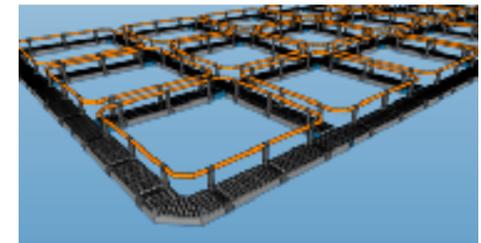
△ Standard, ○ Optional

◆ Injection Moulded, ◎ Fabricated, ■ Skid Guard



BLUE OCEAN PLATFORM

Our most farmers friendly square cage system available. Composed by our triple and standard double collar stanchions, the Blue Ocean Platform features an extra-wide center walkway and optional walkways around the perimeter for additional access and operational efficiency, allowing the farmers to easily move from cage to cage and inspect every corner with ease.



- Maximize operational efficiency
- Easy access from cage to cage
- Optional extra wide perimeter aisle

Blue Ocean Platform Specification

	FY-315BOS	FY-355BOS	FY-400BOS	FY-450BOS	FY-500BOS										
Floating Pipe	Ø 315mm	Ø 355mm	Ø 400mm	Ø 450mm	Ø 500mm										
Center Aisle Width	1.6m	1.6m	2.2m	2.2m	2.7m										
Center Aisle Stanchions	OOO	OOO	OOO	OOO	OOO										
Perimeter Aisle Width	1.0 / 1.6m	1.0 / 1.6m	1.3 / 2.2m	1.3 / 2.2m	1.6 / 2.7m										
Perimeter Stanchions	OO or OOO														
Stanchions Separations	2m	2m	2.5m	2.5m	2.5m										
Polystyrene Filling	△	△	△	△	△										
Walkway	△/O	△/O	△/O	△/O	△/O										
Recommended Configurations	5x5m	7x7m	9x9m	7x7m	9x9m	11x11m	9x9m	11x11m	13x13m	13x13m	15x15m	17x17m	17x17m	19x19m	21x21m
2x1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2x2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2x3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2x4	+	+		+	+		+	+		+					
2x5	+			+			+								
2x6	+			+											

△ Standard

○ Optional

+ Available

OOO Triple Collar

OO Double Collar

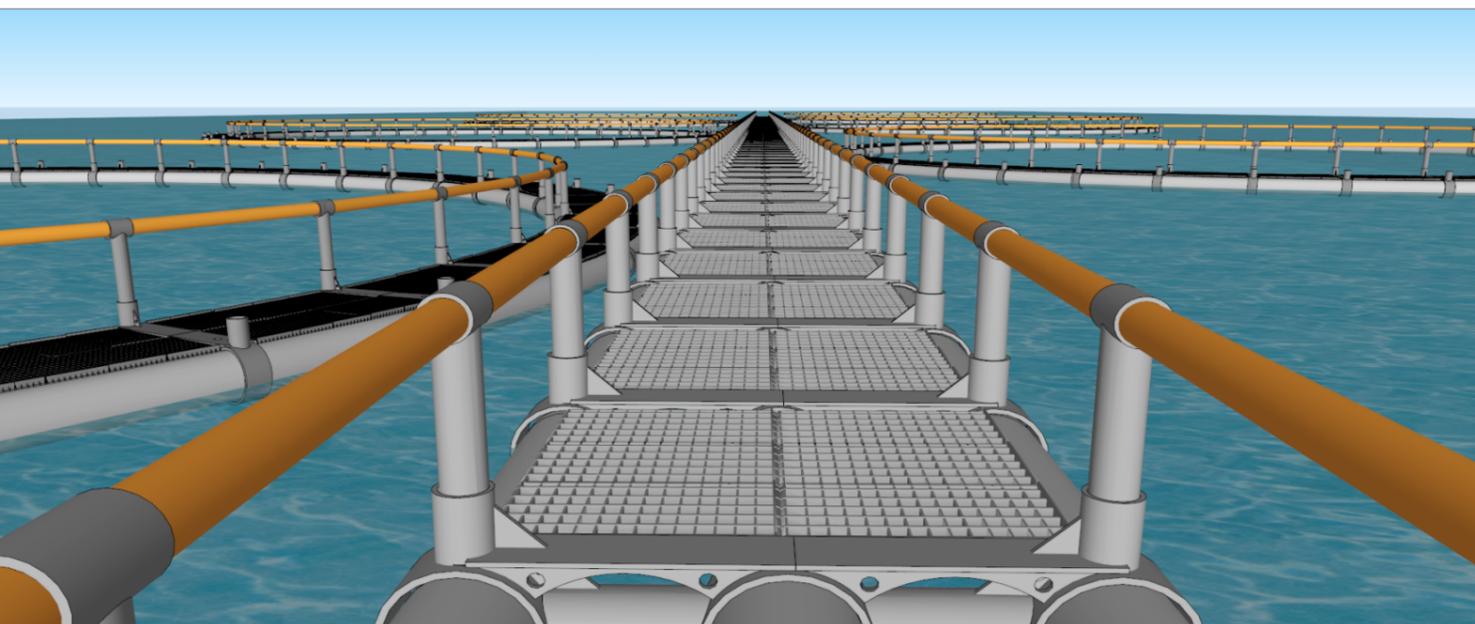
PONTOON WALKWAY

Designed with safety, stability, and durability in mind, our triple collar pontoon walkway could be used as a simple bridge from point A to point B, or as an ideal addition to groups of cages for easy access from cage to cage for enhanced operational efficiency. The walkways are assembled using the modified triple collar stanchion used in our extra-wide cages and are built to have the same sturdiness and strength as our typhoon ready cages. The walkways feature removable handrails for added convenience and come with injection-moulded Skid Guard Walkway panels for added safety.

Pontoon Walkway

	WKS-315T	WKS-450T
Floating Pipe	Ø 315mm	Ø 450mm
Walkway Width	1.3m	1.9m
Stanchions Separations	2m	2.5m
Handrail Pipe	Ø 110mm	Ø 125mm
Handrail Upright	Ø 125mm	Ø 160mm
Handrail Height	0.82m	1.0m
Walkway Panel	△	△

△ Standard



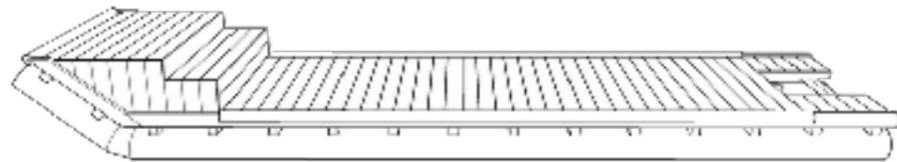
35m-diameter cage with balanced stanchions, 355/315mm floating pipes, Kikkonet. Oita, Kyushu, Japan

RAFT BOAT

Toford's raft boat combines the simplicity of a proven traditional design with the modern ruggedness of the HDPE pipes for a quality built, user-friendly and low maintenance craft.

Our raft boat features a durable flat pontoon hull made with HDPE100 pipes, allowing the boat to be used in shallow bodies of water and to land on virtually any beach surface. The open flat deck is designed for optimal operation and handling of cargos or fishnets. The edges of the deck are lined with round HDPE guards for smooth handling of fishing nets without the drags, making our raft boat an ideal vessel for small cargos, fishing, and as a workboat.

- Rugged HDPE100 pontoon for landing on virtually any beach surface and navigating in shallow waters
- Design to fit in standard 40ft shipping containers for easy transport.
- Open flat deck designed for optimal cargo handling and operation



Raft Boat Specification

	RB-0950S	RB-0950D	RB-1150S	RB1150D
Length (LOA)	9.5m	9.5m	11.5m	11.5m
Beam (BOA)	2.25m	2.25m	2.45m	2.45m
Deck Size	2.25x7m	2.25x7m	2.45x9m	2.45x9m
Hull Pipe (HDPE100-SDR17)	Ø 355mm	Ø 355mm	Ø 400mm	Ø 400mm
Layers of Pipes	single	double	single	double
Weight	1970kg	2660kg	2740kg	3840kg
Maximum HP	115hp	115hp	140hp	140hp
Recommended HP	from 60hp	from 85hp	from 85hp	from 115hp
Maximum Load	1000kg	3000kg	2100kg	5600kg
Deck	wood	wood	wood	wood
Winch	○	○	○	○
Safety Rails	○	○	○	○

△ Standard

○ Optional



Our pontoon workboat in operation in Papua New Guinea.

HDPE WORKBOAT



Lightweight, highly impact resistant and naturally buoyant, these HDPE workboats are designed for endurance and high performance in all sea conditions and are suitable for use from the tropics to the arctic. Made with top-quality UV-resistant HDPE material that has excellent tensile strength to withstand fatigue and impacts with the waves, and does not crack or break when frozen, making these boats extremely robust, user friendly and low maintenance.

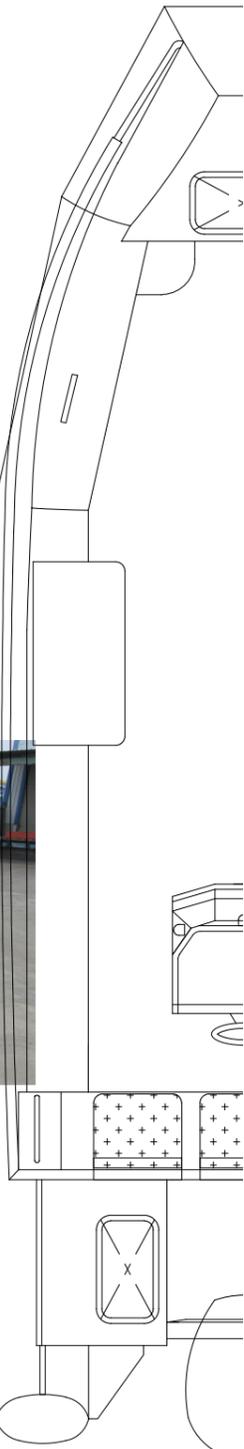
The rigid pontoons are filled with polystyrene, combined with natural buoyancy of the HDPE material, making these boats virtually unsinkable.

- Virtually unsinkable robust design
- Highly impact resistant
- Excellent seaworthiness
- Non-toxic, resistant to fouling, corrosion and chemical resistant
- ISO12217-1 Cat C, DNV Small Craft



HDPE Open Workboats

	WB560	WB660	WB780	WB860
Length (LOA)	5.6m / 18'5"	6.6m / 18'5"	7.8m / 25'6"	5.6m / 18'5"
Beam (BOA)	2.3m / 7'6"	2.3m / 7'6"	2.8m / 9'2"	2.8m / 9'2"
Displacement	700kg / 1540lbs	900kg / 1980lbs	1200kg / 2640lbs	1400kg / 3080lbs
Recommended Power	60hp+	100hp+	115hp+	150hp+
Maximum Power	115hp	250hp	300hp	350hp
Maximum Load	1000kg / 2200lbs	1200kg / 2645lbs	2000kg / 4410lbs	2200kg / 4850lbs
Human Capacity	8	8	10	12
V-bottom	21°	21°	21°	21°



TURNKEY SOLUTION - CAGE + NET + MOORING

In addition to cage manufacturing and assembly service, turnkey solution is also available. For many years we have worked in direct cooperation with local fish farmers, our partner net manufacturers and with external engineers to deliver complete solutions to our customers.

We can work with you and provide a complete turnkey solution from the beginning to the very end or work with your preferred net supplier and mooring system provider.

OUR NET PARTNERS



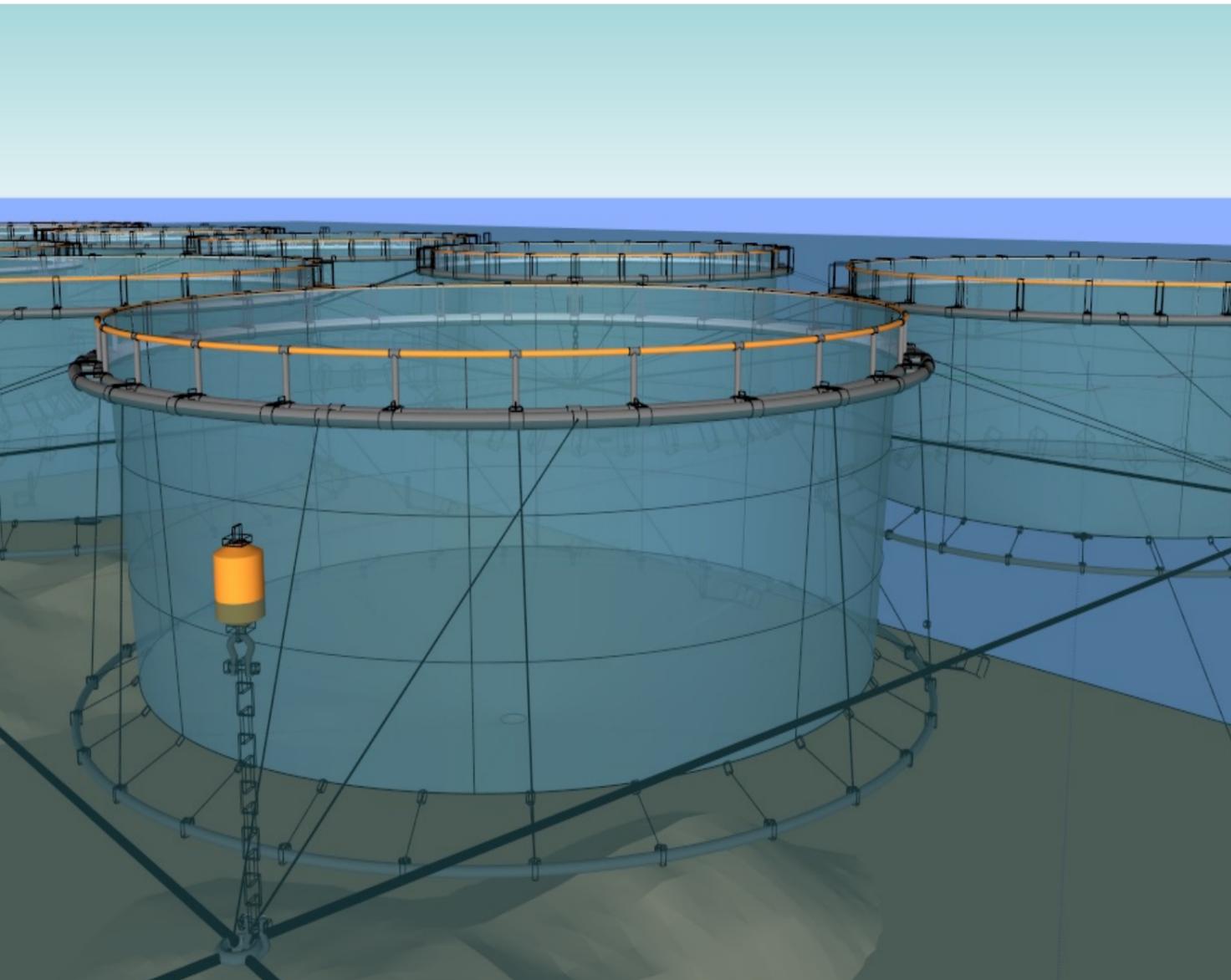
CAGE REPAIR SERVICE & BRACKET

Accident happens and we are here to help no matter how the damage is done and what kind of plastic cage you have.

Because our cage production is not constrained by fixed moulds we can supply the stanchions and all the necessary parts to fit your existing cage specifications.

Repair Bracket. Toford's easy to install repair brackets will quickly get your cage back in shape and get you through to your next harvest without the need to pull the cage out of the water for repair or the trouble of transferring existing fish stocks to another pen for safety.

- Custom made to fit your cage
- High-strength stainless steel cap screws
- Double-wall neck for extra strength



Cage damaged by cargo ship. Undamaged components are extracted to be reused.



HDPE PIPES

We've been a manufacturer of high quality, HDPE pipes since 1990. For aquaculture use, here at Toford, we insist on using top quality HDPE100 material for our stanchions, brackets, and cages for its superior strength, durability, flexibility and UV resistance.

HDPE Pipes for Aquaculture Use

In recent years, HDPE pipes have become a commodity, in most cases, one can easily obtain a rough estimate of the price per meter based on the total weight of the pipe. However, sometimes the weight of the pipes can be deceiving.

To cut cost, some vendors might use cheaper recycled materials or combine with other additive to increase the weight and by making the walls thicker. The pipes might look the same, or appear to be stronger because of a thicker wall, but the added impurity reduces the durability of the pipes against repeated wear and tear by the sea and the intense expose to the sun.



HDPE100 Pipe Specifications

O.D.	Wall Thickness (mm)					Standard Colors	
	SDR-33	SDR-21	SDR-17	SDR-13.6	SDR-11	Black	Orange
32mm	-	-	2.4	2.4	2.9	+	+
40mm	-	-	2.4	2.9	3.6	+	+
50mm	-	-	2.9	3.7	4.5	+	+
63mm	-	-	3.7	4.6	5.7	+	+
75mm	2.3	3.6	4.4	5.5	6.8	+	+
90mm	2.8	4.3	5.3	6.6	8.2	+	+
110mm	3.4	5.3	6.5	8.1	8.2	+	+
125mm	3.9	6.0	7.4	9.2	10.0	+	+
140mm	4.3	6.7	8.2	10.3	12.7	+	+
160mm	4.9	7.7	9.4	11.8	14.5	+	+
180mm	5.5	8.6	10.6	13.2	16.4	+	+
200mm	6.2	9.6	11.8	14.7	18.2	+	
225mm	6.9	10.8	13.2	16.5	20.5	+	
250mm	7.7	11.9	14.7	18.4	22.7	+	
280mm	8.6	13.4	16.5	20.6	25.5	+	
315mm	9.7	15.0	18.5	23.2	28.6	+	
355mm	10.9	16.9	20.9	26.1	32.3	+	
400mm	12.3	19.1	23.5	29.4	36.4	+	
450mm	13.8	21.5	26.5	33.1	40.9	+	
500mm	15.3	23.9	29.4	36.8	45.5	+	
560mm	17.2	26.7	32.9	41.2	50.9	+	
630mm	19.3	30.0	37.1	46.3	57.3	+	
710mm	21.8	33.9	41.8	52.2	64.5	+	

+ Available





20 Yanhai Rd, Donggang Township
Pingtung County, Taiwan, 92849
www.cage-aquaculture.com

cage@toford.com
t. +886.8.832.3135
f. +886.8.832.2726

