



AQUACULTURE

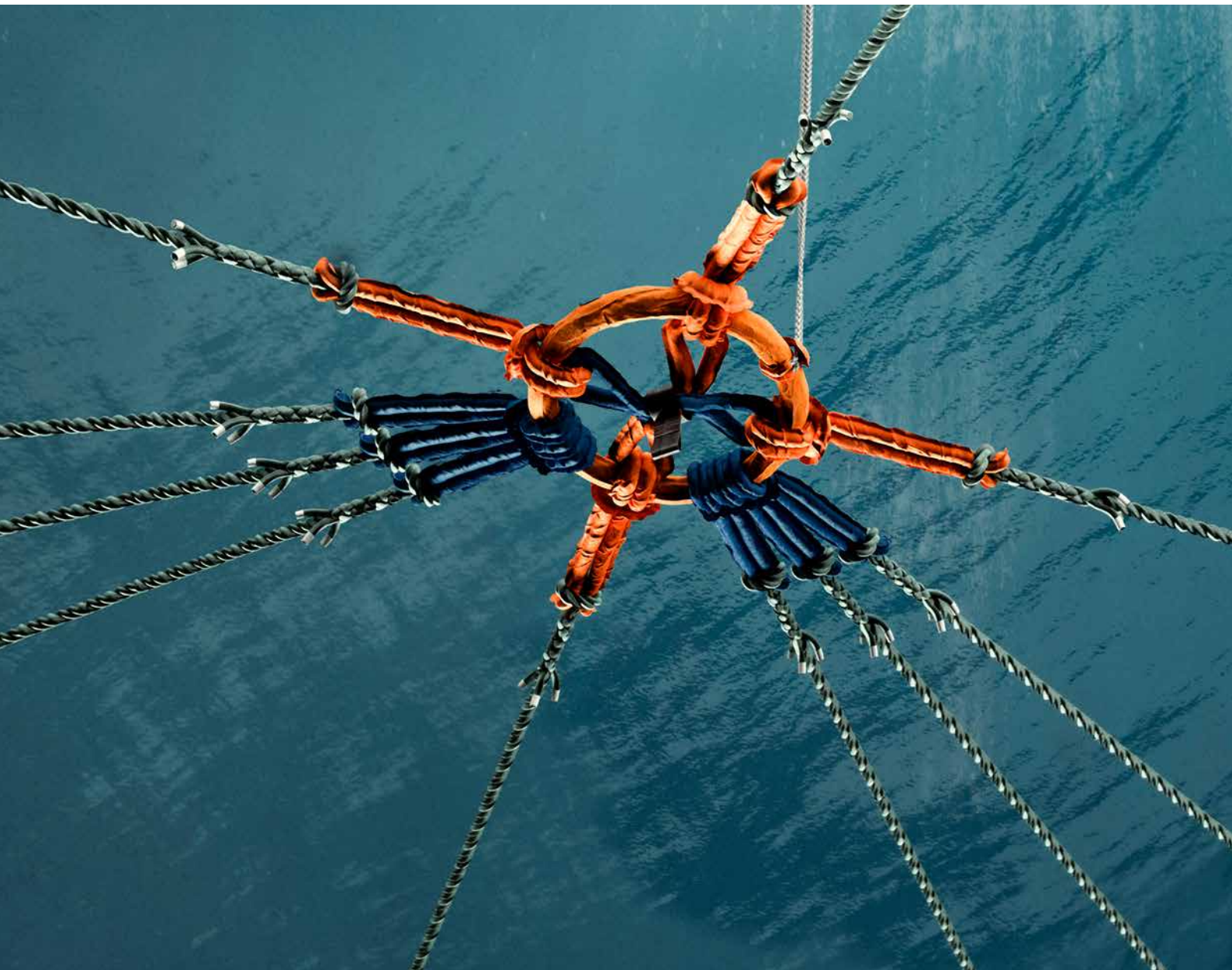
PRODUCT CATALOGUE

TOTAL SUPPLIER | NETS | MOORINGS | NET SERVICES | ANTIFOULINGS/COATINGS | CONSULTANCY SERVICES
AQUACOM | TOP NETS | SEINE NETS | DE-LOUSING TARPAULINS



TRADITION FOR INNOVATION

Mørenot Aquaculture AS is a company in the Mørenot Group, which has provided quality products for aquaculture, fisheries and offshore for almost 70 years. Focus on innovation, quality products and high level of service makes us a reliable supplier. We are constantly interacting with our customers.





As Norway's first supplier of knotless nets in Nylon, Dyneema® and Plexus®, Mørenot Aquaculture is a leading and innovative supplier to the aquaculture industry. Our skilled employees continuously work on new, innovative solutions for a number of years. Innovations such as Flexilink®, Flexi-loop, MMCD and GPS-synchronised marking lights are among some of the products we have developed in recent years.

Our delivery capacity, quality in all stages of production and innovation based on extensive experience is the signature of Mørenot Aquaculture. Our customers can expect quality prod-

ucts, service, advice and on time delivery. Our designs and products are based on the Norwegian standard NS 9415 and NYTEK regulations.

Our catalogue provides useful information about Mørenot Aquaculture's products and services. The majority of products can be manufactured in accordance with the customer's specifications and requirements, or they may be purchased directly from our warehouses along the entire Norwegian coast, in Canada, on the Shetland Islands, in Scotland and in Spain.





CONTENT

1	NETTING	6
2	NETS	10
2.1	NETS	12
2.2	NETS DIMENSION CLASS 0	13
3	MOORINGS	14
3.1	FLEXILINK®	15
3.2	ROPES/MOORING	17
3.3	PLEXUS® ROPE	18
3.4	HARDWARE	19
3.5	ANCHORS	23
4	BUOYS AND LIGHTS	24
4.1	BUOYS	25
4.2	MARKING LIGHTS	27
5	SUNDRIES	28
5.1	ROPES	29
5.2	TOP NETS	30
5.3	SEINE NETS	30
5.4	DELOUSING TARPAULINS AND SEA LICE SKIRTS	30
5.5	DEAD FISH COLLECTORS/KNIVES	31
5.6	BUOYS/FENDERS/TRAWL FLOATS	32
6	SERVICE AND TREATMENT	34
7	AQUA KNOWLEDGE	38
8	AQUACOM	40
9	RESEARCH AND DEVELOPMENT	42



DELIVERING THE DIFFERENCE®

Mørenot Aquaculture has taken the aquaculture industry to a new level

Mørenot Aquaculture collaborates with customers to develop improved and innovative solutions in a rapidly increasing industry. This adds value to the sites and boosts profitability. Increased focus from the authorities on sustainable growth, escapes and sea lice require improved solutions for nets, moorings, service, site calculations and other equipment.

EXPERIENCE AND EXPERTISE

Extensive experience and expertise in all our fields means that we meet our customers' needs when it comes to providing nets, service, mooring deliveries and calculations of moorings. Our proprietary databases MMCD and Net log are tools that provide our customers a complete outline of components and nets at their facilities.

QUALITY

Quality in all stages, innovation built on long experience and continuously increasing capacity makes Mørenot Aquaculture a leading supplier to the aquaculture industry. Our focus on innovation, quality and high level of service makes us a reliable partner that our customers can relay on. All our facilities in Norway and abroad are subject to annual quality inspections of production, assembly and service.

Mørenot Aquaculture AS is certified according to ISO 9001:2008, and our products are certified according to NS 9415.

The consultancy department is accredited according to ISO 17020.



1. NETTING

Feedback from our customers is clear
- MøreNett Aquacultures nettings are among the best available.



First class nettings

The constant, high quality in Mørenot Aquacultures nettings is fully traceable back to each filament supplied. We offer Nylon, with its good qualities in pattern and strength, Dyneema® with its high tensile strength and resistance against abrasion and wear, and our own brand Plexus® with Super-leg construction and the same quality as Dyneema®. We also manufacture strong, high quality nets made from HDPE.

Mørenot Aquaculture was first on the market with ripple free knotless nettings in Norway - long experience has enabled us to produce a netting with very high tensile strength relative to the twine thickness and weight.

Netting from Mørenot Aquaculture has the following advantages and qualities:

- Produced only with quality fiber from recognised suppliers
- We have high standards for UV protection
- The production process is monitored according to ISO 9001:2008

NYLON

- Netting is manufactured at our main plant in Norway and in Asia
- High tensile strength relative to the twine thickness and weight
- Resistant to UV radiation
- The netting is preferred by customers for its good pattern and strength

DYNEEMA®

- Manufactured at our main plant in Norway
- Very high tensile strength
- Resistant against abrasion and wear
- Lighter - less fiber with the same or better tensile strength
- Easier handling
- Thinner twine
- UV-protected

PLEXUS®

- Manufactured at our main plant in Norway
- Mørenot Aquacultures own brand
- High tensile strength
- Made of Dyneema® fiber and Polyester
- Produced in Super Leg construction
- Similar properties to pure Dyneema® netting
- UV-protected



CONVERSION TABLE

Knotless, ripple free netting (super knot)

From half mesh to mesh opening

Twine no:	Halfmesh mm	Knot length mm	Mesh opening mm
210/15	4,5	2,3	6,7
210/15	6	2,3	9,7
210/18	4,5	2,6	6,4
210/18	6	2,6	9,4
210/18	8	2,6	13,4
210/24	6	3,1	8,9
210/24	8	3,1	12,9
210/24	10	3,1	16,9
210/30	10	3,4	16,6
210/30	12,5	3,4	21,6
210/30	15,5	3,4	27,6
210/36	10	3,7	16,3
210/36	13	3,7	22,3
210/36	15,5	3,7	27,3
210/42	13	4,1	21,9
210/42	14	4,1	23,9
210/42	15,5	4,1	26,9
210/42	18	4,1	31,9
210/48	13	4,5	21,5
210/48	15,5	4,5	26,5
210/48	18	4,5	31,5
210/48	19,5	4,5	34,5
210/48	22,5	4,5	40,5
210/48	25	4,5	45,5
210/60	15,5	5,2	25,8
210/60	18	5,2	30,8
210/60	19,5	5,2	33,8
210/60	22,5	5,2	39,8
210/60	25	5,2	44,8
210/60	28,5	5,2	51,8

Twine no:	Halfmesh mm	Knot length mm	Mesh opening mm
210/72	16,5	5,6	27,4
210/72	18	5,6	30,4
210/72	19,5	5,6	33,4
210/72	22,5	5,6	39,4
210/72	25	5,6	44,4
210/72	28,5	5,6	51,4
210/96	18	5,8	30,2
210/96	19,5	5,8	33,2
210/96	22,5	5,8	39,2
210/96	25,5	5,8	45,2
210/96	29	5,8	52,2
210/108	22,5	6,0	39,0
210/108	25,5	6,0	45,0
210/108	27	6,0	48,0
210/108	29	6,0	52,0
210/108	35	6,0	64,0
210/120	25,5	7,0	44,0
210/120	27	7,0	47,0
210/120	29	7,0	51,0
210/120	32	7,0	57,0
210/138	25,5	7,5	43,5
210/138	27	7,5	46,5
210/138	29	7,5	50,5
210/138	32	7,5	56,5
210/156	27	8,0	46,0
210/156	29	8,0	50,0
210/156	32	8,0	56,0
210/156	35	8,0	62,0

Measurement of mesh size: According to the Industry Standard for knot- and ripple free net (Super Knot), the mesh size is measured between the center of 2 opposed junctions (Fig. 1) in accordance with ISO 1107-1974.

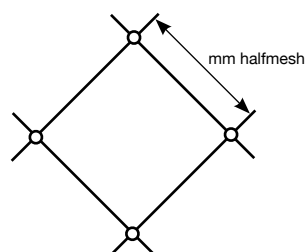


Fig. 1

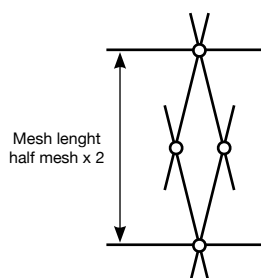


Fig. 2

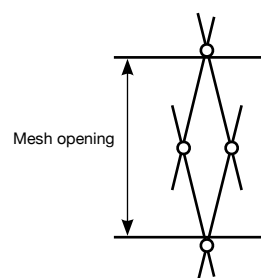


Fig. 3



CONVERSION TABLE

Knotless, ripple free netting (super knot)

From mesh opening to half mesh

Twine no:	Mesh opening mm	Knot length mm	Half mesh mm
210/42	20	4,1	12,1
210/42	25	4,1	14,6
210/42	27,5	4,1	15,8
210/42	30	4,1	17,1
210/48	25	4,5	14,8
210/48	30	4,5	17,3
210/48	35	4,5	19,8
210/48	40	4,5	22,3
210/48	45	4,5	24,8
210/60	25	5,2	15,1
210/60	30	5,2	17,6
210/60	35	5,2	20,1
210/60	40	5,2	22,6
210/60	45	5,2	25,1
210/60	50	5,2	27,6
210/72	25	5,6	15,3
210/72	30	5,6	17,8
210/72	35	5,6	20,3
210/72	40	5,6	22,8
210/72	45	5,6	25,3
210/72	50	5,6	27,8
210/96	25	5,8	15,4
210/96	30	5,8	17,9

Twine no:	Mesh opening mm	Knot length mm	Half mesh mm
210/96	35	5,8	20,4
210/96	40	5,8	22,9
210/96	45	5,8	25,4
210/96	50	5,8	27,9
210/108	30	6,0	18,0
210/108	35	6,0	20,5
210/108	40	6,0	23,0
210/108	45	6,0	25,5
210/108	50	6,0	28,0
210/120	35	7,0	21,0
210/120	40	7,0	23,5
210/120	45	7,0	26,0
210/120	50	7,0	28,5
210/120	55	7,0	31,0
210/138	40	7,5	23,8
210/138	45	7,5	26,3
210/138	50	7,5	28,8
210/138	55	7,5	31,3
210/156	40	8,0	24,0
210/156	45	8,0	26,5
210/156	50	8,0	29,0
210/156	55	8,0	31,5
210/156	60	8,0	34,0

Measurement of mesh size: According to the Industry Standard for knot- and ripple free net (Super Knot), the mesh size is measured between the center of 2 opposed junctions (Fig. 1) in accordance with ISO 1107-1974.

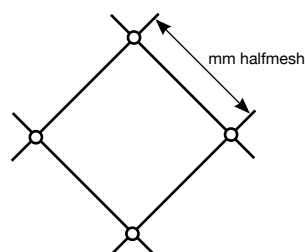


Fig. 1

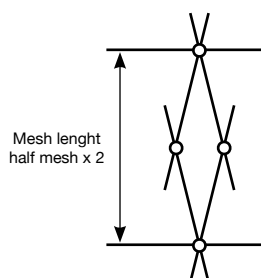


Fig. 2

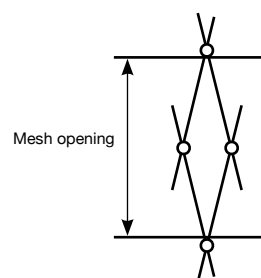


Fig. 3

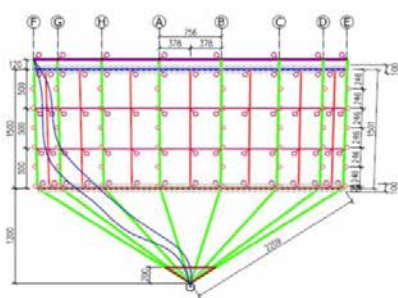


2. NETS

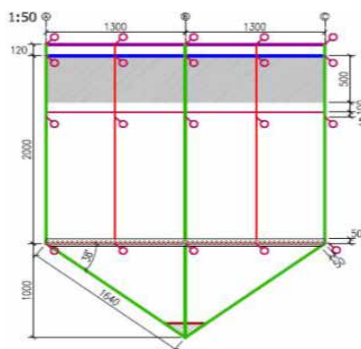
Mørenot Aquaculture manufacture customized nets based on the customers requirements and operating methods. The nets are assembled at our facilities and with our partners.

Customized nets

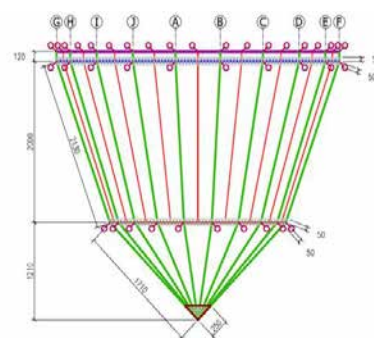
Mørenot Aquaculture produces customized nets based on customers requirements and in accordance with the regulations in NS 9415



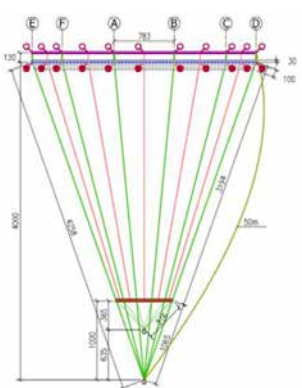
Circle net



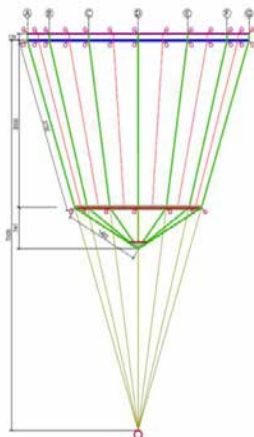
Square net



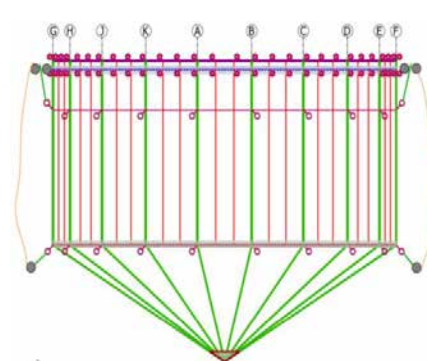
Circle with coned base



Coned net



Spaghetti legs



Circle w/sinker tube attached to net

NYLON - PREFERRED BY MANY CUSTOMERS

- Good design and high breaking strength
- Super knot

PLEXUS® AND DYNEEMA® - LIGHTER WEIGHT

- Reduced weight - easier handling
- Thinner twine - less fouling
- Increased water flow - better environment for the fish
- Reduced coating needs - less environmental impact
- Resistant to UV radiation and abrasion - extends the lifetime

Netting from Mørenot Aquaculture has high breaking strength relative to the twine thickness and weight.

ASSEMBLY

Nets made of Nylon, Dyneema® and Plexus® are assembled:

- At Mørenot Aquaculture in Søvik
- With subsidiary companies along the coast of Norway
- With subsidiary companies in Canada, Scotland, Shetland and Spain
- With partners in Turkey, Ireland and Iceland
- With partner in Asia





2.1 NETS – NS 9415, DIMENSIONING

All nets are assembled in accordance with the requirements of NS 9415 and in accordance with the customer's specifications. The table below shows the requirements for the dimensioning of netting and ropes in relation to the nets circumference and depth."

Nets -dimension classes

Net depth (m)	Circumference (m)							
	< 49	50 - 69	70 - 89	90 - 109	110 - 129	130 - 149	150 - 169	170 <
0 - 15	I	II	III	IV	V	V	VI	0
15,1 - 30	II	II	IV	IV	V	VI	VII	0
30,1 - 40	III	III	IV	V	V	VI	VII	0
40 <	0	0	0	0	0	0	0	0



Machine installation

Netting strength requirements

Half mesh 1) (mm)	I	II	III	IV	V	VI	VII	0
	Minimum mesh strength in net (kg)							
< 6,0	21	21	25	25	25	25	25	25
6,0 - 8,0	25	31	31	39	39	39	39	39
8,1 - 12,0	31	39	47	55	55	55	55	55
12,1 - 16,5	39	47	65	63	71	71	79	79
16,6 - 22,0	47	63	79	79	79	95	95	95
22,1 - 29,0	63	71	95	95	117	136	136	136
29,1 - 35,0	95	95	117	117	136	136	151	151

Half meshes in netting with square meshes shall be measured in accordance with NS-EN ISO 1107. When using netting with hexagonal meshes use conversion table.



Test of breaking strength

Rope requirements

Minimum breaking strength in any rope		I	II	III	IV	V	VI	VII
Min. breaking strength in any rope (kg)		1900	1900	2800	3400	4100	4100	5000
Top rope	Min. quantity:	1	1	1	1	1	1	1
Main rope	Min. quantity:	1	1	1	1	1	1	1
Bottom rope	Min. quantity:	1	1	1	1	1	1	1
Side rope/ attachment points	Max. distance (m):	7,5	7,5	6,5	6,5	5,0	5,0	5,0
Lifting rope	Max. distance (m):	15,0	15,0	19,5	13,0	15,0	15,0	10,0
Cross rope bottom	Requirements:	All lifting rope SHALL continue as cross rope at the base						



2.2 NETS IN DIMENSION CLASS 0

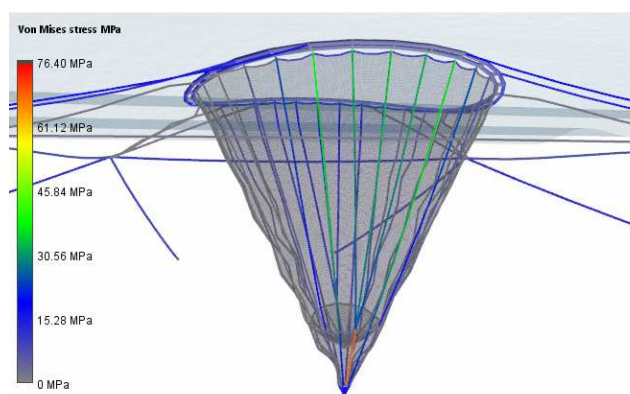
Mørenot Aquaculture is currently one of few net manufacturer that has developed both its own expertise and a certified system of calculating and dimensioning nets in class 0.

ANALYSIS AND EXPERIENCE

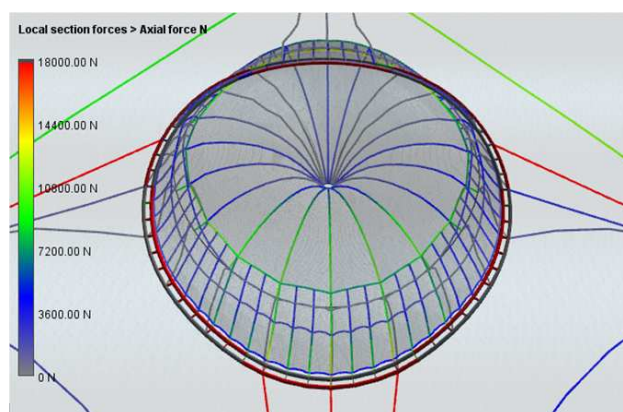
Advanced analytical tools combined with Mørenot Aquaculture's experience of netting production and assembly of fish farming nets provide us with the knowledge required to tailor and certify nets for class 0 locations."

UNIQUE ASSEMBLING SOLUTIONS

Unique assembling solutions make us able to certify nets for locations with extreme wave and current conditions, whilst the dimensions of ropes and netting remain within the norm.



Technical analyses of class 0 seine bags.

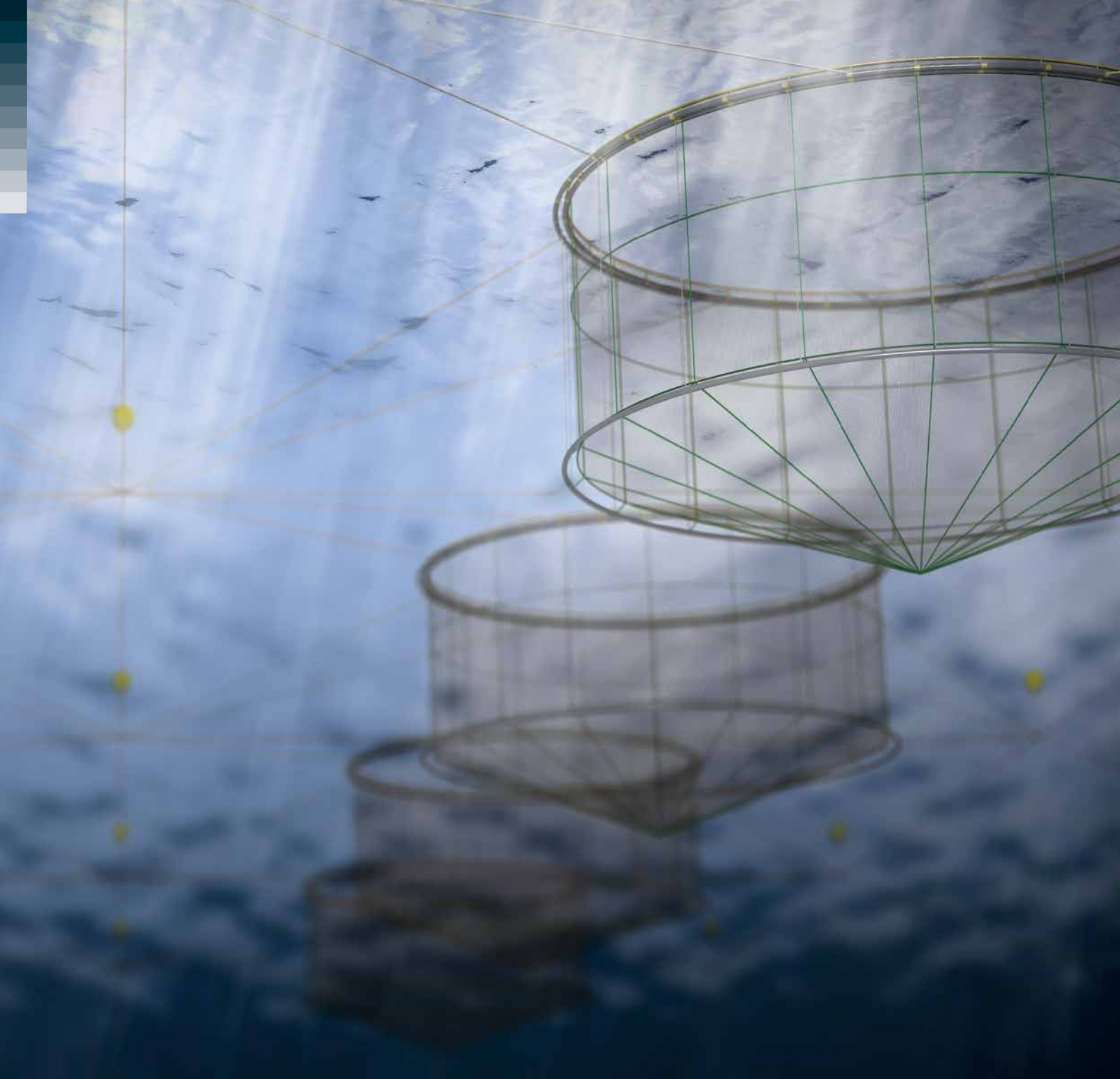


Nets

Design class 0

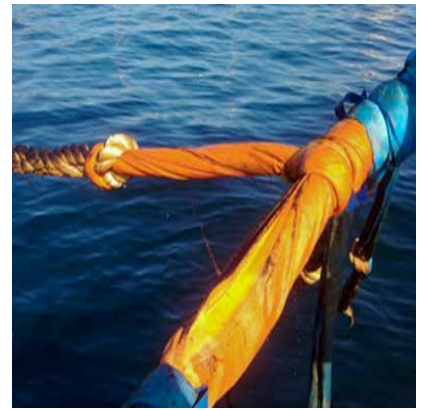
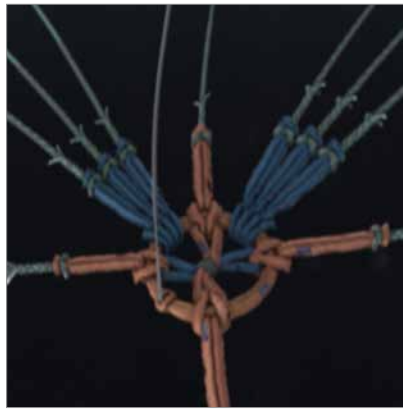
For locations with dimensioning, significant wave heights above 2.5 metres and a dimensioning current velocity above 0.75 m/s, the dimension class is set to 0.





3. MOORINGS

Mørenot Aquaculture's main focus is on quality, the ability to deliver and product development. We will tailor and supply your mooring system in a short time and at the right price for your site. We never compromise on quality and only use equipment and solutions that have been thoroughly tested and which meet all the requirements of NS 9415. All components are product certified in accordance with the Norwegian NYTEK regulations and NS 9415. Our fibre mooring solution – Flexilink® – puts Mørenot Aquaculture in a class of its own.



3.1 FLEXILINK®

Internationally patent applied

Flexilink® is a result from years of research and development in collaboration with SINTEF and norwegian aquaculture companies. The system meets all the requirements in NS 9415 and can be adapted to all types of sites.

UNIQUE MOORING SOLUTION

As a pioneer in the field Mørenot Aquaculture has launched the Flexilink® mooring grid in fiber with the following qualities:

- Reduced number of components in the mooring
- Reduced mechanical wear
- Reduced the number of inspections on the grid
- Lower acquisition- and life cycle costs

BENEFITS OF THE FLEXILINK®

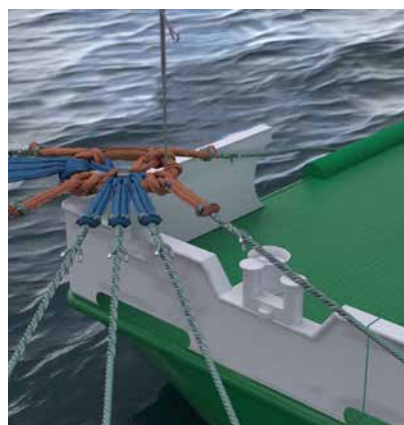
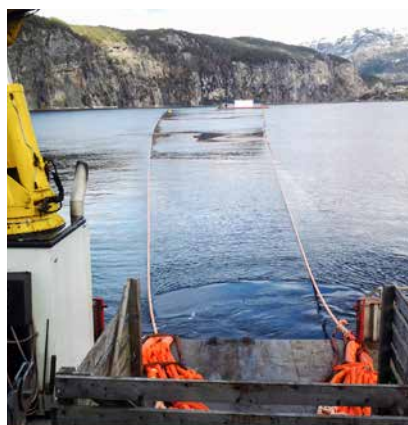
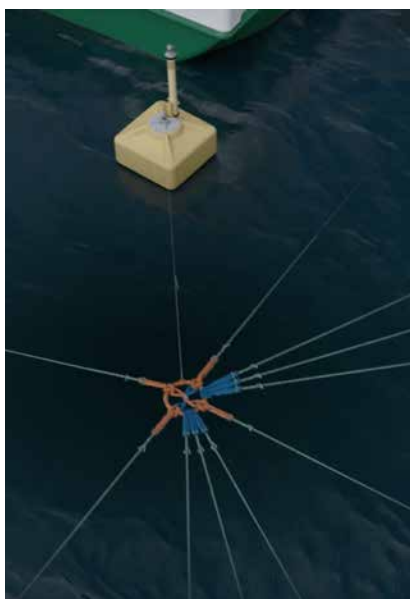
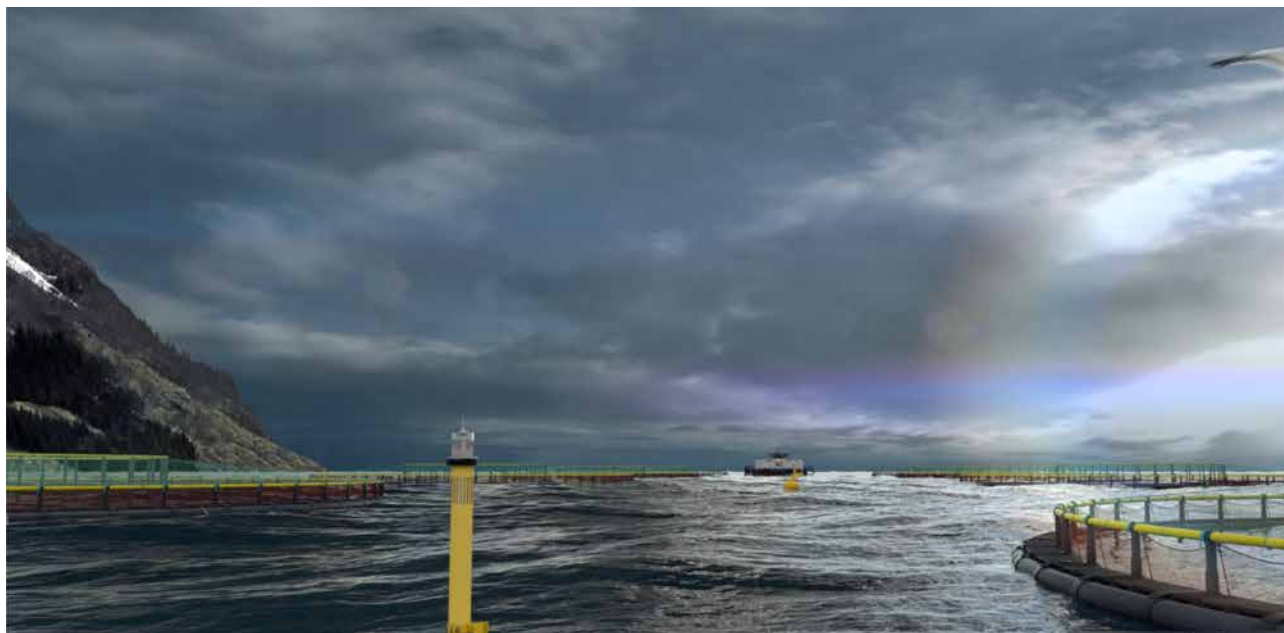
Several Norwegian aquaculture companies have changed to Flexilink® in the mooring grid. Benefits of the Flexilink® are:

- No connection plates, shackles, thimbles or steel rings
- Only flexible fiber straps combined with rope
- From 42 tons breaking load
- Prefabricated grids makes installation quicker and easier
- Few individual components provides greater security and longer intervals between inspections
- Longer inspection intervals significantly lower lifetime cost



INSTALLATION OF A FLEXILINK GRID

- done in one hour



Rapid installation of Flexilink® grid.



3.2 ROPES/MOORING ROPES

3-strand

Art-no.	Type	Weight kg/m	MBL kg
52002800	Danline 28 mm	0,36	13200
52003200	Danline 32 mm	0,46	16800
52003600	Danline 36 mm	0,58	20600
52004000	Danline 40 mm	0,72	25700
52004400	Danline 44 mm	0,88	30170
52004800	Danline 48 mm	1,04	36600
52005200	Danline 52 mm	1,23	42000
52005600	Danline 56 mm	1,42	52000
52006000	Danline 60 mm	1,63	59500
52006400	Danline 64 mm	1,85	64100
54003201	Gold Safety 32 mm	0,46	20000
54004001	Gold Safety 40 mm	0,72	31400
54004202	Gold Safety 42 mm	0,80	35200
54004401	Gold Safety 44 mm	0,88	37900
54004801	Gold Safety 48 mm	1,04	45100
54005201	Gold Safety 52 mm	1,22	53000
54005601	Gold Safety 56 mm	1,42	61400
54006001	Gold Safety 60 mm	1,63	70600
54006401	Gold Safety 64 mm	1,85	80300
54006801	Gold Safety 68 mm	2,10	90700
54007202	Gold Safety 72 mm	2,34	101600
54008002	Gold Safety 80 mm	2,90	125600



Danline rope



Gold safety

Mooring rope 8-strand

Art-no.	Type	Weight kg/meter	CIR Inch	MBL kg
52003205	Danline mooring rope 32 mm	0,46	4"	16800
52003605	Danline mooring rope 36 mm	0,58	4,5"	20600
52004008	Danline mooring rope 40 mm	0,72	5"	25700
52004405	Danline mooring rope 44 mm	0,85	5,5"	31800
52004805	Danline mooring rope 48 mm	1,04	6"	36600
52005205	Danline mooring rope 52 mm	1,23	6,5"	42100
52005605	Danline mooring rope 56 mm	1,42	7"	52000
52006005	Danline mooring rope 60 mm	1,63	7,5"	59500
52006405	Danline mooring rope 64 mm	1,85	8"	67550
52007205	Danline mooring rope 72 mm	2,34	9"	84500
52008005	Danline mooring rope 80 mm	2,90	10"	104000
52008805	Danline mooring rope 88 mm	3,51	11"	125000
53004000	Gold mooring rope 40 mm	0,75	5"	31500
53004400	Gold mooring rope 44 mm	0,88	5,5"	36800
53004800	Gold mooring rope 48 mm	1,04	6"	43200
53005200	Gold mooring rope 52 mm	1,23	6,5"	50400
53005600	Gold mooring rope 56 mm	1,42	7"	57800
53006000	Gold mooring rope 60 mm	1,63	7,5"	65200
53006400	Gold mooring rope 64 mm	1,85	8"	73700
53006800	Gold mooring rope 68 mm	2,10	8,5"	83500
53007200	Gold mooring rope 72 mm	2,34	9"	93000
53008000	Gold mooring rope 80 mm	2,95	10"	113200
53008800	Gold mooring rope 88 mm	3,58	11"	138620
53009600	Gold mooring rope 96 mm	4,25	12"	164000



8-strand Danline mooring rope



8-strand Gold mooring rope

3.3 PLEXUS® ROPE



Plexus® 12s

Art-no.	Dia mm	Weight kg/100 m	MBL kg
57000600	6	2,5	4 700
57000800	8	3,8	7 200
57001000	10	5,9	11 400
57001200	12	9,4	14 800
57001400	14	10,6	20 500
57001600	16	14,8	25 300
57001800	18	19,2	32 500
57002000	20	22,3	39 400
57002200	22	27,8	47 900
57002400	24	33,1	56 000
57002600	26	38,9	64 000
57002800	28	42,4	72 000
57003000	30	49,6	83 000
57003200	32	58,9	95 000
57003400	34	65,0	105 000
57003600	36	75,0	119 000
57003800	38	86,0	131 500
57004000	40	96,9	143 000
57004200	42	106,0	152 000



Plexus® rope

Properties:

- 12 parts braided
- Material: Dyneema® SK75
- Specific gravity: 0.96
- Water absorption: 0
- Critical temperature: around 66°C
- Melting point: 145°C
- Elongation at break:
 - Rope: 4,5%
 - Fibre: 3,5%
- High resistance to:
 - Abrasion
 - UV rays
 - Chemicals



Rope braid



3.4 HARDWARE



Mooring rope thimble, strong k3

Art-no.	For mooring rope diameter mm	Total length mm	Inner width C	Wall thickness mm
23091232	--> 32	4"	50	3,0
23091240	--> 40	5"	59	4,0
23091249	--> 49	6"	75	5,0
23091260	--> 60	7"	75	5,0
23091265	--> 65	8"	105	8,0
23091272	--> 72	9"	110	8,0



Mooring rope thimble

Mooring rope thimble, strong k3 w/oval ring

Art-no.	For mooring rope diameter mm	MBL
93087340228	40	25,8T
93087348304	48	34T
93087356380	56	43,2T
93087356517	64	51,7T
93087372853	72	85,3T



Mooring rope thimble

Rope-wire thimble, extra strong "stub-end" type k2

Art-no.	For rope/wire diameter mm	Total length mm	Inner width C	Wall thickness mm
23091032	28	7"	80	9,0
23091034	32	8"	100	11,0
23091038	36	9"	115	11,0
23091042	40	10"	120	11,0
23091046	44	11"	130	13,0
23091252	48	12"	140	13,0



Stub-end" thimble

Tubular thimble

Art-no.	For rope diameter mm	Total length mm	Inner width C	Weight kg
93000000028	28	215	60	2,40
93000000032	32	240	65	3,10
93000000036	36	280	75	4,06
93000000040	40	298	85	5,95
93000000044	44	308	86	6,85
93000000048	48	312	88	7,20
93000000056	56	332	90	7,60
93000000064	64	342	94	8,30
93000000072	72	450	130	20,11
93000000080	80	500	150	24,85
93000000092	92	550	190	30,43

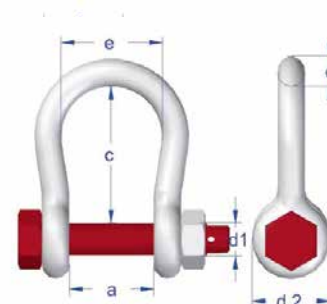


Tubular thimble



Mooring shackle - Anja Gunnebo

Art-no.	Hoop dia mm	Bolt dia mm	Gap mm	Inner width mm	Inner length mm	MBL tonnes
94080000034	19	22	44	58	100	28
94080000078	22	25	52	68	125	40
94080000118	28	28	62	89	150	60
94080000114	32	32	82	98	170	90
94080000150	45	50	126	135	248	150



Mooring shackle import

Art-no.	Hoop dia mm	Bolt dia mm	Gap mm	Inner width mm	Inner length mm	MBL tonnes
94090000030	19	22	44	58	100	30
94090000040	22	25	52	68	125	40
94090000060	28	32	70	89	150	60
94090000090	32	35	82	98	170	90
94090000140	38	42	172	146	258	140



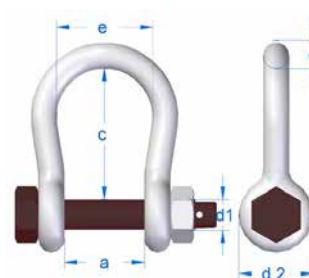
Lifting shackle 855 Anja Gunnebo

Art-no	Hoop dia mm	Bolt dia mm	Gap mm	MBL tonnes
23010051	5/8"-16	19	27	3,25
23010052	3/4"-19	22	31	4,75
23010053	7/8"-22	25	37	6,5
23010054	1"-25	28	43	8,5
23010056	1 1/4"-32	35	52	12
23010057	1 3/8"-35	38	57	13,5
23010059	1 3/4"-45	50	74	25



Mooring shackle 852 Anja Gunnebo

Art-no.	Hoop dia mm	Bolt dia mm	Gap mm	Inner width mm	Inner length mm	MBL tonnes
94080000034	19	22	58	44	100	28
94080000078	22	25	68	52	125	40
94080000118	28	28	89	62	150	60
94080000114	32	32	98	82	170	90
94080000110	42	45	150	112	200	110
94080000150	45	50	175	127	248	150





Chain – mooring, Grade 40 - tarred surface without pole

Art-no.	Thickness mm	Interior length mm	Interior width mm	Weight kg/m	MBL kg
24210030	30	120	48	19,33	47685
24210036	36	144	58	27,50	68575
24210040	40	160	64	35,69	84568



Mooring chain Grade 40

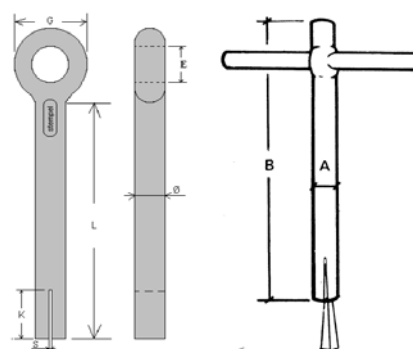
Chain – Long linked galvanised alloy

Art-no.	Type	Link sizes			Weight kg/m	MBL kg
		D (mm)	P (mm)	W1 (mm)		
24210011	11,0 mm LL GALV.	11	72	19	2,2	13000
24210013	13,0 mm LL GALV.	13	82	24	2,93	20000
92020000016	16,0 mm LL GALV.	16	100	30	4,45	22600
92020000019	19,0 mm LL GALV.	19	110	35	6,35	32100
92020000022	22,0 mm LL GALV.	22	125	38	8,4	46400
92020000025	25,0 mm LL GALV.	25	143	38	10,30	58100
92020000030	30,0 mm LL GALV.	30	159		16,0	88700
92020000113	13,0 mm LL GALV. GUNNEBO	13	80	22	2,95	18000
92020000116	16,0 mm LL GALV. GUNNEBO	16	100	28	4,4	24700
92020000119	19,0 mm LL GALV. GUNNEBO	19	100	28	6,5	34800
92020000122	22,0 mm LL GALV. GUNNEBO	22	120	36	8,7	46600



Mooring bolt

Art-no.	Type	Dim mm	MBL ton
94050000140	T combi	32 x 400	40 T
94050000141	T combi	35 x 400	50 T
94050000142	T combi	38 x 500	60 T
94050000143	T combi	45 x 600	80 T
94050000145	T combi	50 x 700	100 T
94050000114	Eye combi	32 x 400	40 T
94050000112	Eye combi	38 x 500	60 T
94050000134	Eye combi	45 x 600	80 T



Mooring plate, circular

Art-no.	Type	Dia mm	Goods thickness mm	Number of holes x dia mm	Load pr. hole ton	Weight kg
94030000001	50 T	500	26	12 x 37	50	45
94030000009	50 T	600	26	16 x 37	50	59
94030000012	90 T	700	30	16 x 39	90	96
94030000013	140 T	700	35	16 x 46	140	111

Warm galvanized grade 70 (ca. 100-120 my galv. thickness).



Ring, galvanized

Art-no.	Type	L mm	W mm	Weight kg	MBL ton
91070000022	Oval 22 mm	160	95	1,6	26,0
91070000028	Oval 28 mm	190	110	3,2	37,6
91070000032	Oval 32 mm	240	140	5,05	51,7
91070000134	Oval 34 mm	240	140	5,3	80,0
91060000038	Oval 38 mm	270	140	7,3	85,3
91070000142	Oval 42 mm	250	150	7,7	120,0



3.5 ANCHOR



SANDIG II sand anchor/plough

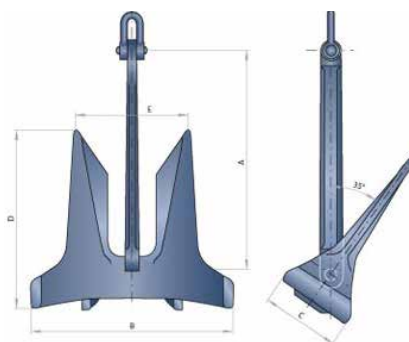
Art-no.	Type	Weight kg	Holding power tonnes
92010010500	SANDIG II Plough anchor 500	500	15,4
92010010700	SANDIG II Plough anchor 700	700	19,8
92020011000	SANDIG II Plough anchor 1000	1000	26,5
92010011200	SANDIG II Plough anchor 1200	1200	30,7
92010011400	SANDIG II Plough anchor 1400	1400	34,8
92010011800	SANDIG II Plough anchor 1800	1800	42,7
92010012200	SANDIG II Plough anchor 2200	2200	50,0
92010013000	SANDIG II Plough anchor 3000	3000	63,0



Plough anchor SANDIG II

“AC 14”, High power holding

Art-no.	Type	Weight kg	-A- mm	-D- mm	Holding power tonnes
92010000200	AC 1000	1000	110	105	25,3
92010000300	AC 1500	1500	120	150	34,9
92010000400	AC 2000	2000	130	150	43,5
92010000600	AC 2500	2500	150	155	51,0
92010000700	AC 3000	3000	170	165	57,7
92010000800	AC 4000	4000	190	180	55,0



Anchor

Anchor launch in-situ





4. BUOYS AND LIGHTS

Mørenot Aquaculture supplies buoys and lights for all locations and site requirements. Prebuoy, APB and Activa are the most used buoys in the aquaculture industry.



4.1 BUOYS

Prebuoy series

Art-no.	Volume litres	Net buoyancy kg	Weight kg	Length incl. Mountings (mm)	Width buoy (mm)	Galv. chain in mountings
92030400600	600	515	60	1125	1200	16 mm - MBL 27 tonn
92030400850	850	740	73	1430	1200	16 mm - MBL 27 tonn
92030401100	1100	1000	95	1625	1200	16 mm - MBL 27 tonn
92030401350	1350	1175	118	1875	1200	16 mm - MBL 27 tonn
92030401600	1600	1400	130	2125	1200	16 mm - MBL 27 tonn
92030401750	1750	1540	135	2450	1200	16 mm - MBL 27 tonn



Prebuoy 600

APB-series

Art-no.	Volume litres	Net buoyancy kg	Weight kg	Length incl. Mountings (mm)	Length buoy (mm)	Width buoy (m)	Volume m³
92020002200	2200	2100	400	1550	1050	1,80 x 1,80	5,0
92020004400	4400	4200	760	2600	2100	1,80 x 1,80	8,4
92020006600	6600	6000	1300	3670	2900	1,80 x 1,80	11,9



APB-buoy

Activa-series

Series 2: 2,200 - 5,000 litres			
Number of elements	1	2	3
Size (litres)	2200	3600	5000
Water displacement (kg)	2228	3650	5071
Own weight (kg)	101	191	282
Mountings (kg)	80	80	80



Activa



Aqua-series

Art-no	Volume litres	Net buoyancy kg	Weight kg	Lenght incl Mountings (mm)	Length buoy (mm)	Width buoy (mm)
92030310600	620	560	55	1650	1165	77x77
92030312000	2020	1900	180	2280	2228	117x117



Aqua buoys

Cipax buoys

Art-no	Volume litres	Net buoyancy kg	Weight kg	Lenght incl Mountings (mm)	Diameter (mm)
92003044010	Buoy CB 440	440	45,5	1580	757
92003068010	Buoy CB 680	680	50,5	1580	910
92030110010	Buoy CB 1100	1100	82	1540	1160
92030180010	Buoy CB 1800	1800	123	2300	1150



Cipax buoys

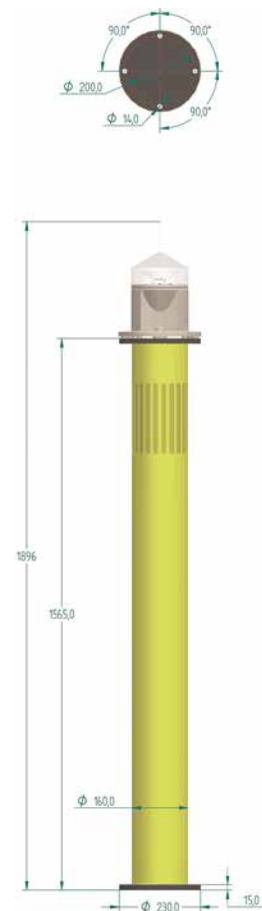


4.3 MARKING LIGHTS

Light and battery packs

Art-no	Type
93160010001	ACTIVA 1600 LIGHT SABIK - PR-BAT-GPS
93190000001	ACTIVA BATTERY PACK S AL 14-18
93160010002	SABIK LIGHT SBF 160-1,7YB SYNC
93190000002	SABIK BATTERY PACK S AL 14-18 220AH
93160010003	SABIK LIGHT SBF solar cell 160-1,7YB SYNC
93190000003	SABIK BATTERY PACK solar cell 60AH AGM

- In accordance with the labelling regulations of the Norwegian Coastal Administration
- Approved radar reflector integrated
- Easy installation on buoys and railings
- 2-piece mast for different buoy sizes
- Brackets for all known types of buoy
- Can be connected to external power supply
- Height: 1.75 m or 1.25 m for smaller buoys
- Weight 25 - 35 kg
- Battery life: 12 months
- "Offshore Technology" - operationally reliable system
- Flash synchronisation (GPS)
- Option to monitor battery status



Marking lights

Fish farm in Høgdaalen





5. SUNDRIES

Mørenot Aquaculture's branches stock a wide range of equipment for use in the daily operation of fish farms. We offer consumables such as ropes, dead fish collectors, knives, buoys and other essential equipment. We also make seines nets and tarpaulins with a short turnaround time at most of our service stations along the coast.



5.1 ROPES

Danline 3-strand

Art-no	Type	Weight Kg/m	MBL Kg
52001000	Danline 10 mm	0,045	1900
52001200	Danline 12 mm	0,068	2800
52001400	Danline 14 mm	0,086	3600
52001600	Danline 16 mm	0,115	4550
52001800	Danline 18 mm	0,148	5550
52002000	Danline 20 mm	0,18	6650
52002200	Danline 22 mm	0,22	8100
52002400	Danline 24 mm	0,266	9300



Danline rope

Lead core rope

Art-no	Type	Weight Kg/m	Farge
53050053	LEAD CORE ROPE	0,5 Kg/m	BLUE
53050103	LEAD CORE ROPE	1,0 Kg/m	BLUE
53050123	LEAD CORE ROPE	1,2 Kg/m	BLUE
53050153	LEAD CORE ROPE	1,5 Kg/m	BLUE
53050203	LEAD CORE ROPE	2,0 Kg/m	BLUE
53050303	LEAD CORE ROPE	3,0 Kg/m	BLUE



5.2 TOP NETS

Our top nets can be made in a number of dimensions and mesh sizes in accordance with the customer's wishes, and for all types of cages.

A standard top net in PE and Nylon reinforced with a 5 x 5 net in the centre and a 12 mm Danline rope around the edge. Mørenot Aquaculture and its subsidiary companies stock individual types of top nets for rapid delivery. Tailored made for all types and sizes may be ordered:

120 m rings	Manufactured as standard to a 125 m circumference
160 m rings	Manufactured as standard to a 165 m circumference
Green PE	Net manufactured in 100 mm, 200 mm or 300 mm, all with 1/2 mesh
Black Nylon. UK 36	Manufactured in 100 mm, 200 mm or 300 mm, all with 1/2 mesh



5.2 SEINE NETS

Seine nets are made in accordance with the customer's specifications in white or black netting with or without a purse line. We also supply seine nets that comes with flexigrid panel.



5.4 DELOUSING TARPULINS AND SEA LICE SKIRTS

Delousing tarpaulins and sea lice skirts are made in accordance with customer requirements and specifications. The tarpaulin is made of airbag fabric and reinforced with web-band and durable tarp if desired. We can supply tarpaulins for all cage sizes, in dark or light fabric. Many of our service stations possess the equipment and expertise to repair tarpaulins. The tarpaulins are disinfected and treated in a similar way to seine nets that are being serviced.





5.5 DEAD FISH COLLECTORS / KNIVES

Standard bag

Art-no.	Description
94050090100	Dead fish bag 0,9 m komplett
94050012100	Dead fish bag 1,2 m komplett
94050150100	Dead fish bag 1,5 m komplett
94040000060	Bag ov m/3 m. alu. handle dia 60 cm



Victorinox knives

Art-no.	Description
5010802	Pocket knife, red (39050)
5011042	Knife, serrated edge (50433)
5010090	Knife sheath (50433)



Sheath knives

Stainless steel

Art-no.	Description
5010132	Sheath knife, art. 546 blue handle
5010133	Sheath knife, art. 511 red handle
5010455	Sheath knife with rubber grip, Ergo 746 Mora
5010108	Safety knife 861, serrated edge
5010106	Safety knife with blunt tip



Melting knives

For rope

Art-no.	Description
27024000	Melting knives
27024010	Spare blade



5.6 FLOATS/FENDERS/TRAWL FLOATS

Polyform, A-series, floats

Art-no.	Type	Buoyancy kg
61100034	A - 0	6
61101044	A - 1	13
61102054	A - 2	31
61103064	A - 3	55
61104074	A - 4	85
61105094	A - 5	180
61106114	A - 6	360
61107114	A - 7	675



Polyform A-float

Fenders

Art-no.	Type	Size cm	Color
61200202	F 02	20x68	WHITE
61200100	F 1	15x64	WHITE
61200200	F 2	22x64	WHITE
61200300	F 3	22x76	WHITE
61200400	F 4	22x104	WHITE
61200500	F 5	30x76	WHITE
61200600	F 6	30x109	WHITE
61200700	F 7	38x104	WHITE
61200800	F 8	38x147	WHITE
61201100	F 11	60x145	WHITE
61001302	F 13	80x195	GREY
61201300	F 13	80x195	WHITE



Fender

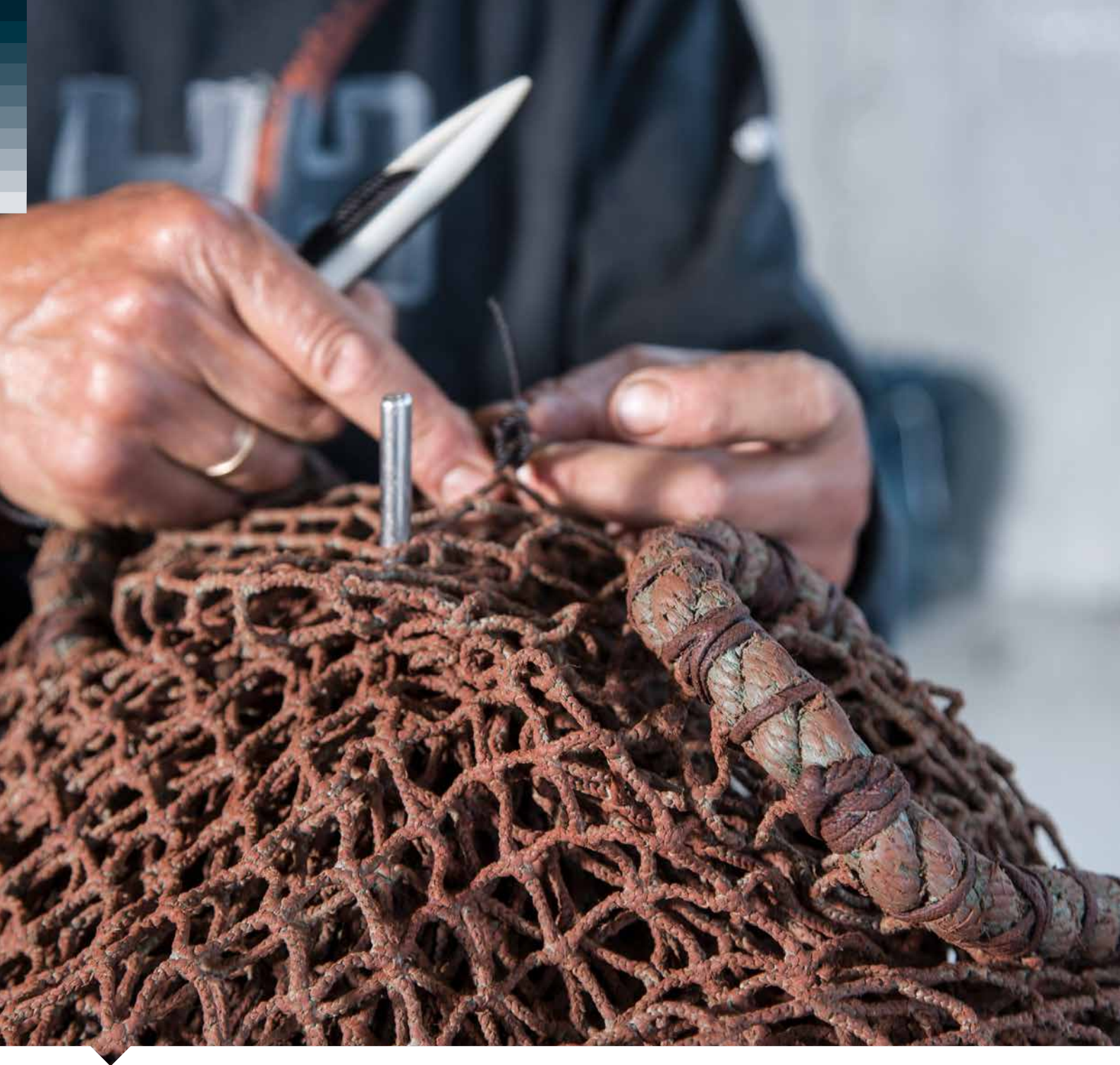
Trawl floats

Art-no.	Type	Max. m	Size	Color	Buoyancy kg	Weight/ pcs kg
25090508	508	1200	8" - 200 mm	orange	2,47	1,50
25090005	446	700	11" - 280 mm	orange	8,4	2,62
25090004	511	950	11" - 280 mm	rød	7,48	3,49



Trawl float





6. SERVICE AND TREATMENT

Mørenot Aquaculture has service stations that perform washing, disinfection, repairs and antifouling treatment along the entire Norwegian coast, in Canada, on the Shetland Islands, in Scotland and in Spain. We also have partners performing the same services in Ireland, Turkey and Iceland. Mørenot Aquaculture will always choose the best antifouling and coating products for you, the customer, based on our extensive experience, full-scale testing of different types of antifouling, as well as an analysis of the environmental conditions at your site.



Service – nets NS 9415

After washing and disinfection of the net, we inspect the netting, tying points and ropes for abrasion and wear. Netting is tested for remaining strength and all results are recorded in the Netlog.

Remaining breaking strength	Validity
100%	24 months
65% - 100%	12 months

Nets that meet the requirements of NS9415 is repaired and recertified. Each net is issued with a service card which is valid up to 24 months after the net is put to sea. Use and maintenance of the net must be in accordance with the user manual.



ANTIFOULING

Problems linked to marine growth have become increasingly more complex, with rising sea temperatures and new species of algae. We therefore make sure that we have reliable partners that ensure we make the right choices to promote healthy fish with sufficient oxygen and optimal growth conditions. Our main long term partner offers a high quality antifouling programme suitable for all markets in order to combat marine growth on fish farming nets.

	Netwax NI3 (Netrex)	Netwax NI4	Netwax NI Gold	Netwax NI Gold Super	Netwax T4 Anti-bite (cod farming)	Netpolish (impregnation and primer)	Netwax NI Greenline
Water based	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Environmental documentation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Counteracts algae growth	Good	Good+	Very good	Good+	Good	-	Very good
Beskytter mot UV-stråling	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Protects against abrasion	-	-	-	-	Yes	-	-
Protects against mechanical wear	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy to clean	Yes	Yes	Yes	Yes	Yes	Yes	Yes
May be stored after impregnation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Suitable for green licenses				-		Yes	Yes
Ecologically accepted				-		Yes	Yes

Easy to apply, including with re-impregnation

Provides a very even and homogeneous film, usually also on shiny surfaces

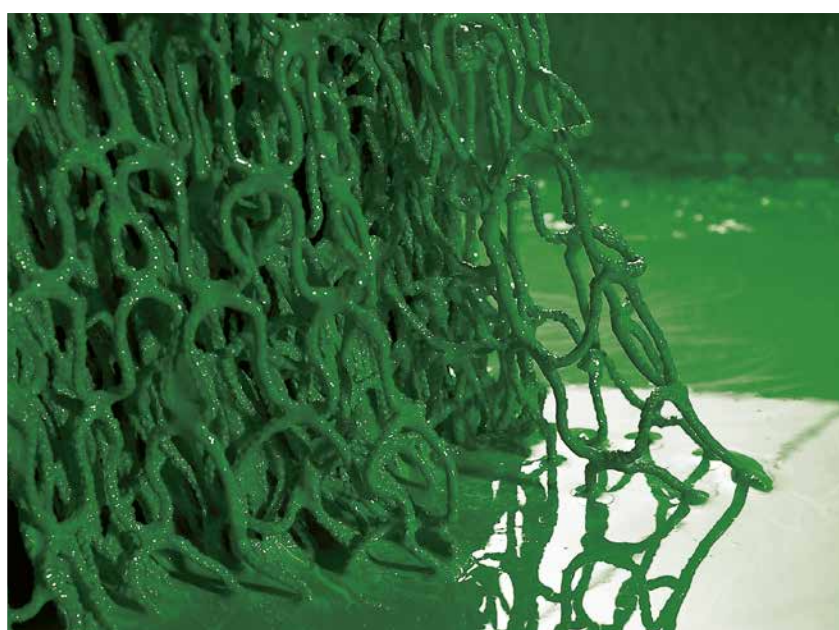
The nets may be stored after impregnation

Keeps the nets soft and elastic

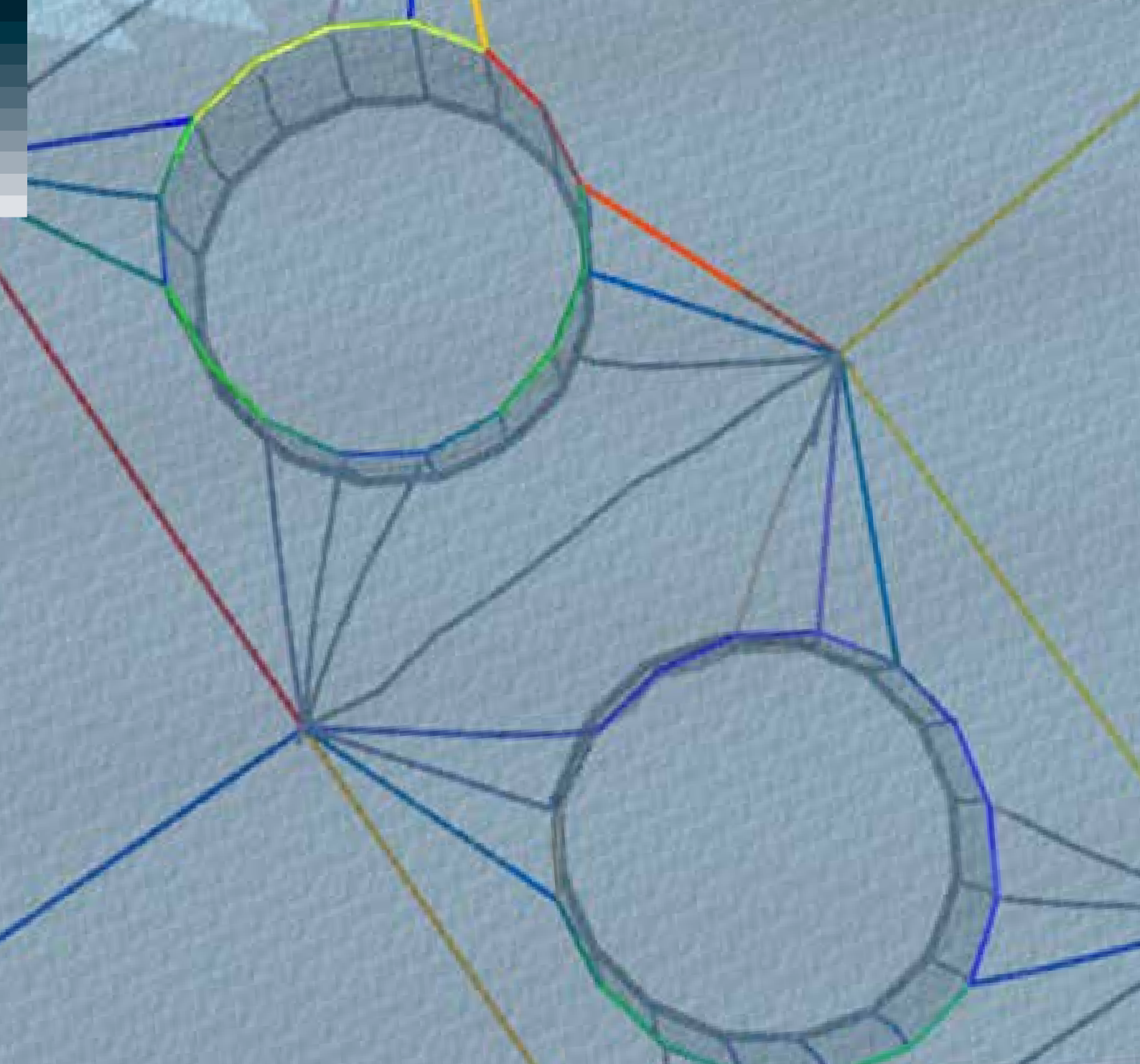
Easy to clean because algae growth is easily removed by rinsing

Steadily increasing focus on environmental and sustainable operating concepts drives technological development within the supplier chain in the aquaculture industry. As a consequence of this we now offer antifouling in Norway that is accepted by Debio. Antifouling has been specially developed for green licenses, but may also be used by all types of fish farms.

As a partner in the aquaculture industry, you may rest assured that Mørenot Aquaculture always uses the correct product for developing optimal and environmentally-friendly seafood production. With this in mind, Mørenot Aquaculture has associated itself with the best manufacturers and therefore offers antifouling and coating from several suppliers, regarding each project as unique with regard to the type of antifouling chosen.

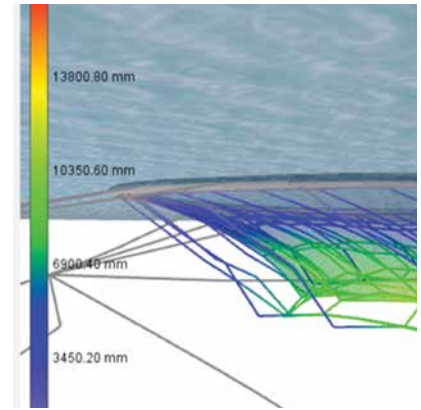
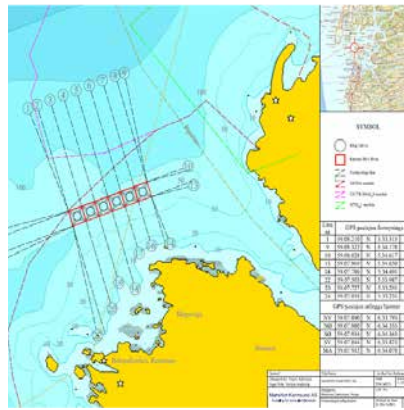






7. AQUA KNOWLEDGE

Aqua Knowledge AS work out designs, calculations and technical solutions for our customers and for internal use in the Mørenot group. They also have the main responsibility for Aquacom.



Our service make day to day workload easier for the customer

TECHNICAL SERVICES

Aqua Knowledge is accredited for the design and analysis of mooring systems. The company is also certified for design and technical analysis of nets. All models are simulated using advanced software tools for testing and dimensioning of extreme locations and environmental conditions. The product range also include project management when installing new site or remodeling existing facilities. Aqua Knowledge manage and develops Aquacom. Assistance in the site applications and contact with the authorities when installing the sites are also services provided by the department.

MOORING ANALYSIS

Accredited mooring analysis for all types of facilities and barges are performed for our customers in Norway and abroad. By using dynamic analyse programs, the site is modeled as accurately as possible towards the pre-installed site. Aqua Knowledge delivers excellent and easy to understand reports for those who are installing the moorings while maintaining all requirements in NS9415 and the Nytek regulations.

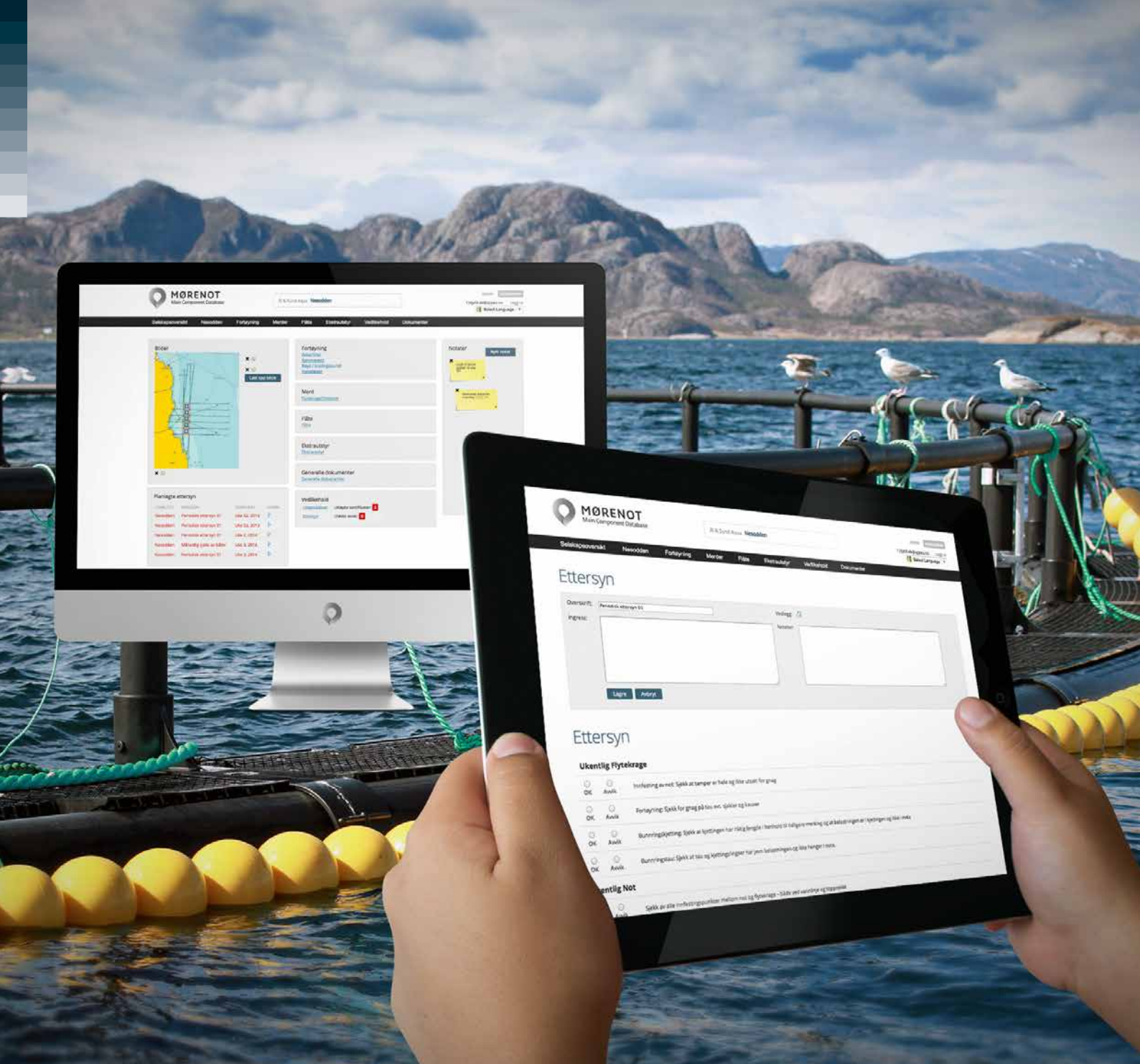
NET ANALYSIS

Nets to be used on sites with wave height above 2.5m and current velocity above 0.75m/s, must be calculated according to class 0. The nets are designed and dimensioned based on the analysis that have been made. This ensures that a net from Mørenot Aquaculture can be certified for the most exposed locations.

SITE PLANNING

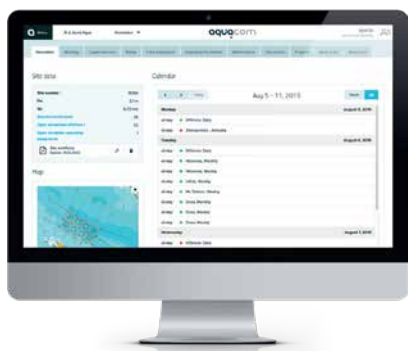
Along with the fish farmer we find the best location and design for a new or existing fish farm. Modern mapping tool is used to find the optimal location for the water flow, the location of the anchors and power distribution throughout the mooring system.

Site applications and project management can be made by Aqua Knowledge who controls that the planning and installation are done in accordance with applicable permits and regulations.



8. AQUACOM

Med Aquacom har du full oversikt og kontroll over alt teknisk utstyr som inngår i oppdretts-selskapets virksomhet. Teknisk drift, sertifisering, vedlikehold og ressursplanlegging er fullinte-grert i Aquacom-familien som består av modulene: OFFSHORE, ONSHORE, VESSELS OG PLANNER. Modulene kan benyttes uavhengig, eller settes opp samlet til et helhetlig integrert drifts- og vedlikeholdssystem for hele verdikjeden.



AQUACOM OFFSHORE

Daily control and monitoring of the Technical components of sea-based facilities – Both above and below water

- Covers all needs regarding status documentation of facilities in relation to certifications and internal requirements.
- Easy access to certificates, technical specifications, checklists and user manuals.
- Inspection and maintenance are easily implemented from a calendar and checklist.
- Daily tools for workers and managers.
- Dashboard provides a good overview of your area of responsibility, inspection status and any discrepancies at your locality or throughout the whole company.



AQUACOM ONSHORE

Technical operation of the machinery and equipment regarding hatcheries, post-smolt facilities and harvesting facilities

- Full overview regarding the facility's technical equipment.
- All types of checkpoints, hour-controlled inspection and maintenance can be implemented regarding equipment such as pumps, generators, feed systems and similar.
- Organise general inspection for each department or round of duty.
- Receive full overview regarding the maintenance and technical status of your facility or throughout the whole company.



AQUACOM VESSEL

Technical monitoring and operational safety on all types of vessels

- Simplify the working day in relation to the certification of vessels and equipment.
- Document and safeguard regulation requirements regarding vessels between 8 and 15 meters long.
- Oil changes, safety equipment, training, exercises and certificates are some of the features covered.
- All types of checkpoints, hour-controlled inspection and maintenance can be implemented regarding components such as engines, generators, cranes and similar, as well as general inspection of the vessel.



AQUACOM NETS

Good overview and efficient logistics regarding nets and net maintenance

- Can be integrated with other modules in Aquacom.
- Overview of floating collars, nets and sinker systems.
- Service and service cards are transferred to Aquacom Nets upon completion of service.
- Easy movement of nets between cages, storage facilities and service stations.
- Record events such as cleaning nets, repairs, inspections etc.
- Full overview regarding certificates, service cards and expiration dates.



9. RESEARCH AND DEVELOPMENT

Mørenot Aquacultures research and development department work forms the basis of our innovative solutions and products. Our product development and growth helps our customers to better solutions.



R&D

Through close collaboration with customers and research institutions Mørenot Aquaculture is engaged in continuous product development that creates innovative solutions. Escape prevention and good conditions for the fish are important for our customers and for us.

Mørenot Aquaculture is engaged in different types of research projects. Everything from internal projects that document and develop our own products to major international research projects that will find good solutions to prevent escapes also on the most exposed sites. We constantly strive to develop new products and

services that make the sites more suited to meet increasingly tougher challenges. This with regard to the environment, official requirements and aquaculture companies' goal of producing the best fish at the lowest possible cost. With service facilities in several countries we retrieve the experience and knowledge from all

markets. This puts us in a unique position to solve small and big challenges for our customers. The R&D focus in Mørenot Aquaculture is crucial for us as a company, but it is also very important for all of our customers who use our products daily to optimize a good and sustainable food production.

COMPANIES IN NORWAY

Mørenot Aquaculture AS

Søvikneset 91, NO-6280 Søvik
Telephone: +47 70 20 95 00
Managing Director: Bente Lund Jacobsen
aquaculture@morenot.no

Mørenot Karlsund AS

Husøyvegen 270, NO-4262 Avaldsnes
Telephone: +47 52 84 57 70
General Manager: Rolf Berg
karlsund@morenot.no

Aqua Knowledge AS

Rennesøygata 16, NO-5537 Haugesund
Telephone: +47 474 84 803
General Manager: Yngve Askeland
post@aquaknowledge.no

Mørenot Radøy AS

NO-5938 Sæbøvågen
Telephone: +47 56 34 99 40
General Manager: Normann Sæbø
radoy@morenot.no

Mørenot Vevang AS

Nerstølvegen 21, NO-6494 Vevang
Telephone: +47 71 29 96 30
General Manager: Robert Gaustadnes
vevang@morenot.no

Mørenot Øksning AS

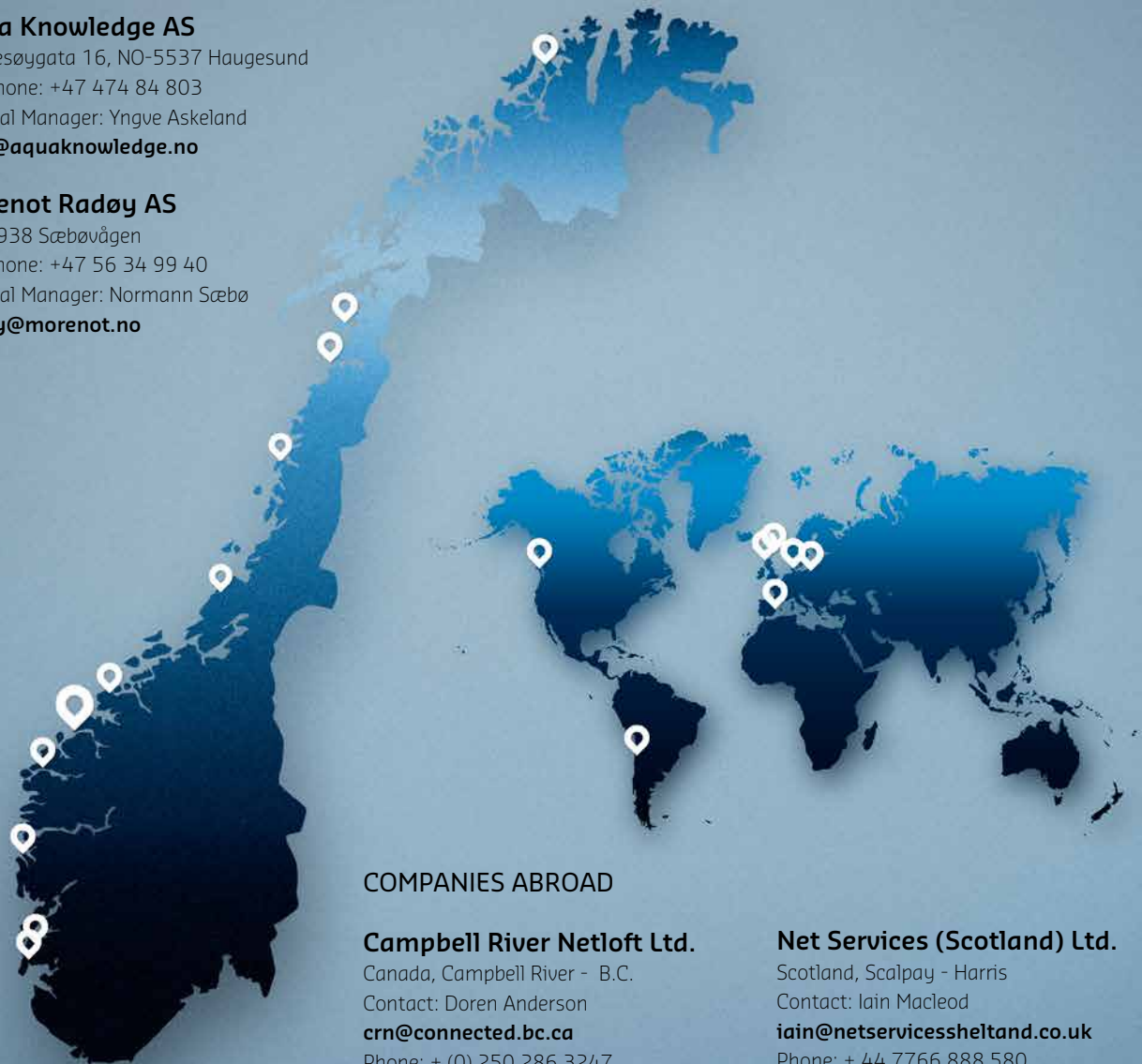
NO-8850 Herøy
Telephone: +47 75 05 94 90
General Manager: Odd Endresen
oksning@morenot.no

Bøteriet AS

NO-8286 Nordfold
Telephone: +47 75 77 97 00
General Manager: Kenneth Larsen
post@boteri.no

Mørenot Hammerfest AS

NO-9610 Rypefjord
Telephone: +47 78 41 20 43
General Manager: Harder Dagsvold
hammerfest@morenot.no



COMPANIES ABROAD

Campbell River Netloft Ltd.

Canada, Campbell River - B.C.
Contact: Doren Anderson
crn@connected.bc.ca
Phone: + (0) 250 286 3247

Net Services (Shetland) Ltd.

Shetland, Scalloway
Contact: David Goodlad
david@netservicesshetland.co.uk
Tel: +441 595 880 816
Fax: +441 595 880 903
Mobile: + 447818228932

Net Services (Scotland) Ltd.

Scotland, Scalpay - Harris
Contact: Iain Macleod
iain@netservicesshetland.co.uk
Phone: + 44 7766 888 580

Delta Aqua Redes S.L.

Crta. Del Canal Amposta
St. Jaume, KM 1,5
43870 AMPOSTA,
Tarragona, SPAIN
Tel.: + 34 977 743 445
Contact: Albert Comas Granel
acomas@morenot.es



MØRENØT
AQUACULTURE

www.morenot.no
www.morenot.com