CSA Standard W47.1: 2019

Welding for the Marine Industry

Shipbuilding Technology Forum 2019
Ottawa

CWB | cwbgroup

CWB Group: Excellence in Welding

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A New Future: CSA W47.1M Marine Annex

SHIP BUILDERS

DESIGN ENGINEERS

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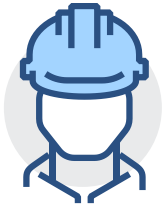
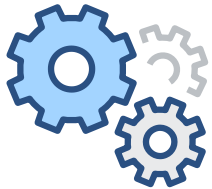
CLASS SOCIETIES



WELDING SUPERVISORS



WELDING ENGINEERS

A New Future: CSA W47.1M Marine Annex

Currently

Certification of CSA W47.1 is recognized **partially** only for **some** marine applications

A New Reality with a New Annex

1. Developed to **meet and exceed** International Association of Class Societies Unified Rules Requirements for welding (IACS UR-W)
2. Will be mandatory when Canadian Standards Association (CSA) W47.1 is selected for use as a governing standard for ship construction & repair
3. Supplements the requirements for certification listed in W47.1

CSA W47.1M – Responding and Innovating

Background: The Change Imperative

- Historically certification to CSA W47.1 has been recognized partially only for some marine applications
- Consequently, manufacturers experience inefficiencies due to:
  1. Increased testing requirements
  2. Increased manufacturing costs
  3. Fabrication delays
  4. Quality inconsistencies in applying the rules

In Response

- Technical Committee of W47.1 formed a Technical Group tasked with developing the new Annex “M”

CSA W47.1M – High Industry Engagement

Committee Members Representing:

- Canadian Coast Guard Vessel Procurement
- Integrated Technical Services and Maritime Civil Infrastructures
- Department of National Defence Headquarters and Fleet Maintenance Facilities Cape Scott and Cape Breton
- Chantier Davie Canada
- Newdock St. John's Dockyard
- Irving Shipbuilding
- Seaspan Shipyards
- Transport Canada Marine Safety and Security
- Canadian Welding Bureau

47.1M
Welding Procedures and Qualification

Procedure Prequalification

- Does not permit prequalification for procedures

Mandatory Testing

- Same mandatory testing as IACS UR; prequalification concept will not be employed

Matrix for Joint Testing

- A similar matrix for the joints required to be tested

CSA W47.1M
Welding Procedures and their Qualification

Thickness Ranges

- Similar qualification thickness ranges: butt welds, by throat for fillet welds

Energy Values

- Specifies energy values required for CVN testing based on the type of material and the type of process

Position Qualification/Heat

- Qualification in one position qualifies only for that position. All position requires testing for the highest and lowest heat input

CSA W47.1M
Welding Personnel Qualification (1 of 2)

Classifications	▪ Welders will have same classifications in line with W47.1 but followed by letter “M”; e.g. S-M; FW-M, WT-M
Welding Positions	▪ Same logic for progression through welding positions as required in W47.1; e.g. F, H, V and O
Standard Test Assembly	▪ Allows only option 1 and 3 of Figure 8 for the standard test assembly

CSA W47.1M
Welding Personnel Qualification (2 of 2)

Matrix for Joints	Similar matrix for the joints required to be tested
Check Testing Frequency	Check testing required every 2 years for welders
Retesting	No retest is required for welding operators unless a new qualification is required
Transferability	Although qualifications are transferable a new retest may be required by the class society's surveyor

CSA W47.1M
Helping Shipbuilders & Class Societies

+ Quality

+ Productivity

+ Cost Savings

+ Efficiency

Advantages of CSA W47.1M

- No new certification is required for all certified clients
- No new exams required for the existing supervisors and engineers
- A single certification process can be used on all projects
- Reduced testing of procedures
- Led by CWB's Marine Team of marine applications specialists, providing expertise and technical support

CSA W47.1 Marine Annex

Made in Canada
by
Canadian Fabricators
following
Canadian Standards
funded by the
Canadian Government

CWB Group: Excellence in Welding

If you have questions, or would like to register to receive timely updates, email

marineannexupdates@cwbgroup.org

- CWB Group Office of Public Safety
- 1-800-844-6790 x 717

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