

inspection & repair of marine structures



ROYAL HASKONING

thinking in
all dimensions

inspection & repair of marine structures



Clockwise from top left: Refurbishment of bulk handling jetty, Guinea, West Africa; Accident repairs, Malaysia; Detailed inspection of cracked concrete jetty beams; Inspection of cracking to corrosion damaged concrete jetty deck.

extending the life of valuable assets

The maritime structures that port operators and asset managers value the most are all under high exposure to physical, biological and chemical attack. Installations like quay walls, jetties, RoRo berths, marinas, sea walls and breakwaters exist in a destructive environment that doesn't encourage long-term survival.

But a successful port management process can extend the working life of structures by many decades. Royal Haskoning, through Posford Haskoning Ltd., and Haskoning Nederland B.V., can help you prolong the life of your installations.

Bringing damaged, corroded and weathered marine structures back to full working order is a specialist business. Our engineers and project managers know this – we've been doing it for years, building up unrivalled experience all over the world.

By commissioning Royal Haskoning to inspect and test your marine structures, you can achieve long-term savings, yet keep down time to a minimum. Options for remedial and upgrade works can be identified and costed, while maintenance and repair programmes can be established.



Clockwise from top left: Ground anchoring to stabilise quay, UK; Installing limpet dam to inspect and repair steel sheet piles below water level; Modification and repair of quay capping beam, Middle East; Replacement pile head ready for jacking into place; Accidental structural damage to concrete pile head, Malaysia.

inspect, repair & maintain your structures

Our expertise covers:

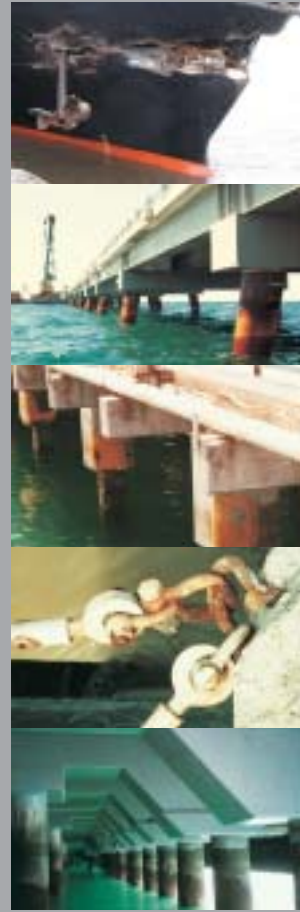
- Condition surveys including the inspection and testing of damaged and deteriorated structures, above and below water.
- Ship collision and storm damage reports including liaison with loss adjusters following accidental damage.
- Corrosion protection schemes and the assessment of structures displaying symptoms of accelerated low water corrosion.
- Whole life analysis including maintenance and repair schemes.
- Identification, design and costing of repair options for superstructures and substructures to ensure durability and overall stability.
- Contract documentation including design and construct solutions.
- Site supervision of contractors for initial testing, and later to implement works involving techniques such as guniting, pile jackets, grouting, limpet dams, temporary jacking, ground anchoring, underwater working, cathodic protection and protective coatings.

We look forward to bringing our expertise to your structures and ensuring that cost effective, appropriate technology is used for their repair and upkeep.

Royal Haskoning is an independent, worldwide operating consultancy that has its origins in a firm established in 1881 in the Netherlands. The consultancy now has a staff of 3,000 who together combine a wide range of knowledge and experience. Rooted in a technical background, our consultancy services focus on the broad field of the interaction between people and their environment, in the fields of spatial development, infrastructure & transport, architecture & building, mechanical & electrical services, environment, water, coastal & rivers and maritime.

We are committed to working enthusiastically with our clients to achieve sustainable solutions in an increasingly complex society. The expertise and experience of our professionals in a variety of disciplines allow us to

consider all technical, logistical, architectural, legal, organisational, social, environmental and economic aspects of your project, in order to develop sustainable and practical solutions. Royal Haskoning has subsidiaries and partners throughout the world. Through our branch and project offices in Europe and overseas, we have access to all major international markets. This way, Royal Haskoning offers multidisciplinary and integrated services locally, based on experience built globally. With our personal service in consultancy, we contribute effectively to the successful planning, design, implementation, commissioning and operation of projects and programmes and enhance our clients' work with added value.



Royal Haskoning, through Posford Haskoning Ltd., and Haskoning Nederland B.V. is a member of:

- ACE The Association of Consulting Engineers
- BCCB British Consultants & Construction Bureau
- PIANC International Navigation Association
- ICHCA International Cargo Handling Co-ordination Association
- CIRIA Construction Industry Research Information Association British Section
- ICID International Commission on Irrigation and Drainage
- IEMA Institute of Environmental and Management Assessment
- FIDIC International Federation of Consulting Engineers

Royal Haskoning, through Posford Haskoning Ltd., or Haskoning Nederland B.V. is registered with: African Development Bank, Asian Development Bank, Caribbean Development Bank, European Bank for Reconstruction and Development, European Development Fund, International Development Bank, Islamic Development Bank, Kuwait Fund for Arab Economic Development, Department for International Development, United Nations Development Programme World Bank, and many other Funds and National Authorities.

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