

USER MANUAL

Sweepnet

REVISION 6

AKVAGROUPTM
EGERSUND NET



SUMMARY

A sweepnet is special equipment used to remove fish from the net. It can be manufactured in various sizes and with various types of materials, based on the purpose for which it is intended. Sweepnets are used, for example, for harvesting fish for slaughter, sampling when counting lice and for different types of treatments. Sweepnets can also be used for catching cleaner fish (this sweepnet is called Sperrerot).

Sweepnets are designed to meet the requirements of Norwegian Standard (NS9415:2021) and Nytek regulations (Nytek23)

When using sweepnets there are some risks to consider/be aware of:

- Components with sharp edges must not be installed in the sweepnet, as these can cause chafing and wear on the netting in the fish farming net
- The sweepnet must be removed from the net after use, to avoid unnecessary contact between sweepnet and net that can lead to chafing on the fish farming net

Inspection and maintenance of sweepnets are essential to ensure safe use and optimal service life.



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1 SWEEPNET AND ITS CONSTITUENT PARTS

1.1 Definitions

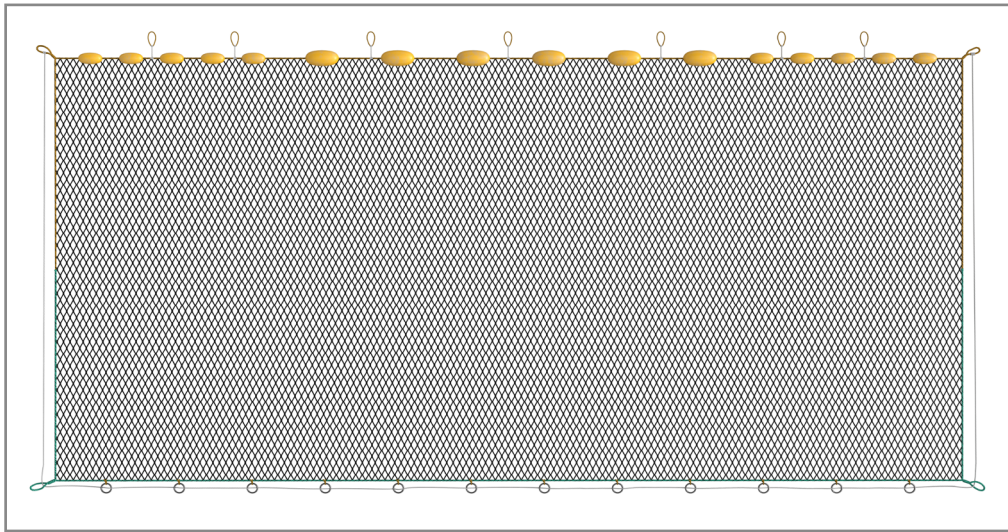
Sweepnet for harvesting fish	Sweepnet for catching fish to be delivered for slaughter
Sweepnet for treating fish	Sweepnet used when fish needs to be treated (for example lice treatment)
Canada-net	Sweepnet used for treatment of fish - big volume and can catch all the fish in the net inside the sweepnet
Sweepnet for samplig fish	Sweepnet for catching a small amount of fish for sampling (for example counting lice)
Sperrenot	Sweepnet for catching cleaner fish
Air hose	Equipment used to reduce the volume in a net, so that fish is kept in a smaller area in the net - easier to catch the fish
Floater	Floating elements that provide buoyancy in the sweepnet

1.2 Sweepnet for harvesting fish

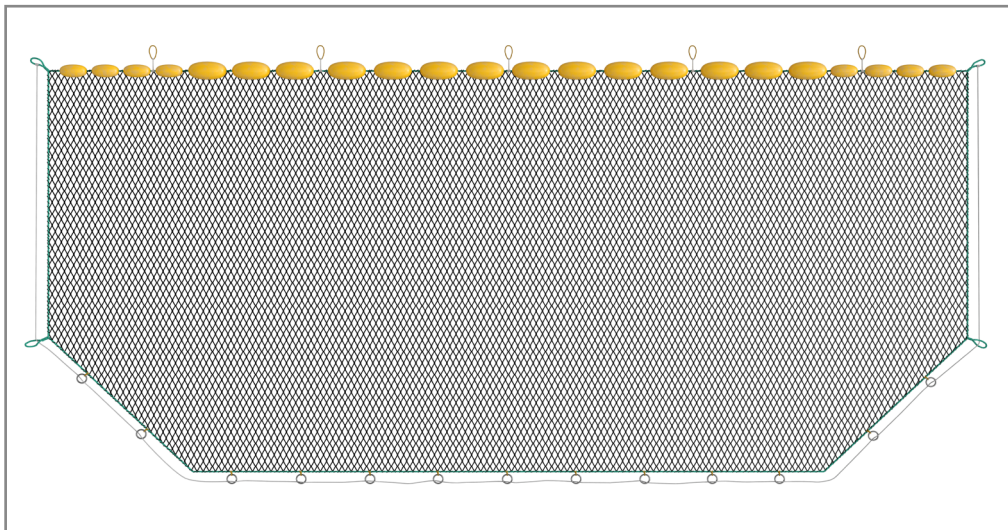
A sweepnet is often used when fish are to be taken out of a net and sent to slaughter. Size and design depend on the type of net it is to be used in. For cone-shaped nets (e.g. ENCC coned nets), we recommend using sweepnets with cut corners. This will ensure the sweepnet is better adapted to the net it will be used in. You will then also prevent folds in the netting in the sweepnet, which in turn ensures that fish avoid getting stuck in the netting in the sweepnet.

Sweepnets are produced on a framework of rope, and most often made with an oversize in the netting. Then you get a bag in the net that makes it easy to catch fish. Floats are usually mounted along the top of the sweepnet, to give buoyancy in the net. Crane loops for handling can be mounted along the top. Lead rope is usually mounted along the bottom, so that the sweepnet sinks well into the fish farming net when it is set out. If there is a lot of current in the sea, it may be advantageous to increase the size of the lead rope. Purse rope can be mounted along the bottom, this is threaded through rings or bridles which are mounted along the bottom rope.

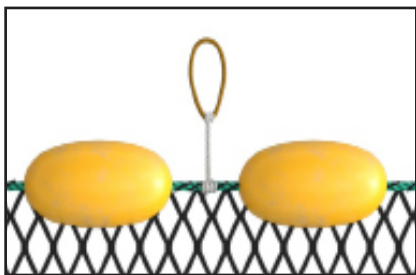
Sweepnets with this design can also be used to catch fish for different types of treatment.



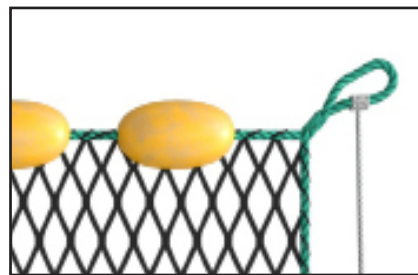
Square sweepnet



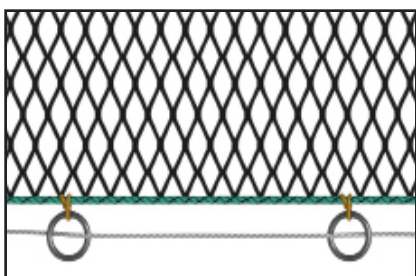
Sweepnet with cut corners



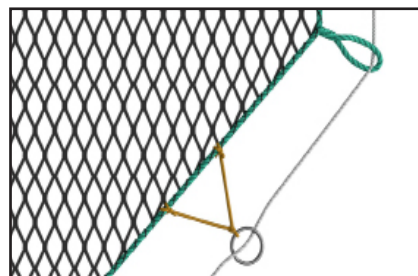
Crane loops along top, for handling



Loops in end of top, purple rope is attached here



Purple rings along bottom, with purple rope through



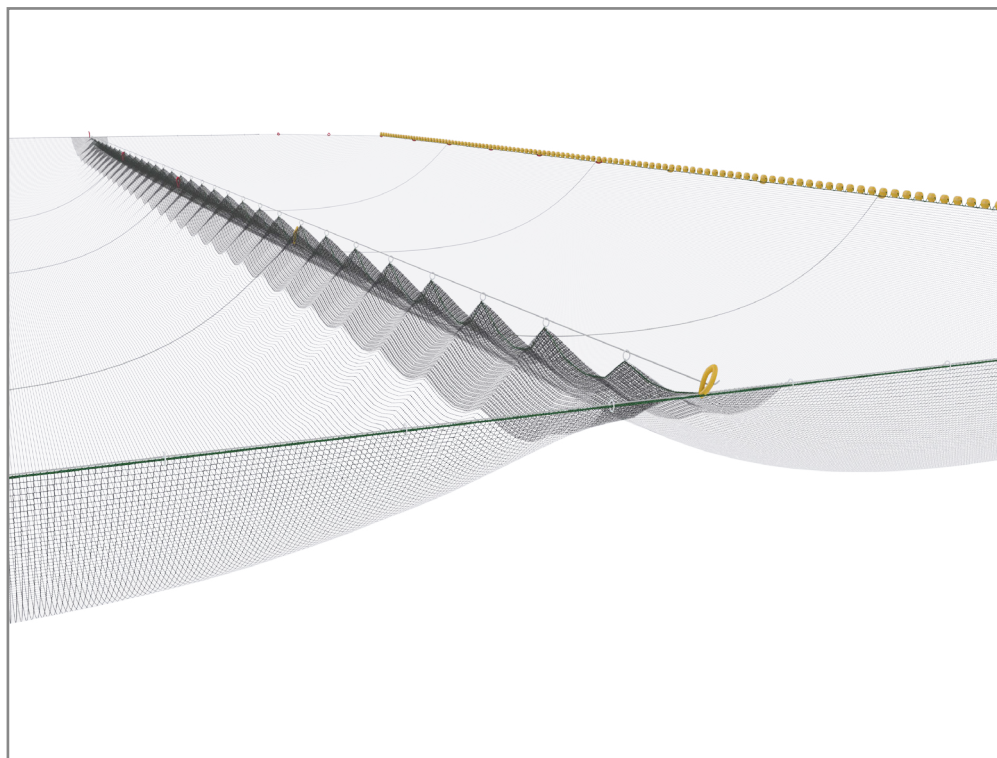
Bridles with purple rings, with purple rope through

1.3 Sweepnet for treatment of fish

Sweepnet which is used for treatment of fish, can be produced with various measurements and specifications - based on the size of the fish farming net it is to be used in and the type of operation involved. Many sweepnets for treatment of fish are designed with the same specifications as sweepnets for harvesting fish, preferably with a smaller size. When treating fish, a smaller amount of fish must sometimes be caught in each catch, and then the size of the sweepnet can be smaller.

In some cases, it is desirable to catch all fish in a fish farming net, and then a "Canada net" can be used. Then you do not have to handle the fish farming net itself, and it will not be necessary to remove the weight of the stretching system such as sinkertube or center weight. Operation with Canada net can be carried out in an efficient manner, and the risk of fish escaping will be reduced.

This sweepnet is produced with a good oversize in the netting so that the fish are not cramped or stressed. Such a sweepnet can be used in all types of fish farming nets.



Canada net for treatment of fish

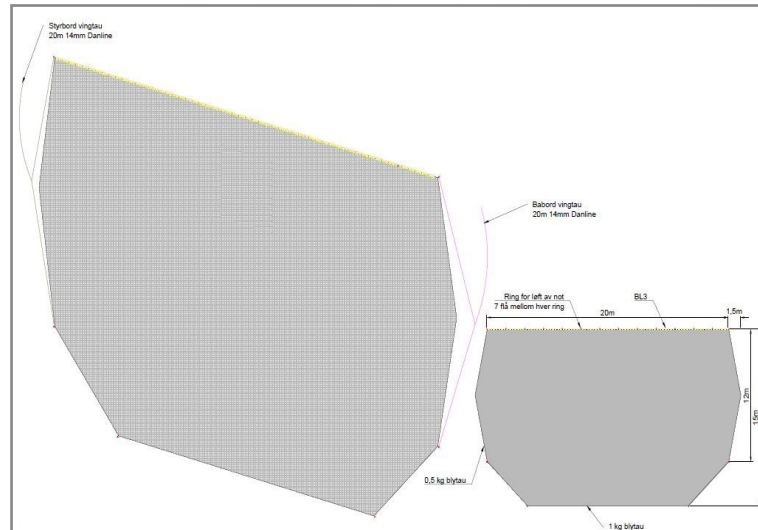
1.4 Sweepnet for sampling of fish

Samples must be taken regularly of fish in fish farming facilities. It may be counting lice, weighing fish or samples to detect or rule out fish diseases. In order to catch enough fish for these purposes, you need fishing gear. Sweepnet for sampling fish - also called sampling net or net for counting lice - can be used to catch fish for sampling. Sweepnets for sampling can be produced in various sizes and with various specifications. Such nets are often produced with netting and rope with a low specific weight, so that they can be handled in a simple way.



1.5 Sperrenot - sweepnet for catching cleaner fish

The illustration below shows an example of a small sweepnet that is used when catching cleaner fish. The sweepnet is also called "sperrenot". Such nets are often produced in netting with small meshes, and are often used when recapturing cleaner fish before catching salmon or trout. This is to preserve the cleaner fish. Sperrenot can be produced in various sizes and with various specifications.



1.6 Assumptions and limitations



Sweepnet from AKVA group Egersund Net is produced for catching fish from a fish farming net, must not be used for any other purpose. Sweepnet must be adapted to the purpose for which it is intended. Interaction between the net and the other components in an aquaculture facility is important.

1.7 Modifications, reconstructions and enlargement

Any modification, reconstruction and/or enlargement of sweepnet must be undertaken in consultation with AKVA group Egersund Net. AKVA group Egersund Net must be contacted prior to making any improvements to the sweepnet.

1.8 Discrepancies and managing faults

If any faults or defects are discovered in the sweepnet, this must immediately be reported to our sales representative or to one of our service facilities. The type of fault or defect will determine the course of action to take

- whether the fault or defect is to be rectified at the site
- whether the sweepnet must be returned to the nearest service facility
-

2 INTERACTION WITH OTHER COMPONENTS

2.1 Interaction with net



The sweepnet must be adapted to the fish farming net it is to be used in. It is important that the sweepnet is checked before use, to ensure that there is no wear or sharp edges that can get caught in the netting in the fish farming net. It is also important that the sweepnet is removed after use, so that there is no unnecessary contact between the sweepnet and the fish farming net - this can lead to wear and tear on the fish farming net.

2.2 Interaction with floater

Sweepnet is often attached along the floater during operation; floats/the top is hanging to the railing during installation, and the bottom is hanging on the railing when catching fish.



It is important to take care that there is not too much load on railing on the floater. When the operation with the sweepnet is finished, the net must be removed from the floater and driven back to the work boat.

3 INSTALLATION AND USE OF SWEEPNET

3.1 Control of documentation and checkpoint before installation and use

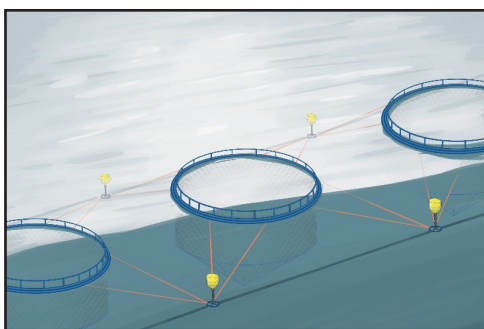


Before the sweepnet is put into use, the fish farmer must ensure that the user manual is available. The net is checked for damage. Visible damage to the product is a sign that something has touched the sweepnet during transport or storage. In such cases, the sweepnet must be specially checked.

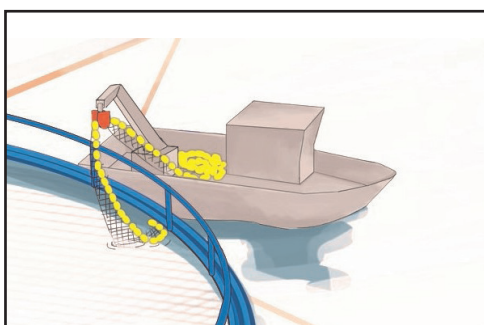
Sweepnet should only be installed when weather and current conditions permit. Before the operation starts, fish farmer must go through their current procedures. The operations manager/person with experience and the right competence must be responsible for the operation, and the various tasks must be distributed. The right type of protective equipment must be used, and in connection with the use of a crane, the right type of lifting equipment must be used. Extra equipment that can get caught in the net must be removed or secured. The work operation must be monitored.

3.2 Installation and use of sweepnet

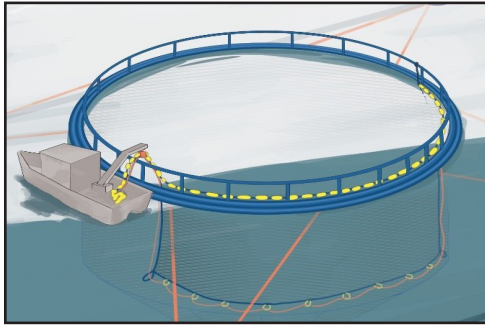
3.2.1 Sweepnet for harvesting fish



Wellboat placement depends on current conditions in the sea. It must not get into contact with the anchoring.

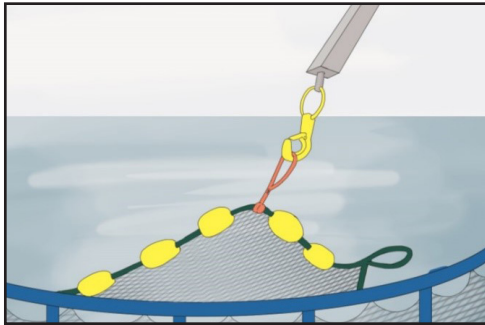


The sweepnet can be run out into the fish farming net through a block on the workboat.

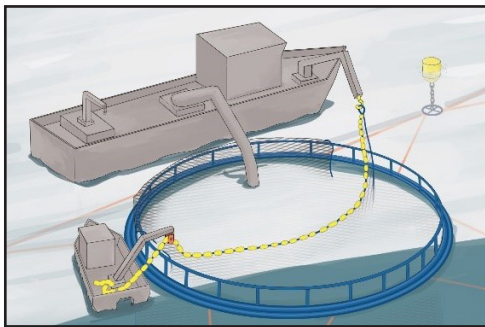


When harvesting fish, the sweepnet is placed around the floater, in a semicircle.

The sweepnet should be arranged along the railing on the floater. The bottom is lowered down along the net wall to get depth in the catch.



When lifting the sweepnet, we recommend using crane loops fitted between floats along the top rope.



When starting to gather the sweepnet, start lifting the sides and bottom as well.

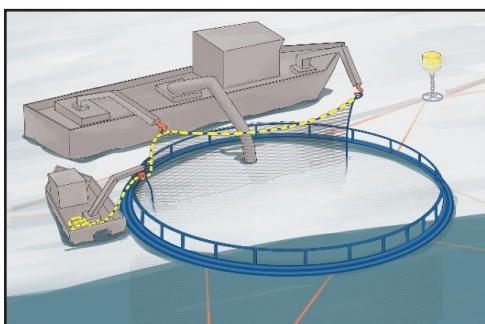
The extent to which the sweepnet is gathered determines how many fish are captured in the catch.

The sides and bottom are hung over the railing on the floater so that the sweepnet forms a "bag". This is done towards the side where the wellboat is positioned. In some cases, it is the wellboat itself that does the job of pulling the sweepnet towards the boat.



NOTE: Use caution during this part of the operation to prevent folds from forming in the netting where fish could be crushed.

As the fish are pumped aboard the wellboat, start to reduce the volume of the sweep net so that the remaining fish are brought closer together. This must be done as slowly as possible to ensure that the fish have sufficient volume and oxygen. In some cases, the oxygen level must be monitored (for example, during fish treatments) and extra oxygen added if needed. Lift the bottom via rings/bridles using a crane (or manually if the sweepnet is not too heavy). Use the purse line that is on the outer edge of the sweepnet.



The float belt and sides at the end of the sweepnet can be lifted using a crane. The other end of the net is run back to the workboat through the block. The job of running the net back again also helps to "remove" excess netting.

3.2.2 Sweepnet for treatment of fish

This procedure primarily applies to Canada net for treatment of fish. For other types of sweepnets for treatment of fish, see chapter 3.2.1 Sweepnet for harvesting fish.

- Make sure you have a sweepnet with the right size in place in relation to the size of the fish farming net
- The treatment sweepnet is disinfected and has no damage. The sweepnet must be prepared to be put out in the net.
- Extra equipment must be removed or moved, this may apply to cleaner fish hides, bird net and bird net poles.
- Air hose or other equipment being used or reducing volume in a net, must be placed on the opposite side of where the work boat is located (for example a well boat performing treatment of the fish).
- Purse line through horizontal rope on the sweepnet is already in place. Other ropes being used for handling the sweepnet, must be prepared for use - pulling ropes to pull the sweepnet to the sides and over to the opposite side.
- Current conditions in the sea are crucial, both regarding placement of boat and for performing the operation.
- The right type of safety equipment must be used, and in connection with the use of crane, the right type of lifting equipment must be used.
- The sweepnet is gathered at the top, and cut ropes are mounted.
- The bottom of the sweepnet is taken in to the net first, through a block. It is important to hold the ropes in the sides of the sweepnet to each side - this is to prevent twists in the sweepnet.
- Ropes for pulling and purse line are prepared and attached to loops in the sweepnet (sides and bottom of the sweepnet). The top of the sweepnet is lifted into the net.
- Grab one end of the top, and pull this to one side. Then grab the other end of the top and pull this to the other side of the net.
- Cut ropes are cut continuously, and the sweepnet is attached to the railing on the floater using rings mounted along the top of the sweepnet. The sweepnet now hangs along the wall of the net, in a semicircle.
- The bottom is pulled over and up to the opposite side of the net using pulling ropes.



Canada sweepnet installed in a net



Model testing - Canada treatment sweepnet

- NOTE! it is now important that the sides of the sweepnet is held into the sides of the net, so that all fish is gathered in the catch. Purse line thread through rings along the sides are used, and also ropes in the middle of the sides (90 degrees). Any slack in the netting can be distributed afterwards using these purse lines.
- Fish is lead to the upper part of the sweepnet (past the horizontal rope), using air hose or other equipment for reducing volume in the net. The horizontal rope is lifted up when desired amount of fish is located in the upper part of the sweepnet.
- It is important to pull the sweepnet up to the sides, to avoid a lot of netting in the same area - this is to prevent fish from being squeezed.
- The boat performing the treatment of fish, pumps it on board.
- When all fish is pumped on board the boat, the horizontal rope is lowered and the same procedure is repeated.
- A small sweepnet can be used to catch the fish inside the big sweepnet. The small sweepnet is then used instead of the horizontal rope.
- Air hose or other equipment is used to minimize the volume in the sweepnet, and to lead the fish towards the top of the sweepnet and closer to the boat pumping it on board.
- When the operation is complete, the sweepnet must be checked and disinfected. A box with valve for draining can be used for disinfection and storage of the sweepnet.

3.2.3 Sweepnet for sampling fish

- Sampling net is used in a small part of the net. Equipment which is needed (ex. crane on workboat), depends on the size of the sweepnet.
- It is smart to throw some feed into the sweepnet, to gather enough fish in the catch.
- The net is in the sea until wanted amount of fish is caught.
- A hand net can be used to get the fish onboard the boat.
- A safety net can be installed between the boat and the floater when fish are to be moved from the sweepnet and on board the boat. This is a piece of netting that acts as a safeguard if fish end up outside, for example a hand net, when it is moved.
- Make sure that the sweepnet does not get caught in the net, and that no fish is squeezed.



3.2.4 Sperrenot - sweepnet for catching cleaner fish

- Feed into the cleaner fish hide, so that most fish gather there.
- Thread the net around the hide to catch the cleaner fish. Close the net in the top.
- If an air hose or other equipment for reducing volume in a net is used, you must make sure the net does not get stuck. See user manual for air hose for more information.
- Pay attention to the cleaner fish during the whole process, to avoid fish from being squeezed, and to maintain good fish welfare.



3.3 Special environmental conditions

In the event of potential extreme weather or strong current, operation using sweepnet must be postponed.



3.4 Risk assessment - critical points

Sweepnet must only be used for the purpose it is produced for.

Nevertheless, there are some critical factors that could cause damage to a net:

- The sweepnet must be removed from the net after use, to avoid unnecessary contact between sweepnet and net.
- Breakage of components in sweepnet - for example steel rings - can cause hole in the net if contact occurs.

These factors must be in focus, so that risks can be avoided. Frequent maintenance and inspection of sweepnet must be carried out. Raising the awareness of personnel who handle sweepnets and who are responsible during work operations, will in many cases reduce the risk of escape accidents occurring.

4 INSPECTION AND MAINTENANCE

4.1 General

Maintenance of a sweepnet is essential to be able to carry out the work operation in the best possible way. To ensure optimal service life for a sweepnet, it is important that it is checked regularly. Controls and inspections must reveal any abnormal conditions, and help prevent fish escaping.

The person carrying out the inspection must have knowledge about the sweepnet, and have experience from fish farming facilities, so that the person concerned is able to observe any abnormal events. All inspections and maintenance must be logged.

If there is a need to replace components on sweepnet, this must always be done in consultation with the manufacturer.

Contact AKVA group Egersund Net if there is uncertainty about what the fish farmer can and cannot carry out in terms of maintenance and replacements.

4.2 Checkpoint for inspections

Inspections aim to uncover possible damage and weaknesses at the earliest possible stage. Fish farmer must incorporate these points into their regular operating routines. If there is suspicion that there is damage to a sweepnet, this must be investigated immediately.

Before sweepnet is used, it must be checked to ensure that it has no damage that may cause damage or holes in the fish farming net.

 The following points must be checked by fish farmer:

Check point	Scope
Netting, ropes, loops, floaters	Check that there are no damage on components, that can cause damage to the fish farming net
Steel rings	Check that there are no wear and tear on steel rings

4.3 Inspection of sweepnet in service facility

Sweepnets can be delivered to a AKVA group Egersund Net service facility for inspection or improvements.

A service may include inspection and repair of sweepnet.

Components that are damaged or clearly weakened, is replaced. This regards damage on netting, rings, ropes and loops.

4.4 Log

All inspections and maintenance of an sweepnet must be logged.

The log must at a minimum describe:

- The action completed (type of inspection), with reference to a plan and procedure
- The result of action taken
- The necessary follow-up as a conclusion to the action taken
- Date
- Person performing/responsible
- Signature

4.5 Disposal/recycling

Sweepnets which will no longer be used, can be returned to one of AKVA group Egersund Net`s service facilities. It will then be handled in accordance with their waste management program.

5 TRANSPORTATION AND STORAGE

5.1 Transportation and receipt of sweepnet

AKVA group Egersund Net recommend that sweepnet is packed in a bag. When receiving a sweepnet, you must check the packaging for any damage. Visible damage to the packaging is a sign that something has happened to the sweepnet during transport. In such cases, you must inspect the sweepnet before use and notify AKVA group Egersund Net and the carrier. Sweepnet must always be checked before and after use. This is a requirement even if the product comes straight from a service facility.

5.2 Storage of sweepnet

Sweepnets must be stored in such a manner that they are not exposed to external factors capable of causing damage to components. Work involving strong heat, such as welding, must never be performed near the sweepnet.

When you receive a sweepnet, it is your responsibility to ensure that it is stored appropriately.

Storage in a bag or a box is considered the best storage location for a sweepnet.

If a sweepnet is packed in a bag with loops, it is important to check the capacity of the loops before performing any lifting. Sweepnet must not be dragged on the ground, as this can damage it.

6 MANUFACTURER AND PRODUCT IDENTIFICATION

6.1 Contact

If you have any questions about sweepnets, inspection or maintenance, please contact our head office or nearest service facility.

HEAD OFFICE

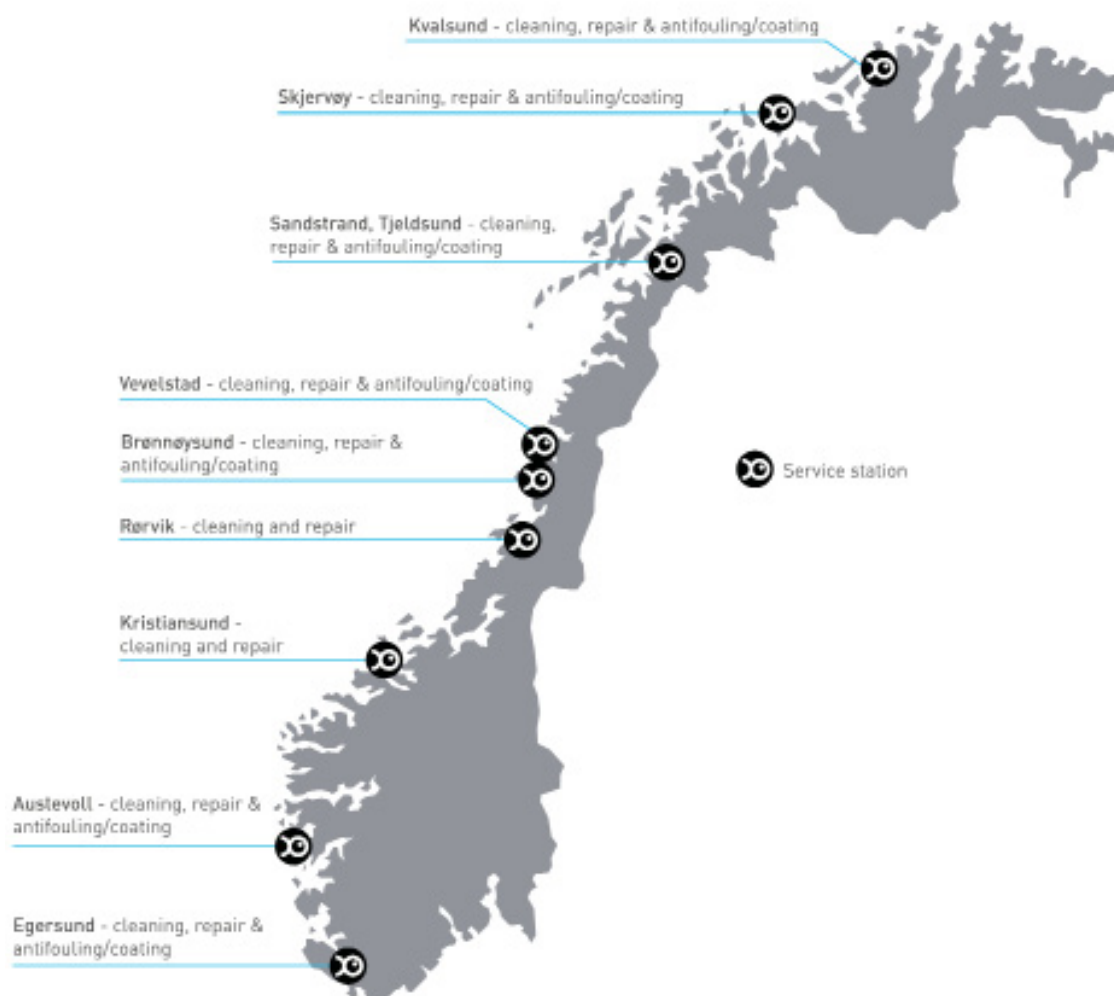
AKVA group Egersund Net AS

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N-4373 Egersund Telefon: +47 51 46 29 00

E-mail: post@egersundgroup.no

www.akvagroup.com



6.2 Identification of sweepnet

Each sweepnet has a unique production number. All production-related information and maintenance history is registered and stored with reference to the production number. Identification lable with an ID number is attached to rope on top of sweepnet.

6.3 Net-Reg

Net-Reg customer portal is a userfriendly equipment log that covers the need for checklists and documentation for all equipment - included sweepnets. Use of this tool gives the fish farmer a complete overview of their locations and the status of their equipment.

For both internal and external audits, the tool is used to produce documentation for each individual component in the entire installation.

6.4 Symbol definitions



REQUIREMENT: This symbol is placed next to text describing requirements



NB: This symbol is placed next to text describing potential incidents and other aspects that you should be aware of



TIP: Describes tips and advice in connection with the installation and handling of a sweepnet



ESCAPE RISK: This symbol is placed next to text describing incidents and/or operations that may increase the risk of fish escaping

7 REVISION HISTORY

7.1 Revision change

Table with an overview of changes in the latest revision of the user manual.

Rev.no	Date	Scope	Reference
6	15.12.2023	User manual updated according to NS9415:2021 and Nytek23	All
6	15.12.2023	New chapter with definitions	Chapter 1.1
6	15.12.2023	New risks included	All
6	15.12.2023	New pictures and illustrations	Chapter 1 and 3

THANK YOU FOR CHOOSING AKVA GROUP EGRSUND NET

Our mission is to deliver solutions and services that optimise production and contribute to sustainable, cost-effective and safe fish farms. We place great emphasis on fish welfare, operational performance and profitability for the customer in everything we do.

A sweepnet is special equipment used to remove fish from the net.

AKVA group Egersund Net aims to produce high-quality, durable sweepnets, and we describe how they should be used in this user manual.

We wish to make our manual as user-friendly as possible. To achieve this, we rely on your feedback and our collaboration with you as the user of our air hoses. We appreciate every suggestion we receive, as it helps us deliver more effective and safer equipment. If you have any suggestions or ideas that may help improve user-friendliness, we would appreciate hearing from you.

Together, we can make fish farming an even more eco-friendly and sustainable growth industry that produces safe and healthy seafood for the global market.

The manual is designed to meet the requirements of the Norwegian Standard (NS) 9415:2021 and the NYTEK23. Risk assessment for the product is carried out, risks and measures to reduce them are described in the user manual.

AKVA group Egersund Net reserves all rights to this user manual and its contents. Reproduction and distribution to third parties without our clearly expressed prior approval is not permitted. We reserve the right to correct any errors in the text or illustrations.

Regards,
AKVA group Egersund Net



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EGERSUND NET