

PRE-STRESSED AND POST- TENSIONED CONCRETE

Facilitator Guide



Timings	Facilitator Notes	Resources
15 mins	Discuss learning outcome and assessment criteria	Slide 1 Slide 2
	DISCUSS <i>Refer Student Notes – Pre-Stressed Concrete – General</i> ASK Ask participants if they have had any experience with pre-stressed concrete. EXPLAIN Explain that Pre-stressed concrete is a method of giving additional strength to concrete by tensioning steel within and can be done either before or after the concrete has been poured. Explain that steel is required to give the structure tensile strength. It is set up inside formwork then concrete is poured around it.	Slide 3
	DISCUSS <i>Refer Student Notes – Compressive Strength Added</i> Discuss compressive stresses	Slide 4
	DISCUSS <i>Refer Student Notes – Post-Tensioning Pre-Stressed Concrete Elements</i> Discuss the post-tensioning pre-stressed concrete elements including: • Purpose • Background • Preplanning and coordination • Responsibilities ASK Ask participants for idea on the preplanning and coordination process: what would be involved within each stage?	Slide 5 Slide 6 Slide 7
	DISCUSS	Slide 8

	<i>Refer Student Notes – Specific Issues</i> Discuss specific issues including: • Working platforms • Formwork • Provisions for stressing • Pre-stressing safety considerations • Uncoiling, cutting and placing strands • Pushing strands into ducts • Concrete pour • Barricades • Stressing operations • Grouting	
	DISCUSS <i>Refer Student Notes – Pre-Tensioned Concrete</i> Discuss pre-tensioned concrete including the following: • Safety • Personnel • Tensioning of tendons • Pre-tensioning – associated works	Slide 9
	DISCUSS <i>Refer Student Notes – Materials</i> <i>Refer Student Notes – Tensioning Equipment</i> Discuss materials including: • Supply of tendons • Traceability • Handling, storage and fabrication of materials	Slide 10 Slide 11 Slide 12
	DISCUSS <i>Refer Student Notes – Safety</i>	Slide 13
	DISCUSS <i>Refer Student Notes – Tensioning of tendons</i> Discuss tensioning of tendons including: • General • Stressing bed and anchorages • Placing of tendons • Tensioning force required • Tensioning procedure • Tendon failure • Transfer of pre-stress	Slide 14

	• Permissible pull-In of tendons • Method of tensioning • Cutting of tendons • Data to be recorded	
--	--	--

Version	Date	Author
1	30/06/2018	WHSQ