



SF MARINA



Proud manufacturer of floating concrete pontoons ...since 1918

Welcome to SF Marina and our world.

In our opinion, we are working in the most beautiful
of worlds, a world where sea meets land.



Floating platform, Oslo, Norway



Nynäshamn, Sweden



Yalikavak, Turkey



Sochi, Russia



Marstrand, Sweden

HERITAGE

SF Marina is a Swedish company operating globally with a history of manufacturing concrete floating pontoons dating back to 1918. From the very beginning, when floating concrete pontoons were unheard of up until today, SF Marina has led the development of floating concrete structures. SF Marina has relentlessly pursued new challenges as well as new markets, both technological and geographical.

As a result of SF Marina's global expansion, our products can be found in all the oceans in the world, and on every continent. Our products survive all kinds of challenges such as typhoons, all kinds of storms, hurricanes, ice pressures, tides, as well as sun and salt exposure throughout the year.

SF Marina's products fit a wide range of different needs. They are the floating pontoons in your well-sheltered marina, they are the ferry landing you commute from, they are the commercial jetty where your fish is landed and they are the floating breakwater protecting your harbor. We have completed thousands of floating docks and breakwaters worldwide. All components we deliver have been tested, tested again and finally tested yet again.

Over the last century, our products have figured in almost all floating applications one can think of, always with safety, function and durability being the paramount design criteria for the development process. Approach us with any idea, large or small, and we will share with you our vast experience. At SF Marina, development is as fundamental as it is ever ongoing. This is how we expand the boundaries of our world.



BEING GLOBAL, ACTING LOCAL, ALWAYS RESPONSIBLE

The coastline is always a very sensitive environment to operate in. In-depth knowledge of local phenomena and local conditions are fundamental when designing and building a floating installation. Based on storm-proven technology in the design of pontoons and connectors, all installations need to be customized to suit currents, tides, wave exposure and a number other site-specific conditions. Your local SF Marina representative is well trained and has all the experience of the SF Marina worldwide network to benefit from when aiding you in designing your floating project, large or small. Today you can find a local SF Marina representative in more than 30 countries.

All of our pontoons can be built in our main production site located in Wallhamn, on the Swedish west coast. It has access to a deep-water quay and today, pontoons up to 200 tons have been shipped out. Experience and new demands from installations, customers and representatives around the world are funneled back to headquarters where our R&D staff can quickly transform these to functional products or processes. Experience from the salty waters of the Middle East to the strength and durability of a connector exposed the fury of the North Atlantic, all are incorporated in every one of our products.

SF Marina production sites are built close to each respective market to lower the cost and the environmental impact of transport. Today there are 21 production sites around the world, operating according to local regulations, and building according to SF Marina drawings, technology and standards.



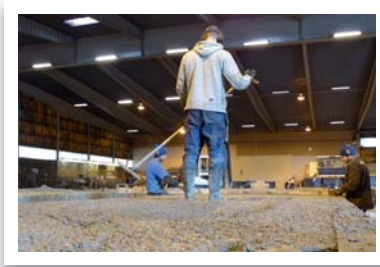
SF Marina – building the strongest concrete pontoons in the world since 1918.



SF MARINA TECHNOLOGY AND PHILOSOPHY

Absorbing wave energy without damage to the structure is the challenge. Every project we build is designed to operate within set wind and wave conditions. What sets SF Marina apart is that above and beyond these conditions, each project we build is designed with a survival mode. SF Marina is still there, after the storm. Our technology consists of three equally important parts:

- A) **STRONG PONTOONS** – State of the art reinforcement for load distribution.
- B) **STRONG CONNECTORS** – Unique range of in-house developed connectors for every application.
- C) **ENGINEERED ANCHORING** – Designed to match each pontoon in every given location.



SF Marina will, for every location, design, produce and install your project using our comprehensive, well-tested product range and our vast experience to guarantee your project the longest possible lifetime, with minimum maintenance costs. This will give you the lowest possible Life Cycle Cost (LCC) for your project.

SF MARINA, AN INNOVATIVE COMPANY

At SF Marina development is an ongoing process. Every day we are challenged with more and more exposed locations. Civil construction is moving the boundaries of what is technically possible to build and SF Marina is proud to take part in this evolution.

Cost efficient manufacturing and novel materials requires us to invest and reinvest in our production facilities and product designs. Environmental responsibility demands

that we question our environmental impact every day, how to perform transports, installations and anchoring in the most sustainable way. Prolonging the lifetime of our products is yet another very important way for SF Marina to reduce the impact on the environment.

Next step in floating breakwaters

SF Marina introduced the concept of concrete floating breakwaters almost 40 years ago. Ever since the beginning, new and more exposed locations have called for novel solutions, turbulence chambers, stronger connectors and novel anchoring techniques to mention a few. SF Marina is now taking the next step, going for 3-6 second wave periods. Taking the industry to a new level. Tank tests and computer modeling combined with our vast experience have formed our new 6, 8 and 10 meters wide breakwater series.

Basalt

Innovation thrives within SF Marina and always has done. What would happen if one could replace steel as reinforcement with something non-corrosive? It would allow for thinner protective concrete layers! A long process was started and after a couple of years of development, a patent was applied for covering a new production method using Basalt as reinforcement. SF Marina today proudly offers two different product lines based on this new, patented, technology, SF Marina ProDock and SF Marina X-line. In both of these product lines the advantages non-corrosive Basalt reinforcement are exploited to the limit, resulting in low weight, high freeboard, low transport costs and exceptional lifetime expectancy.



Anchoring

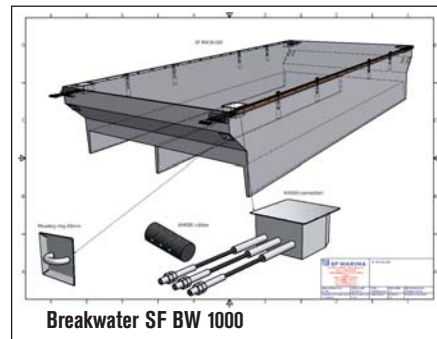
SF Marina can now offer new technique that has been developed for anchoring in difficult conditions such as remote locations or in deep waters (up to 50 meters).



Tank test



Helical anchor



Breakwater SF BW 1000



X-Line

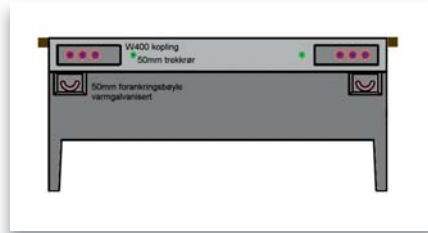


ProDock

CONCRETE FLOATING BREAKWATER PONTOONS

It is with great pride that we present our current breakwater range. It is the sum of all experience we have gathered from the first breakwater installation. Our confidence in our breakwaters comes from knowing that our floating breakwater range has and is being tested every day and from these occasions we study, learn and improve our technology.

SF Marina floating breakwaters have been tested to the very limits by bespoke storms, hurricanes and typhoons in all parts of the world. Since the first floating breakwater was installed almost 40 years ago, SF Marina has installed floating breakwaters in a wide variety of sites exposed to harsh conditions, in deep and shallow waters and in all climate zones imaginable.



WHY A FLOATING BREAKWATER

A floating breakwater and a fixed breakwater function in different ways and cannot be compared. There are three major advantages with a floating breakwater compared to a fixed;

- Cost
- Deep water developments become technical possible
- Environmental reasons such as water flow, no bottom footprint and positive effects on natural biotopes.

All floating breakwater projects are of necessity always custom designed in term of geometry, angles, mooring-system and connector configuration.

HOW A FLOATING CONCRETE BREAKWATER WORKS

All concrete pontoons will attenuate waves, but it is very important to distinguish

Model	Lengths	Width	Freeboard (approx)
SF BW300	10, 12, 15, 20 m	3 m	0,5 m
SF BW400	10, 12, 15, 20 m	4 m	0,5 m
SF BW500	10, 12, 15, 20 m	5 m	0,5 m
SF BW600		6 m	
SF BW800		8 m	
SF BW1000		10 m	

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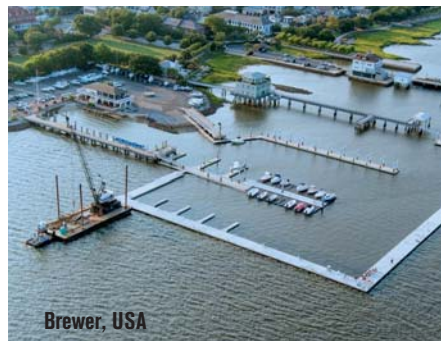
between a floating breakwater and a concrete pontoon. Floating breakwaters and concrete pontoons differ significantly in all the three vital criteria; strength of reinforcement, strength of connectors and anchoring. A normal pontoon will mainly handle forces from direct loads and wind forces. A breakwater is designed to restrain the movement of the floating breakwater elements it is connected to. When it does this the wave is efficiently attenuated and the energy from the wave is converted into motion energy of the breakwater. When wave energy exceeds the maximum of what the breakwater can absorb, the breakwater must be designed so that it allows for excess energy to pass through without damaging the breakwater. This, since survival mode design is of paramount importance when building floating breakwaters. It is no coincidence that SF Marina's rugged floating breakwaters enjoy a worldwide recognition.

SF Marina delivers a complete range of floating concrete breakwaters with widths from 3 meters to 10 meters. Our design team will assist you in designing the correct breakwater configuration for your location as well as engineering a reliable and cost efficient anchoring plan for your breakwater.

A floating breakwater, although much cheaper than a fixed one and much more environmentally friendly is still a vast investment. It needs to have a well-defined life cycle cost. SF Marina breakwaters are designed for lowest possible maintenance cost, with easily accessible inspection points, easy to replace connector wires and stainless females and bolts.



SF BW 400, USA



Brewer, USA



SF 400, Sweden



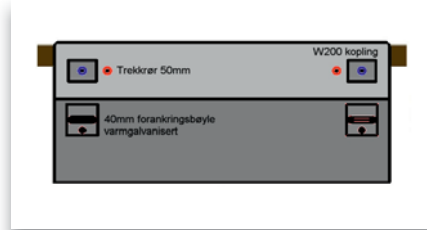
SF BW 400, Norway



SF BW 300, Concrete Fingers, Iceland

CONCRETE PONTOONS

SF Marina offers a wide and versatile range of concrete pontoons. Pontoon widths range between 2,4 and 10 meters. Freeboards range from 50cm to 100 cm. Almost without exception any length can be custom made, any angle can be manufactured and any configuration can be built. Utility ducts can be customized to any need, large or small. The SF Marina concrete pontoons have a low center of gravity, which allows for installations also where swells and waves are predicted to be somewhat more severe.



Thick cover layers of strong, high-quality concrete protect the reinforcement, delivering the longest lifetime of all steel-reinforced concrete pontoons on the market today. Concrete pontoons will deliver an esthetic, clean, uncluttered and safe mooring for all marina guests in all weathers. All concrete pontoons will attenuate waves.

All concrete marina pontoons are fitted with a pressure treated wood fender bolted onto the concrete body using marine grade stainless steel bolts into stainless females, adding 250 mm of width to the concrete width of the pontoons.

Anchoring points for any concrete pontoon can be either eyes or anchoring wells when chain/rope and anchor is to be used for anchoring. If pile anchoring is to be used, cast in tracks for attachment of pile guides alternatively internal pile guide recesses are cast in.

Stainless steel females can easily be cast in for any auxiliary equipment such as flag posts, safety equipment or bollards.

In many cases the concrete pontoons are decked with various materials ranging from exotic wood to plastic composites.

THE X-LINE RANGE

In the X-line pontoon range conventional steel reinforcement has been replaced with lava fiber reinforcement.

The new technique allows the X-line concrete pontoons to be built at a very low weight, as there is no need for a certain concrete layer thickness to protect the reinforcement from corrosion. The X-line pontoons present unparalleled transport economics as well as unmatched endurance in corrosive conditions.



Model	Lengths	Width	Freeboard (approx)
SF Basic	10, 15, 20 m	2,4, 3 m	0,45-0,5 m
SF X-line	12 m	2,4, 3 m	0,5 m
SF1000	10, 12, 15, 20, 25 m	2,4, 3, 4, 5, 6, 8 m	0,5 m
SF1200	10, 12, 15, 20, 25 m	3, 4, 5, 6, 8, 10 m	0,65 m
SF1500	10, 12, 15, 20, 25 m	4, 5, 6, 8, 10 m	0,75 m
SF1800	10, 12, 15, 20, 25, 30 m	4, 5, 6, 8, 10 m	1 m

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Angle connection



Sandhamn, Sweden



Korea



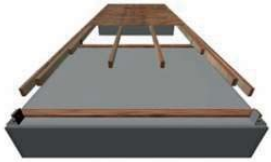
Super Yachts



Wave attenuation

PONTOONS, ASSEMBLE-ON-SITE, AOS

In very sheltered locations, SF Marina promotes the use of AOS marina pontoons for environmental and cost reasons. The AOS pontoons consist of floating elements in between which a continuous deck is mounted.



Assembling pontoons on site allow for cost savings compared to full concrete pontoons, as more flexible transports and less weight need to be transported. AOS pontoons are available in standard widths of 2, 2,4 and 3 meters, in any desired length.

Floats and decks are shipped unassembled and are assembled on site. The floating elements are manufactured using high grade Styrofoam cast in fiber reinforced concrete. The non-metallic fibers ensure longest possible lifetime also in very salty waters as the risk of reinforcement corrosion in the concrete floats is eliminated. On our standard floats various decks can be mounted;

- A) In ProDock, our newest development, ultra-thin concrete decks are used for connecting the floats. Only using the SF Marina patented technology can one cast this thin concrete structures with an impressive lifetime expectancy.
- B) In our Eurodock the concrete floats are attached using galvanized steel frames decked with either pressure treated wood, hardwood or plastic composites.

Model	Lengths	Width	Freeboard (approx)
SF31	Optional	2,0, 2,4, 3,0 m	0,5 m
SF32	Optional	2,0, 2,4, 3,0 m	0,5 m
Eurodock	Optional	2,4, 3,0 m	0,5 m
ProDock	10 m long	2,4 m	0,5 m

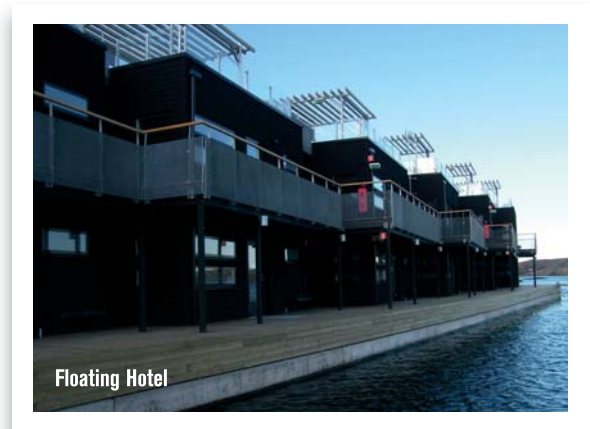
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- C) In our Type 31 and 32 decks built with pressure treated wood on wood frames are bolted onto the concrete floats.

An advantage of the AOS marina pontoons, besides transport economy, is a very good water circulation in the marina, ensuring perfect water quality throughout a marina.

SPECIAL PONTOONS

SF Marina, with its vast experience and innovative nature has a proven track record of building increasingly larger floating concrete structures. Our main production site in Wallhamn, with access to a deep-water quay is perfect for delivering custom built floating structures. We deliver onto geared vessels or onto submersible barges for transport anywhere.



SF Marina can build given geometries at a given freeboard, right off the drawing board. Floating houses, floating hotels, floating restaurants, diving platforms, cruise ship piers, event platforms, fuel stations, ferry landings, fish farms... all of these have already been made.

Challenge SF Marina and SF Marina will deliver - Like we always have!



ProDock



SF 31



Euro dock



Floating house



Fuel pontoon

CONNECTOR SYSTEM

Connecting two or more concrete floats is a complex task with complexity growing almost exponentially with increasing loads. Heavier pontoons, larger waves, bigger boats and higher wind speeds all increase the loads on the connections between the pontoons.

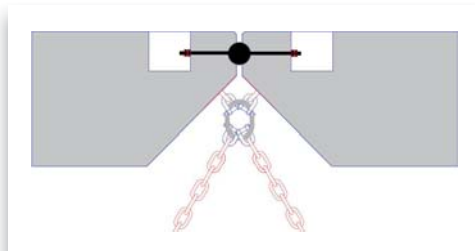
The SF Marina connector range is an integral part of the SF Marina system as they allow for long piers to be built in separate units that can be connected without compromising the structural integrity of the pier.

Each connector is designed to be strong enough to rein the concrete pontoons or floating breakwaters in lateral direction whilst giving structural relief to the same bodies by allowing for horizontal movement, thereby operating like giant hinges.

With a long pier and long waves, the strong restriction to horizontal movement when using normal connectors, requires relief of torsional tension. In the SF Marina connector range the solution to this challenge is to introduce the center connector. This is normally used every three units in a longer pier structure.

Over the years many designs parameters have been embodied in our present connector range design; ease of fitting, ease of replacement, maintenance schedule, spare part minimization to mention a few.

Between the stainless half circle housings of two adjoining pontoons/ breakwaters, a horizontal rubber cylinder is placed. The rubber absorbs shocks and keeps the bodies away from each other during heavy loads.

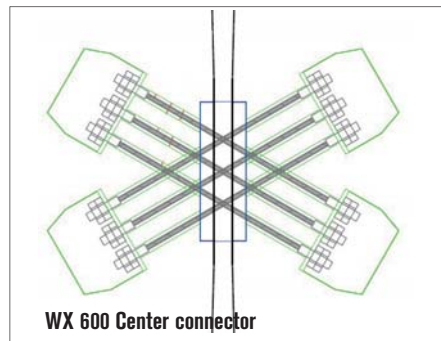


From one connector box on through the rubber cylinder and into the connector box on the next pontoon wires are led and securely fastened with two nuts on each end. Today each wire used in our connector range has corrosion-preventive grease encapsulated inside a shrink rubber housing, prolonging lifetime significantly compared to unprotected wires. After expected lifetime each wire can be replaced one at a time without any need to disconnect the pontoons.



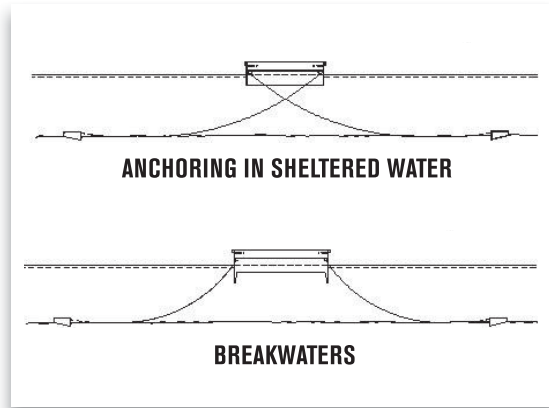
The SF Marina connector range deals with all kinds of different configurations, such as L and T configurations. With the addition of more wires it can deal with larger pontoons and higher loads, still being well within empirically found calculation models. Adopting the empirically developed technique, today any angle can be connected by using the well tested SF Marina connectors.

SF Marina connectors are state-of-the-art concrete pontoon connectors especially designed for connecting the world's strongest concrete pontoons and they are delivering this in thousands of locations around the world every day.



ANCHORING

Anchoring of floating pontoons and breakwaters is the technique of ensuring that an anchored breakwater or concrete pontoon remains in desired place independent of what forces are acting upon it. This is achieved by ensuring that forces acting upon the pontoon are distributed in such a way that the pontoon remains unhurt even in the vilest of conditions.



Seabed securement, chain, rope, Seaflex and the fastening points in the pontoon need all be designed for force distribution.

Anchoring may also be carried out by using screw anchors which are screwed into the seabed resulting in exceptionally strong fastening points to where chain, rope or Seaflex cables can be attached.



In all cases anchoring must be designed for the forces foreseen. Designing a proper anchoring solution for each location is of utmost importance. SF Marina uses commercially available calculation

methods as reference but will without exception adapt hard earned experience from thousands of finalized projects before committing to an anchoring design.

PILE GUIDES

When water level variations are big, one may want secure the floating pontoons using piles driven into the seabed. This allows the pontoons to rise and sink with the water level. The floating breakwaters or pontoons are in these cases secured in place by either external or internal pile guides. Designing suitable pile guides for each project is naturally of utmost importance.



Pile guide



Pile, Cowes, England



Bridge ring



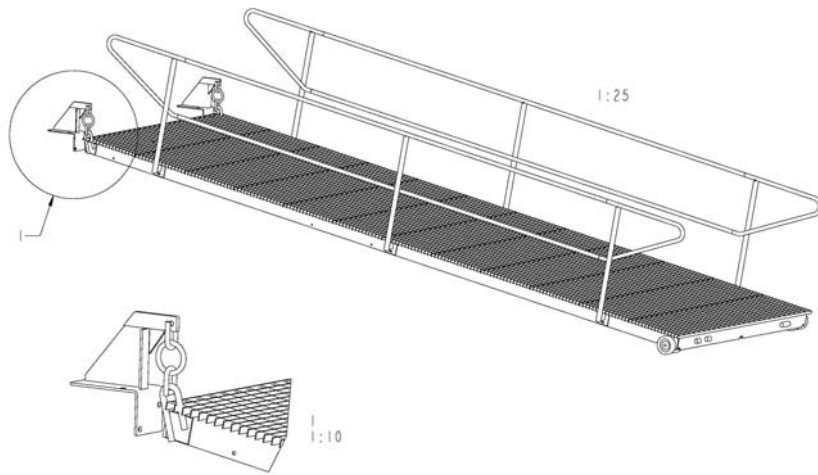
Helical Anchor



Seaflex

GANGWAYS

Gangways connect land to any floating structure. Being a stiff construction, the fastening points need to deal with the motion of a floating structure on one hand, and a fixed land fundament in the other, as well as tidal differences. SF Marina supplies gangways in galvanized steel and in aluminum. Lengths range from 4 meters up to 30 meters. Widths range from 1,2 meters to 10 meters. Custom designs are available.



MOORING FINGERS

Mooring a boat between mooring fingers is indisputably the most convenient and safest mooring choice available. It allows for easy docking with a minimum of crew. The SF Marina range of mooring fingers covers fingers in galvanized steel, aluminum and concrete, in lengths ranging from 4,5 up to 20 meters length. For larger yachts, SF Marina recommends the use of walkable fingers. Concrete fingers are the ultimate solution.



Hamilton, Bermuda



Gangway



Gangway



Concrete Finger



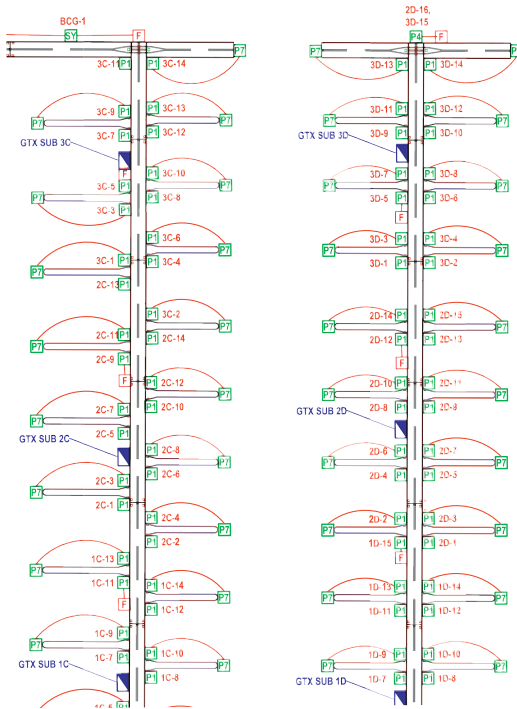
Walkable Finger



Galvanized Finger

UTILITIES

Modern marina life requires a vast amount of utilities to be available by the mooring slips. Designing the pontoons from the very beginning with this in mind allows for efficient solutions to these challenges to be cast in. A proper solution for utilities distribution should be safe, easy to maintain and enhance the beauty of the marina environment.



Ducts for water and electricity

ACCESSORIES

In the final design stages it is important to equip the pontoons with all cast in material. For instance, adding a 5-ton cleat requires the fastenings, always done with stainless steel females, to be sufficiently reinforced to withstand the full 5-ton load. Females for fastening lampposts or other equipment are better cast in than mounted post casting. By choosing SF Marina as your supplier you can benefit from decades of experience on how to design your project and be confident everything is designed to work.



SAFETY EQUIPMENT

On a floating pier there is always a risk of someone falling into the water. When this happens safety equipment such as ladders hooks and buoys placed in the right places significantly reduces the hazard. SF Marina can assist you in finding the correct equipment and designing your project with the safety aspect in mind from the very beginning.



Turkey



USA



Rubber fender



5ton Bollard



Bollards & Cleats

PROJECT MANAGEMENT

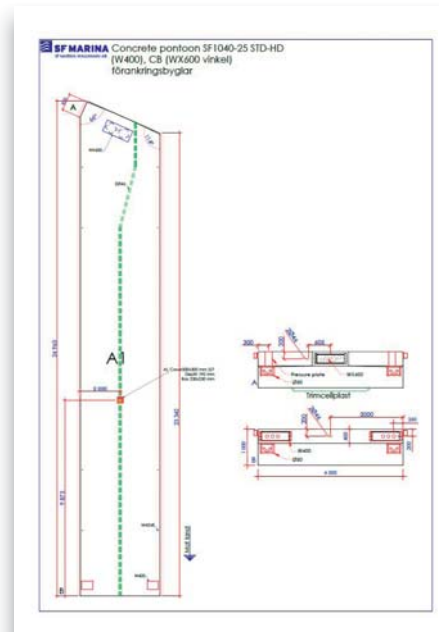
Anywhere in the world, building a floating project is a complex undertaking from the very first idea to project completion.

The SF Marina global network has completed projects in almost every corner of the world.

As project managers we can supply turnkey installations using well-established connections with consulting firms, shipping agents and waterworks specialists.

Starting with sight survey, designing layouts to suit the desired needs, choosing the correct products, anchoring, auxiliary equipment, etc. to transport and installation.

- Request
- Sight Survey
- Marina Layout
- Shop Drawings
- Production
- Transport
- Installation
- Maintenance



Shop Drawing

QUALITY

All concrete floats and breakwaters are with very few exceptions custom built.

SF Marina builds each pontoon according to a shop drawing which is signed by the customer before manufacturing. Production takes place with strict adherence to the SF Marina quality control program.



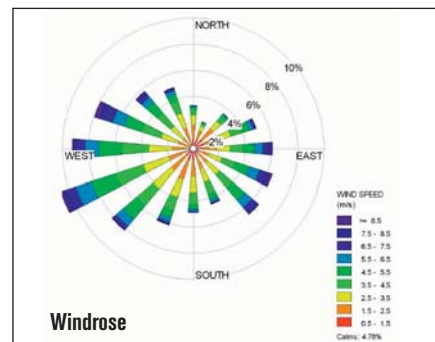
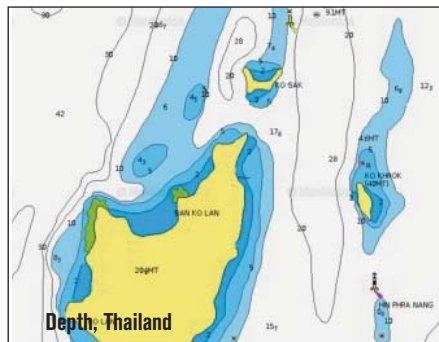
Measuring pontoon freeboard

After casting and fitting of auxiliary equipment, each pontoon is inspected, tested in water and freeboard is checked. After the completion of inspection and testing, the inspector signs the quality certificate, which is delivered with every pontoon.

ENVIROMENT

Floating pontoons are environmentally friendly. Since the pontoons are floating the flow of water is not restricted in the same way as with a fixed pier. A concrete pontoon will add a "hard surface" in the area. A hard surface is good for the environment. The new vegetation under the pontoon is a nursery for small fish. Clams and mussels filter the water. Pontoons introduced in areas with a "dead bottom" has in some cases resulted in new rich life. The pontoons attenuating effect will also help in minimizing shore erosion in exposed locations.

Our marinas are built with pontoons in a modular system. The pontoons have a very long design life. It is very common that the marina layout develops under a 50 year time period. Layout changes can then easily be done with little environmental impact, which is a big advantage compared to a fixed pier.



We have installations all over the world.







SF MARINA



Look for this symbol of quality on the concrete floats you walk on. It is a guarantee that the surface you are walking on is made of the best available materials, to the highest industry standards, that it is professionally installed, and that it has a well-documented history.
A symbol for almost a century of service to the marine community!



www.sfmarina.com

