

Carry out prestressing activities in concrete manufacturing operations

Overview

What is this standard about?

This standard states the skills, knowledge and understanding required to demonstrate competence to carry out work activities to prestress concrete products. Care and attention must be paid to positioning components and to the prestressing conditions to obtain a product of the required quality. Adopting safe working practices and adherence to organisational procedures is an essential requirement.

Who is this standard for?

This standard is applicable to operatives involved in prestressing concrete products.

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Performance criteria

You must be able to:

1. carry out work activities in accordance with **approved policies, procedures and practices** select, check and use personal protection equipment (PPE) for the work activity
2. select tools and equipment for the work activity, and check they are clean and in good repair
3. prepare the casting bed
4. identify and interpret the given information relating to the planned work activity
5. handle, move and position the **support materials**
6. couple the **support materials**
7. select and use resources for the retention of **support materials**
8. join **support materials**
9. crop **support materials**
10. position and secure safety restraints, barrels and wedges, or button ends
11. check that the process is ready for prestressing to commence
12. check the guards, warning systems and safety devices are in place and operational and that the prestressing hazardous area is clear
13. apply a preload and inspect **support materials** and anchorage
14. apply full prestressing load
15. place the concrete into the casting area
16. monitor the application of the processes
17. carry out de-tensioning processes
18. complete and shut down the work activity
19. remove, clean, check and store tools and equipment
20. ensure work environment is left clean and tidy
21. report the application of the processes

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Knowledge and understanding

You need to know and understand:

1. the **approved policies, procedures and practices** for the work activity
2. your personal responsibilities for health and safety and working safely
3. how to select, check and use personal protection equipment (PPE) for the work activity
4. the hazards and risks associated with the work activity and the control measures in place
5. the checks that should be made on tools, equipment and the work area before work commences
6. the purpose and process of prestressing
7. how to handle and move **support materials**
8. the various **support materials** patterns than can be applied in your area of work
9. the **support materials** guides and pullers for varying patterns for the product design
10. the various methods for pulling the **support materials** from the coil or source and the importance of understanding directional issues
11. why it is important to make continual visual checks on the coil or source of **support materials**
12. the positioning of the **support materials** safety restraints
13. why the positioning is important and what could go wrong if safety restraints are not applied
14. the common issues and faults associated with the fitting and use of barrels and wedges
15. the process for fitting and using barrels and wedges
16. the methods used for separation of defective components
17. when grip release spray may be required, how it is used and what precautions need to be taken
18. the process to fit button ends, the potential faults and issues with them and how they can be overcome
19. why grinding equipment should not be used on button ends
20. the methods used for cropping **support materials**
21. the approved process for jointing **support materials** and the issues to be aware of when carrying out this activity
22. the different types of anchors used at your work site
23. the process of de-tensioning
24. post prestressing checks
25. the dangers associated with and the preventative measures to be taken with **support materials** breakages, de tensioning, wire/strand slippage,

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- and button end breakages
- 26. the requirements relating to the calibration of tools and equipment used
- 27. the process of post operational cleaning and maintenance
- 28. the principles and effects of bond slip and the organisations post manufacture tolerances
- 29. the product storage, waste disposal and recycling procedures in relation to the work activities undertaken
- 30. the reporting and recording of processes, issues and faults
- 31. the importance of near miss reporting and the benefits to the individual and organisation in doing this

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Scope/range

- 1. approved policies, procedures and practices:** legislative, organisational, operational, accident or emergency, health and safety, first aid, and environmental as appropriate to the work site and work activity
- 2. support materials:** wire, strands, or other structural support materials, singly or in combination, as appropriate to the product and production process

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