SEMME3156

Installing marine sheet metal components and assemblies

Overview

This standard identifies the competences you need to install marine sheet metal components and assemblies, in accordance with approved procedures. You will be required to select the appropriate tools and equipment to use, based on the operations to be performed and the components or assemblies to be installed. The marine sheet metal assemblies to be installed will include items such as stowage racks, galley assemblies, toilet (head)/shower cubicles, kit lockers, pyrotechnic lockers, galley storage boxes, bunk spaces, venting and ducting units, and panels and cladding units. The installation activities will include making all necessary checks and adjustments to ensure that the sub-assemblies and components are correctly positioned and aligned, have appropriate working clearances and that they function as per the specification.

This standard does not involve maintenance/repair type activities, such as removal and replacement of existing equipment.

Your responsibilities will require you to comply with organisational policy and procedures for the marine sheet metal installation activities undertaken and to report any problems with these activities that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to ensure that all tools, equipment and materials used in the installation are correctly accounted for on completion of the activities. You will need to complete all necessary job/task documentation accurately and legibly, to work with a minimum of supervision and to take personal responsibility for your own actions and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide a good understanding of your work and will provide an informed approach to applying installation techniques and procedures for marine sheet metal components and assemblies. You will understand the equipment being installed and its application and will know about the relevant components, fastening and securing devices, in adequate depth to provide a sound basis for carrying out the activities, correcting faults and ensuring that the completed installation is to the required specification.

You will understand the safety precautions required when carrying out the installation operations. You will be required to demonstrate safe working practices throughout and will understand the responsibility you owe to yourself and others in the workplace.

Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. follow all relevant drawings and specifications for the installation being carried out
3. use the correct tools and equipment for the installation operations and check that they are in a safe and usable condition
4. install, position and secure the assemblies and components in accordance with the specification
5. ensure that all necessary connections to the installation are complete
6. deal promptly and effectively with problems within your control and report those that cannot be solved
7. check that the installation is complete and that all components are free from damage
8. complete relevant documentation in line with organisational procedures

Knowledge and understanding

You need to know and understand:

1. the specific safety practices and procedures that you need to observe when installing marine sheet metalwork components and assemblies (including any specific legislation, regulations/codes of practice for the activities, equipment or materials)
2. the health and safety requirements of the work area in which you are carrying out the installation activities and the responsibility these requirements place on you
3. how to recognise and deal with emergencies and the procedures to be followed (such as methods of safely evacuating and closing down of compartments in the case of fire or other major incident, first aid, fire fighting and resuscitation of personnel)
4. the hazards associated with installing marine sheet metal components or assemblies and with the tools and equipment used and how they can be minimised
5. the protective equipment that you need to use for both personal protection (PPE) and protection of the structure/vessel/craft
6. the interpretation of drawings, standards, quality control procedures and specifications used for the installation (including symbols and conventions to appropriate BS or ISO standards) in relation to work undertaken
7. how to carry out currency/issue checks of the specifications you are working with
8. the sheet metal components or assemblies to be installed and their function within the particular system
9. the various mechanical fasteners that will be used and their method of installation (including threaded fasteners and special securing devices)
10. the importance of using the specified fasteners for the particular installation and why you must not substitute others
11. what the torque loading requirements are on the fasteners and what to do if these loadings are exceeded or not achieved
12. the quality control procedures to be followed during the installation operations
13. procedures for ensuring that you have the correct tools, equipment, components and fasteners for the activities
14. the techniques used to position, align, adjust and secure the sub-assemblies/components to the structure/vessel/craft, to avoid damage to sub-assemblies/components and structures
15. methods of lifting, handling and supporting the components/equipment during

the installation activities

16. the use of seals, sealant, adhesives and anti-electrolysis barriers and the precautions to be taken

17.

the procedure for the safe disposal of waste materials

18.

how to conduct any necessary checks to ensure the system integrity, functionality, accuracy and quality of the installation

19. how to recognise installation defects (such as cosmetic appearance, misalignment, ineffective fasteners, foreign object damage or contamination)

20. the importance of ensuring that the completed installation is free from dirt, swarf and damage

21. the tools and equipment used in the installation activities and their calibration/care and control procedures

22. the problems that can occur with the installation operations and how these can be overcome

23. the recording documentation to be completed for the activities undertaken and where appropriate, the importance of marking and identifying specific pieces of work in relation to the documentation

24. the extent of your own responsibility and whom you should report to if you have problems that you cannot resolve

Scope/range related to performance criteria

1.

Carry out all of the following during the marine sheet metalwork installation activities:

1.1 use the correct issue of installation drawings and specifications
1.2 use copies of relevant COSHH sheets and risk assessment documentation
1.3 check the calibration dates of tools to be used
1.4 obtain clearance to work on the structure/vessel/craft, if required and observe the access and safety procedures
1.5 return all tools and equipment to the correct location on completion of the installation activities
1.6 leave the work area in a safe condition and to the prescribed category of cleanliness

2.

Install marine sheet metalwork components or assemblies, which include four of the following:

2.1 frames
2.2 panels
2.3 kit lockers
2.4 tanks/reservoirs
2.5 sectional trunking
2.6 bunk spaces
2.7 vent ducting/trunking
2.8 toilet (head)/cubicles
2.9 pyrotechnic lockers
2.10 guards
2.11 shower cubicles
2.12 protective covers/cladding
2.13 hoods
2.14 galley equipment
2.15 work surfaces
2.16 stowage racks
2.17 stores
2.18 other specific marine assembly

3.

Install marine sheet metalwork components or assemblies in four of the following areas:

3.1 machinery spaces
3.2 engine room
3.3 bridge/control room
3.4 manoeuvring room
3.5 galleys/pantries

3.6 passageways
3.7 toilets (heads)/showers
3.8 stores
3.9 refrigeration
3.10 medical/first aid facilities
3.11 weapons stowage compartments
3.12 accommodation/recreation facilities
3.13 ward room/senior and junior ratings messes
3.14 other specific marine area

4.

Apply all of the following installation methods and techniques:

4.1 positioning and aligning
4.2 earth bonding (where applicable)
4.3 functional checks
4.4 torque loading
4.5 setting working clearance
4.6 manual handling
4.7 applying sealant/adhesives
4.8 mounting/hanging techniques (hard/resilient where applicable)

5.

Make five of the following types of mechanical securing connections:

5.1 threaded fasteners
5.2 torque load bolts
5.3 locking and securing devices
5.4 quick-release fasteners
5.5 screws
5.6 rivets
5.7 other specific connector

6.

Produce installations which comply with one of the following standards:

6.1 BS or ISO standards and procedures
6.2 customer (contractual) standards and requirements
6.3 company standards and procedures
6.4 specific system requirements
6.5 recognised compliance agency/body's standards
6.6 other accepted international standards

7.

Complete the relevant documentation in line with organisational procedures, to include one from the following and pass it to the appropriate people:

7.1 build records
7.2 log cards
7.3 job cards
7.4 quality documentation
7.5 self verification record
7.6 test forms

7.7 requisition for components/materials
7.8 other specific recording method

Behaviours

Behaviours:

You will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as:

- strong work ethic
- positive attitude
- team player
- dependability
- responsibility
- honesty
- integrity
- motivation
- commitment

SEMME3156

Installing marine sheet metal components and assemblies

Developed by	Enginuity
Version Number	3
Date Approved	31 Mar 2019
Indicative Review Date	29 Apr 2021
Validity	Current
Status	Original
Originating Organisation	Semta
Original URN	SEMME3156
Relevant Occupations	Marine Engineering Trades
Suite	Marine Engineering Suite 3
Keywords	Engineering; marine; install; sheet metal; components; assemblies; stowage; galley; toilets; lockers