Client
The client performs complex ship and submarine asset management and repairs

Location
Naval Dockyard in the South West of England

Featured Product Range:

VENTEX® Ventilation Solutions

RAVEX® Fume Control

Controlling welding fume and grinding dust during a major refurbishment of an Amphibious Assault Ship

Project Overview

This project was based on one of the Royal Navy's Albion class amphibious assault ships. The ship lands Royal Marines and their equipment, including trucks and tanks, ashore by air and sea.

Challenge

The ship was due to undergo a major refurbishment which would include a lot of welding, cutting and grinding activities. Whilst the customer had actively put control measures in place to minimise exposure to hazardous fume and dust, and to ensure adequate air quality inside the work zones, they were struggling to achieve velocities required in accordance with HSG258, particularly for grinding dust. The initial extraction system in place was large in size and had to be placed outside of the vessel. It was not able to maintain a high enough pressure over long duct runs to extract from machinery spaces and tanks deep inside the vessel.

The customer identified that a more specialist and high pressure extraction system was required in order to ensure the safety of everyone nearby. The new solution would ideally be situated inside the ship, with the ability to reach multiple extraction locations. They reached out to RVT Group, a long-standing provider of specialist hazard control solutions across the dockyard, for a bespoke solution.

Solution

RAVEX® Wandafilta Plus Kits were installed with VENTEX® 200S HP Centrifugal fans and twin VENTEX® 300M centrifugal fans to extract dust and fume at the source.

We filtered to H14 (HEPA) standard which captures an impressive 99.99% of 0.3-micrometer air particles. This means that out of 1,000,000 particles, only 10 particles will not be captured. The extraction hoses (which included both 100mm and 80mm diameter in size), ran up to a distance of 60m, and were fitted with suitable capture hoods for the task at hand. The capture hoods were fitted with pressure indicators so that the customer could visually check airflows before starting the task - for added peace of mind.

All of the extraction systems on site were commissioned, demonstrating that it is performing in accordance with RVT Group's design, and meeting the customer's requirements. The customer chose to have an RVT Group technician attend the site on a regular basis to check the system, and replace any filters as and when needed, to ensure that the system was performing at full capacity and productivity all times.

- RVT has provided a 'turnkey' service for the naval base for a number of years. RVT visit the site to survey the hazard control requirements, design an effective system, supply and install the solution, and collect the equipment at the end of the project.
- VENTEX® 300M Centrifugal fans extract dangerous fumes in line with COSHH regulations.
- The RAVEX® Wandafilta Plus Extraction & Filtration Kit has 3 stages of filter media, up to HEPA filtration.
- The VENTEX® Centrifugal Fan 200S-HP is particularly suited for extracting dust and fume, as well as providing fresh air supply where needed.
- RVT Group's range of fans are specifically designed to maintain high pressure over long duct runs, ideal for extracting hazards from deep inside vessels.

RVT has a long-standing relationship with the UK's largest naval ship manufacturers and over the years we have developed bespoke hazard control solutions to meet their niche requirements.

We provide mechanical control measures which protect long-term health of those maintaining and repairing ships. We operate a scalable team, based on site every day, reacting fast to enable maintenance work to take place in the high-pressure environment.

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