

Project: Iron Bridge SMPEI Process Plant Construction – Dry Plant		FMG Document No: 662NSC2002-2000-IT-QA-0008		Document No: C292-QU-ITP-0008		Revision: 1		
Project No: C292		Contract No: 662NSC2002-0000-CO-CP-0002		Prepared By: P Thomson		Approved By: W. Bradshaw		
Scope: Piping Installation - HDPE				System / Section:				
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 Piping Installation Test Plan for FMG Approval	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002	662NSC2002-2000-SW-CN-0002_4 Cl. 10.3 100-ST-QA-0002 Cl. 2.1	Approved ITP	QC / PE	H / R	H / R	
1.2	Submit HDPE Welding Procedure to FMG for approval	100-SP-PI-0001_Rev 4	100-SP-PI-0001_Rev 4 Cl. 8.9 AS 2033 ISO 21307	Approved HDPE Welding Procedure	QC / PE	H / R	R	
1.3	Submit HDPE Welder Qualification Records (WQR) to FMG for Approval	100-SP-PI-0001_Rev 4	100-SP-PI-0001_Rev 4 Cl. 8.9 AS 2033 ISO 21307	Approved WQR	QC / PE	H / R	R	
2 Calibration								
2.1	Ensure All Inspection, Measuring and Testing Equipment is Calibrated Including: • Hydrostatic Testing Equipment; and • Torque Wrenches. • HDPE Butt Fusion Welding Machine (Pressure Gauge); • Heater Plate;	100-SP-PI-0001_Rev 4 Project Quality Management Plan C283-QU-PLN-0001	100-SP-PI-0001_Rev 4 Cl. 9.11 Pressure Gauges Calibrated within 60 Days AS 2566	NATA Calibration Certificates	QC / PE	R	R	
3 Materials Receipt, Inspection & Storage								
3.1	Inspect Supplied and Fabricated Materials Including Pipe, Fittings, Valves, Fasteners, Gaskets and Other Pipe Related Materials for the Following: • Identification/Markings; • End Caps on Valve Ends and Pipe; • Conformance to Specification and Drawings; • Damaged or Missing Components; and • Review Material Certification and Material Traceability Records. NOTE: Non-Conforming Materials Shall be Segregated, Quarantined and an OS&D Report Completed.	100-SP-PI-0001_Rev 4 Project Quality Management Plan C292-QU-PLN-0001 Civmec Material Storage, Handling & Traceability Work Instruction 10-QU-QC-WIN-0010	100-SP-PI-0001_Rev 4 Cl. 8.9	Delivery Dockets Material Certificates OS&D Report	SS / QC / PE	S / R	S	
4 Excavation & Trench Preparation (If applicable)								
4.1	Refer to Underground Services Installation ITP	C292-QU-ITP-0001	C292-QU-ITP-0001	C292-QU-ITP-0001	SS / PE	H / R	R	

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5	HDPE Pipe Welding (Butt Fusion)							
5.1	Destructive Testing of Test Samples Conducted by an Independent, Accredited Laboratory.	100-SP-PI-0001_Rev 4 ISO 21307 ASTM F2634-10	100-SP-PI-0001_Rev 4 Cl. 8.9 ISO 21307 ASTM F2634-10	NATA Destructive Testing Report	QC / SS	S / R	S / R	
5.2	Undertake HDPE Butt Fusion Production Welding in Accordance with Written Joint Procedure and Maintain Weld Record Sheet	100-SP-PI-0001_Rev 4 Weld Parameter Cards ISO 21307	100-SP-PI-0001_Rev 4 Cl. 8.9 ISO 21307	HDPE Weld Record Sheet C292-QU-FRM-0001	QC / SS	S / R	S / R	
5.3	Complete Visual Inspection of Completed Weld	100-SP-PI-0001_Rev 4 ISO 21307	100-SP-PI-0001_Rev 4 Cl. 8.9 ISO 21307	Weld Record Sheet Weld Traceability Map	QC	H	S / R	
7	HDPE Pipe Installation							
7.1	Installation of Piping, Valves and Other Associated Materials in Accordance with Drawings and Specifications Completing the Following: <ul style="list-style-type: none"> • Check Pipe Internal Cleanliness is Free From Obstructions, Dirt and Other Foreign Matter; • Check Flange Alignment, Orientation and Level; • Check Pipe Elevations, Plumb and Strains; • Check Bolting & Gasket Size, Type and Quantity; • Check Flanged Connections are Torqued in Accordance with Piping Class Data Sheets; • Check Valve and Instrument Orientation, Type and Nameplate; • Check Vents and Drains Plugged; and • Check Pipe Support Position and Type. 	100-SP-PI-0001_Rev 4 AS 2566.2 AS 2033 AS 4130 IFC Drawings	100-SP-PI-0001_Rev 4 Cl. 8.2, 8.9, 10 & 11 AS 2566.2 AS 2033 AS 4130 IFC Drawings	FMG C1-PHTR-004 PIPING - POLYETHYLENE FMG C1-PHTR-005 BELOW GROUND PIPING (if applicable)	SS	S / R	S / R	
7.2	Complete Pipeline Identification Banding (where applicable)	100-SP-PI-0001_Rev 4 Cl. 8.2 AS 1345 AS 2700	100-SP-PI-0001_Rev 4 Cl. 8.2 AS 1345 AS 2700	FMG C1-PHTR-004 PIPING - POLYETHYLENE	SS	S / R	S / R	
8	Hydrostatic Testing							
8.1	Submit Test Pack for Portion of Piping to be Hydrostatically Tested and Complete Field Inspections: <ul style="list-style-type: none"> • Field Inspection Records Completed up to Hydrostatic Testing; • Piping adequately supported prior to filling • All Welds are Exposed; • All Flanged Connections Verified; • Area is Barricaded and Appropriately Signed; • Required Valves / Instruments / Equipment Removed or Isolated from Test; • Appropriate High Point Vents are Included in the System; and • System can be Safely Drained. 	100-SP-PI-0001_Rev 4 AS 2033 AS2419 (Firewater Systems) Hydrotesting Procedure C292-QU-PRO-0003	100-SP-PI-0001_Rev 4 Cl. 9.11 AS 2033 AS2419 (Firewater Systems)	Hydrostatic Test Pack inc marked up Master PID's FMG C1-PHTR-008 PIPING - SERVICE/ LEAK/ PRESSURE TEST	SS / PE	H	H	

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8.2	Undertake Hydrostatic Pressure Test in Accordance with Hydrostatic Testing Procedure	100-SP-PI-0001_Rev 4 AS 4041 AS2419 (Firewater Systems) Hydrotesting Procedure C292-QU-PRO-0003	100-SP-PI-0001_Rev 4 Cl. 9.11 AS 4041 AS2419 (Firewater Systems)	FMG C1-PH-TR-008 PIPING - SERVICE/ LEAK/ PRESSURE TEST Hydrotest Report	SS / PE	H	H	
8.3	Complete line flushing and drying in accordance with Hydrostatic Testing Procedure (On Applicable Lines Only)	100-SP-PI-0001_Rev 4 AS 4041 AS2419 (Firewater Systems)	100-SP-PI-0001_Rev 4 Cl. 9.11 AS 4041 AS2419 (Firewater Systems)	FMG C1-PH-TR-007 PIPING - FLUSHING/PURGING Hydrotest Report	SS / PE	H	H	
9	Backfill of Excavation (if applicable)							
9.1	Refer to Underground Services Installation ITP	C292-QU-ITP-0001	C292-QU-ITP-0001	C292-QU-ITP-0001	SS / PE	R	R	
10	Final Inspection							
10.1	Complete Reinstatement Following Hydrostatic Testing and Conduct Final Inspection of Installed Pipe	100-SP-PI-0001_Rev 4 AS 4041 AS2419 (Firewater Systems) IFC Drawings	100-SP-PI-0001_Rev 4 Cl. 8.2, 8.4, 9.12 & 11 AS 4041 AS2419 (Firewater Systems) IFC Drawings	Signed ITP Punchlist	SS / PE	H	H	
11	Finalise Documentation							
11.1	Redline Drawings Verified for Relevant Portion of Piping	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002	662NSC2002-2000-SW-CN-0002_4 Cl. 10.2 100-ST-QA-0002 Cl. 2.8	Redline Drawings	QC / PE	R	R	
11.2	Complete Construction Verification & Punchlisting	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002	662NSC2002-2000-SW-CN-0002_4 Cl. 9.1 100-ST-QA-0002 Cl. 9.2	Approved Construction Verification Documentation Signed-off Punchlist	QC / PE	H/R	H/R	

SIGNATURE IDENTIFICATION REGISTER

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