JC-FX-TDR-2611-003-001

Revision 1 - 10 identical connections - B/1, B/2, B/3, B/4, B/5, B/6, B/7, B/8, B/9, B/10

PROJECT AND TRACEABILITY

Project	**FX-TDR-2611-003 - [DEMO] Pipe Rack Structural Module M-03**
Client	**Sample Energy Partners**
Template	**No library template**
Calculation	**CALC-2C3EDE62080E**
Fingerprint	**2C3EDE62080E**
Model revision	**A**
Change	**Initial issue.**
Replaces / replaced by	**- / -**

JOINT GEOMETRY

Joint	**Fillet-only joint - no groove preparation**
Secondary	**200 x 200 x 10 mm (PL10)**
Preparation	**No groove weld - fillet only**
Fillet	**8 mm both sides (WELD_PROCESS_FCAW); 6 mm single side (WELD_PROCESS_FCAW)**
Weld	**Shop - FCAW**
WPS	**Not supplied**
NDT	**None recorded**

PARTS

Mark	Description	Profile	Grade	Per con...
b/1	Primary member	IPE300	S355J2	1
p/1	End plate	PL10	S355J2	1

OPERATIONS

Code	Operation	Qty/conn	Unit	Qty total	H/conn	H total
WELD-02	2 fillet weld specifications (FCAW)	0.62	m	6.2	0.094	0.938
CUT-01	Member end saw cut	1	cut	10	0.5	5
CUT-02	End plate profile cut, PL 10 mm	0.8	m	8	0.16	1.6
FIT-01	Fit-up, align and tack the connection	1	connect...	10	0.6	6
HAND-01	Material handling of the connection m...	1	connect...	10	0.25	2.5
LIFT-01	Lift and turn for welding	1	connect...	10	0.2	2
GEN-01	General handling allowance	1	connect...	10	0.139	1.39
SETUP-01	Card setup, drawing review and first-...	1	card	1	0.75	0.75

WELD SPECIFICATIONS

Kind	Specification	Leg	Sides	Length	Metal	Labour
fillet	Fillet 8.0 mm leg, both sides, FC...	8 mm	2	500 mm	0.1256 ...	0.083 h
fillet	Fillet 6.0 mm leg, single side, F...	6 mm	1	120 mm	0.017 kg	0.011 h

QUANTITIES, TIME AND COST

Groove weld length	**- m**
Fillet weld length	**6.2 m**
Total weld length	**6.2 m**
Cut length	**17 m**
Weld metal	**1.4256 kg**
Consumable	**1.584 kg**

Man-hours (batch)	**16.04**
Machine hours (batch)	**4.14**
Cost (batch)	**991**
Access allowance	**9 h**
Man-hours incl. access	**25.04**
Cost incl. access	**1,531**
Shared setup	**0.75 h**
Elapsed production (excl. access)	**11.83 h**
Shifts / days	**1.18 shifts - 2 day(s) - cre...**

ACCESS AND SCAFFOLDING

Status	**CALCULATED from recorded data**
Method / height	**scaffold at 3.5 m**
Scaffold setup	**2 h (once per card)**
Access time (all connections)	**7 h**
Allowance total	**9 h**
Allowance cost	**540**

Scaffold at 3.5 m recorded for 10 connection(s).

Scaffold erection/dismantling 2 h counted once for the card.

Per-connection access time 0.7 h x 10 = 7 h.

Basis: Illustrative planner test for 10 repeated joints. Evidence: DEMO-ACCESS-001 (synthetic).

The access allowance is additive: the fabrication hours above are unchanged. Elapsed production excludes access unless the planner has scheduled it.

RESOURCE SCHEDULE

Code	Activity	Crew	Machine	Man-h	Mach-h	Elapsed	Window
SETUP-01	Card setup	1	-	0.75	0	0.75	0-0.75 h
CUT-01	Member cutting	1	Beam Saw	1.5	3.5	3.5	0.75-4.2...
CUT-02	Plate cutting	1	CNC Plasma Table	0.96	0.64	0.96	0.75-1.7...
FIT-01	Fit-up	2	-	6	0	3	4.25-7.2...
WELD-02	Fillet welding	1	Welding set	0.94	0	0.94	7.25-8.1...
HAND-01	Material handling	2	-	2.5	0	1.25	8.19-9.4...
LIFT-01	Lifting	2	-	2	0	1	9.44-10....
GEN-01	General handling	1	-	1.39	0	1.39	10.44-11...

Elapsed time is the scheduled makespan. Critical path: SETUP-01 -> CUT-01 -> FIT-01 -> WELD-02 -> HAND-01 -> LIFT-01 -> GEN-01.

ISSUE HISTORY

2026-11-21 05:38 - CREATED - Local estimator: Issued from a locally checked calculation.
2026-11-21 05:38 - CHECKED - Local estimator: Calculated, locally checked and issued.

VERIFICATION AND BLOCKERS

Local demonstration record: a named person reviewed the calculation inside this browser. It is not an authenticated company engineering approval.
Blocking/notice: Machine "Beam Saw" has no configured rate - machine cost omitted.
Blocking/notice: Machine "Plate Beveller" has no configured rate - machine cost omitted.

Issued by Local estimator **Checked by Demonstration Checker (local only)** 2026-11-21 05:38