

THE IMPORTANCE OF A GOOD PAINT JOB

Zander Davidson, director of Davidsons Marine & Industrial Painters, discusses the importance and benefits of maintaining ageing fishing vessels.

The typical lifespan of today's modern vessel is approximately 25-30 years. During this time, the vessel will operate in some of the world's most adverse weather and seas conditions, making it imperative to maintain its facades to ensure it stands the test of time.

Intensive quality control and inspection techniques must be used on a frequent basis. This can range from an annual repaint for vessels still in their prime, to a more comprehensive blasting job for ageing ships. The importance of this is to preserve the ship's coating to avoid rust or abrasion from both an operational and aesthetic perspective.

Davidsons Marine & Industrial Painters (Davidsons) is a family-run marine and industrial painting specialist located in the North-east of Scotland. Since its establishment in 1976, the firm has worked on many high specification shipping projects and thousands of vessels that have ventured around the globe have been through the Davidsons marine facilities.

SHIP LIFTING

Using a variety of blasting and coating techniques across its facilities in Peterhead, Fraserburgh and Macduff, Davidsons operates through a close-knit team of highly skilled and experienced workers, including a fully certified NACE inspector.

The family-run firm has both indoor and outdoor ship lifting facilities, with its largest indoor

facility accommodating vessels up to 44 metres in length, 25.2 metres high and up to a weight of 2000 tonnes. Without the constraints of weather, the indoor facility is advantageous due to the reduction in vessel downtime, resulting in cost efficiency.

SHORT-TERM SOLUTIONS

Typically, a vessel that is in its prime should be given an annual repaint to maintain its exterior and to avoid more damaging abrasion occurring. Preparation for vessel painting is a fundamental part to this process to ensure the ship's coating lasts until its next annual repaint job. The pre-paint phase will include a high-pressure wash and steam clean to leave the vessel grease free with a clean surface for touching up the paintwork. Any rusty areas and coating breakdown will be mechanically diced and two spot coats of epoxy primer will be applied. A full two-coat paint system is then applied to the topsides and the superstructure of the vessel and an anti-fouling system applied to the underwater area.

BACK TO BASICS

Ageing ships, typically older than 15 years, will require a tougher cleaning process in order to strip out any contaminants from the ship's surface that have built up over the years. Blasting is a technique that uses various materials to strip imperfections, paint, rust and any other impurities from the ship's exterior. It is an important step in surface coating preparation for ageing ships, as



Pressure washing before lifting out.

it cleans and creates a smooth surface that will hold the protective coating. Blasting offers additional economic advantages because it cleans surfaces quicker and more efficiently than the traditional techniques.

Dry grit blasting, for example, is a means of cleaning steel structures by blowing an abrasive media against the steel using compressed air, or mechanical means to propel the grit. Some of the common materials used for blasting are steel grit, steel shots, expendable, glass beads (bead blasting), olivine and garnet.

A contemporary blasting method also offered by Davidsons is Ultra High Pressure (UHP) water blasting. This removes all old coatings from hulls and superstructures back to bare steel and is an environmentally friendly alternative to sand blasting or grit blasting.

During the blasting process, it is important to keep temperatures and relative humidity levels low using climate control to help eliminate excess moisture that could hinder both the protective coatings application and the drying process. Temperature and humidity control is particularly vital when preparing metal surfaces, as the bare metals exposure to the environment makes it susceptible to corrosion.

PROTECTING AGAINST THE HARSHTEST ENVIRONMENTS

After the blasting process is complete, metal spraying, including hot zinc, can be applied and is ideally suited for vessels travelling in harsh marine environments. A protective coating of zinc in molten particles is flame sprayed onto clean prepared surfaces using a zincing gun, providing an effective and resilient barrier to corrosion and steel work.



Prepping the surface before painting.

Insulation is also important for fishing vessels to achieve temperature control in warmer environments. Foam injection insulation is a specialised service Davidsons provides and involves the injection of closed cell foam insulation between the vessel's fish room linings and hull sides to minimise heat transfer from outside the vessel. This technique is fast becoming the most widely used for the insulation of cold storage areas on fishing vessels and helps to achieve superior temperature control and preservation of the catch.

THE FINISHING TOUCHES

Applying a protective coating is the final step to the blasting and painting process. Polyurea is a specialist application used by Davidsons that cures within seconds and can be put into service within minutes. Once applied, it leaves a rubber/plastic finish. It is beneficial to the marine industry as it is maintenance free, easily cleaned, corrosion resistant and meets all health and hygiene requirements.

For fishing vessels, Polyurea can be used for the lining of the fish holds and fish handling areas, and due to its chemical and oil resistance, it can also be used as tank lining.

Davidsons also offer fibreglass application for vessels with fish rooms. Fibreglass is a lightweight and extremely strong and robust material that eliminates odours caused by deteriorating timber linings, leaving extremely durable and hygienic surfaces. Fish room refurbishment can also be completed by removing old linings and replacing with foam injected insulation to fill in the cavities. Afterwards, a fibreglass application is applied on to the internal linings of the fish room. In addition to this, Davidsons can provide specialised fish tank coatings, certified for the carrying of foodstuffs.

CASE STUDY - VICTORIA MAY

The Victoria May was designed and built by Macduff Shipyards Ltd in 2011. The 24m long vessel has the distinction of being the first twin rig prawn freezer trawler to be built in Britain.

Davidsons was contracted by Mfv Victoria May, to hydroblast and coat the trawler at its facility in Peterhead. Upon entering the ship lift, the bottom and topsides of the Victoria May were hydroblasted to clean and prepare the surface for coating. The coating process that Davidsons



Applying the top coat.

delivered was as follows:

Topsides:

- Hot zinc sprayed and one coat of epoxy sealer applied
- Stripe coat and one coat of epoxy highbuild applied
- Stripe coat and one coat of polyurethane topcoat applied
- Second coat of polyurethane applied

Bottom:

- Two coats of epoxy sealer applied
- Stripe coat and one coat of epoxy tie coat applied
- Two coats of antifouling applied

Upon completion of this project, Barry Lauder of Mfv Victoria May, said: "I recently had my vessel Victoria May, water blasted and painted by Davidsons and from start to finish, I didn't have to worry about a thing. The firm took professional care of my vessel from inside and outside of the ship lift - the service was first class.

"When we came back to the vessel ready to sail, everything was tidy and the paint job was perfect. I also have full confidence that if I need Davidsons back to touch up anything, it would be dealt with professionally and without any

delay or problem."

Davidsons Marine & Industrial Painters is a family-run business specialising in marine and industrial painting. Formed in 1976 by Zander Davidson, the business has grown from strength to strength. The firm has over 35 years' experience in the ship painting industry with a highly skilled and competent workforce, including a fully certified NACE inspector. Its facilities stretch across Peterhead, Fraserburgh and Macduff, offering a range of marine services including steam cleaning, water and grit blasting, fibre glass application and specialist plastic coatings.



The finished vessel emerges from the paint shed.

DAVIDSONS SHIP PAINTERS

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ATLANTIC ROSE S7 AND ROSE OF SHARON S70



MARINE AND INDUSTRIAL PAINTERS SINCE 1976

SERVICES PROVIDED

Hydrojetting Specialists - Grit Blasting - Hot Zinc Spraying - High Pressure Cleaning
Foam Injection Insulation - Fish room Refurbishment - Specialist plastic coatings

FACILITIES/LOCATIONS

Peterhead, Fraserburgh, Macduff - Covered shiplift for vessels upto 40m