



GRAYSON ENGINEERING (2015) LTD

INSPECTION & TEST PLAN

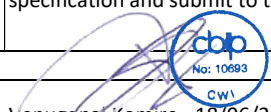
LEGEND		Date : 18/06/2025	CLIENT: Hawkins Construction Ltd				Job Number : 5600		Construction Category : CC3		
W = Witness Point		P = Perform H = Hold Point	PROJECT: AIAL Domestic Processor - Pier				Revision : 5, Issued for Construction				
M = Monitor A = Approved		C = Client GEL = Grayson Eng Ltd	WORK SCOPE: Shop Drawings, Material, Fabrication Paint, Delivery and Installation								
RWC = Responsible Welding Coordinator		R = Review SGS=Third Party Inspections					Approval by :		Date:		
Revision Records											
Revision Number		Revision Description				Revised by	Date	Comments			
B		Issued ITP rev B to address client's comments, and implement changes from Rev A.				GK	16/12/2024				
C		Issued ITP Rev C to address client's comment from Rev B & RFI#GEL-QA-5600-003				GK	28/02/2025				
D		Issued ITP Revision D to Incorporate client feedback from Revision C				GK	20/03/2025				
1		Added "R" item 4.8 for Client and SGS, and issued for Construction with Revision 1				GK	24/03/2024				
2		Added a note to item 1.8, of use non ACRS Mills, the route of compliance with SCNZ:111 for other accreditations.				GK	14/05/2025				
3		Added item 1.8 & 1.9 to cover Third Party Accredited Mills with route of compliance using SCNZ:111				GK	28/05/2025				
4		Clarity provided to item 1.8 to cover Third Party Accredited Mills with route of compliance using SCNZ:111				GK	10/06/2025				
5		Updated as per SGS request: Item 1.6: Removed 'R' for SGS since it is already covered in Items 1.7 to 1.9 (MTC's review).And Items 3.1, 3.2, 3.3, 4.6, 4.7: Changed SGS role from 'R' to 'P'.				GK	18/06/2025				
ITEM	Inspection/Activity		Acceptance Criteria		Performed	Records	Stage/Frequency	INSPECTION BY			Comments
								GEL	C	SGS	
1.0	Pre - Start Fabrication										
1.1	Technical review		AS/NZS 5131 : 2016 - Section 4.5.2, ISO 3434.2 & Client Specification		GEL	Technical Review	Post Award	P	R	R	Prior to Construction
1.2	Shop Drawings		AS/NZS 5131 :2016 Section 4.4 & Structural Specification : 6.7		Cadtec/GEL	Approved Drawings	Prior to Fabrication	H	R	R	Please refer to Section 6.7 of the Structural Spec to ensure that all items are covered.
1.3	Quality Management System		ISO 9001 & AS/NZS 3834 Certification is Current		GEL	QMS Records	Awarded	R			
1.4	SFC Certification to be current and minimum CC3 as per the Construction Category, if any non SFC Certified, Sub-Contractors are Proposed to be used, approval required from the design engineer and principal.		AS/NZS 5131 & Structural Specification :6.4.2.3		GEL	GEL QMS records	SFC Certificates	R			
1.5	Document Approval - Submission of Quality Plan, ITP and Procedures for Client Approval		AS/NZS5131:2016, Client Specification		GEL	QP and ITP Transmittal Records	Post Award and Prior to Works Execution	P	R	R	
1.6	Material Procurement		AS/NZS 5131 : 2016 Section 4.6 & AS/NZS 3404.1:2009 Section 2, Structural Specification:6.8.3		GEL	Purchase Orders	All Purchase Orders	P	R		All the Materials Substitution Shall be Approved Via RFI, 4 Weeks prior to Steel Procurement

ITEM	Inspection/Activity	Acceptance Criteria	Performed	Records	Stage/Frequency	INSPECTION BY			Comments
						GEL	C	SGS	
1.7	Steel Supply (Third Party Certified Mill - ACRS ONLY) Steel grade to Comply With relevant Standards as required by Specification and NZS 3404.1	Structural Specification:6.4.2.6 & 6.8 NZS1163 Grade 350/400 NZS1594 Grade 300 NZS3678 Grade 350 L15 NZS 3679.1 Grade 300/300 SO NZS 3679.2 Grade 350 L15 / SO NZS4600 G450 Z275 NZS 4671 Grade 300E	GEL Independent third Party	Steel Mill Certificates	Each Delivery Received Third Party Audits Quarterly	R	R	R	Material Certificates Included in Manufacturer Data Reports
1.8	Steel Supply (Third Party Certified Mill - Non-ACRS) Steel grade to Comply With relevant Standards as required by Specification and NZS 3404.1	Structural Specification:6.4.2.6 & 6.8 NZS1163 Grade 350/400 NZS1594 Grade 300 NZS3678 Grade 350 L15 NZS 3679.1 Grade 300/300 SO NZS 3679.2 Grade 350 L15 / SO NZS4600 G450 Z275 NZS 4671 Grade 300E Report: SCNZ 111:2018	GEL Independent third Party	Steel Mill Certificates Third Party Product Certification	Each Delivery Received Third Party Audits Quarterly	R	R	R	Material Certificates Included in Manufacturer Data Reports Where steel is to be procured from a non-ACRS mill, the compliance pathway is to be requested for each Mill using TSUBs referencing the guidance provided in Report SCNZ 111:2018. Ref. Figure 3 for CC3 pathway
1.9	Steel Supply (Non-Third Party Certified Mill Certs) (Requirements additional to 1.7 above) 100% Independent Third Party Material Chemical and Mechanical Verification testing undertaken in NZ	Third Party Test Reports Chemical, Mechanical and Weldability comparison Testing Accordance with SCNZ 111:2018 Standard Sample & Test Plan	NZ based IANZ Accredited Laboratory Independent third Party	Steel Mill Certificates All third party Test Certificates	Each Delivery Received - 100% of all heat numbers Third Party Audits Quarterly	P/R/A	R	R	Material Certificates & Third Party Test Reports, Included in Manufacturer Data Reports
1.10	Material Delivery Confirm As per the Purchase order Confirm Heat Numbers as per the delivery docket Confirm all Steel marked with Heat number & PO number prior to Unloading truck	AS/NZS5131:2016 ISO 3834.2 GEL Procedures	GEL	Delivery Notes Steel Mill Certificates	Each Delivery Received	H			

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2.0	Start Fabrication & Welding								
2.1	Material Traceability Heat Number of each item is traceable by part Mark on assembly shop drawing reference back to nesting/cutting schedule Confirm Heat Numbers as per the delivery docket confirm all steel marked with Heat Number, and PO number if possible Prior to Unloading Truck.	AS/NZS5131:2016 - 4.7 ISO 3834.2 GEL Procedures	GEL	Assembly shop drawings and nesting/cutting schedules	All Parts	P		R	
2.2	Fabrication - Material Cutting, Shaping, Holing, and Corners, accordance with the Construction Standard, Unless otherwise specified in the drawings/Specification - Supervised by Workshop Supervisors	AS/NZS 3404.1:2009 Section 3 AS/NZS 5131:2016 Section 6 Approved Fabrication drawings	GEL	GEL Procedures & Approved Drawings	Every Fabricated Item	P		R	
2.3	Fabrication Inspection - performed by Workshop Supervisor/RWC	AS/NZS 5131:2016 Section 13.5	GEL	QC Fabrication & Weld Summary Reports	Every Fabricated Item	H		R	
2.4	Fabrication Tolerances : Shall confirm to the construction standard requirements unless specified in the drawings	AS/NZS 5131:2016 Structural Specification : 6.10.2	GEL	Shop Drawings	Every Fabricated Item	H		R	
2.5	Weld Access Holes: Weld Access holes shall be accordance with the Construction Standard left open after welding, and the access hole area shall be cleaned to meet Welding Standards, unless otherwise specified on the drawings/specification or confirmed by the design engineer for closure,	AS/NZS5131:2016 Section 6.7.7 Structural Specification : 6.12.5.2 RFI # GEL-QA-5600-001	GEL	Approved drawings / Structural Specification	All the Access hole members	P	R		Weld Access Holes to be Closed on Category 1 and 2 members and Remain Open on Category 3 and 4 Members, As Per RFI#189(GEL-QA-RFI-5600-001)
2.6	Welding Procedures - Approved Prior to Welding	AS/NZS 5131:2016 Section 7.4.1 AS/NZS 1554.1:2014	GEL Welding Supervisor / Inspector	QC Summary - Welding Procedure Register		P	A	R	
2.7	Welding Plan - Qualified Welding Supervisor/Competent Person	AS/NZS 5131:2016 Section 7 AS/NZS 1554.1:2014 ISO 3834.2 Approved Fabrication drawings	GEL Welding Supervisor	QC Fabrication & Weld Summary Reports	Every Welding Item	P		R	
2.8	Welder Qualifications	AS/NZS 5131:2016 Section 7.4.1 ISO9606.1:2017	GEL Welding Inspector	QC Summary - Welder Qualification Register	All Weld Joints	P	A	R	

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2.9	Welding Traceability to be provided by welders ID Recorded near to the weld joint and on the workshop drawings, this shall then transferred to the welding Fabrication Welding Summary, for submission in the MDR	AS/NZS5131:2016 Section 7.4.2 & Table 7.4 AS/NZS/ISO 3834.2	GEL Workshop/ Welding Supervisor	Fabrication & Weld Summary Reports	All weld Joints	P		R	
2.10	Weld Category : All Weld are category SP(Structural Purpose) Unless Specifically stated on drawings as Category GP	AS/NZS 1554.1:2014 &Structural Spec :6.12.1	GEL Workshop/ Welding Supervisor	Approved Shop Drawings	All	P		R	
2.11	Welding - Clean all Welded Areas, smooth the edges and remove any spatter, AESS - Architecturally exposed structural steel (AESS) Shall confirm to the requirements Construction Standard/Specification	AS/NZS 5131:2016 AESS Structural Specification : 6.15	GEL	Approved Shop Drawings	As per the specification	P	R/A		
3.0	Post weld								
3.1	Visual Scanning : 100% - Category A,B & C, Visual Examination : 100% - Category A, 25% - Category B & C,	AS/NZS 5131 Appendix I Structural Specification :6.12.5 (Table 6.5 and 6.6) AS/NZS 3404.1:2009 Section 8 AS/NZS/ISO 3834.2	Independent third Party	QC Fabrication & Weld Summary & NDT Reports	All Welds	H	R	P	
3.2	Non Visual Examination NDT Requirements , Non Visual Examination in Accordance with AS/NZs 5131 Table I7 and Table I5	AS/NZS 5131:2016 Section 13.6 AS/NZS 3404.1:2009 Section 8 AS/NZS/ISO 3834.2 Structural Specification:6.12.5 (Table 6.5 & 6.6)	Independent third Party	NDT Reports	Category "A" - MPI to 25% (10%) ² of Fillet Welds including 10 of the first 10 joints,	H	R	P	Minimum Hold Times prior to NDT as per AS/NZS 5131:2016, Table 13.6.2.1
	Magnetic Particle Testing (MPI)- AS1171 Ultrasonic test (UT) - AS2207	AS 2207 & AS1171			Category "A" - UT 50% (25%) ² of Butt welds including 10 of the first 10 joints ¹ & Category "B" - UT - 25% (10%) ² of butt welds ¹ including 10 of the first 10 joints.				Where a Welding non - compliance is noted through NDE in addition to reinspection of the weld repair, three additional consecutive joints to be inspected, per AS/NZS3404.1 8.1.14
	Notes: 1 - Ultrasonic Testing on butt welds shall include scanning for lamellar defects on plates in excess of 30mm thick. 2 - Extent of testing may be reduced to the figure in brackets once the welding inspector is satisfied is that the contractor is consistently achieving the weld QA requirements.								
3.3	Weld Defects : All Weld defects revealed by visual or non - visual examination shall be repaired with the requirements of the standard, each weld defect shall be assessed in accordance with the appropriate, clause in the relevant part of the AS/NZS 1554 series,	AS/NZS 5131:2016 AS/NZS 1554.1:2014 Section 5.8 Structural Specification : 6.12.6	GEL	NDE Reports	Any Weld Repair	P/H	R	P	Weld Inspector Report Required

ITEM	Inspection/Activity	Acceptance Criteria	Performed	Records	Stage/Frequency	INSPECTION BY			Comments
						GEL	C	SGS	
4.0	Site Erection								
4.1	Compile Site Delivery Docket/Load List - Load List /delivery Dockets to be maintained, Fabricated components to be delivered to site - Load and Phase wise	GEL Procedures	GEL	Delivery Dockets	All Site Delivered Materials	P/M	R		
4.2	Site Erection - Drawings and Document Revision Review	AS/NZS 5131:2016 Section 11,12 & Appendix F&AS/NZS 3404.1:2009 Sec 4	GEL	IFC Drawings	All Structural Steel	P	R		
4.3	Erection Tolerances	AS/NZS 3404.1:2009 & AS/NZS 5131:2016 Section 12 Structural Specification: 6.13.2	GEL	Site Sign off Reports	All Structural Steel	P	R/A		
4.4	Methodology - Installation and Erections tightening of bolts, tensioning of bolts, and all other required methods	AS/NZS 5131:2016, & GEL Procedures Structural Specification: 6.13.3	GEL	Site Sign off Reports	All Structural Steel	P/R/A	R/A		
4.5	Site Welding - Qualified Welders	AS/NZS 5131:2016 Section 7 AS/NZS 1554.1:2014 ISO 3834.2 Approved drawings	GEL	Welder Qualification Register	All site Welding	P	R	R	
4.6	Site - Visual Scanning : 100% Category A,B & C Visual Examination : 100% Category A, and 25% Category B & C	AS/NZS ISO3834.2 AS/NZS 1554.1:2014 AS/NZS 5131: Section 13.6	Independent third Party	Inspection Reports	All Welds	P/M/R	R	P	
4.7	Site - NDT Testing Non Visual : Magnetic Particle Testing AS1171 Ultrasonic Testing AS2207	AS/NZS 5131:2016 Section 13.6 AS/NZS 3404.1:2009 Section 8 AS/NZS ISO3834.2, AS/NZS 1554.1:2014 AS1171,AS2207 & GEL Procedures Structural Spec:6.12.5 (Table 6.5 & 6.6)	Independent third Party	NDE Reports	Category "A" - MPI to 25% (10%) ² of Fillet Welds including 10 of the first 10 joints, & Category "B" MPI to 10% of Fillet Welds Category "A" - UT 100% (50%) ² of Butt welds ¹ & Category "B" - UT - 25% (10%) ² of butt welds ¹ including 10 of the first 10 joints.	P/M/R	R	P	Minimum Hold Times prior to NDT as per AS/NZS 5131:2016, Table 13.6.2.1 Where a Welding non - compliance is noted through NDE in addition to reinspection of the weld repair, three additional consecutive joints to be inspected, per AS/NZS3404.1 8.1.14
Notes: 1 - Ultrasonic Testing on butt welds shall include scanning for lamellar defects on plates in excess of 30mm thick. 2 - Extent of testing may be reduced to the figure in brackets once the welding inspector is satisfied is that the contractor is consistently achieving the weld QA requirements.									

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4.8	Bolts,Nuts,Fateners and Screws	AS/NZS1252.1 & AS/NZS 5131:2016 Section 5.5 & Structural Spec:6.11.4 & 6.11.4.1&2	GEL	Material Register with Certs &Site Sign off Reports	All the Site connections	P	R	R	for Grade info Please see Structural Spec.
4.9	Bolting Installation	AS/NZS 3404.1:2009 Section 4 & AS/NZS 5131:2016 Section 8 GEL Procedure : OP022	GEL	Site Sign off Reports	Each Member	P	R	R	
4.10	Site Final Inspection	AS/NZS 5131 :2016 & AS/NZS 2312	GEL	QC Site Sign off Reports/Summary	Completion of Each Phase / or As agreed	H	H		
5.0	Documentation								
5.1	Manufacturer Data Records(MDR) - Compile all the quality documentation as required by the specification and submit to the client	AS/NZS5131:2016 Appendix E Structural Specification :6.4.2.5 & 6.5(PS) AS/NZS ISO3834.2	GEL	Manufacturer Dat Reports (MDR)	Completion of Work	P	R		Including PS3 and EPD Information
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Venugopal Komire - 18/06/2025									
Name, Signature & date			Name, Signature & date			Name, Signature & date			
GEL			CLIENT			TPI			