DESIGN OF WELDED CONNECTIONS FOR MARINE APPLICATIONS

1 - Day Seminar with International Expert

Auckland on 9th July 2018

Join us for this exclusive full day seminar with world renowned expert University of Michigan Prof. Pingsha Dong, Naval Architecture and Marine Engineering. Prof. Dong is the inventor of an advanced Master S-N Curve Fatigue Assessment Method adopted by the 2007 ASME Div 2 and API 579/ASME FFS-1 Codes and Standards which is mandated by over 50 countries worldwide. And, over the past 10 years, has taught courses in fatigue design, fracture control, residual stress/distortion control around the globe.

OVERVIEW

With the advent of novel and high speed craft types the need for good structural detail has never been more important. Most structural failures that occur in the service life of a craft result from fatigue. A considerable amount of published data exists for more conventional steel vessels, however, little such data exists for the novel or high speed craft constructed from aluminum alloy.

The Lloyds Register Rules for Special Service Craft and the Germanischer Lloyds Rule for Light Speed Craft are the two most common standards that are applied in New Zealand.

The largest segment of the design and building industry in New Zealand is aluminum vessel under 24m, most often planning craft which are going further and faster these days. The vessels must meet a standard. In the case of a deficient design, this can lead to expensive rework and poor commercial outcomes for the yards and designers.

This seminar will cover how to specify structural connections in order to achieve performance in marine applications and resistance to structural failures including fatigue. References will be made to the commonly used design procedures such as LR, GL and DNV and case studies.
WHO SHOULD ATTEND?

Naval architects, designers of yachts and boats, ship surveyors, ship maintenance engineers, inspection personnel and boat builders and fabricators.

CPD

This is a RINA accredited CPD course, attendees will receive a RINA certificate of attendance.

PROGRAM

9:00am Welcome and Introduction

9:15am Part 1: Basic principles for design of welded connections for marine applications

- Typical failure modes in welded joints
- Fillet weld sizing
- Standard in-situ weld strength testing procedures
- Fatigue failure and stress concentration
- Design analysis methods: limitations and outlook
- Examples

10.30am Morning tea

10.45am Part 1 continued

12.15pm Lunch

1.00pm Part 2 Structural basis of DCW

- Single sided versus double sided fillet welds
- Weld end (start/stop) effects
- Effects of weld defects
- Intersecting weld effects
- Examples

2.30pm Afternoon tea

2.45pm Part 2 continued

- Interpretation of Rules in LR’s Notice (2014) and related requirements
  - Triaxial stress and intersecting welds
  - Use of scallops
  - Weld end wrap-around or turn-around
  - DCW length requirements

- Best practices (dos and don'ts) - Process/procedure implementation and accuracy control
  - Importance of “interim product” definition
  - “Shrinkage zone” concept
  - Managing and creating symmetry
  - Weld sequencing
  - Self-jigging/fixturing
  - Examples
5.00pm Q&A and end of seminar

VENUE
HERA House, 17-19 Gladding Place, Auckland
9th July 2018

REGISTRATION FEES:
HERA Ordinary members and RINA: $375
Non Members: $450

REGISTRATION
Complete the details below and return to HERA via fax on +64 9 262 2856 or scan and email to admin@hera.org.nz.
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