



SCALE **AQ**

Nordic/Viking  
steel pens

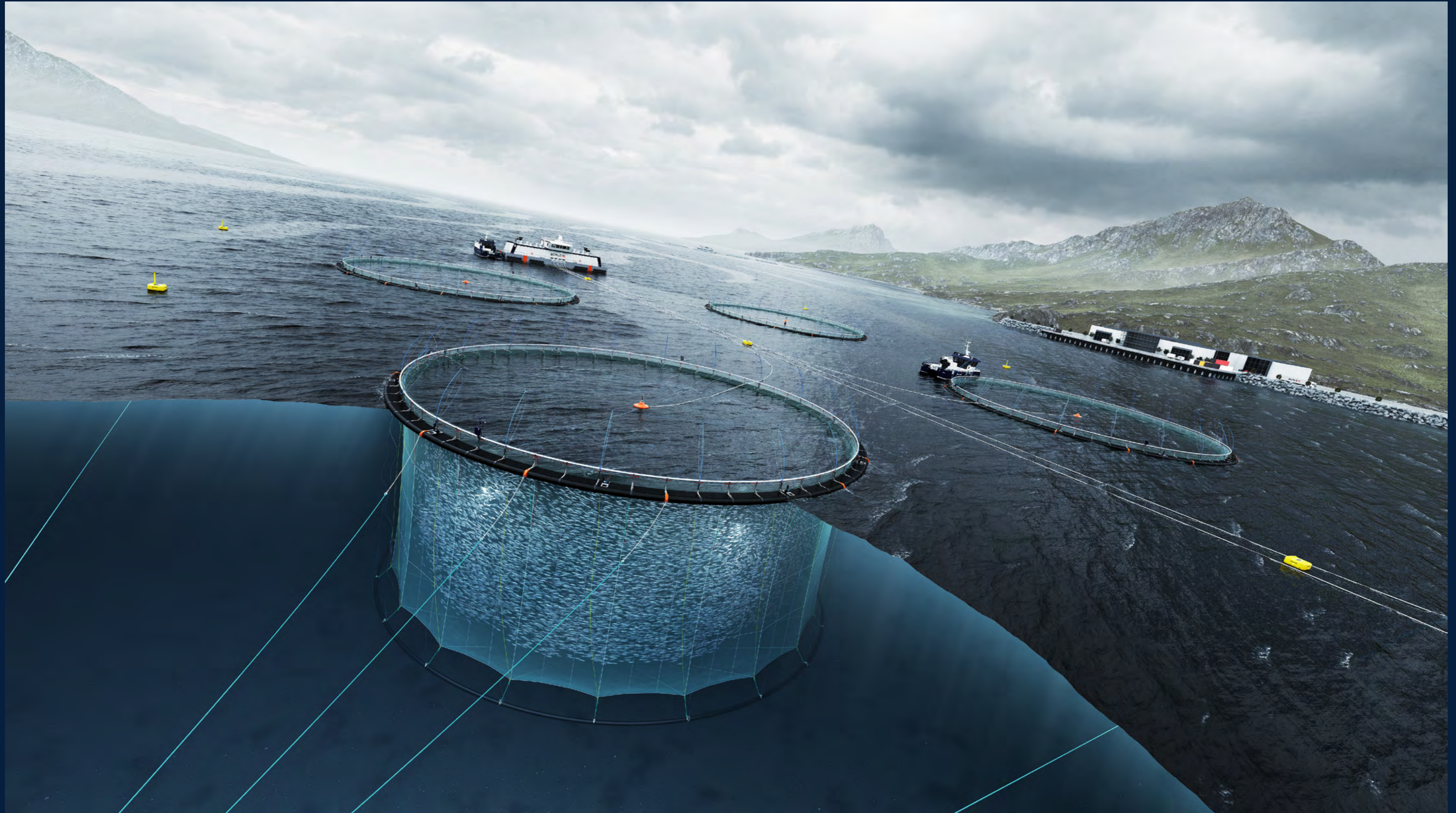


An underwater photograph showing a school of small fish swimming in dark blue water. Numerous bubbles are visible, rising from the bottom towards the surface. The lighting is dim, creating a serene and mysterious atmosphere.

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ScaleAQ is a leading global technology provider that supplies and manufactures complete sites for the aquaculture industry in more than 40 countries. The company has approximately 900 employees and offices in Norway, Scotland, Poland, Iceland, Chile, Canada, Tasmania and Vietnam. Through focus on sustainability and biology, ScaleAQ has taken a clear role in ensuring the development of technology on the terms of biology and the environment. We do this by producing and delivering technology, infrastructure and services in a solid, sustainable and innovative way.



# Steel pens

The Nordic/Viking steel pens can be delivered in sizes up to 40m x 40m in one or two rows. With modular solutions, we offer customized setups for farming and holding pen facilities. Nordic/Viking steel pens are manufactured according to the highest market requirements and standards. ScaleAQ steel pens are above all solid, reliable, and cost-effective.

Safe and sturdy solutions make Nordic/Viking the clear first choice. We always strive for satisfied customers, which is why we take pride in the quality of our products and our flexibility in meeting customer needs. We go the extra mile to fulfill customer requirements.

## Solid

The Nordic/Viking steel pen concept is based on solid and reliable solutions. Through decades of optimization, we are confident in the quality of our steel pens.

## Low maintenance

The steel pens are manufactured from high quality hot-rolled steel which is galvanized according to ISO 1461.

## Lifetime

Thanks to the unique torsional coupling with vulcanized inserts, the loads on the various components are reduced and the lifetime of the system is multiplied.

## Stability

The Nordic/Viking facility is highly stable. With strong buoyancy in all sections and the option to increase buoyancy by adding more or larger pontoons, this provides flexibility to customize the facility according to the customer's preferences.

## NS-9415 NYTEK Certified

Certified according to NS9415 – Marine Fish Farms – requirements for site survey, risk analyses, design, dimensioning, production, installation and operation and the NYTEK-regulation.





## Nordic/Viking

The Nordic/Viking steel pen concept was developed in 1983. These stable and solid steel pens have provided a safe and secure platform for fish farming. Development has happened through more than three decades of innovation, great ideas and problem solving.

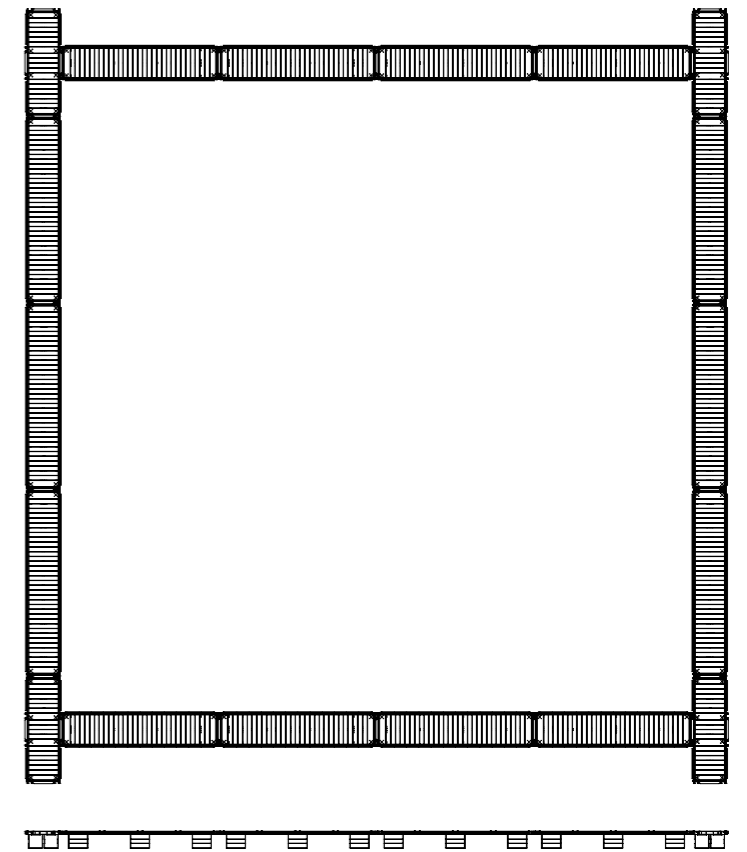


Illustration of a 40x40 pen.

### Innovation

One of the greatest innovations is the unique torsional coupling with vulcanized inserts. This coupling reduces the stresses on various components, resulting in lower maintenance of the pens and increases the lifetime of the system. When combined, all the innovative ideas provide you, as a customer, a rugged steel pen system for generations to come. The difference is in the details.

### Experience

With decades of experience and steel pen deliveries worldwide, the Nordic/Viking steel pens are proven to be a safe system that will last for decades.

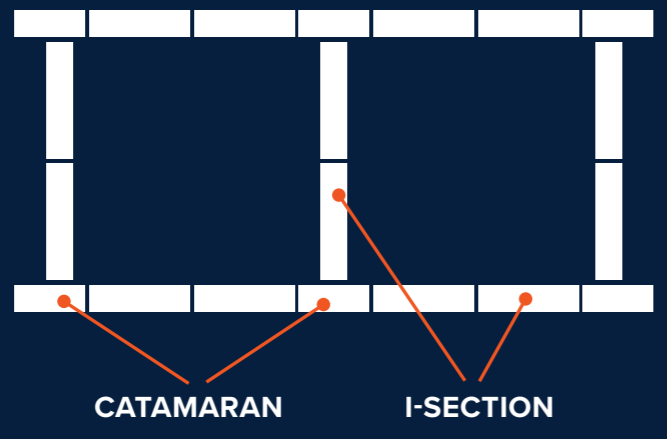
Specifications	
Pen sizes	Up to 40m x 40m
Number of rows	One or two rows
Drivable sections for forklift	Yes, on request
Material	High quality hot-rolled steel, galvanized according to ISO 1461
Hinged connections	Torsion coupling or standard hinges
Pontoon	Polystyrene filled, two sizes of pontoons can be delivered
Mooring	Heavy Load Mooring Points
Certification	NS9415, NYTEK-regulation, Steel galvanized according to ISO 1461
Optional accessories	Rescue equipment, fender, net handling equipment, lamp posts, winches and more



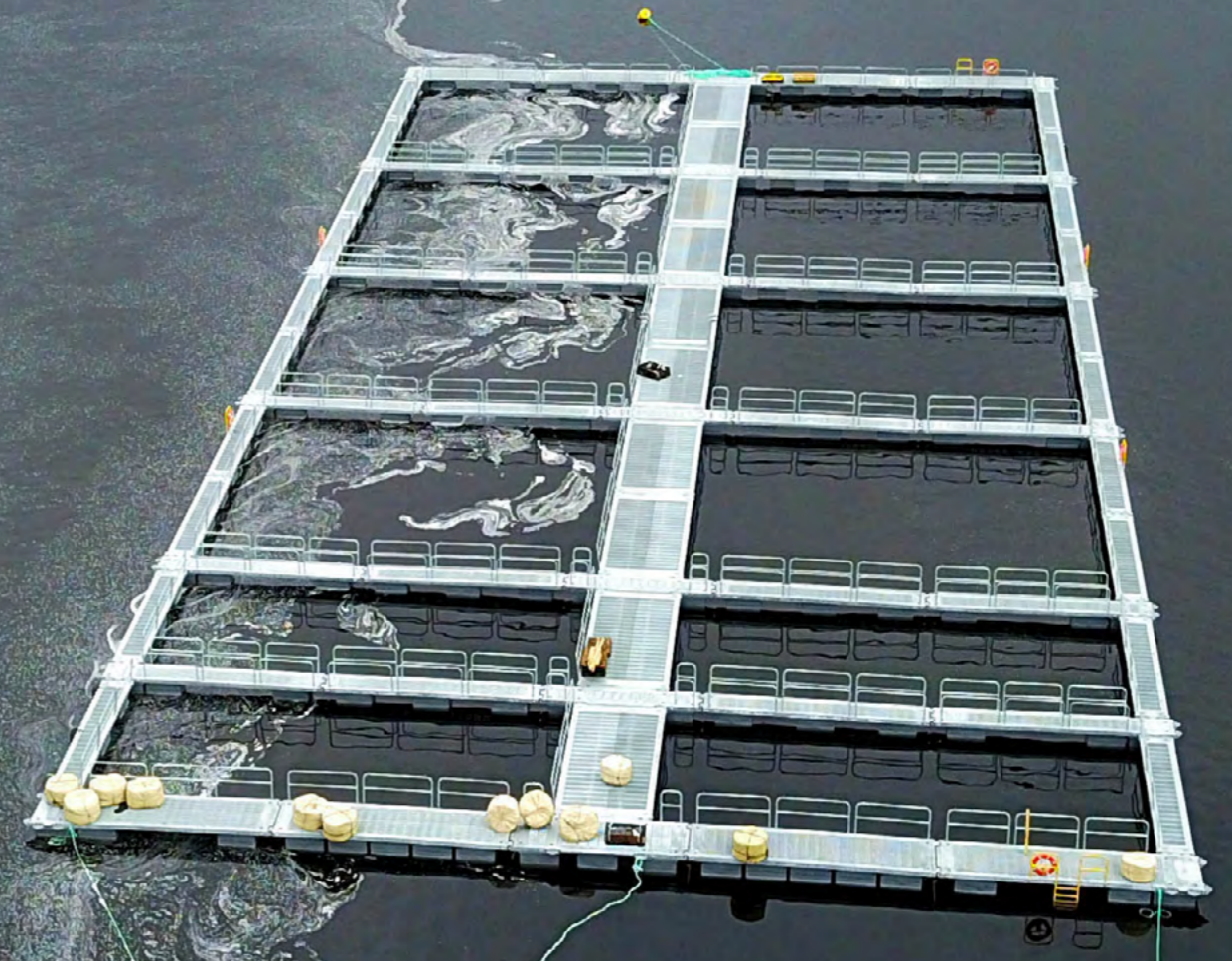
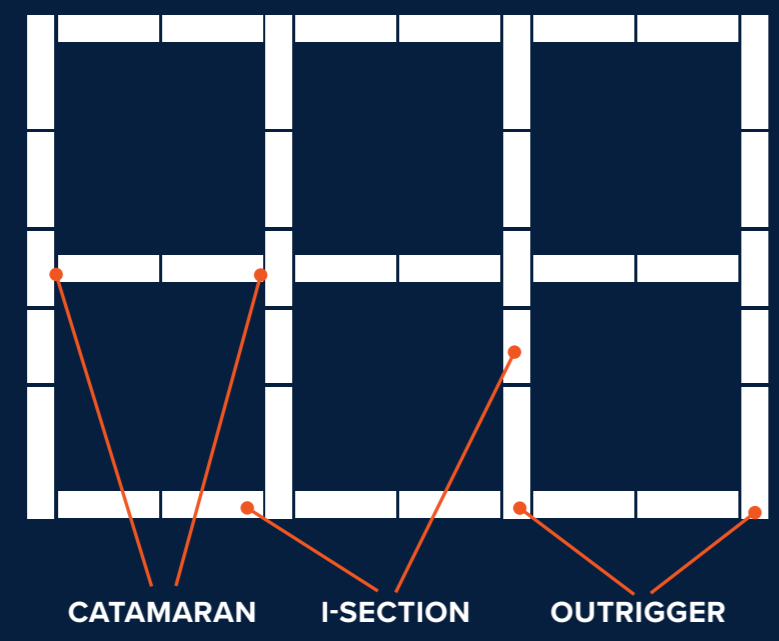
## Modules

Pen size 40×40m  
(Pen sizes limited according to site analyses)

Single row



Double row





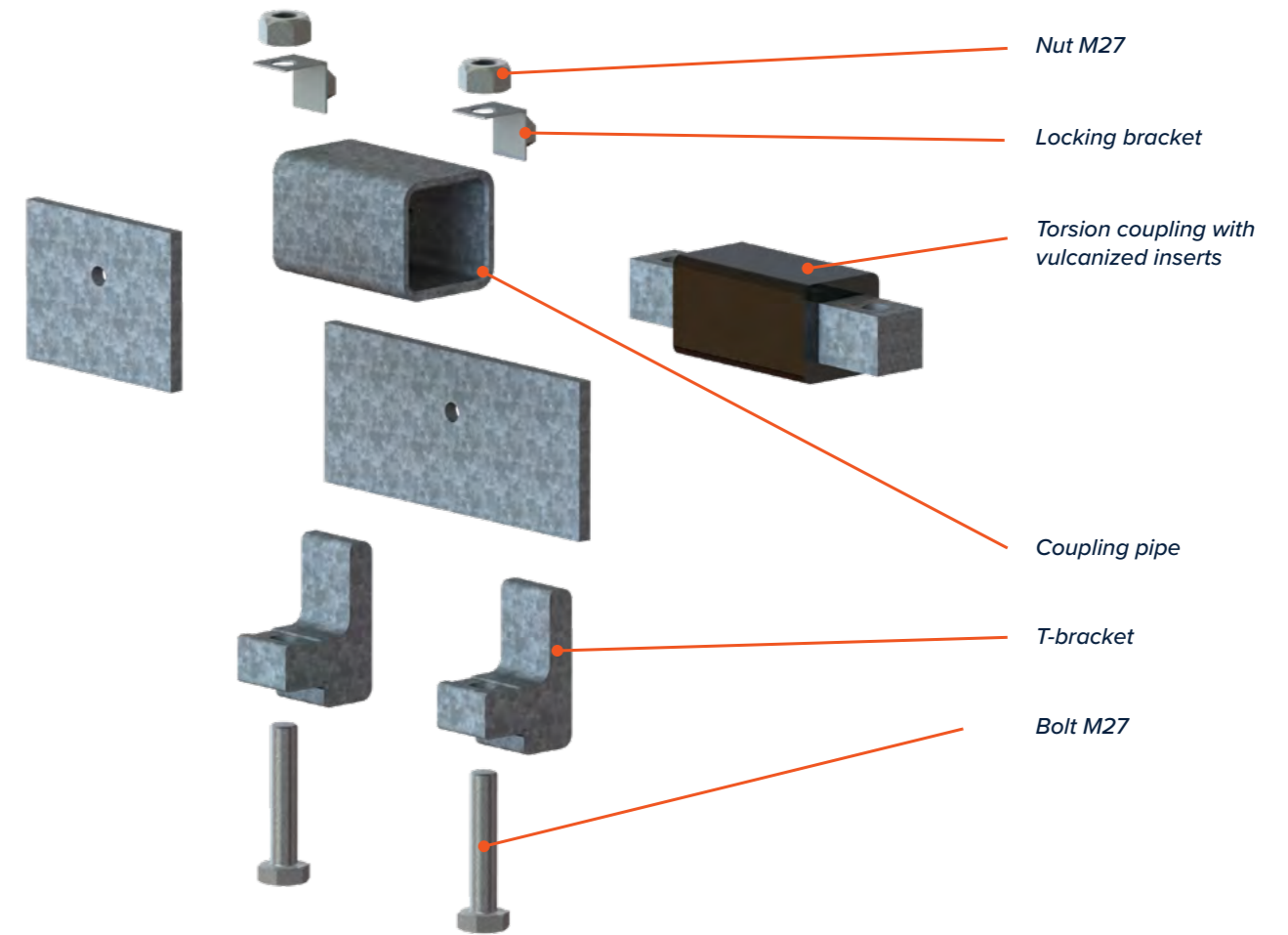
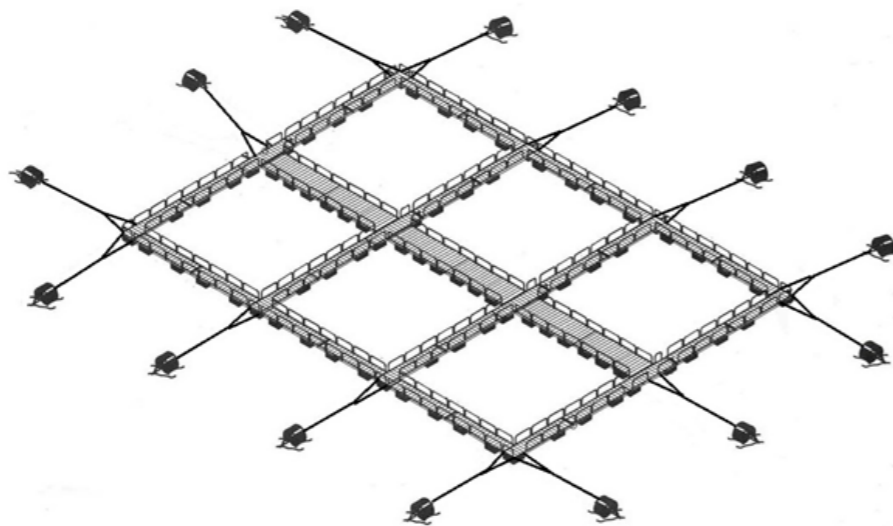


## Assembly

ScaleAQ has been involved in the assembly of the Nordic/Viking steel pens since the early 80's. There are many reasons for ScaleAQ to be a part of the assembly. The main reason has always been to ensure the well-known ScaleAQ quality. We also get to teach the customer about their new steel pens. The dialogue between us and the customer in this phase can detect eventual faults or defects. Smaller adaptations and changes can also be done in this phase.

## Mooring

Proper mooring is critical for the system to be able to move and maintain the strength it is designed for. Together with our partners, we prepare mooring analyses and mooring plans. Heavy Load mooring fixtures are delivered as standard on all steel pen system. These are suitable for most deliveries with a capacity of up to 210 kN per mooring point. For customization, we adapt the mooring arrangement according to the applied loads.



## Torsion coupling

The unique torsion coupling with vulcanized inserts provides the pen system with several benefits. The coupling reduces the loads on various components, which results in lower stresses between the different sections. This is also one of the reasons for the long maintenance intervals on the Nordic/Viking pen system. The torsion coupling itself also requires little maintenance because of its unique design. There are no steel to steel friction points in the coupling. This is the main reason for minimal maintenance and quiet pen flexing.



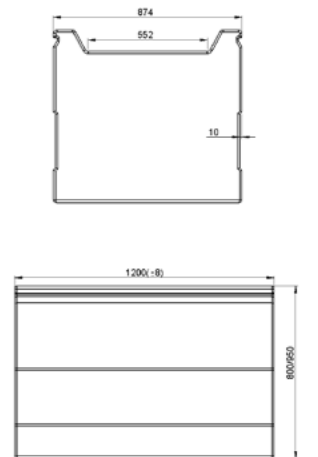
*The torsion coupling provides movement in all directions*

## Pontoons

The pontoons for the Nordic/Viking pens are rotational moulded in polyethylene and filled with polystyrene for secondary safety. The pontoons are delivered in two different sizes, 750 litres and 900 litres. By choosing between the two different pontoons sizes, the buoyancy of the pens can be adapted to different needs and demands. Both pontoons are mounted to the steel sections without any bolts. The pontoons are pressed into wedge tracks in the steel sections. This solution provides a secure attachment of the pontoon, but also minimizes wear on the net. Only the polyethylene surfaces of the pontoon touch the net.



*Pontoon during assembly*







Steel pen sections before galvanization



Steel pen sections after galvanization

## Materials

Nordic/Viking steel pens are manufactured from hot-rolled steel which is galvanized according to ISO 1461. Galvanization according to ISO1461 is the most effective protection for this type of steel pen. Experience shows that this galvanization is incredibly durable, even in the toughest conditions. All materials included in the production have been tested and certified in accordance with data sheets and applicable specifications.

## Reinforcements

The reinforcements in the different modules are constructed so there is no need for trans-verse beams. This allows movement in each module and between the different modules. This flexibility is necessary to handle the rough conditions of the ocean. All reinforcements are optimized in terms of strength according to current regulations. As an option, it is possible to get reinforced sections for operating forklifts. These sections are also equipped with crash barriers for increased safety, as shown in the picture to the right.



Sections reinforced for forklift driving

# A global market

ScaleAQ can be found in 33 locations in 8 different countries



### Nordic/Viking customers worldwide

Lerøy Vest  
Sinkaberg Hansen  
Nordfjord Laks  
Havforskningsinstituttet  
Fjord Harvest  
Norcod  
Stettefisk  
Fjord Toro  
Sudane Fiskeoppdrett  
Vikenco  
Landøy Fiskeoppdrett

Atlantic Codfarmers  
Helgeland forskningsstasjon  
Gildeskålen forskningsstasjon  
Termar Seafarm  
Balt Import Russia  
Marøy Havbruk  
Codfarmers  
Boguøy Fiskeoppdrett  
Saumon France  
Tunsbergpollen Torsk  
Karstensen Fiskeoppdrett

### Design and project department

Ålesund, Norway

### Production

Ålesund, Norway  
Stettin, Poland  
Nha Trang, Vietnam

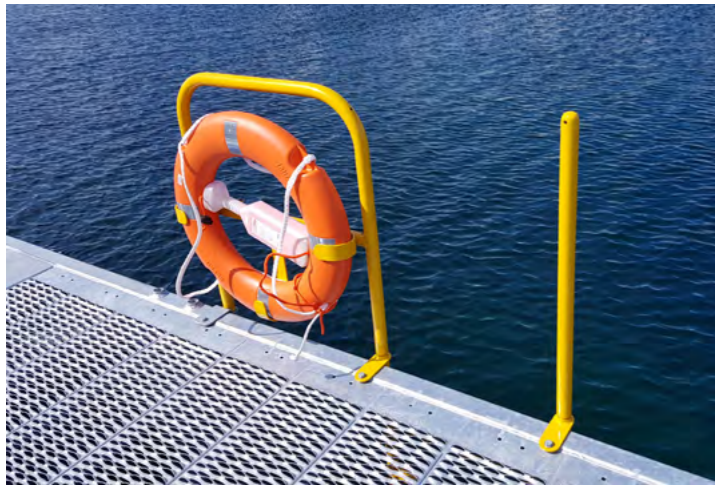


*«Throughout our 34 years in the aquaculture industry, this is the most durable steel pen concept we have ever experienced. Our aquaculture sites are relatively exposed at Værlandet, on the west coast of Norway. Over the years, we have experienced several extreme weather conditions. The steel pen concept from ScaleAQ has dealt with this very well, without any significant problems. The torsion couplings must be highlighted as one of the success factors in this concept. The couplings make the pens silent during operation, obtain forces between the modules and lowers the amount of maintenance. We are very pleased with the delivery, service and facility delivered by ScaleAQ!»*

Helge, Roar and Kjell Landøy  
Landøy Fiskeoppdrett AS







### Life saving equipment

Rescue ladder for access from sea to pens.  
Equipped with handrails and lifebuoy.



### Net handling equipment

A variety of net hooks



### Fenders

We deliver two standard fender types,  
rubber fenders and the PE-pipes.  
Other solutions on request.



### Net handling equipment

Mini-lift for mounting on separate poles



### Railing

ScaleAQ delivers two types of standard  
railings. One standard railing as shown in the  
picture on the left and one railing for the crash  
barriers as shown in the picture on the right.  
Other solutions upon request.



### Lamp posts

Lamp post connection point

### Other equipment

Equipment for attaching bird nets, predator nets and more. Contact ScaleAQ for more information.

## Optional accessories

The ScaleAQ quality and our flexibility have always been our pride. We offer a wide range of optional equipment suitable for all Nordic/Viking pens. This includes equipment for increased safety and providing a better user experience of the pens.





Walkways are adapted to fit the customers' needs



Specialized hinged connection between steel pens and existing docks

## Customized solutions

Over the years, we have delivered several different customized solutions for fish farms, harvest facilities and others. We have vast experience with adaptations and customizations for our customers. The pictures show a customized solutions at a harvest facility in the west of Norway.



## Tested and approved

The Nordic/Viking steel pens have been in use for almost 40 years. Based on our experiences, we are proud to say that the Nordic/Viking steel pens is a well-proven concept. All steel pens are delivered with a product certificate issued by ScaleAQ. This certificate approves the steel pens in accordance with NS9415 – Marine Fish Farms – requirements for site survey, risk analyses, design, dimensioning, production, installation and operation and the NYTEK-regulation.

### Certified

ScaleAQ is certified in accordance with ISO 9001:2015 and ISO 14001:2015.

### Service

ScaleAQ has multiple departments along the entire Norwegian coast and in most countries where the aquaculture industry is present. Here we accept customer inquiries and send out technicians for service and repairs.

### Support department

ScaleAQ has a 24-hour support department stationed in Haugesund, Norway. Support cases are either resolved by the support operator or sent to the service coordinator closest to the facility.







Instagram: **scaleaquaculture**



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Podcast: **ScaleAQ Pod**



## CONTACT

[sales@scaleaq.com](mailto:sales@scaleaq.com)

+47 488 52 488

