

Project: Iron Bridge SMPEI Process Plant Construction – Dry Plant		FMG Document No: 662NSC2002-2000-IT-QA-0007		Document No: C292-QU-ITP-0007		Revision: 2		
Project No: C292		Contract No: 662NSC2002-0000-CO-CP-0002		Prepared By: F.Fernandez		Approved By: W. Bradshaw		
Scope: Grouting (Cementitious & Epoxy)						Workpack / Area:		
Control Point	H = Hold Point (Work must not proceed to the next step until this activity is completed and a signature obtained); W = Witness Point (Notify to permit witness, work can proceed if witness does not attend at agreed time); S = Surveillance (Monitor operations / surveillance of activity); R = Review Documentation (Sign to record review);							
Resp. Person	QC - Quality Inspector; PE - Project Engineer; CQR - Client Quality Representative; CI - Coating Inspector; PM - Project Manager; SS - Site Supervisor; DC - Dimension Checker; WE - Welding Engineer; PP - Pre-processing Personnel							
ACT No.	DESCRIPTION OF ACTIVITY	PROCEDURE / SPECIFICATION REFERENCE	ACCEPTANCE CRITERIA	VERIFYING DOCUMENTATION	RESP. PERSON	CONTROL POINT		REMARKS
						CIVMEC	CLIENT	
1 Submission / Approval of Documentation								
1.1	Submit Grouting Inspection & Test Plan for FMG Approval	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0001	662NSC2002-2000-SW-CN-0002_4 Cl. 10.3 100-ST-QA-0001 Cl. 2.1	Approved ITP	QC / PE	H / R	H / R	
1.2	Verify Acceptance of Grout Material	100-SP-ST-0002_0 IFC Drawings	100-SP-ST-0002_0 Cl. 9.6.4 Table 6: Approved Grout Materials IFC Drawings	Batch Certificates	QC / PE	H / R	H / R	
2 Materials Receipt, Inspection & Storage								
2.1	Inspect Supplied Grouting Materials on Receipt for the Following: • Conformance to Specification and Drawings; • Expiry Date of Materials; • Damaged Packaging; and • Review Material Certification. NOTE: Non-Conforming Materials Shall be Segregated, Quarantined and an OS&D Report Completed.	100-SP-ST-0002_0 IFC Drawings	100-SP-ST-0002_0 Cl. 9.6.4 IFC Drawings	Delivery Dockets Batch Certificates OS&D Report	SS / QC / PE	S / R	S	
2.2	Ensure Grouting Materials are Stored in Accordance with Manufacturer's Data Sheets	100-SP-ST-0002_0 Manufacturer's Recommendations	100-SP-ST-0002_0 Cl. 9.6.4 Manufacturer's Recommendations	Signed ITP	SS / QC / PE	S / R	S	
2.3	Compressive Test cubes x 3 taken for each supplied grout batch - testing completed prior to use at - 7, 14, 21 days with specified compressive strength achieved by 21 days. NOTE: Where compressive strength results are not achieved, the batch shall be immediately quarantined for re-testing and consultation with supplier	100-SP-ST-0002_0 Manufacturer's Recommendations	100-SP-ST-0002_0 Cl. 9.6.4 Table 6: Approved Grout Materials Cementitious Grout - Steel : 60MPa Epoxy Grout - 2B Hold Downs: >95MPa Epoxy Grout - Mechanical: >90 MPa Manufacturer's Recommendations Relevant Technical Queries	Grout Manufacturer Batch Certificates NATA Endorsed Compressive Test Records	QC / PE	H / R	R	
3 Pre-Placement								
3.1	Verify Foundation Acceptance and Release for Grouting	100-SP-ST-0002_0	100-SP-ST-0002_0 Cl. 9.6.1	Signed ITP	SS	H / R	W / R	
3.2	Confirm grout batch has been tested and complies with requirements in sec 2.3	100-SP-ST-0002_0 Manufacturer's Recommendations	Per ITP Sec 2.3	NATA Endorsed Compression Test Records	SS	H / R	H / R	
3.3	Inspect Concrete Surfaces to be Grouted for the Following: • Free From Laitance, Grit, OIL, Dust, Foreign Substances or Loosened Aggregate Immediately Prior to Grouting; • Suitably Scabbled to Produce a Roughened Level Surface with 5mm Nominal Protrusions of Embedded Course Aggregate; and • Hold Down Bolt Pockets Cleaned.	100-SP-ST-0002_0 Manufacturer's Recommendations	100-SP-ST-0002_0 Cl. 9.6.2 Manufacturer's Recommendations	FMG C1-ST-ITR-004 GROUTING	SS	W	W	

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3.4	Inspect Formwork Erected to Facilitate Grout Placement	100-SP-ST-0002_0	100-SP-ST-0002_0 Cl. 9.6	FMG C1-ST-ITR-004 GROUTING	SS	W	W	
3.5	Verify Concrete Surfaces to be Grouted Have Been Soaked for 12 Hours Prior to Grout Pour (Cementitious Grout Only) or completely dry (Epoxy Grout)	100-SP-ST-0002_0	100-SP-ST-0002_0 Cl. 9.6.2	FMG C1-ST-ITR-004 GROUTING	SS	W	W	
4	Mixing Placement & Sampling							
4.1	Verify Temperature of Grout and Grout Contact Elements Meet Manufacturer's Requirements using IR Temp gun - Grouting shall not carried out When the Contact Elements Have a Temperature in Excess of 35°C.	100-SP-ST-0002_0 Manufacturer's Recommendations	100-SP-ST-0002_0 Cl. 9.6.3 Manufacturer's Recommendations	Nata Calibration Certificate - IR Temp Gun FMG C1-ST-ITR-004 GROUTING	SS	S	S	
4.2	Grout is mixed In accordance with Manufacturer's Recommendations - Cementitious Sika 212: mix ratio- flowable - 3.7l water per 20kg bag Place 70-80% of required water into container & slowly add grout whilst mixing, remaining water added to obtain desired consistency - mix 3-5 minutes at low speed (500rpm max) Epoxy Conbextra EP65 Plus: Pour Hardener into base using slow speed mixer & helical paddle. Mix at 350-400rpm for 2-3 minutes until uniform mix obtained. Megapoxy 206: Stir part A first, then slowly pour part B into Part A and mix for minimum 3 minutes at 200rpm or lower until uniform mix obtained	Manufacturer's Recommendations / TDS	Mixed as per manufacturer's Recommendations	FMG C1-ST-ITR-004 GROUTING	SS	S/W	S/W	Witness for Epoxy Grout
4.4	Ensure grout is placed Continuously in Accordance with Manufacturer's Recommendations	Manufacturer's Recommendations / TDS	Manufacturer's Recommendations	FMG C1-ST-ITR-004 GROUTING	SS	S	S	
4.5	Finish and Cure Grouted Area as Follows: Cementitious Grout • Remove Formwork when Grouted Area Allows; • Steel Trowel to 45° Chamfer; and • Cure with Soaked Hessian Cloth for 24 Hours or Approved Curing Agent. Epoxy Grout • Cure Grout in Accordance with Manufacturer's Recommendations; • Remove Formwork when Grouted Area is Cured; and • Dress Grout Arris by Grinding to a 6mm Chamfer.	100-SP-ST-0002_0 Manufacturer's Recommendations	100-SP-ST-0002_0 Cl. 9.6.2 Manufacturer's Recommendations	FMG C1-ST-ITR-004 GROUTING	SS	S	S	
5	Final Inspection							
5.1	Complete Final Inspection of Grouted Area	100-SP-ST-0002_0 IFC Drawings	100-SP-ST-0002_0 Cl. 9.6 IFC Drawings	Signed ITP Punchlist	SS / PE	H/R	H/R	

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6	Finalise Documentation							
6.1	Complete Construction Verification & Punchlisting	662NSC2002-2000-SW-CN-0002_4 100-SP-QA-0001_1	662NSC2002-2000-SW-CN-0002_4 Cl. 9.1 100-SP-QA-0001_1 Cl. 2.8	Approved Construction Verification Documentation Signed-off Punchlist	QC / PE	R	R	

SIGNATURE IDENTIFICATION REGISTER

NO	NAME	SIGNATURE	POSITION TITLE	ORGANISATION
1				
2				
3				
4				
5				
6				