



Cofferdam – Engineering Design & Fabrication

UMC have established a specialist engineering niche for cofferdam design, fabrication, installation and execution of works as a direct development and support service to Offshore Vessel Operators. We have been designing and installing cofferdams of varying types and sizes for 30+ years, from small simple cofferdams to allow minor crack repairs on hulls, to giant 18m diameter 120 tonne cofferdams to fit under jack up rigs and allow repairs to spudcans. Cofferdams are frequently required to execute weld repairs to rig and vessel hulls where wet welding techniques cannot be used, or dry-docking facilities are not readily available. Our Engineering and Consultancy team use the latest CAD software, 3D modelling and Finite Element Analysis programmes to design and analyse a vast range of equipment and systems to support the projects.

Cofferdam types

Cofferdams fall into three main categories:

- Fully enclosed 'limpet' type cofferdams used for a variety of repairs where an area needs to be sealed off from the sea on all sides, for subsequent internal intervention to the hull or equipment
- Man entry cofferdams used where engineers or technicians need to have external dry access to the hull or equipment
- Open bottom or hyperbaric cofferdams used where a dry space is required to carry out a repair below water, but that can only be accessed by a trained diver

Applications

Our team of naval architects and marine engineers can design a cofferdam system to suit any application across the marine industry. Although typically manufactured from steel we also offer aluminium cofferdams and even ones created using flexible membrane technology.

Applications for cofferdams are as wide and varied as can be imagined and typically include:

- Cofferdam systems for shipping, civil and offshore applications
- Repair schemes for damaged vessels
- Hull aperture blanks for sea chests and discharges
- Replacement of stern seals
- Repair and replacement of tunnel thrusters
- Bespoke tooling and equipment for rudder/stabiliser replacement
- Specialist underwater equipment to carry out hull cleaning and propeller polishing
- Kort-nozzle propeller maintenance
- Propeller shaft seal change outs
- Hydrophone maintenance
- Steelwork replacement
- Anode replacement
- Permanent class approved hull insert plate repairs
- Repairs to concrete structures (i.e. docks, jetties etc.)

Above: Above water-line hull repair cofferdam (first). Man entry cofferdam (second). Ship hull cofferdam (third). Man entry cofferdam for Bilge Keel repairs (fourth).

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