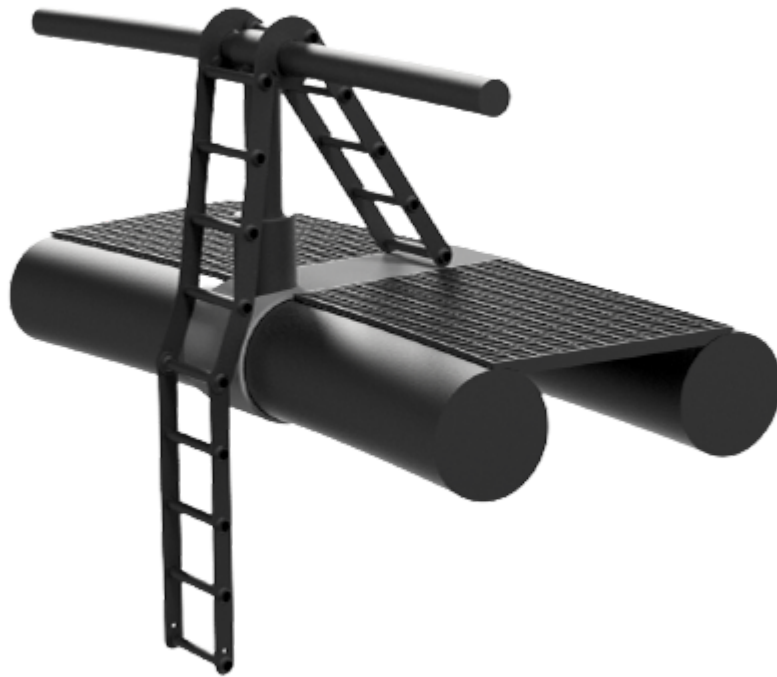


Norse Aqua **Safety Ladder**



A Bluegrove Company

User Manual version: 1.0

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1 Introduction

This User Guide describes how the safety ladder from Norse Aqua should be installed, inspected, and maintained to get maximum utilization and lifetime.

There are no knowledge requirements for reading and understanding this document. Please contact us if further explanation is needed, we will gladly give more guidance.

2 About NorseAqua

NorseAqua was founded in 2014.

The company's vision is to develop innovative solutions for the aquaculture industry with local value creation in focus. If you have any feedback on our products, positive or negative we want to hear from you, so do not hesitate to contact us.

NorseAqua is 100% owned by Bluegrove - a global aquatech company headquartered in Oslo.

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3 Safety Ladder

Components

The safety ladder is a product meant to ensure your safety when working inside the cages.



Hinge mechanism



Steps



Safety straps



Spacers/contact points

After use: check the net for any signs of damage to the net.

Identification of product



Figure 1: Identification of product



Figure 2: Safety sign

4 Operation and maintenance

How to set up the ladder



Inspect the ladder before use - open up the ladder fully, and lift it in place



Open up the hinge mechanism and close over the railing
Tighten the safety straps to limit any movement



Try to move the ladder to see if it is appropriately set - if it's loose, revisit previous steps
 After use, loosen up the straps - open up the ladder and store for next time.

After use: check the net for any signs of damage to the net.

4.1 General maintenance

When	What
Before use	Check plastic for damage - if any damage is detected contact Norse Aqua Pay extra attention to contact points with the net
	Check for wear in safety straps. If straps are missing they need to be replaced as soon as possible. DO NOT USE LADDER WITHOUT STRAPS
Winter	Remove ice or snow and keep the ladder accessible

4.2 Storage

Keep the ladder free of any ropes or other items.

4.3 Requirements and restrictions in use

Used for safety while working inside the cage. To be securely mounted, use the description in this manual.

4.4 Deviation and handling of errors

See attachments.

Risk assessment of escapes

Technical information and limitations

The ladder is made out of PE plastic with anti-slip steps.

Recommended maximum user weight is set to 150 kg (330lbs)

	Dimensions	Description
Size	260 cm (120 cm in the sea)	Folded
Weight	12,5 kg	

Requirements for usage

Use of this ladder does not require any prior knowledge or training other than what is written in this user manual

Estimated lifetime

This product has an estimated lifetime of 60 months if recommended maintenance is done

Limit values

	Value	Comment
Significant wave height (H_s)	5	
Current (m/s)	3	
Wind (m/s)	40	
User weight	150 kg (330lbs)	

These limit values require a proper installation

How to determine the risk escapes

Point	How likely is the accident to occur?	Example	How serious will the consequences be if the accident occurs?	Example
5	Extremely likely	Monthly	Extremely serious	Escapes at facility level can occur
4	Very likely	Once a year or more often	Serious	Escapes at cage level can happen in special cases
3	Likely	Once every 5 years	Moderate	Individual escapes can happen
2	Less likely	Once every 10 years or more often	Potential	Individual escapes can happen in extremely special cases
1	Unlikely	Rarer than every 10 years	Insignificant	Insignificant risk

Risk matrix – Risk of escapes

P o i n t	Danger	Reason for danger	L i k e l i h o o d	P o t e n t i a l d a m a g e	R i s k	How to prevent
1	Chafing on net	The ladder is in contact with net while in use	1	2	2	Only have the ladder on the cage when in use, always check for wear on contact points immediately after use.
2	Tearing of net	The ladder is in contact with net while in use	1	4	4	Only have the ladder on the cage when in use, always check for wear on contact points immediately after use.
3	Icing hazard	Icing on steps might cause limited grip on steps	1	2	2	Remove any snow or ice before use
4	Production defects, fatigue	Production defects can cause breakage in special cases.	3	2	6	Welding inspection in production and inspection before use
5	Different practices for installation and operation	Increases likelihood of the dangers mentioned above	3	1	3	Attach user manual to any shipped product

Attachment: Inspection form

Product/Service		Supplier	Serial nr	Year of purchase
	Daily	Weekly	Monthly	Quarterly
Clean off any ice, snow or ropes etc on the ladder	x			
Inspect ladder for any damages			x	
Test out the ladder and make sure it works as it should				x
Date	Your name			

Attachment: Deviation report

Copy this form before you complete it. Deliver it according to your deviation reporting routine and/or send it to NorseAqua at post@norseaqua.no

Product/Service	Supplier	Product nr / Serial nr	Year of purchase
Problem experienced What has happened? Which problem do you experience because of it?			
Your proposal for corrective measures (Reduce the harmful effects when the problem first appears.)			
Your proposal for preventive measures (Reduce the chance that it happens again later.)			
Date	Your name		