

VÓNIN®

Founded 1969



THE GROUP

VÓNIN[®]

VÓNIN[®]



COSMOS TRAWL[®]

HAMPIÐJAN

SWAN NET-GUNDRY

FJARÐA**NET**

VÓNIN®



© VÓNIN - WE MAKE AQUACULTURE MORE PROFITABLE

WORLD WIDE PRESENCE

VÓNIN[®]

HAMPIDJAN RUSSIA

RUSSIA, KALININGRAD

HAMPIDJAN

ICELAND, REYKJAVIK
ICELAND, Vestmannaeyjar

HAMPIDJAN BALTIC

LITHUANIA, ŠIAULIAI

HAMPIDJAN NEW ZEALAND

NEW ZEALAND, NELSON
NEW ZEALAND, TIMARU

HAMPIDJAN AUSTRALIA

AUSTRALIA, GOLD COAST

HAMPIDJAN CANADA

CANADA, SPANIARDS BAY

FJARDANET

ICELAND, NESKAUPSSTAÐUR
ICELAND, AKUREYRI
ICELAND, ÍSAFJÖRÐUR

SILNET

FAROE ISLANDS, KLAKSVÍK

COSMOS TRAWL

DENMARK, SKAGEN
DENMARK, STRANDBY
DENMARK, HIRTSHALS

SWAN NET GUNDRY

IRELAND, KILLYBEGS
IRELAND, CASTLETOWNBERE
IRELAND, SKIBBEREEN

SWAN NET USA

USA, SEATTLE
USA, DUTCH HARBOUR
USA, GLOUCESTER

NORDSØTRAWL

DENMARK, THYBORØN

Vónin Faroe Island

FAROE ISLANDS, Fuglafjørður
FAROE ISLANDS, Tórshavn Branch
FAROE ISLANDS, Norðskála
FAROE ISLANDS, Klaksvík

Vónin CANADA

CANADA, Newfoundland

Vónin Lithuania

Lithuania, Šiauliai

Vónin RUSSIA

RUSSIA, Murmansk

VÓNIN REFA

Norway, Tromsø
Norway, Svolvær
Norway, Alta
Norway, Finnsnes

Qalut VÓNIN

Greenland, Nuuk
Greenland, Sisimiut
Greenland, AASIAAT
Greenland, ILULISSAT

Vónin DANMARK

DANMARK, Strandby
DANMARK, Skagen

39 Locations Around The World



Vónin LITHUANIA

VÓNIN®



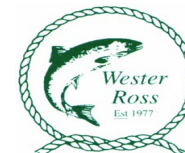
Vónin LITHUANIA

VÓNIN®



CLIENTS

VONIN®



MIGDALE SMOLT



OUR GOALS AND OBJECTIVES

- Manufacture **HIGH QUALITY** products that meet Industry Standards.
- To be a **RELIABLE** Supplier.
- Continually **IMPROVE** our products in close **CO-OPERATION** with our Clients.
- Provide a **HIGH SERVICE** and **GUIDANCE** to our Clients.
- Build long term **RELATIONSHIPS**.



FISHING



AQUACULTURE



OFFSHORE



INDUSTRY



INNOVATION

PRODUCTS

VONIN®

CAGE NETS



CAGE NETS

High quality rope made for safeguarding your fish stock.

We supply the most advanced, most durable and most reliable cage nets for the aquaculture industry. Our nets are made from high quality rope and are designed to last for many years. They are also easy to install and maintain.

We have the ability to manufacture cage nets in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different mesh sizes and materials to choose from.



0000000000

VONIN®

PLASTIC CAGES



INJECTION MOULDED BRACKETS

Designed to withstand the harshest weather and currents of the North Atlantic.

Our brackets are made from high quality plastic and are designed to last for many years. They are also easy to install and maintain.

We have the ability to manufacture brackets in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.

We have the ability to manufacture brackets in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.



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VONIN®

MOORINGS



SAFER MOORING FOR YOUR SALMON WITH OUR RUGGED SOLUTION

Our moorings are made from high quality rope and are designed to last for many years. They are also easy to install and maintain.

We have the ability to manufacture moorings in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.

We have the ability to manufacture moorings in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.



0000000000

VONIN®

BIRD NETS



BIRD NETS

All shapes and sizes of bird nets.

We supply the most advanced, most durable and most reliable bird nets for the aquaculture industry. Our nets are made from high quality rope and are designed to last for many years. They are also easy to install and maintain.

We have the ability to manufacture bird nets in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.

We have the ability to manufacture bird nets in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.



0000000000

VONIN®

SEINES



STANDARD OR TO CUSTOMER SPECIFICATIONS

We supply the most advanced, most durable and most reliable seines for the aquaculture industry. Our seines are made from high quality rope and are designed to last for many years. They are also easy to install and maintain.

We have the ability to manufacture seines in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.

We have the ability to manufacture seines in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.

0000000000

VONIN®

LICE SHIELD



STANDARD OR TO CUSTOMER SPECIFICATIONS

We supply the most advanced, most durable and most reliable lice shields for the aquaculture industry. Our lice shields are made from high quality rope and are designed to last for many years. They are also easy to install and maintain.

We have the ability to manufacture lice shields in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.

We have the ability to manufacture lice shields in a wide range of sizes and shapes to suit your specific requirements. We also offer a range of different materials to choose from.

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VONIN®

CAGE NETS



CAGE NETS

High quality cage nets for safeguarding your fish stock

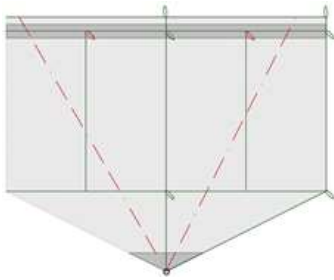
We have for decades designed, developed and manufactured cage nets for the aquaculture industry. The experience which we have accumulated through this time, has enabled us to supply the fish farmers with high quality nets which are certified according to ISO 9001. Our cage nets design have been thoroughly tested to withstand the harsh weather conditions and strong currents of the North Atlantic.

We know that the salmon is a valuable commodity and the salmon welfare, health and protection is a paramount concern and of out-most importance to both the fish farmer and its shareholders. With our cage nets you can safeguard your investment.



TYPES OF NET

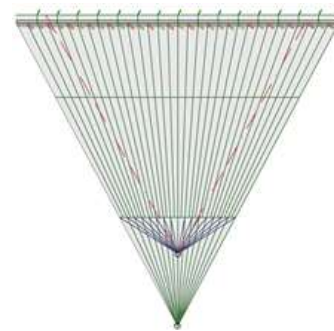
VÓNIN®



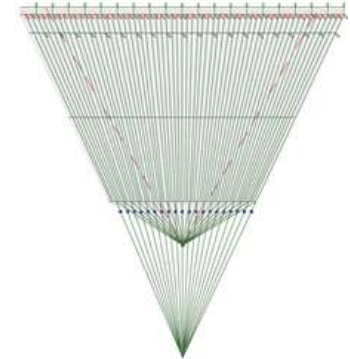
Square



Circular



Pointed



Spaghetti

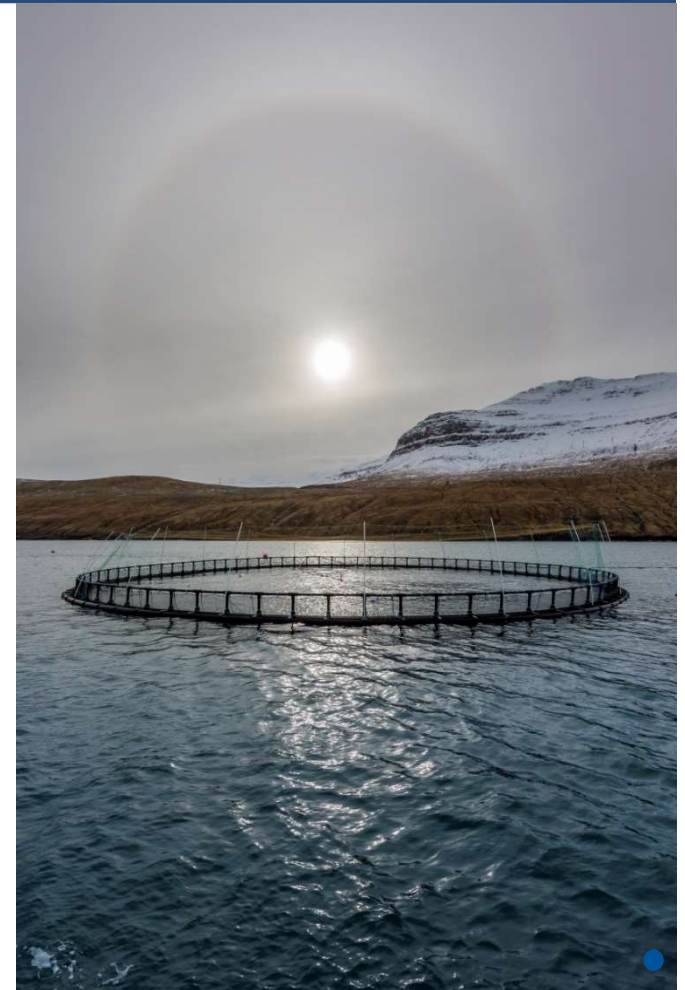
High Quality Netting:

- Dyneema®
- Nylon
- Star
- Polyester
- Polyethylene
- Sapphire

ADVANTAGES WITH DYNEEMA

VÓNIN®

- Reduce twine size
- Or get a higher breaking strength
- Less growth on the net
 - better water flow
 - higher oxygen level
 - Increased fish welfare
 - Increased FCR
- Less net coatings/antifouling
- Superior abrasion resistance
- Less holes
- Reduced service and logistic costs
- Reduced drag forces
 - Helps to keep the volume
 - Less fuel consumption if the nets are being towed



PLASTIC CAGES



WE MAKE AQUACULTURE MORE PROFITABLE

CAGES WITH INJECTION MOULDED PLASTIC BRACKETS

Designed to withstand the harsh weather and currents of the North Atlantic

CAGES ARE OF VITAL IMPORTANCE to every fish farmer. Every fish farmer needs to be ensured that the cages at his disposal are strong and versatile enough to withstand harsh weather and strong currents.

With our cages you are certified that they can withstand the stress fiercely enforced by the Atlantic Ocean.

We are known to only supply high quality equipment, that can meet the strictest demands by the aquaculture industry.

THE PLASTIC BRACKETS

Our plastic brackets are made from high quality HDPE100 and are injection moulded, which makes them strong and reliable. The neck of the bracket, which often is the weak point of a bracket has been specially designed to withstand all the strong forces which it is imposed by.



VÓNIN®

FOR THE TOUGH CONDITIONS
IN THE NORTH ATLANTIC

SPECIFICATIONS

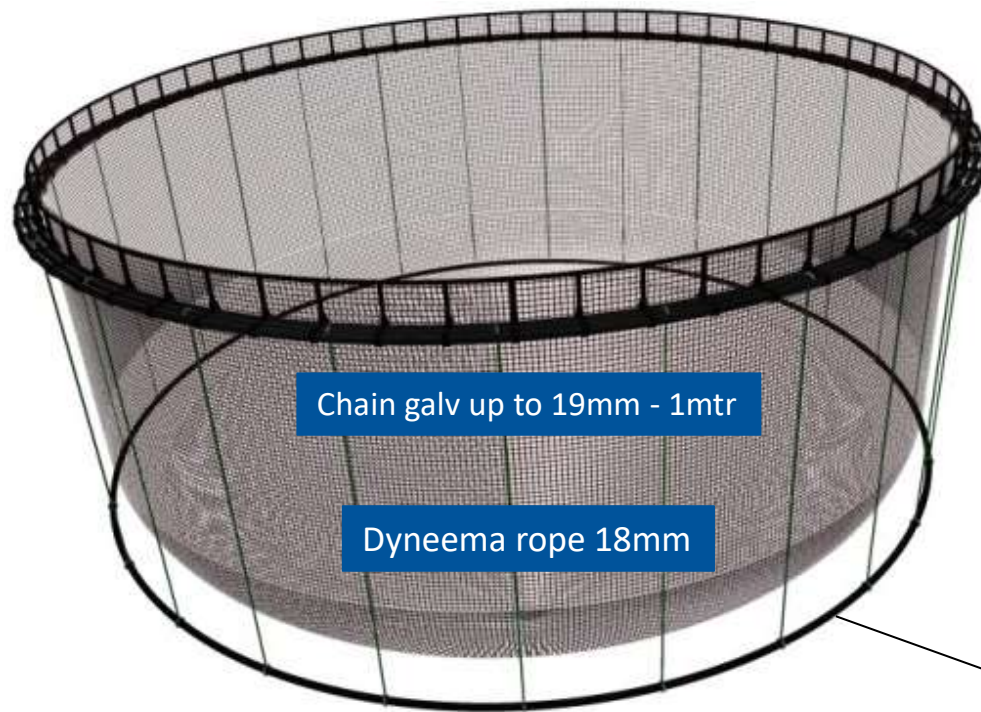
VÓNIN®



Cage model	2x450	3x450
Tube dimensions	450mm	450mm
Number of tubes	2 pcs	3 pcs
Handrail	140mm	140mm
Circumference	100 - 160 mtr	120 - 200 mtr
Polystyrene	1 - 2 tubes	1 - 3 tubes
Mooring brackets for bridles	included	included
Brackets for bird nets systems	included	included
Sinker tube brackets	included	included
Material	HDPE 100	HDPE 100
Injection moulded brackets	Yes	Yes
Anti-skid platform	Optional	Optional
Distance bars	Optional	Optional

SINKER TUBES

VÓNIN[®]



Sinker tube up to 70kg/mtr

PLASTIC CAGES

VÓNIN®



PLASTIC CAGES

VÓNIN®



PLASTIC CAGES

VÓNIN®



PLASTIC CAGES

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PLASTIC CAGES

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PLASTIC CAGES

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MOORINGS



MOORINGS

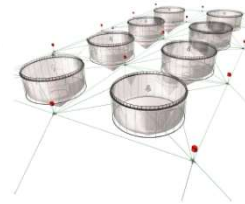
Rugged mooring solution to withstand the harsh conditions in the North Atlantic

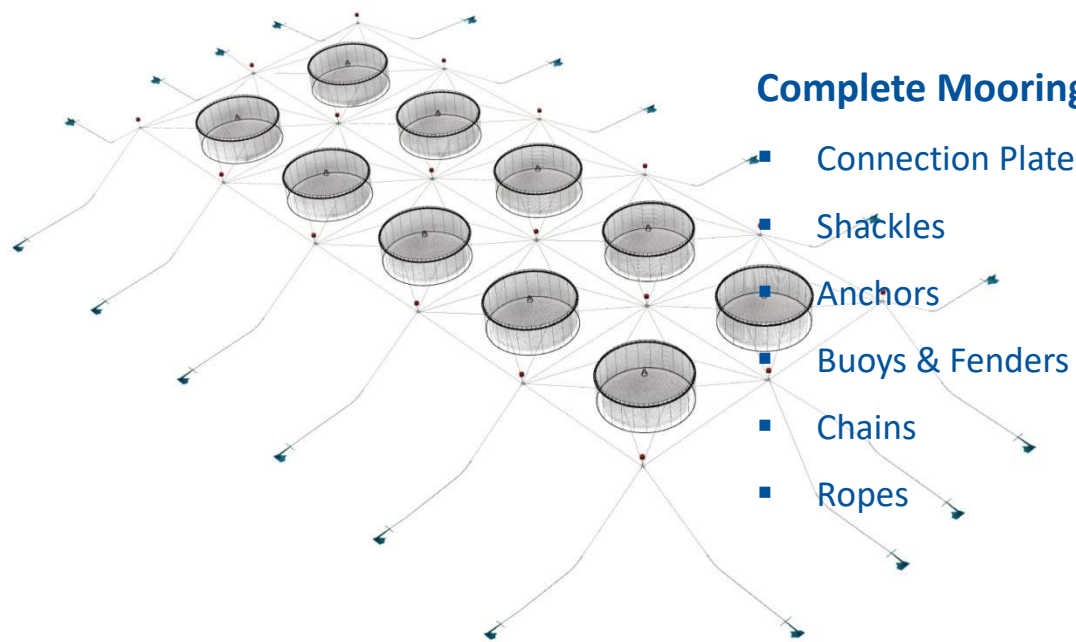
Mooring are of out-most significance to the fish farming activities. Without a proper mooring your valuable fish pens are exposed to the mercy of the vigorous and unpredictable ocean.

With our vast experience in the aquaculture industry, we have specialised in supplying high quality mooring equipment.

All mooring systems are individually worked out with computer analysis and designed according to the exact conditions on the planned site.

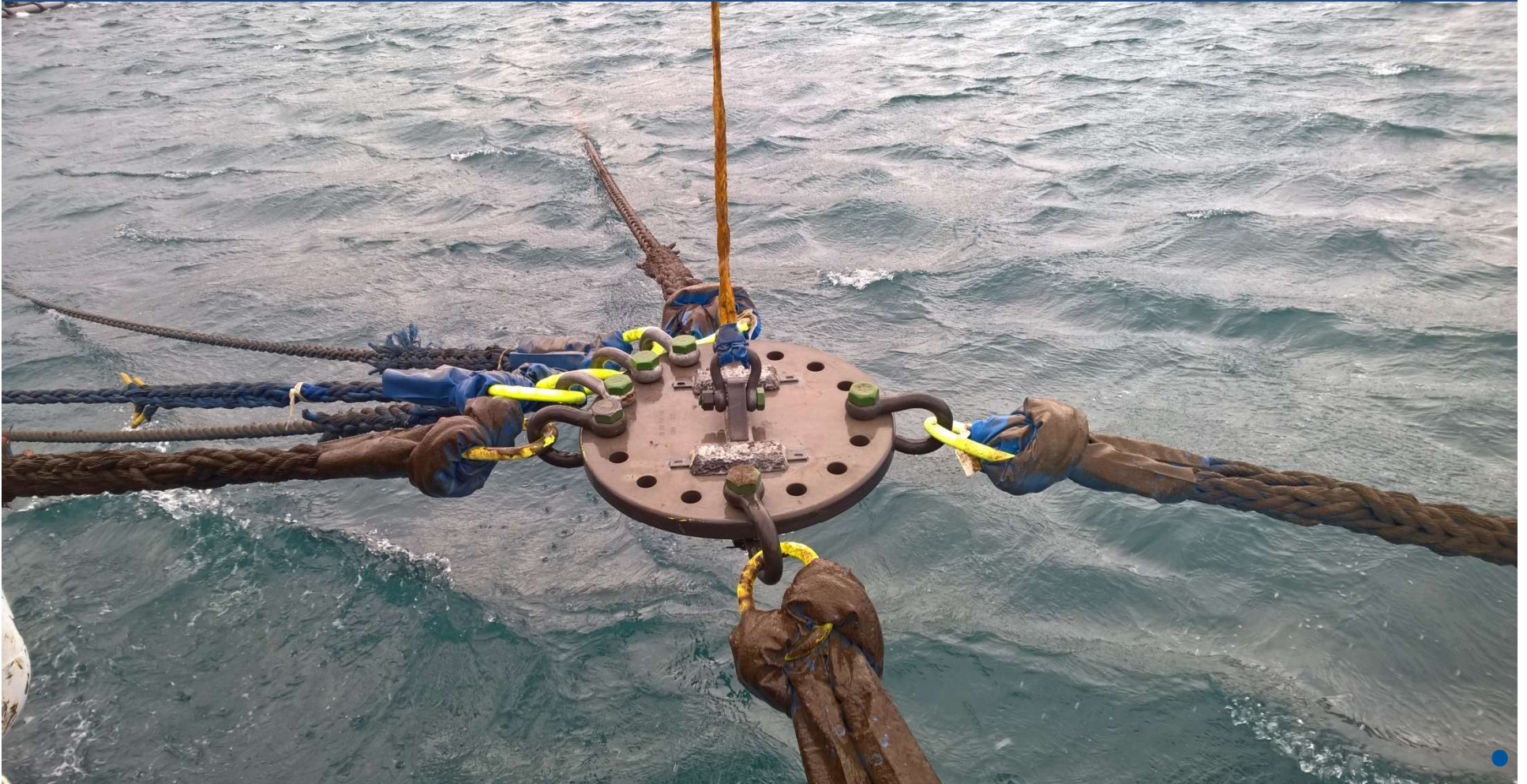
All our equipment is certified according to NS9415.





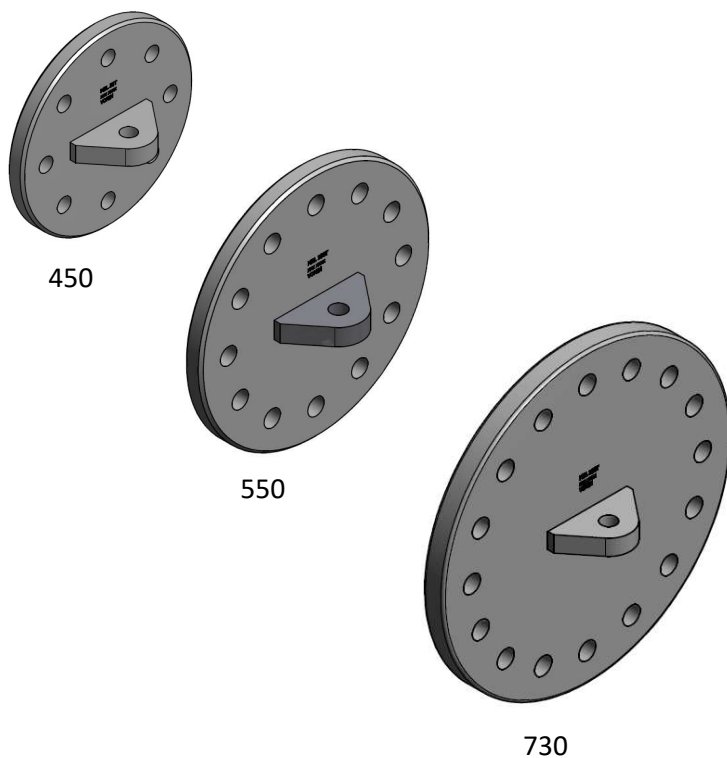
SHACKLE / RING SYSTEM

VÓNIN®



CONNECTION PLATES

VÓNIN®



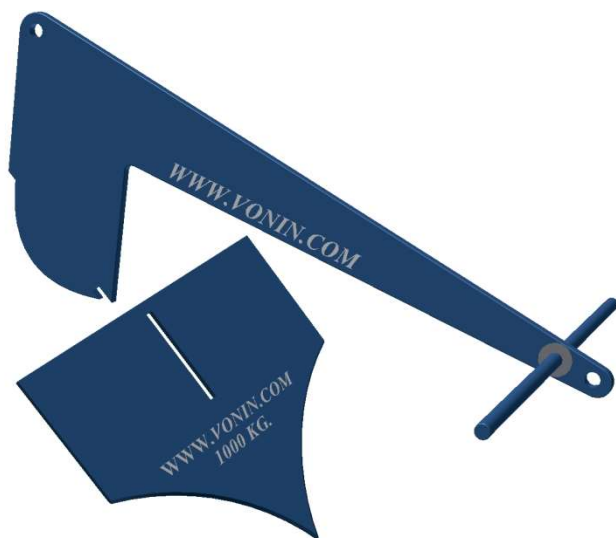
- Molded in one piece
- Steel
- Strong, high breaking point
- Highly resistant to corrosion
- Less abrasive
- Less inspection
- Less maintenance
- Long life span

Diameter	Breaking Strenght	Weight	Holes
mm	ton	kg	qty
450	50	52	16
550	100	73	12
730	150	158	8



- Molded in two pieces
- Strong
- Durable
- Latched and Welded
- Increased vigorousness
- Long life span

Weight	Proofload
kg	kg
1.000	20.000
1.500	30.000
2.000	40.000
2.500	50.000
3.000	60.000
4.000	80.000



- Moulded in two pieces
- Strong
- Durable
- Latched and Welded
- Increased vigorousness
- Long life span

Weight	Proofload
kg	kg
1.000	20.000
1.500	30.000
2.000	40.000
2.500	50.000
3.000	60.000
4.000	80.000



Shackles

- Different dimensions, styles & brands.



Masterlinks

- Different dimensions, styles & brands.



Chains

- Certified chains in different dimensions, Galvanised, Stainless Steel, Hot Dip Galvanised, Steel.



Rope

- Different dimensions, styles & brands.



Buoys

- All shapes, sizes & bouyancy.

QUALITY BRANDS

VONIN®



BIRD NETS



WE MAKE AQUACULTURE MORE PROFITABLE

BIRD NETS

All shapes and sizes of bird nets

We produce and stock bird nets made from polyethylene, nylon and Dyneema® for all types and sizes of cages.

The bird nets can be made as a single top panel or a top panel mounted with side panels. Everything can be according to customer specifications. Our standard bird nets are made from 600 mm fullmesh netting.

The bird nets are reinforced with 14mm lines on the border, and 8mm lines from the center to the border.

BIRD NET POLES

We also stock bird net poles made from fiberglass. The poles are fitted with special made tops to ease the mounting of the bird nets.



VONIN.COM

VÓNIN®

BIRD NET SYSTEMS

VÓNIN®



POLE SYSTEM

VÓNIN®



STAINLESS STEEL TOP

VONIN®



POLE BRACKETS

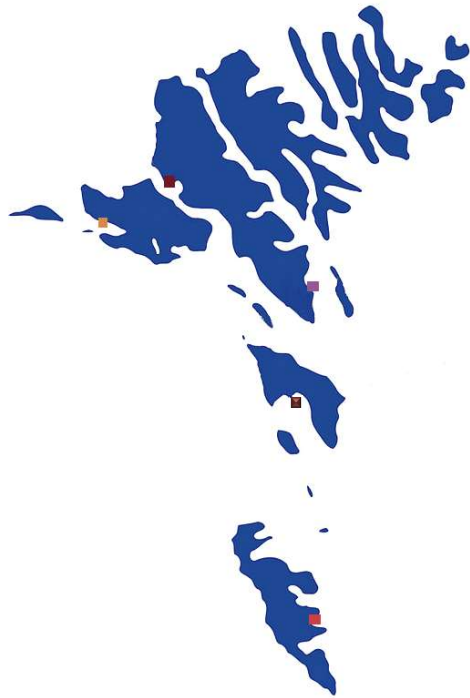
VÓNIN[®]



CENTRE & HAMSTER WHEEL

VÓNIN®





■ **Sørvágur:**

- Wave 4,5 – 5,5 m. (8 m.)
- Current: 0,5 cm/s.

■ **Hov:**

- Wave 7,5 – 8 m.
- Current: 0,25 cm/s.

■ **Gulin:**

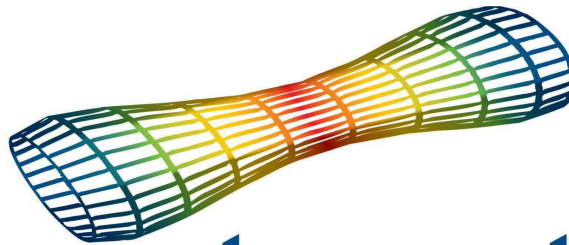
- Wave 2,5 – 3 m.
- Current: 0,8 cm/s.

■ **Sandsvág:**

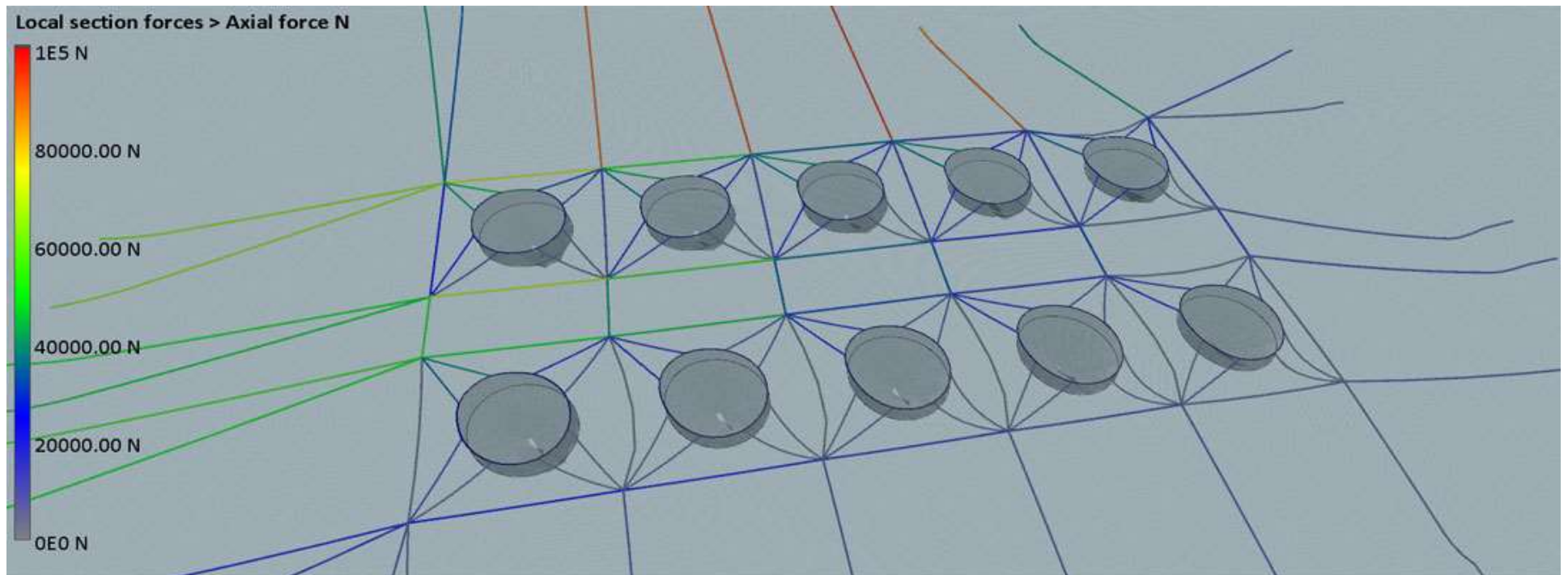
- Wave 6,80 m.
- Current: 0,6 cm/s.

AQUA SIM

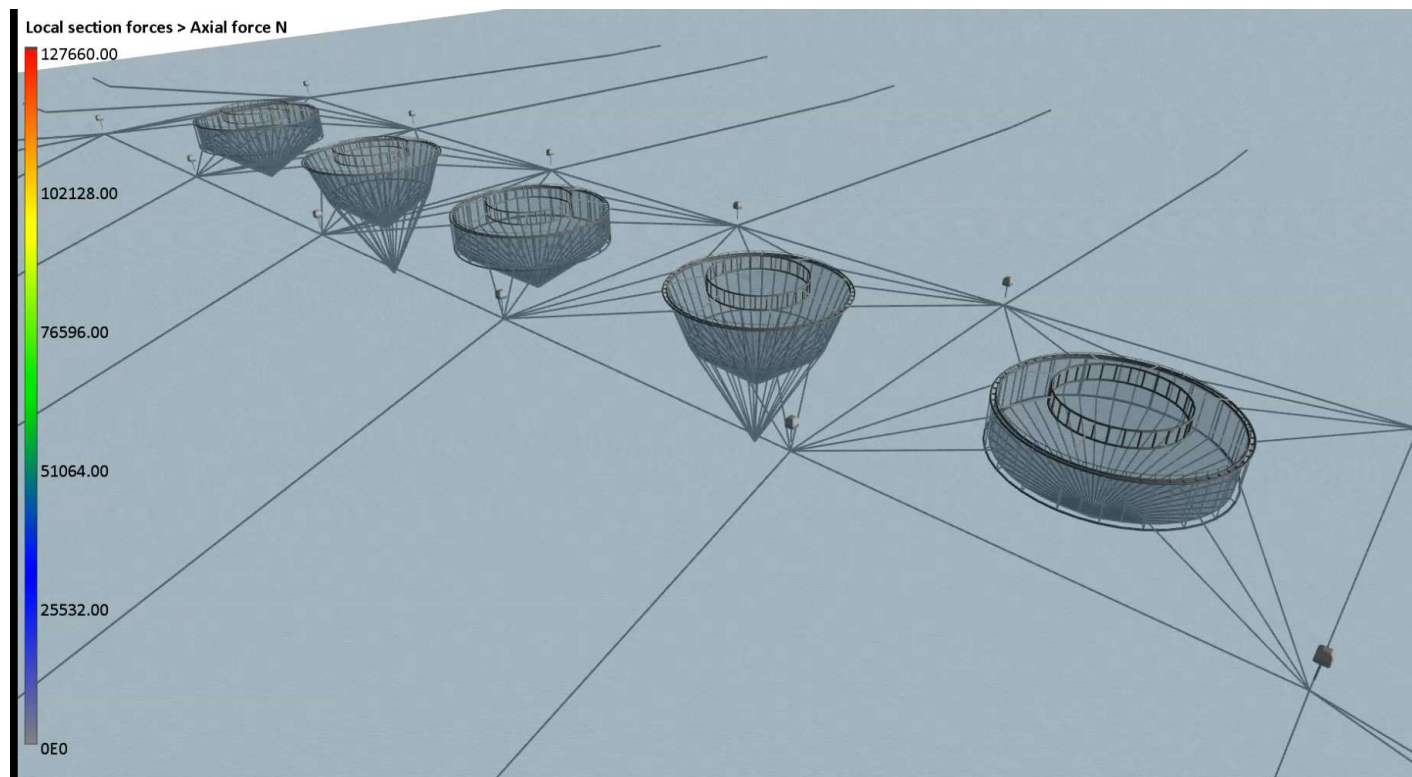
- The only software that is Certified by the Norwegian Government



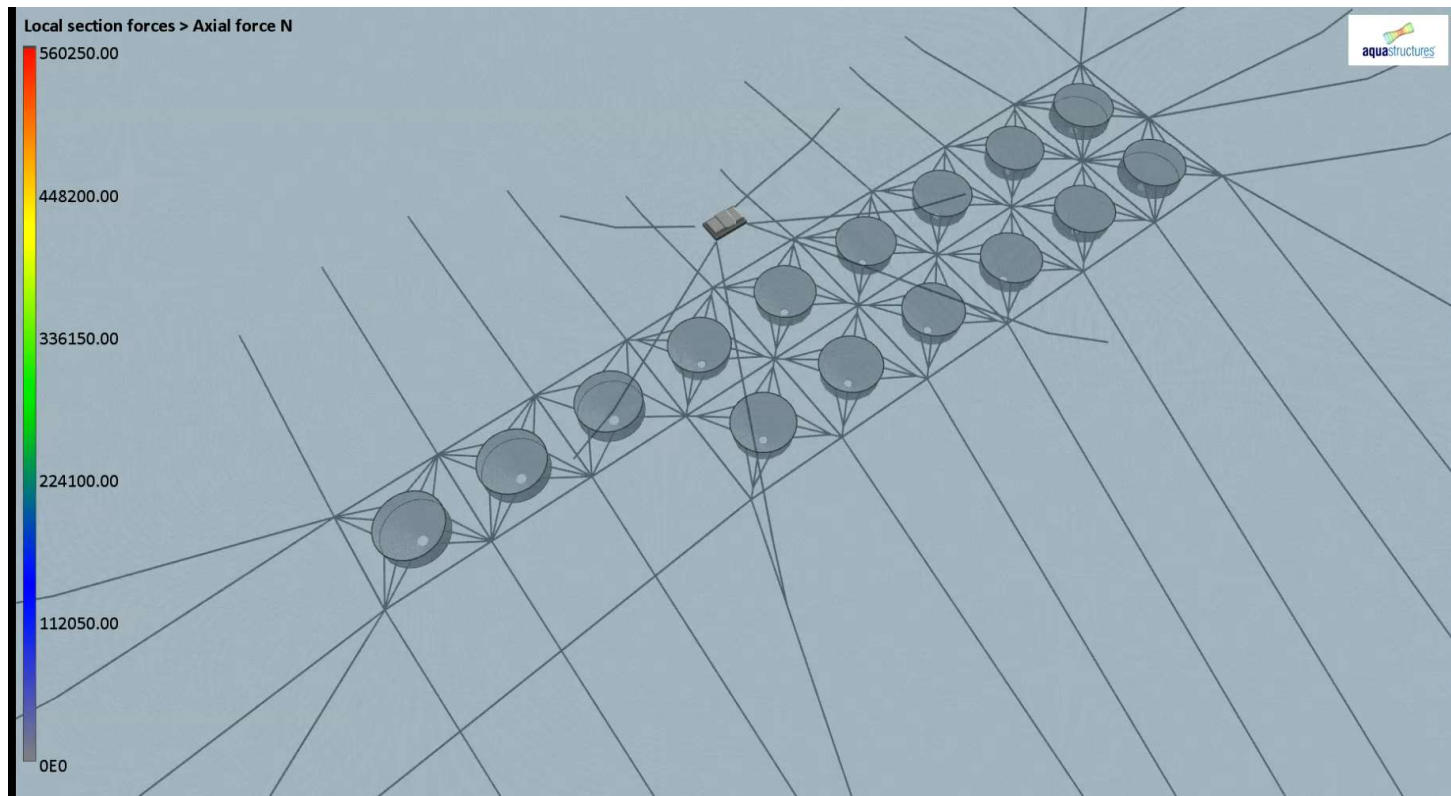
aquastructures
Safety through technology



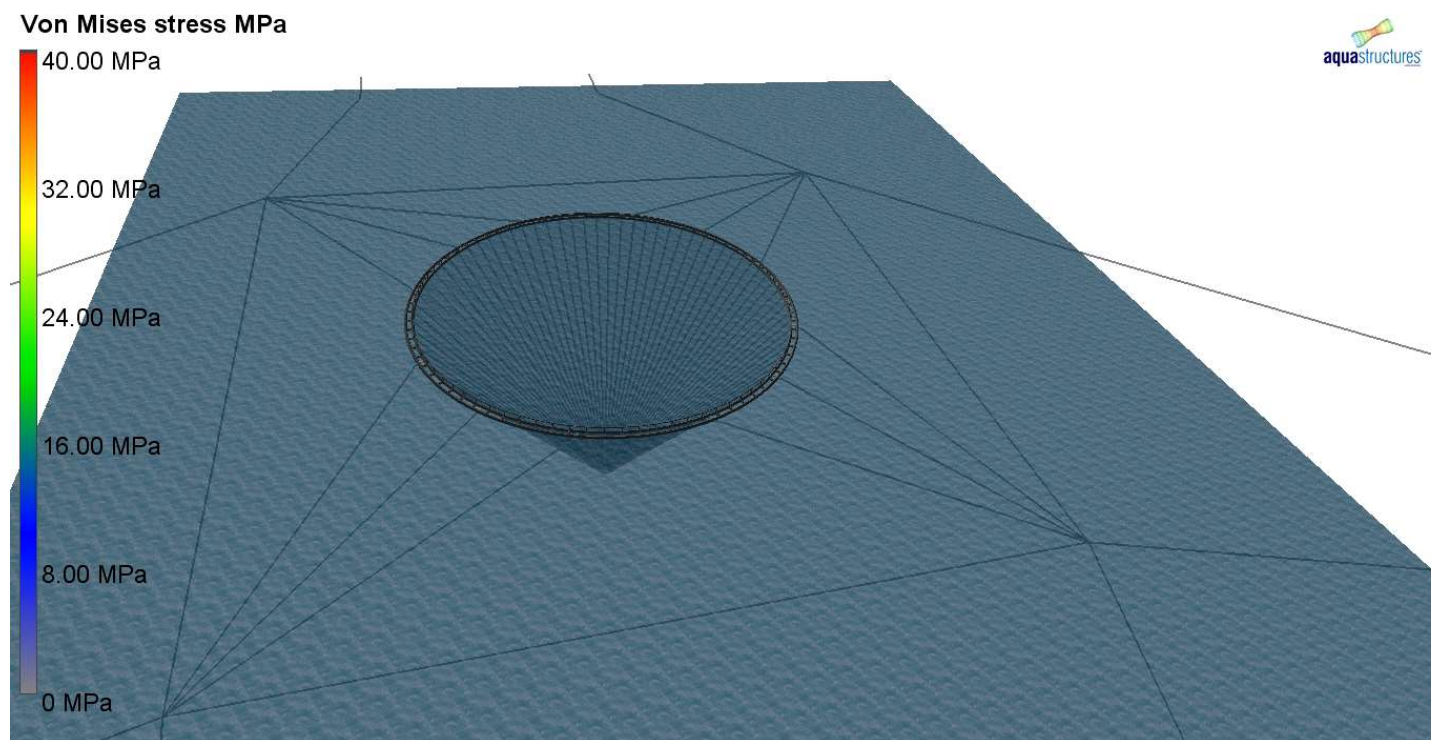
Systems of cages and net structures



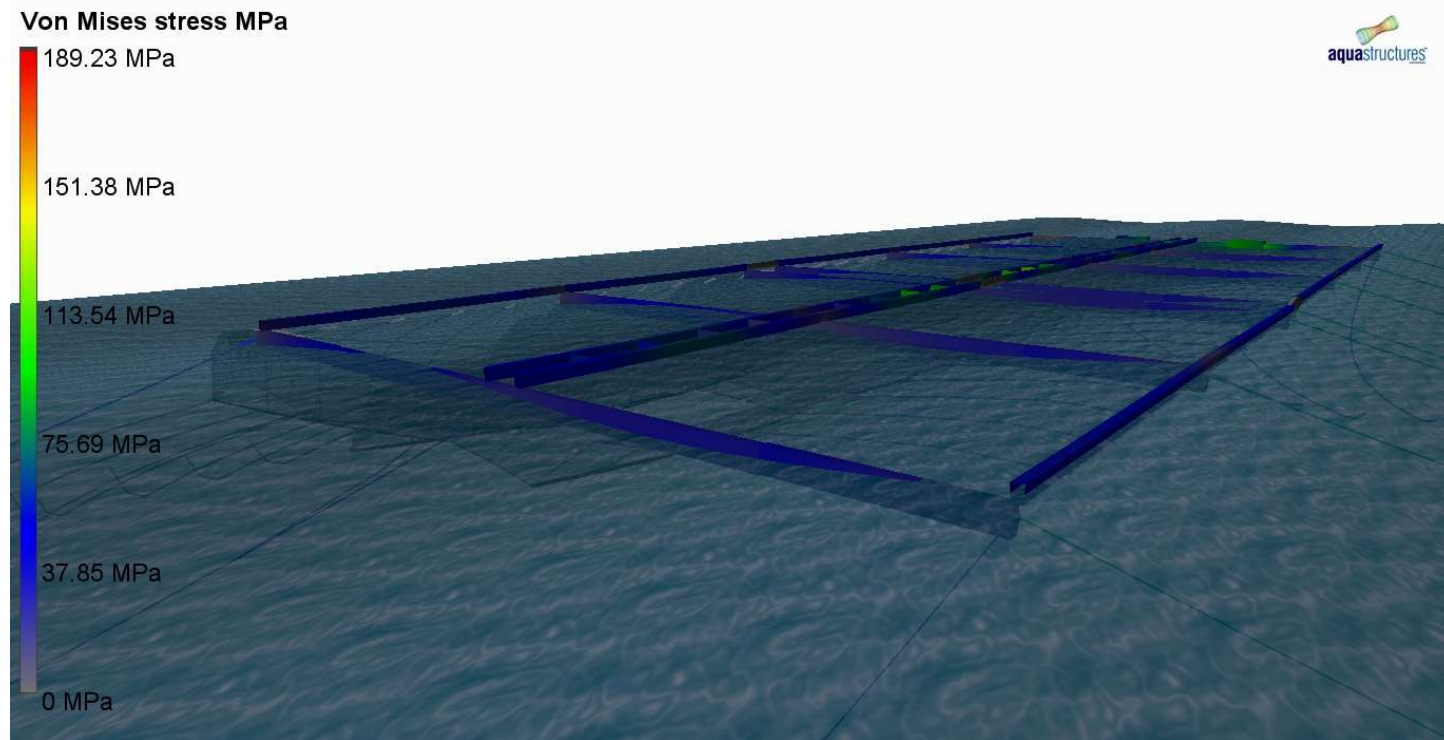
Joined Systems



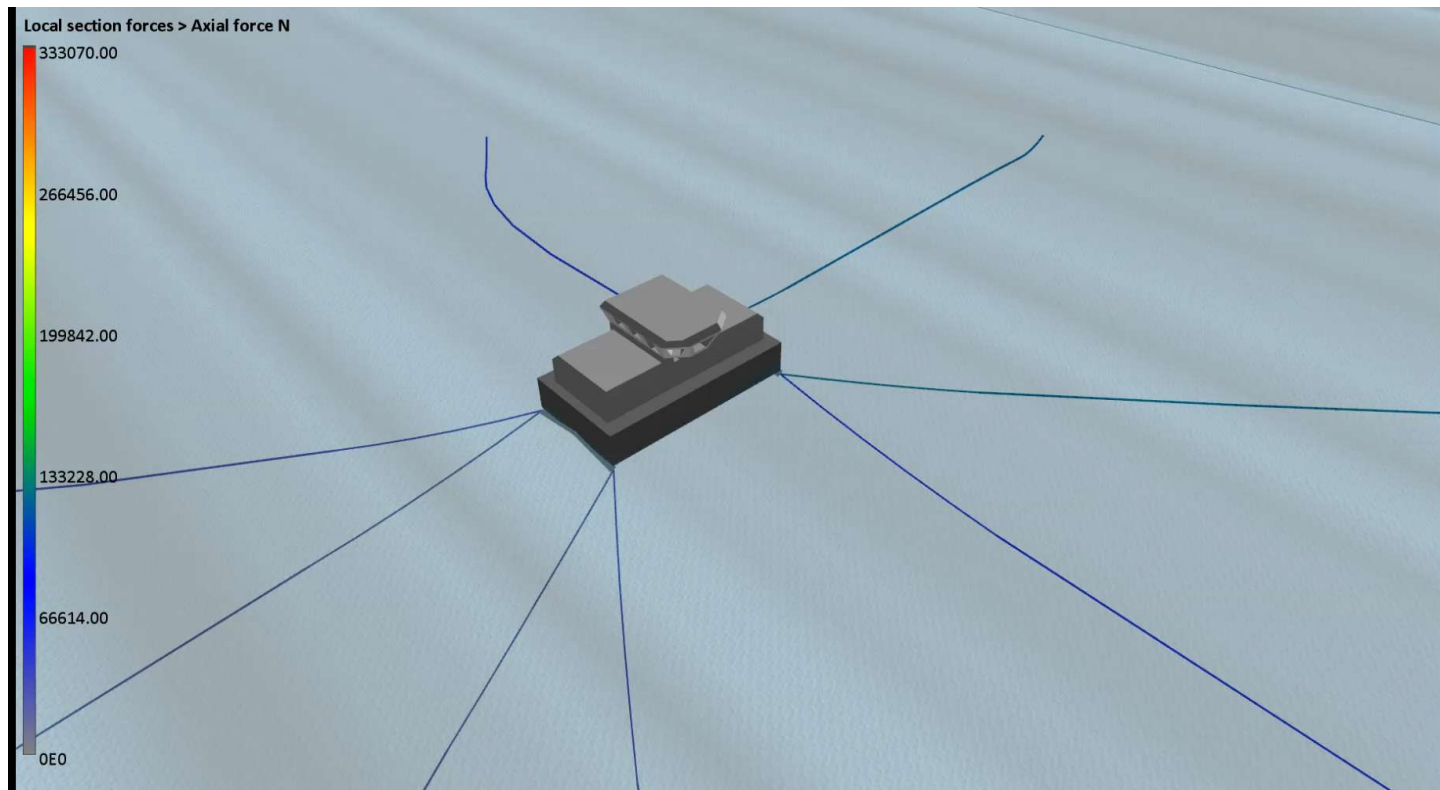
Simple cage with conical shaped net



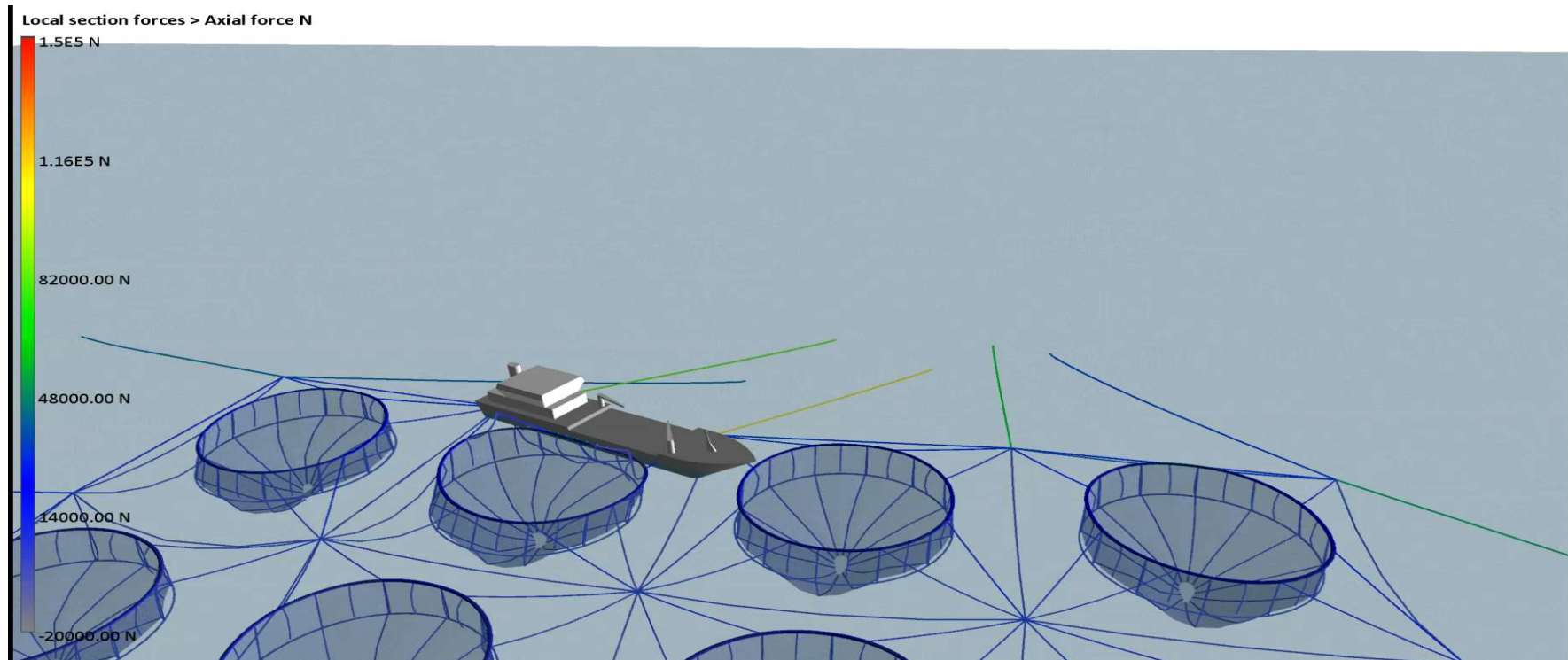
Steel cage with water penetration

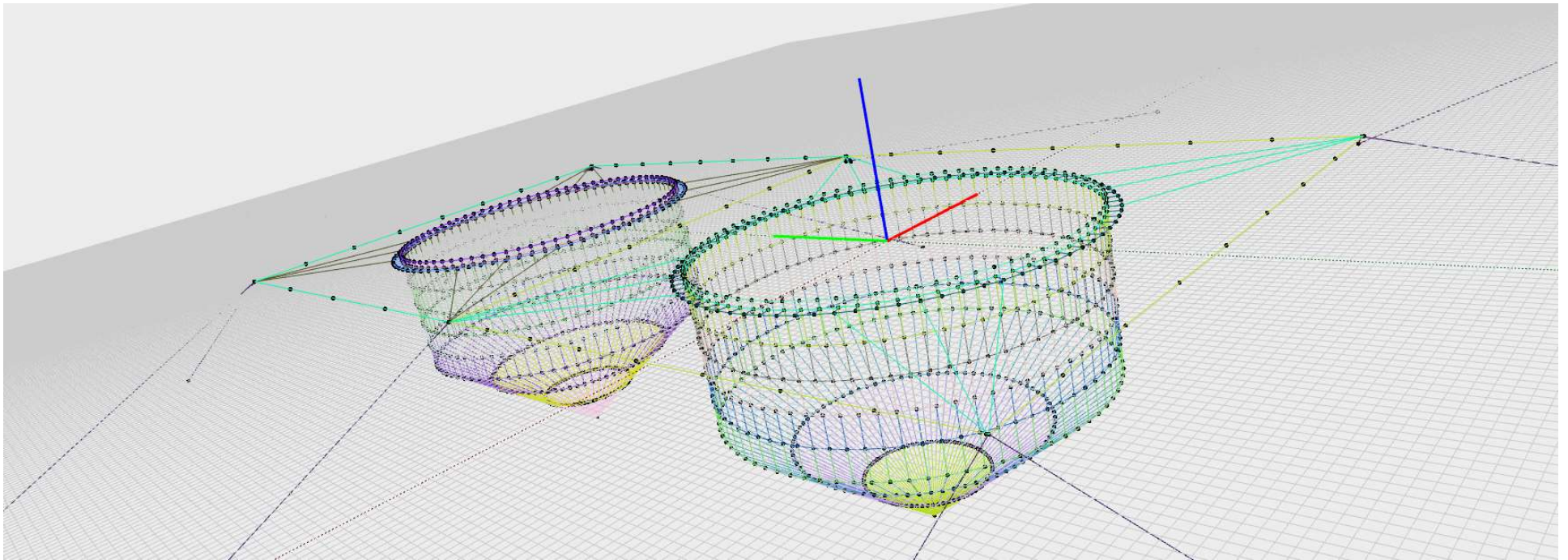


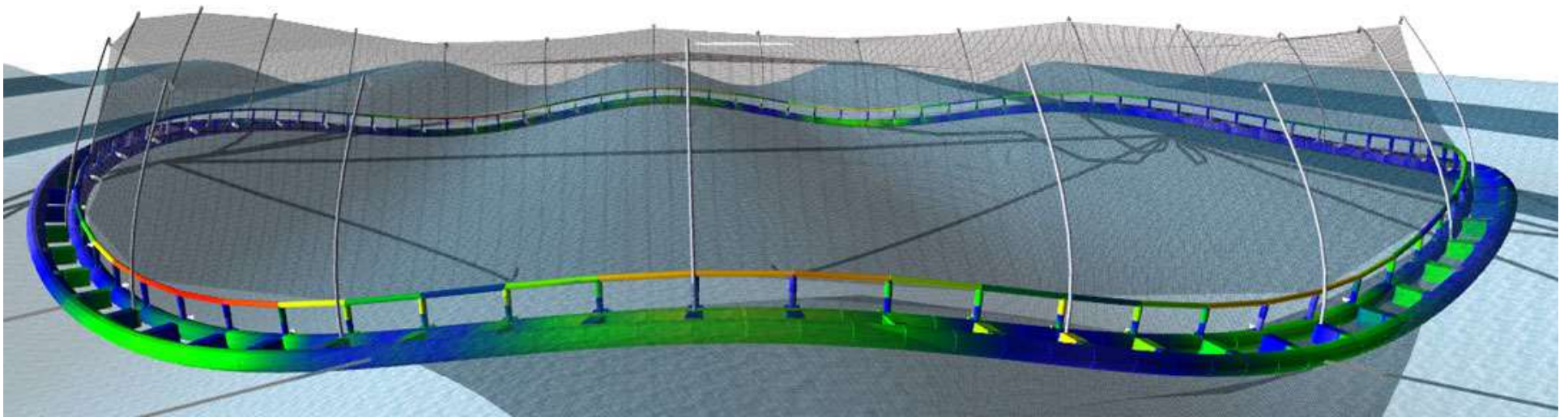
Barges, drift and shock loads in mooring lines



Crisis Analysis







MOORING ANALYSIS

VONIN®

Table 1.3 Floating collars used in the analysis.

Provider	Type	Amount [pcs]	Circumference [m]	Pipe dimension [mm]/[in.]	SDR
Unknown	Plastic	8	120	450 / 2	17.6

Table 1.4 Net used in the analysis.

Net type	Depth baseline/max [m]	Half mesh [mm]	Twine diameter [mm]	Solidity clear/fouled	Stretching system - Sinker tube pieces/weight [pcs/kg]
Circular	15/15	24	1.70	0.15/0.21	120 x 50 kg (total 6000 kg) + 500 kg in center point of the net

In the analysis it is used 16 attachments between the floating collar and the net. Weight of stretching system is described as weight in water.

*Dimension class 0 used in analyses according to NS 9415:2009.

Table 1.5 Input frame and bridles.

Component	Amount	Length	Material	Dimension
Crosswise frame	10 pcs	70 m.	Hawser 8 strands	72 mm.
Longitudinal frame	12 pcs	70 m.	Hawser 8 strands	72 mm.
Attachment cages/ bridles	12 pcs x 8 cages	Adjusted	Hawser 8 strands	64 mm
Coupling discs	15	-	Steel	12 holes
Chain buoys	15	6 m.	Chain	22 mm

It is used 3 x 4 attachments towards the cages with an individual attachment towards coupling disc.

1.4 Line length, bottom anchor points, generally

As a first rule line lengths should be 3 times the depth of bottom anchor points. For material factors used in Norway, see table 1.6 for references in the Norwegian standard NS 9415:2009.

Table 1.6 Material factors (ref. Norwegian standard, NS 9415:2009 Table 13).

Tabell 13 – Material factors for mooringlines

Type	Material factor
Synthetic rope	3,0
Synthetic rope with knots	5,0
Chains and chain components	2,0
Used chains	5,0
Coupling discs and other connecting points of steel*	1,5
Shackles	2,0
Rock bolts and other bottom attachments	3,0
*First yield	

1.5 Accident limit state

The mooring system is analyzed with a break in the mooring line with highest load in intact state (loss of the two extra mooring lines, extr 1 and extr 2) (see table 2.1 – 2.4 for results and dimensioning loads for mooring lines, bridles, frame lines and buoys). Table 1.9 consist of assessments in accident limit state.

Tabell 1.9 Accident limit state assessments

Assessed	Break in line (see figure 2)	Risk break in line (low, medium, high)	Assessment
Break in mooring line:			
- With highest load	Line 14	Low	Ok
- With highest utilization	Line 14	Low	Ok
- Break in line that might be critical for the whole fish farming	F5	Low	Ok
- Break coupling point, eg. Coupling disc	Coupling point to frame	Low	Ok
- Break in line that might be critical for the positioning or displacement of grid, cages or the whole fish farm.	-	-	-
- Break in other lines	Line 22, Crosswise frame	Low	Ok
Loss of buoys etc.	Loss of buoy 15	Low	Low line ascent. Low risk if a buoy is lost.
Progressive break.		Assessed	
Total change / maximal tide.		Assessed	
Iceing		Assessed	

This analysis is done with an assessment for progressive fracture and state of high tide with water level elevation. The marine fish farm is also considered with icing as accidental limit load.

If there is a non conformity between the on-site mooring system and the analysed mooring system please contact Noomas Sertifisering AS for clarification on these matters.

1.6 Analysis software.

This analysis is executed in a computer software called AquaSim, version 2.10.1 – 1740. AquaSim is based on regular waves, and is a dynamic analysis program. For more information see AquaSim user manual or contact Noomas Sertifisering AS.

1.7 Load combinations

Environmental loads on the site are analyzed in 8 directions with 2 combinations. Combination 1 is 10 year waves and 50 year current. Combination 2 is 50 year waves and 10 year current.

Table 1.10 The marine fish farm is analyzed in 16 different states as shown under.

Condition	Environmental loads from	Rs	Tp	Us	S meters	15 meters
	Direction	[m]	[s]	[m/s]	[degrees]	[degrees]
Combination 1	N	360	2.7	16	0.56	180
-	NE	45	2.7	16	0.57	225
-	E	90	2.7	16	0.56	270
-	SE	135	4	16	0.28	315
-	S	180	8	16	0.46	0
Windwaves	S	180	5.1	6.2	0.46	0
Combination 1	SW	225	8.9	16	1.2	45
-	W	270	2.7	16	1.2	90
-	NW	315	2.7	16	0.56	135
Combination 2	N	360	2.8	16	0.3	180
-	NE	45	2.8	16	0.31	225
-	E	90	2.9	16	0.41	270
-	SE	135	4.3	16	0.23	315
-	S	180	9	16	0.41	0
-	SW	225	8.7	16	1.07	45
-	W	270	2.9	16	1.07	90
-	NW	315	2.8	16	0.48	135
Break line 14	SW	225	8.7	16	1.07	45
Break line 22	W	270	2.9	16	1.07	90
Break frame F5	W	270	2.9	16	1.07	90
Break crosswise frame	SW	225	8.7	16	1.07	45
Break bridle cage 5	SW	225	8.7	16	1.07	45
Loss of buoy	SW	225	8.7	16	1.07	45
Tidal change / high tide	SW	225	8.7	16	1.07	45

MOORING ANALYSIS

Mooring

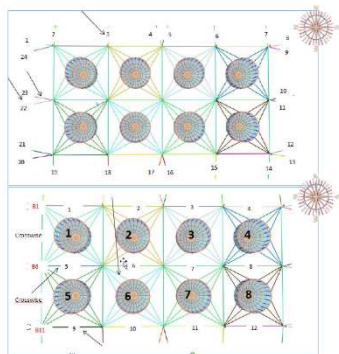


Figure 2: The number of each mooring line, frame rope, bridges (ropes) and buoys (black arrow indicates breaking points that is assessed).

Frame and Bridles

2.0 Requirement for components in mooring system

2.1 Results: intact- and accidental limit state

Table 2.1 Maximum load for frame ropes and bridles in intact- and accidental limit state, and minimum breaking load in frame rope and bridles.

Component (see figure 2)	Intact state						Accidental limit state						Buoys	Chains	Evaluation
	Load in line	WHL rope	WHL chain/bridle	WHL rope	WHL chain/bridle	WHL rope	Load in line	WHL rope	WHL chain/bridle	WHL rope	WHL chain/bridle	WHL rope			
	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]		[kN]	[kN]	[kN]	[kN]	[kN]			
Frame 1	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	ADMISS
Frame 2	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 3	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 4	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 5	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 6	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 7	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 8	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 9	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 10	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 11	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Frame 12	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 1	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 2	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 3	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 4	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 5	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 6	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 7	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 8	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 9	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 10	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 11	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK
Bridge 12	5.5	10.0	10.0	10.0	10.0	10.0	5.5	10.0	10.0	10.0	10.0	10.0	-	-	OK

* These values include material factors used in Technical standard for Swedish fishing vessels. The utilization of chain and ropes is here assessed with material factors in Technical standard for Swedish fishing vessels.

Buoys and chains utilized is based on breaking load of each component used in this analysis, see table 2.2 and 2.3 for frame and bridge specifications.

With use of 4 x 6 bridles to each rope maximum load in bridge is 10.0 kN.

See table 2.2 for mooring line specifications.

Anchor line

Table 2.2 Maximum load in intact- and accidental limit state and minimum breaking load in mooring lines

Line	State	Intact state						Accidental limit state						Utilized	Evaluation
		Load in line	WHL rope	WHL chain/bridle	WHL rope	WHL chain/bridle	WHL rope	Load in line	WHL rope	WHL chain/bridle	WHL rope	WHL chain/bridle	WHL rope		
		[kN]	[kN]	[kN]	[kN]	[kN]		[kN]	[kN]	[kN]	[kN]	[kN]	[kN]		
1	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
2	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
3	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
4	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
5	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
6	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
7	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
8	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
9	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
10	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
11	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
12	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
13	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
14	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
15	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
16	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
17	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
18	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
19	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
20	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
21	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
22	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
23	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS
24	Intact	10.0	10.0	10.0	10.0	10.0	Accidental	10.0	10.0	10.0	10.0	10.0	10.0	OK	ADMISS

* These values include material factors used in Technical standard for Swedish fishing vessels. The utilization of chain and ropes is here assessed with material factors in Technical standard for Swedish fishing vessels.

Buoys and chains utilized is based on breaking load of each component used in this analysis, see table 2.2 and 2.3 for frame and bridge specifications.

With use of 4 x 6 bridles to each rope maximum load in bridge is 10.0 kN.

See table 2.2 for mooring line specifications.

Anchor

Table 2.3 Holding force bottom point mooring and vertical load in mooring lines

Line	Line load	Vertical force		Vertical force		Holding force bottom point	WHL rope
		[kN]	[kN]	[kN]	[kN]		
1	10.0	10.0	10.0	10.0	10.0	10.0	10.0
2	10.0	10.0	10.0	10.0	10.0	10.0	10.0
3	10.0	10.0	10.0	10.0	10.0	10.0	10.0
4	10.0	10.0	10.0	10.0	10.0	10.0	10.0
5	10.0	10.0	10.0	10.0	10.0	10.0	10.0
6	10.0	10.0	10.0	10.0	10.0	10.0	10.0
7	10.0	10.0	10.0	10.0	10.0	10.0	10.0
8	10.0	10.0	10.0	10.0	10.0	10.0	10.0
9	10.0	10.0	10.0	10.0	10.0	10.0	10.0
10	10.0	10.0	10.0	10.0	10.0	10.0	10.0
11	10.0	10.0	10.0	10.0	10.0	10.0	10.0
12	10.0	10.0	10.0	10.0	10.0	10.0	10.0
13	10.0	10.0	10.0	10.0	10.0	10.0	10.0
14	10.0	10.0	10.0	10.0	10.0	10.0	10.0
15	10.0	10.0	10.0	10.0	10.0	10.0	10.0
16	10.0	10.0	10.0	10.0	10.0	10.0	10.0
17	10.0	10.0	10.0	10.0	10.0	10.0	10.0
18	10.0	10.0	10.0	10.0	10.0	10.0	10.0
19	10.0	10.0	10.0	10.0	10.0	10.0	10.0
20	10.0	10.0	10.0	10.0	10.0	10.0	10.0
21	10.0	10.0	10.0	10.0	10.0	10.0	10.0
22	10.0	10.0	10.0	10.0	10.0	10.0	10.0
23	10.0	10.0	10.0	10.0	10.0	10.0	10.0
24	10.0	10.0	10.0	10.0	10.0	10.0	10.0

* These values include material factors used in Technical standard for Swedish fishing vessels. The utilization of chain and ropes is here assessed with material factors in Technical standard for Swedish fishing vessels.

Buoys and chains utilized is based on breaking load of each component used in this analysis, see table 2.2 and 2.3 for frame and bridge specifications.

Icelandic Aquaculture Regulation nr. 1170-2015

Norwegian Standard NS-9415

Scottish Technical Finfish Standard 2020

NET WASHING SYSTEM

VONIN®

DRUM NET WASHER

ROTO SCREEN

DISINFECTOR





VÓNIN Drum net washer:

- Heavy duty washing drum machine
- 100 % water tight
- Large waterproof sealing door for loading and unloading the nets
- Custom made
- Adjustable washing programs
- fully automated PLC system which maximizes the cleaning and disinfection of the nets in an economic and environmental friendly way.

VÓNIN Roto Screen:

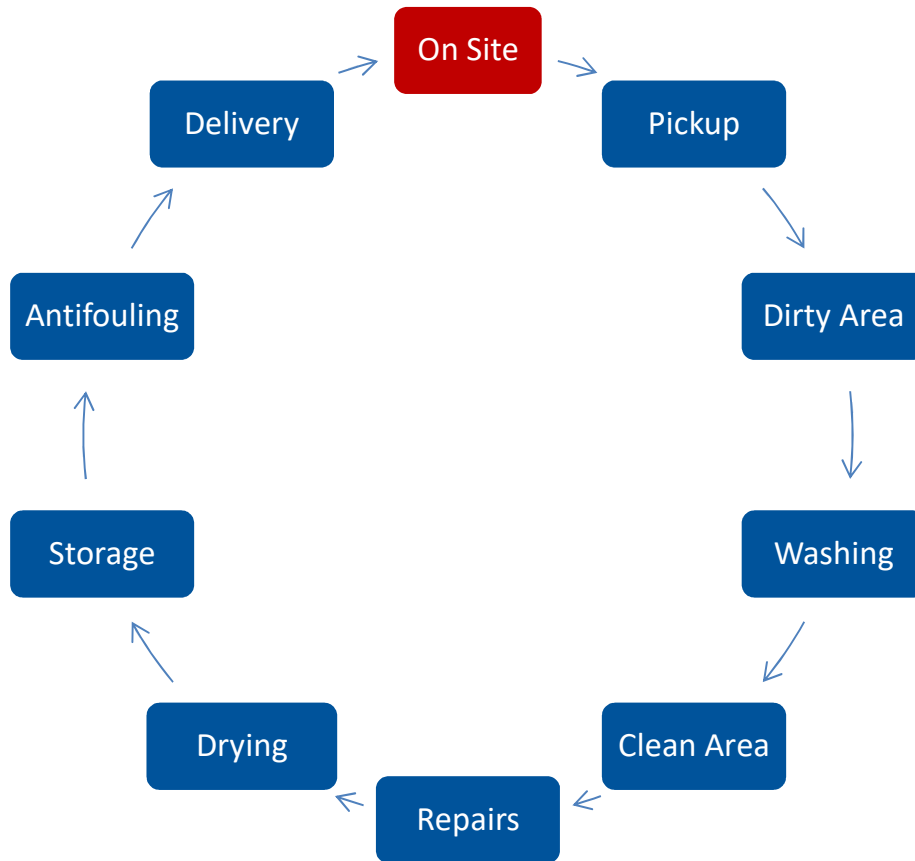


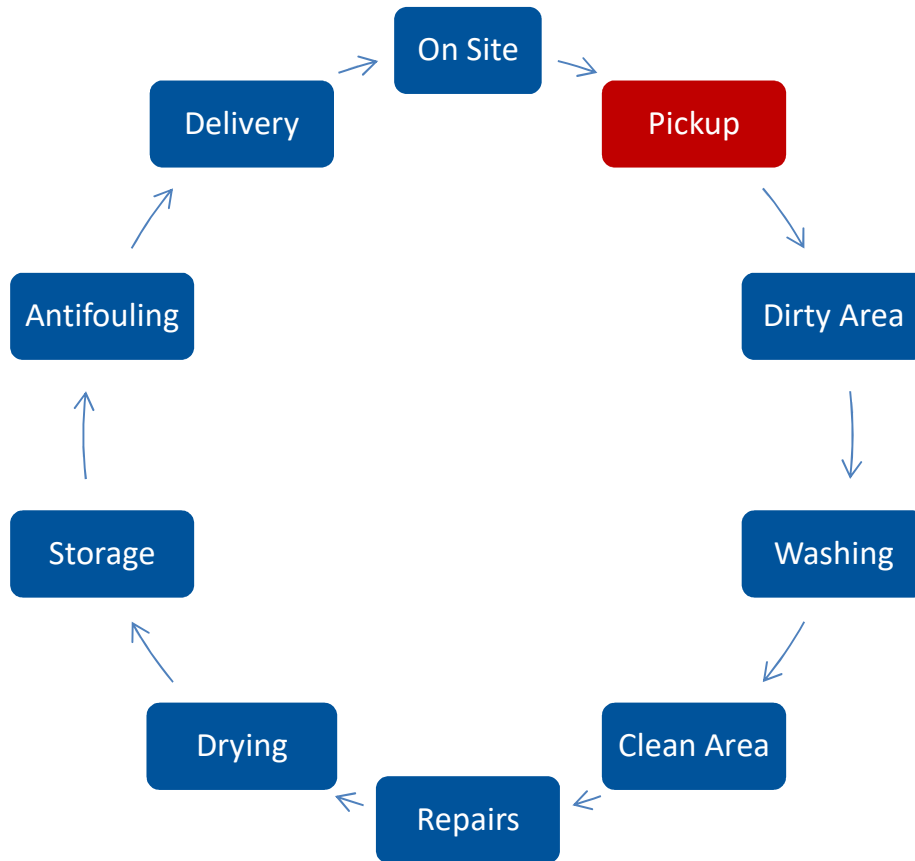
- Water spraying system
- Rotating brushes
- Resistant to clogging
- Highly reliable continuous performance
- Vónin Roto Screen is a environmental and economic solution for separating solids from liquids.

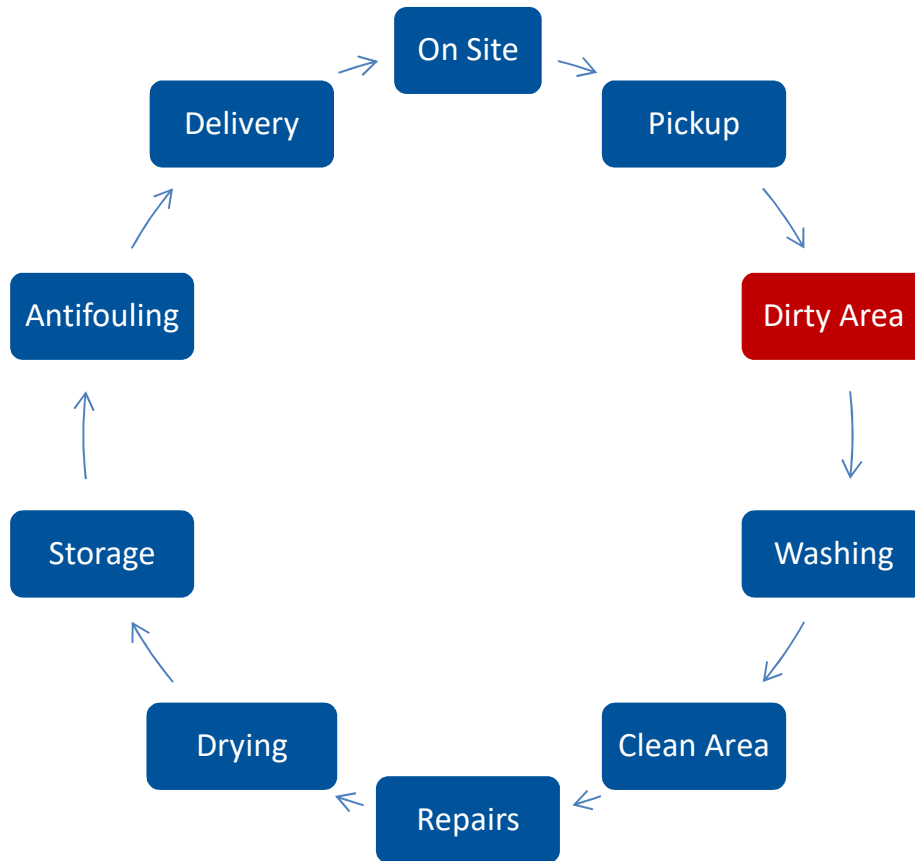


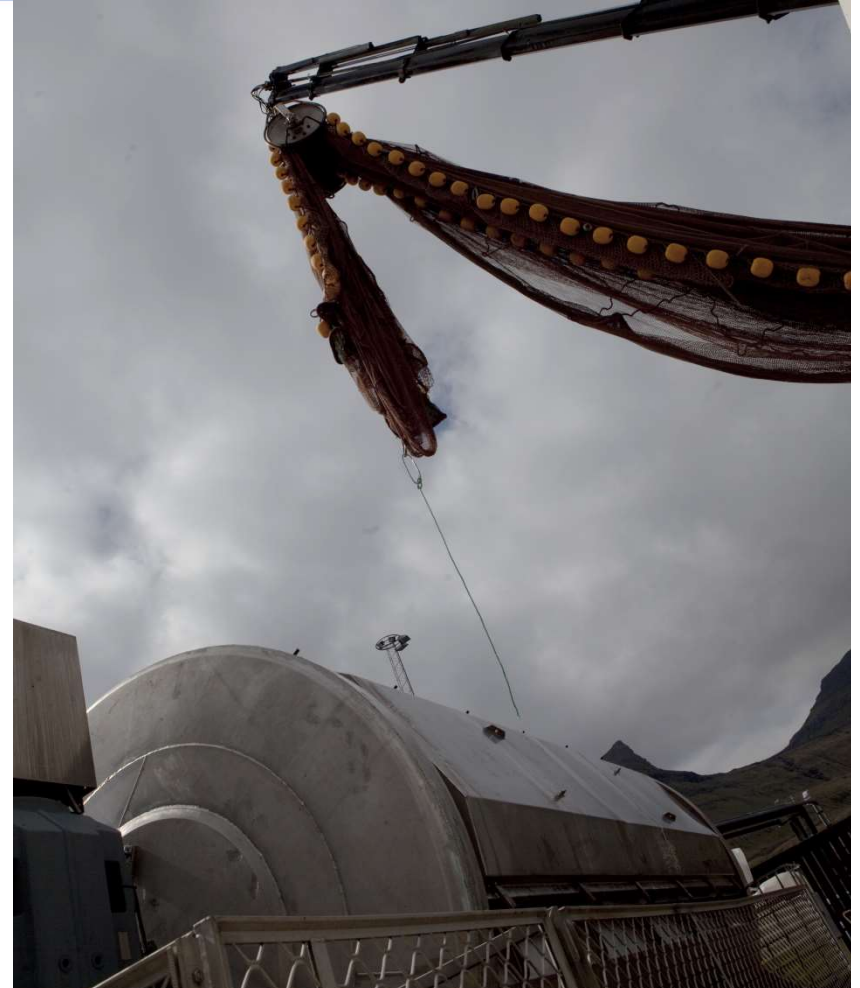
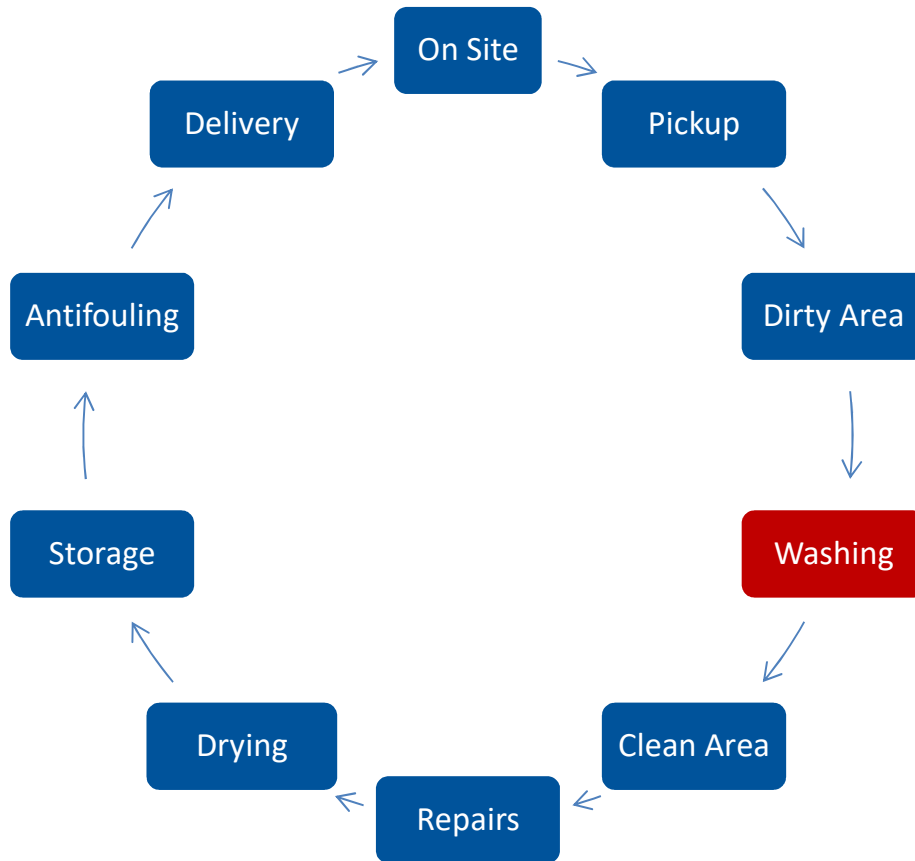
VÓNIN Disinfector of waste water:

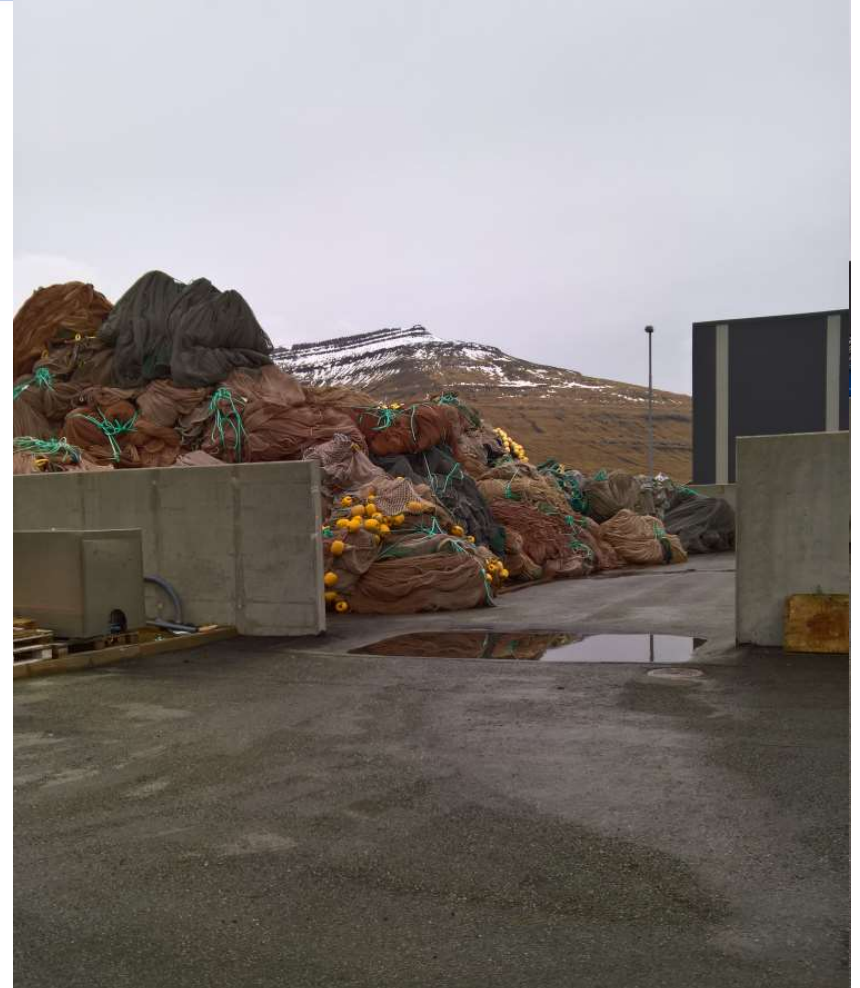
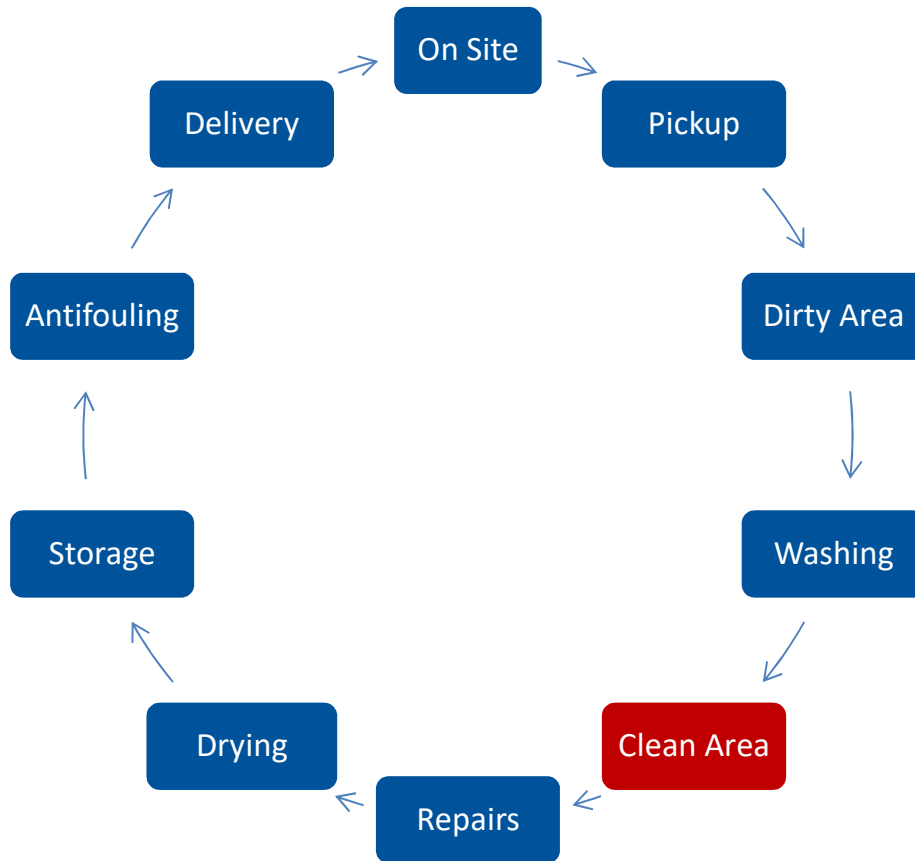
- Water disinfector system
- 3000 l/h
- Resistant to clogging
- Highly reliable continuous performance

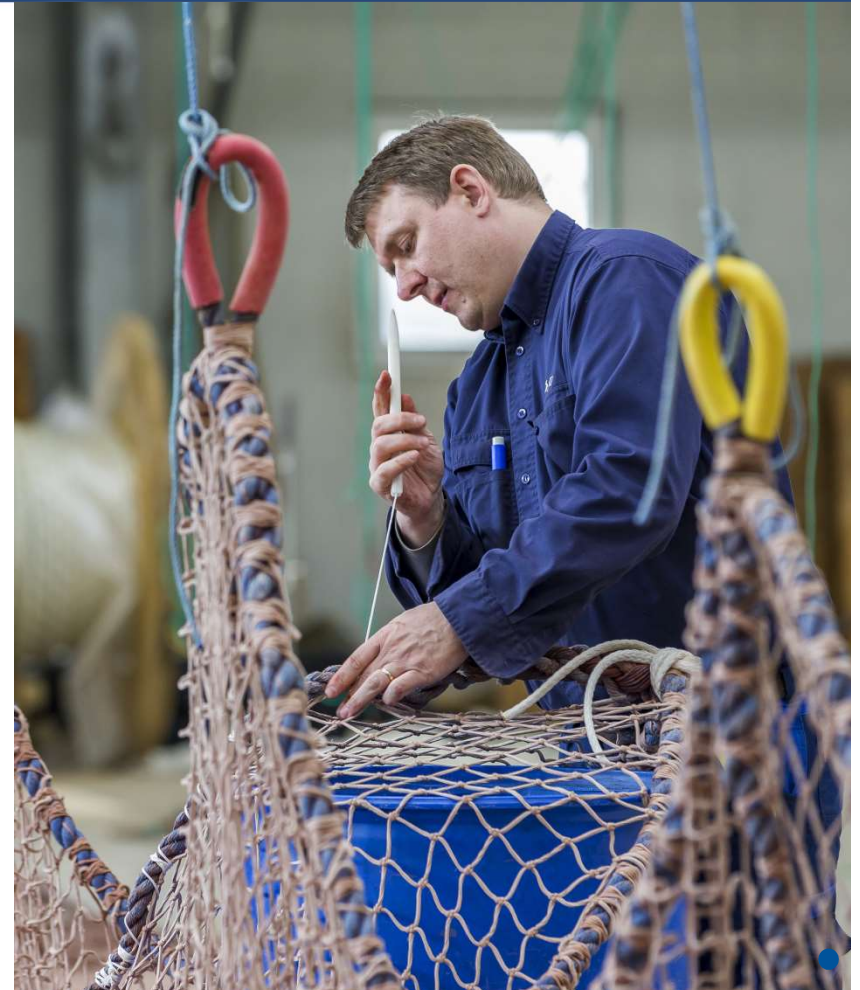
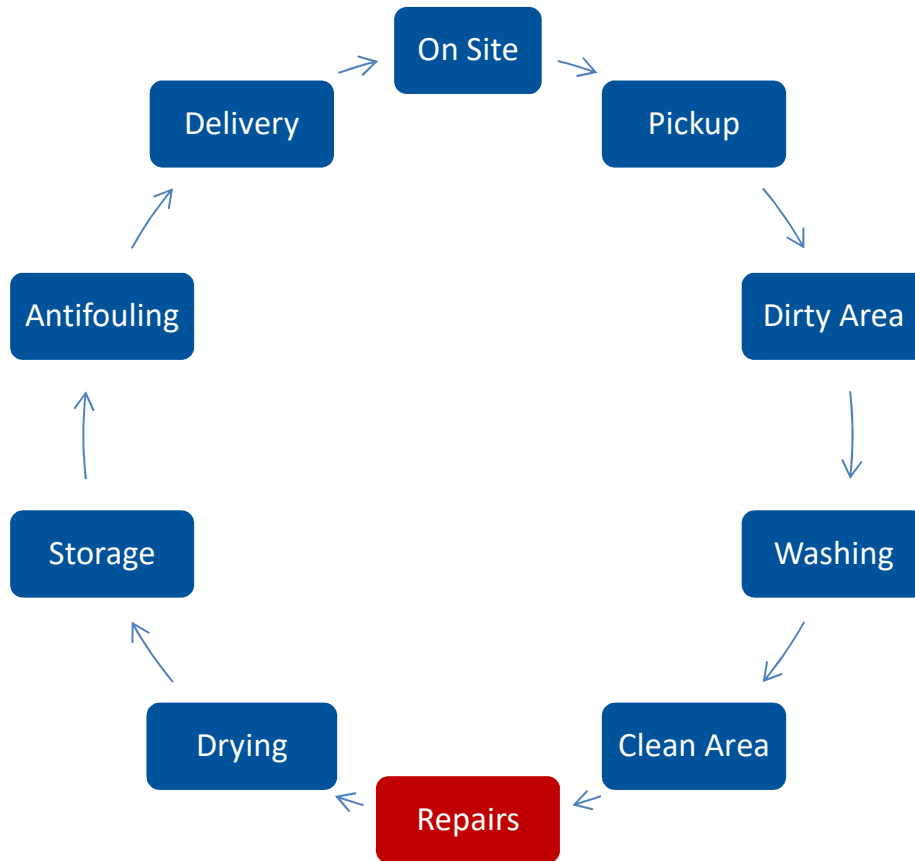






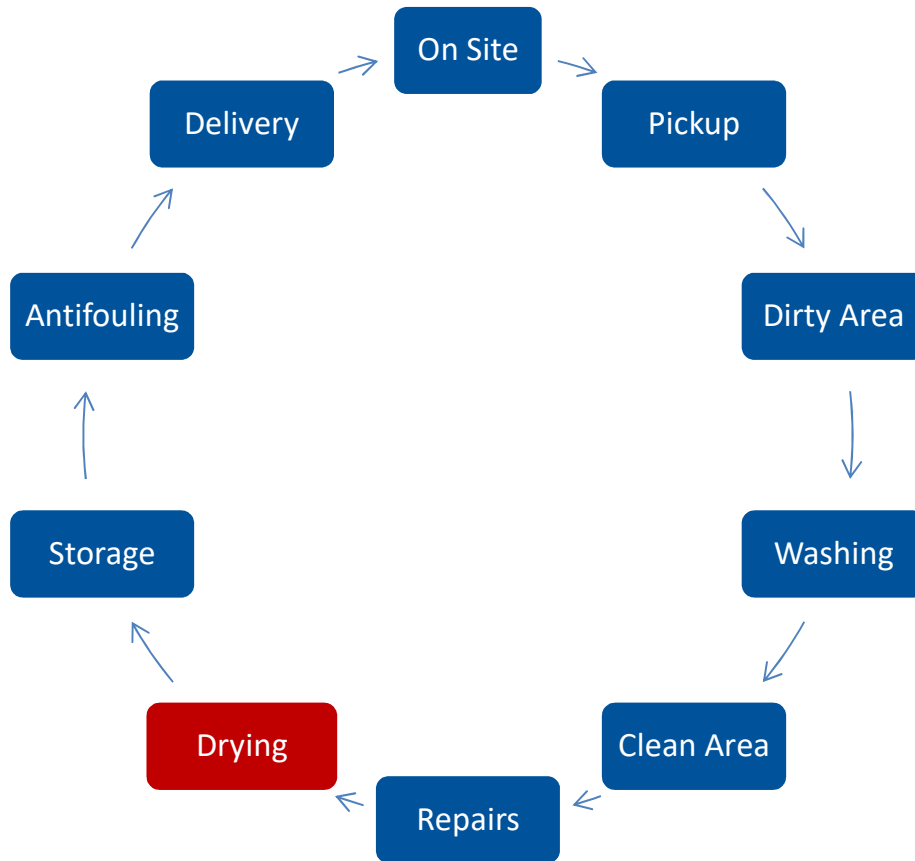






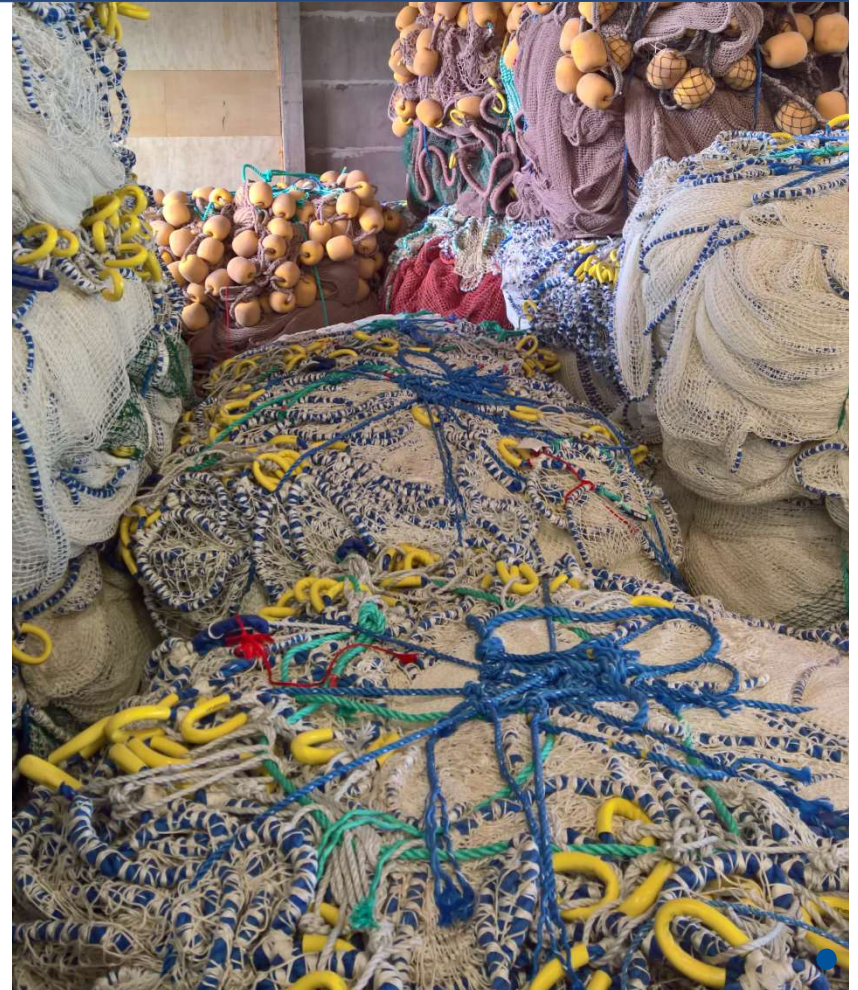
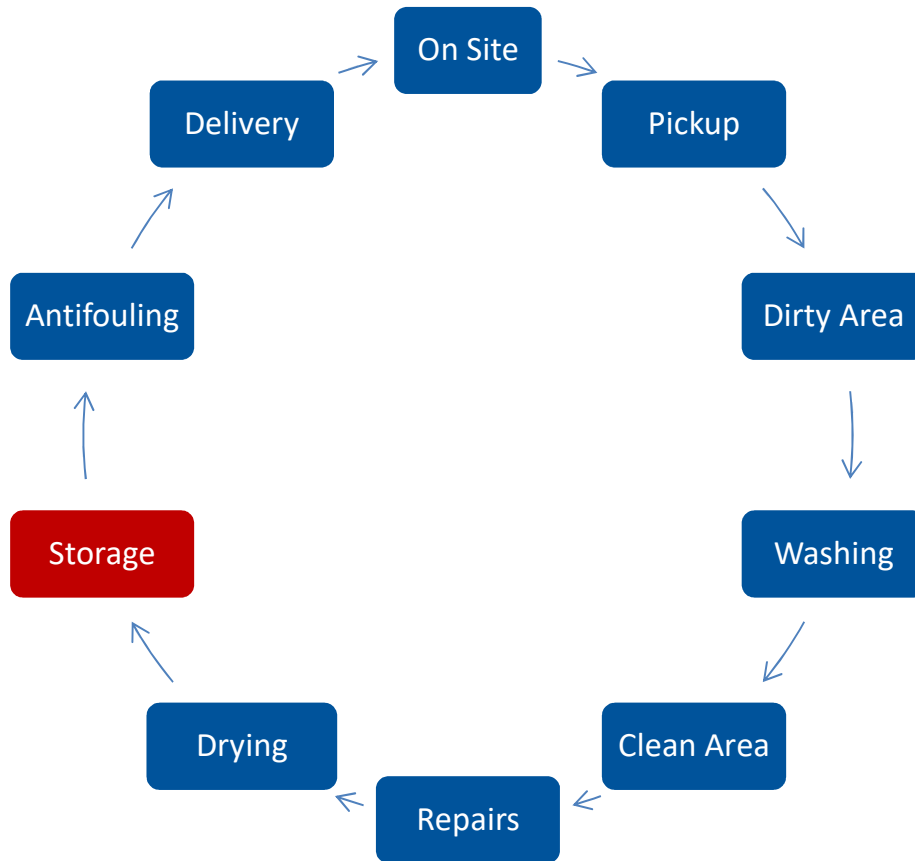
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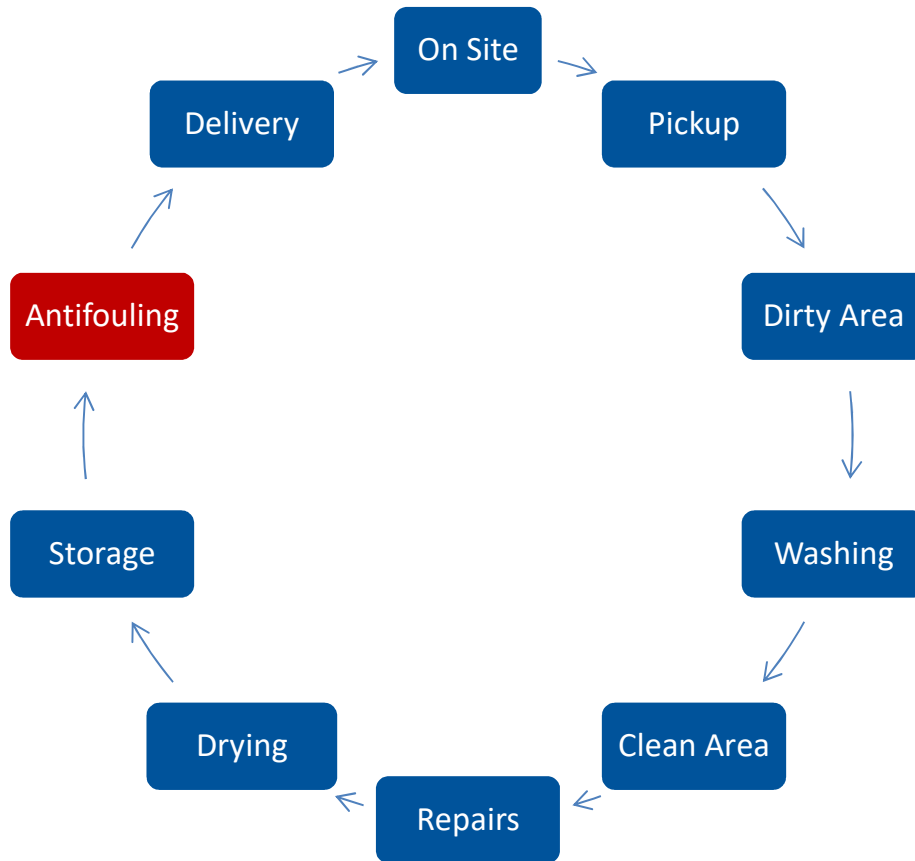
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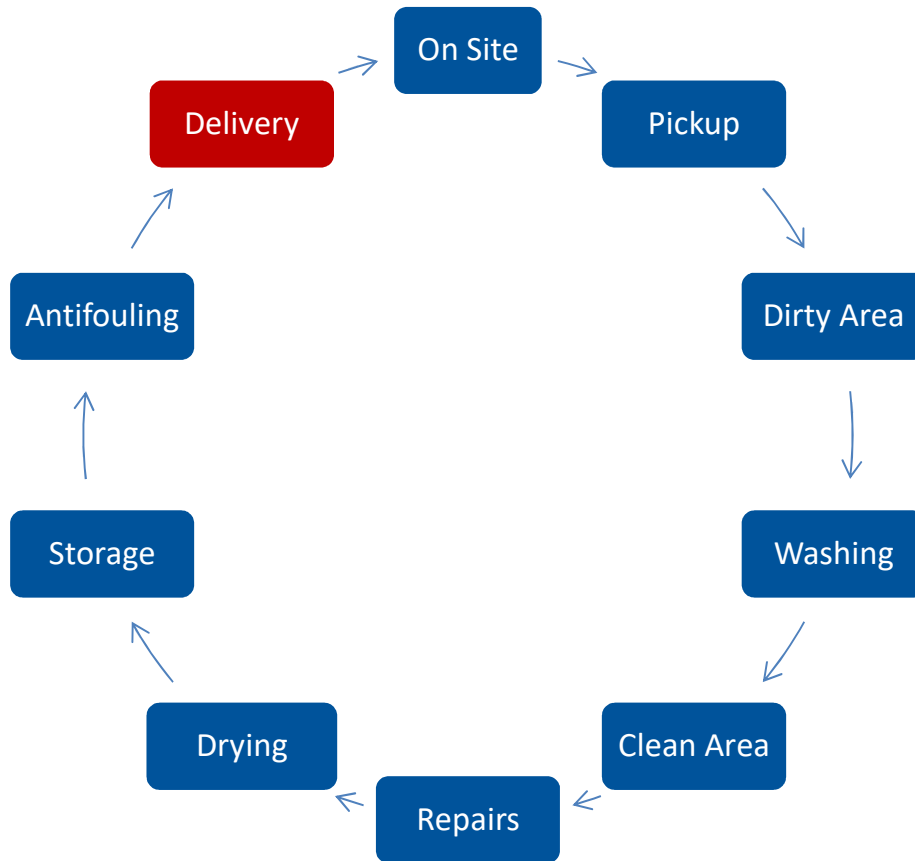


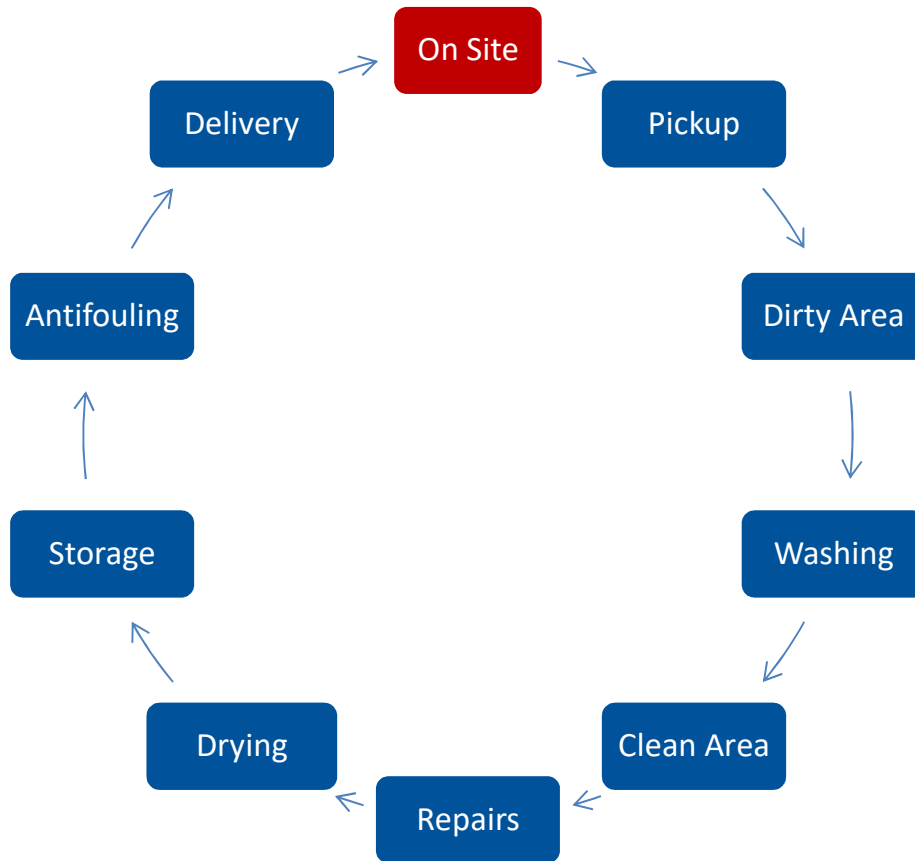
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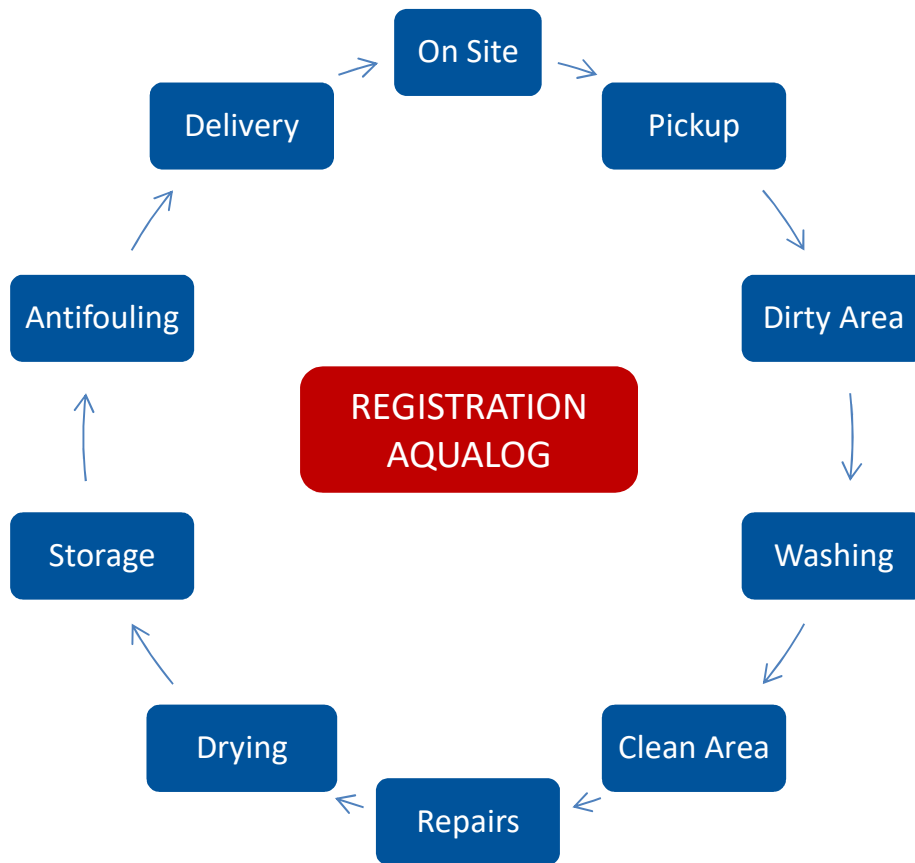
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