

Carrying out manual splicing of wire and fibre ropes

Overview

This standard identifies the competences you need to produce splices in wire and fibre ropes manually, in accordance with approved procedures. You will be required to produce a range of different splices in wire and fibre ropes, in accordance with specifications or instructions.

You will be expected to obtain any necessary equipment and to check that it is in a safe and usable condition. You will need to set the rope up in a suitable workholding device (where appropriate) and prepare the rope by cutting it correctly, un-laying the strands and applying whippings. You will also be expected to produce a tight splice, with the relevant number of tucks and locking tucks, consistent with the type of splice or the intended use.

Your responsibilities will require you to comply with organisational policy and procedures for the splicing activities undertaken and to report any problems with these activities, or with the ropes or equipment used that you cannot personally resolve, to the relevant authority. You will be expected to work to instructions, with a minimum of supervision, taking full responsibility for your own actions and for the quality of the work that you carry out.

Your underpinning knowledge will be sufficient to provide a sound basis for your work and will provide an informed approach to applying manual splicing procedures. You will have an understanding of the techniques and methods of splicing and their application and you will have an adequate understanding of the properties of wire and fibre ropes, to provide a sound basis for carrying out the splicing activity and ensuring that the completed splice is to the required specification.

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

Note All spliced ropes will have to be tested by the appropriate authorities, in accordance with their operating environment and intended use.

Carrying out manual splicing of wire and fibre ropes

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. obtain the required equipment and materials and check that they are in a safe and usable condition
3. follow instructions and any relevant specifications to produce the splice
4. produce the required splice using appropriate methods and techniques
5. check that the finished splice meets the requirements and make any necessary adjustments
6. complete relevant documentation in accordance with organisational requirements
7. deal promptly and effectively with problems within your control and report those that cannot be solved
8. ensure that all the ropes that have been spliced are tested by the appropriate authorities before use

Carrying out manual splicing of wire and fibre ropes

Knowledge and understanding

You need to know and understand:

1. the specific safety precautions to be taken when carrying out splicing operations with regard to health and safety legislation, appropriate personal protective equipment (PPE), safe working practices and procedures and the safety of yourself and others working in the vicinity
2. the risks and hazards associated with carrying out splicing operations, and how they can be minimised
3. the correct handling and storage of wire and fibre ropes
4. drawings, specifications and work instructions relating to splicing
5. types of splice, their purpose and intended use (to include short splice, long splice, back splice and eye splices)
6. tests to be applied to particular splices
7. the limitations and constraints associated with the respective types of splice
8. breaking strain and safe working load (SWL) or working load limit (WLL) of wire and fibre ropes and how this is affected by splicing
9. the tools, equipment and consumables used in the splicing operations
10. cutting and unlaying wire and fibre rope
11. the type and purpose of whippings in the splicing operation
12. workholding devices used when splicing
13. the sequence, number and type of tucks to be made
14. completing a splice by whipping or worming, parcelling and serving; their purpose and under what circumstances they would be used
15. checking all aspects of a completed splice
16. why tool/equipment control is critical and what to do if a tool or piece of equipment is unaccounted for on completion of the activities
17. the requirements regarding testing the completed spliced ropes and the appropriate authority to carry out these tests (taking into account to the environment in which they are to be used and the use/load they are intended to lift/move)
18. the extent of your own responsibility and whom you should report to if you have problems that you cannot resolve

Carrying out manual splicing of wire and fibre ropes

Scope/range related to performance criteria

1. Prepare for the splicing activities, to include carrying out all of the following:
 1. obtain the specification for the splice (including type of splice, size of eye (if applicable), safe working load (SWL) or working load limit (WLL) required, number of tucks)
 2. obtain and check the necessary equipment (including workholding device, if applicable)
 3. obtain the wire or fibre rope, as specified
 4. cut the wire or fibre rope to the required length
2. Prepare the wire and fibre rope for splicing, to include carrying out all of the following:
 1. whip the rope at the extent to which it is to be unlaid
 2. unlaid and whip the ends of unlaid strands
 3. whip the rope in way of the first tuck (wire rope, eye splice)
 4. secure wire rope in the workholding device (where applicable)
 5. for eye splice (where applicable), whip the thimble in place
3. Carry out two of the following splices in wire ropes:
 1. eye splice
 2. short splice
 3. long splice
 4. other specific splice
4. Carry out two of the following splices in fibre rope:
 1. eye splice in multi-plait fibre rope
 2. short splice in fibre rope
 3. short or butt splice in multi-plait fibre rope
 4. long splice in fibre rope
 5. eye splice in fibre rope
 6. back splice in fibre rope
 7. other specific splice
5. Check the completed splice against specification, for all of the following:
 1. number and type of tucks
 2. dimensions (including size of eye)
 3. sequence in which strands have been spliced
 4. thimbles are secure in eye (where applicable)

Carrying out manual splicing of wire and fibre ropes

5. tightness of the splice
 6. SWL/WLL is adequate for the intended purpose
 7. deformation and kinks
6. Complete a splice by one of the following methods:
1. whipping
 2. worming, parcelling and serving
7. Complete the appropriate splicing documentation, to include all of the following:
1. the records and registers relating to the splicing activity
 2. other specific recording documentation

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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

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