

ITP Flange Replacement SRG-ITP-COV-KWI



Client:		Covalent Lithium, Kwinana Refinery		Ref No: COV-TEN-CON 514		ITP Rev No: 001	
Activity:		Stack Flange Replacement on Train 1 & Train 2		SRG Ref No: COV-TEN-CON 514- Flange Replacement			
Contact Details		Summary or Requirements		Principle Codes / Standards		Records	
Client Rep:	Deepak Gupta	Process Qualifications:				Records retained as marked:	
SRG Rep:	Adam Riley	Structural Steel Fabrication	AS/NZS 5131	AS1554	Welding of steel structures	Survey Check ☒	
Sub-Contractors		Lifting & Rigging Procedure	AS2550	AS4100	Steel Structures		
		Steel Structures	AS4100	AS NZS			
Design/drafting:	Carnac Eng	Structural Steel Welding	AS/NZS 1554	1110/1111	ISO Metric Hex Bolts and Screws	Shim Thickness Record ☒	
Survey	BE Surveys	Survey & Alignment	Project Spec	AS1418	Cranes, Hoists and Winches	Splice Flange Inspection ☒	
Surface Treatment:	NA	Installation Method	Approved Methodology	AS5131	Structural Steelwork – Fabrication and erection	Lift Study Reference ☒	
NDT:	Covalent	Working at Heights	COV-000-HS-PRO-0022_5	AS1576	Scaffolding	Welder traceable record ☒	
Pressure Test:	NA	Scaffolding Procedure	COV-0000-HS-PRO-0012	AS1170	Structural Design Actions	Flange Management ☒	
Hot Tapping:	NA	Traceability:		AS1252	Structural Steel Bolts with Associated Nuts and Washers	Weld qualifications ☒	
		Shim Pack Traceability Record	☒	AS1110/1111	ISO Metric Hex Bolts and Screws	Welding Procedures ☒	
Surveillance / Inspection Key		Survey/Alignment Record	☒	AS4291	Mechanical Properties of Fasteners		
Hold point (H): Nominated point beyond which work shall not proceed verified acceptance by nominee.		Lift Study Reference	☒	AS1657	Fixed Platforms, Walkways, Stairways and Ladders		
Witness point (W): Points at which the nominee shall be notified and invited to witness an activity, but further work may proceed without presence of the nominee.		Material Traceability	☒	AS2550	Cranes, Hoists and Winches-Safe Use		
Review (R): Verify by examination of documentary evidence that inspection/tests have been satisfactorily conducted.		Bolts Traceability Record	☒				
Surveillance (S): Continuing evaluation of the status methods, analysis of records and monitoring of activities on a random basis to ensure quality requirements will be met.		Testing (NDT):	NA				
Visual (V): 100% visual inspection of work/item to ensure compliance with code/specification.		Acceptance Criteria:	AS4037				
Dimensional (D): Measurement of critical dimensions to ensure work/item is within tolerance.							
Prepared by:	Adam Riley	Date:	25-05-2026	Approved by:	Mark Cowle	Date:	25-05-2026

Client Specifications		Other Specifications	
H361294-00000-230-242-0001	Protective Coating Specification	ANSI B16.5	Pipe Flanges and Flanged Fittings
H361294-00000-230-210-0001	Structural Design Criteria	AS 1111	ISO Metric Hexagon Bolts and Screws
H361294-00000-232-242-0001	Structural Steel Specifications	AS1112	ISO Metric Hexagon Nuts
AS/NZS 1554.1-1554.6	Structural Steel Welding	AS 1237	Plain Washers for Metric Bolts, Screws and Nuts
H361294-00000-240-210-0001	Mechanical Design Criteria	AS 1252	High-Strength Steel Fastener Assemblies for Structural Engineering – Bolts, Nuts and Washers
H361294-00000-240-210-0002	Layout Design Criteria	AS 1554	Structural Steel Welding Code
H361294-00000-250-210-0001	Piping Design Criteria	AS 2700	Colour Standards for General Purposes
H361294-00000-240-242-0001	Mechanical Standard Specification	AS 3678	Structural Steel – Hot Rolled plates, floor plates and slabs
COV-000-HS-PRO-0022_5	Working at Height Procedure	AS 3679	Structural Steel – Hot Rolled Bars and sections
COV-000-HS-PRO-0033	Plant And Equipment Safety Procedure	AS 3990 - 1993	Mechanical Equipment – Steelwork
COV-000-HS-PRO-0037	Health And Safety Consultation and Communication Procedure	AS1891	Industrial fall-arrest systems and devices
COV-0000-HS-STD-0004	Safety Standard-Cranes and Lifting	AS1554	Structural Steel Welding
COV-0000-HS-STD-0001	Safety Standard-Vehicle and Driving	AS 4100	Steel Structures
COV-0000-HS-STD-0007	Safety Standard-Plant and Equipment	AS 4680	Hot Dip Galvanised (zinc) coatings on fabricated ferrous articles

ITP Flange Replacement SRG-ITP-COV-KWI



COV-COM-POL-0001	Supplier Code of Conduct	AS 5131	Structural Steelwork – Fabrication and Erection
COV-0000-HS-PRO-0048	Cranes and Lifting Procedure	AS 1319	Safety Signs for the Occupational Environment
COV-000-HS-PRO-0002	Fitness for Work Procedure	AS 3905	Quality System Guidelines
COV-000-HS-PRO-0014	Permit to Work Procedure	AS1418	Cranes, hoists and winches,
COV-000-HS-PRO-0031	Barricading, Demarcation and Signage Procedure	AS2550	Cranes, hoists, and winches – Safe use,
COV-000-HS-PRO-0049	Extreme Weather Procedure.	AS3775	Chain Slings
COV-000-HS-PRO-0022	Working at Heights Procedure	AS4991	Lifting Devices
COV-000-HS-REG-0009	Cranes and Lifting Register		
COV-000-HS-FOR-0031	Critical Lift Plan Form		
COV-0000-HS-PRO-0012	Scaffolding Procedure		
H361294-00000-250-242-0005	Piping Fabrication and Installation Specification		
H361294-00000-232-294-0010	Horizontal Bracing Details		
H361294-00000-232-294-0011	Bracing End Connection Details		
H361294-00000-232-294-0013 & 0014	Column and Beam Splice Details Sheet 1 & 2		

ITP
Flange Replacement
SRG-ITP-COV-KW



Project:	Calcliner Off-Gas Stack Extension	Client:	Covalent Lithium	ITP No:	COV-TEN-CON 514- Flange Replacement	Title:	Stack Flange Replacement Train 1
Location:	Kwinana Refinery	Date:	22/05/2026	Level:	Ground	Grid Ref:	R4
Developed by:	Adam Riley	SRG Rep:	Adam Riley			Designer:	Carnac

Ref:	Work Items/ activities to be verified	References (Drawing No, Standard, Client Specification)	Acceptance Criteria Specification Ref. Consultant Reports	Inspection Code - SRG	Inspection Frequency				
						Completed Date	Comment/ Result	SRG Rep Sign & Date	Client Sign & Date
1.0	Pre Deliverables								
1.1	Approved Methodology, SWMS, ITP, Work Permit, Traffic Management plan, WHS Documentation.	COV-TEN-CON 514 SOW, Methodology Rev 3.2, SRG WHS Plan, SRG SWMS,	Approved/current documents available before works commence.	H	0	21/05/2026	Approved	AK 9/6/26	Patricia 12/6
1.2	Pre-start/JHA/CRAW, permits, Weld procedures, Weld Quals and personnel competency records verified for assembly activities.	AS1554, AS 2550, AS 1418, COV-000-HS-PRO-0033,0002,0014	Welding shall not commence until approved WPS, qualified welder records and inspection/NDT requirements are available.	H	Before welding	28/05/2026	Complete	AK 9/6/26	Bob
1.3	Verify new flange, gasket, bolts /nuts/ washers and consumables are received, identified and traceable to drawing	IFC drawings, Material certificates, AS/NZS 1252, AS 1110/1111, AS 1112, AS 1237, AS1554	Correct free issued/supplied items available, undamaged and traceable.	W/V	On receipt	26/05/2026	Verified	AK 9/6/26	Pat
2.0	Site Set-Up, Access and Existing Interface Release								
2.1	Confirm isolations, permits, barricades/exclusion zones, dropped object controls, fire watch, hot work controls, access platform/scaffold and emergency/rescue arrangements.	SWMS/SMOW, Hot Work Permit, COV-000-HS-PRO-0022_5, AS 1554, AS1576,	Controls in place and accepted before cutting or welding commences.	H/S	Before hot work	02/06/2026	Confirmed	AK 9/6/26	Pat
2.2	Erect Scaffold flange replacement Inspect existing duct/stack interface and confirm cut location, orientation, match line to Segment B, retained duct condition and access clearance.	AS1576, IFC drawings including Segment A closure spool detail, Survey set-out, Methodology Rev 3.2, AS1554	Existing interface confirmed suitable for cold cutting and final site welding. Any mismatch/damage recorded and referred before cutting.	H/V	Before cutting	03/06/2026	Complete	AK 9/6/26	Pat

ITP Flange Replacement

SRG-ITP-COV-KWI



2.3	Survey/set-out cut line and reference points. Confirm cut line is level to required interface and suitable for final fit-up of new flange.	IFC drawings, Survey procedure, AS1554	Cutline marked and survey verified. Hold point released before cold cutting.	W	Each train	02/06/2026	Complete	9/6/26	DR
3.0	Flange Removal								
3.1	Mark cut line as required. Confirm no services/obstructions are affected.	IFC drawings, SWMS/SMOW, Hot Work Permit, AS1554, C14-005-MEC-DRG-013	Cutline visible and agreed. Work area protected. No unauthorised cutting outside nominated boundary.	W/W	Each cut	02/06/2026	Complete	9/6/26	DR
3.2	Cut existing duct using a 5' inch grinder with handle or orbital pipe saw to ensure flat cut for final site welding of closure spool.	IFC drawings, SWMS/SMOW, Hot Work Permit, AS1554, C14-005-MEC-DRG-013	Cut completed cleanly with controlled debris and no damage to retained duct beyond approved cut zone.	W/S	Each cut	03/06/2026	Complete	9/6/26	DR
3.3	Remove redundant existing flange/top section and clean retained duct edge. Prepare edge only as required for weld preparation and fit-up.	SWMS/SMOW, C14-005-MEC-DRG-013, Approved WPS, AS/NZS 1554.1	Retained duct edge clean, safe and prepared for fit-up. No excessive removal or unauthorised modification.	W/W	Each train	04/06/2026	Complete	9/6/26	DR
3.4	Inspect cut face, suitability, damage and general condition prior to closure spool fit-up.	IFC drawings, SWMS/SMOW, Hot Work Permit, AS1554, C14-005-MEC-DRG-013	Cut face accepted for fit-up or deviations recorded and approved by Covalent/Designer prior to proceeding.	H/V	Before fit-up	04/06/2026	Complete	9/6/26	DR
4.0	New Flange Fit up								
4.1	Fit new top flange to existing duct. Confirm orientation, bolt hole orientation, flange OD/ID and gasket face condition.	SWMS/SMOW, AS1554, C14-005-MEC-DRG-013	Closure spool/flange orientation and dimensions confirmed against IFC drawings. Gasket face protected and free from damage.	W	Each train	04/06/2026	Complete	9/6/26	DR
4.2	Prepare weld edges, root gap and alignment for full penetration site weld as detailed. Install temporary restraints as required	C14-005-MEC-DRG-013, Approved WPS, AS/NZS 1554.1	Fit-up complies with WPS/drawing requirements including root gap, bevel, alignment and tack weld quality.	H/W	Before full weld	04/06/2026	Complete	9/6/26	DR
4.3	Check flange level, RL, centreline, squareness and bolt hole orientation prior to final welding.	C14-005-MEC-DRG-013, IFC Drawings	Flange position and level accepted by survey/QA before final welding. Deviations corrected or approved.	H/D	Before full weld	04/06/2026	Complete	9/6/26	DR
5.0	Flange Welding								
5.1	Complete site welding of closure spool/new flange to existing duct using approved WPS and qualified welders.	Approved WPS/PQR, AS/NZS 1554.1, Welder qualification records, IFC drawings	Weld completed by qualified personnel in accordance with approved WPS and drawing requirements.	W	Each Flange	04/06/2026	Complete	9/6/26	DR *

* change in soft. connection request provided via email.

ITP Flange Replacement

SRG-ITP-COV-KWI



5.3	Visual inspection of completed weld profile, fusion, undercut, cracks, porosity, arc strikes, spatter, cleanliness and general workmanship.	AS/NZS 1554.1; Project acceptance criteria	Visual inspection accepted or defects recorded for repair. Weld identification and inspection record completed.	S	Each Flange	04/06/2026	Complete	9/6/26	OK
5.4	Complete NDT by Covalent (MT/PT/UT/RT or other method as specified) for the closure spool weld, PT and RT	AS/NZS ISO 17635,	NDT completed by approved personnel to nominated extent. Reports reviewed and accepted before further work	H	Each Flange	04/06/2026	Complete	9/6/26	OK
5.5	Any weld repair, defect removal, dimensional correction or flange rectification to be approved before execution and re-inspected after repair.	WPS, AS/NZS 1554.1	No unauthorised repair/modification. Repair records and re-inspection/NDT closeout completed.	H	As required	04/06/2026	Complete	9/6/26	NO REPAIR
6.0	Bolting and Gaskets for Stack Install								
6.1	Inspect flange face, gasket seating surface, bolt holes, gasket, bolts/nuts/washers and flange cleanliness before bolting to Segments	Flange Management, AS/NZS 1252, AS5131	Flange faces clean/undamaged, gasket correct and bolt holes aligned before assembly.	H/V	Each flange	07/06/2026	Complete	9/6/26	OK
6.2	Install gasket and AS/NZS 1252 Class 8.8 bolts/nuts/washers. Snug-tight in a controlled sequence to seat gasket evenly.	AS/NZS 125, AS 1110/1111, AS 1112, AS 1237, AS5131, AS1252	Correct gasket and bolting installed. Flanges drawn up evenly without gasket damage or flange misalignment.	W/S	Each flange	07/06/2026	Complete	9/6/26	OK
6.3	Stack Flange Bolting and Torquing using 4-stage Star/cross Pattern Method. Grade 8.8 stack flange bolts tightened to 300 Nm minimum using calibrated torque equipment by 4-stage star/cross pattern.	AS 1110/1111, AS 1112, AS 1237, AS5131, AS1252, ASME PCC-1	Final torque achieved and recorded.	R	Each flange	9/6/26	Complete	9/6/26	OK
8.0	Completion Record								
8.1	Deliverables record as per ITP Records	COV-TEN-CON 514 SOV, Methodology Rev 3.2, ITP	Records complete, signed and traceable to module/location.	R	Each Train	08/06/2026	Recorded	9/6/26	NA
8.2	Any repair/modification/deviation identified during assembly submitted to Covalent before repair proceeds.	COV-TEN-CON 514 SOV, Methodology Rev 3.2, ITP	No unapproved repair/modification undertaken.	H	As required	08/06/2026	N/A	9/6/26	NA

Compliance Status		Yes	No	N/A	SRG Global Approval / Signoff		Client Acceptance/Approval and sign off	
Complies with Acceptance Criteria		Yes			Name: Adam Riley		Name: Deepak Gupta	
Does Not Comply with Acceptance Criteria				N/A	Signature:		Signature:	
NCR No.				N/A	Date: 08/06/2026		Date: 12/6/26	