Metal-Asia

Commercial Proposal for Supply

Installation Supervision and Commissioning for Air-Supported Structures

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Executive Summary

Installation supervision (supervisory installation) provides organizational and technical oversight of equipment assembly performed by the client's workforce or contracted local crew. Commissioning encompasses the complete set of technological procedures required to prepare the system for operational handover. Metal-Asia.pw delivers certified supervisory engineers with 50+ facility track records, ensuring structural integrity compliance, operational safety, and full documentation packages for international warranty claims and insurance underwriting.

Membrane dome deployment and climate equipment connection under supervisory oversight

Market Challenges in Unsupervised Installation

International clients deploying Air-Supported Structures without qualified supervisory support encounter critical failure modes:

- Improper HF welding (RF welding) of reinforced PVC membrane panels: seam strength below 80% of base material, leading to progressive delamination and pressure loss
- Anchor contour geometry deviations exceeding ±2 mm tolerance: uneven membrane tension, localized stress concentrations, premature material fatigue
- Incorrect ventilation system commissioning: unstable overpressure regulation, excessive energy consumption, compressor cycling failures
- Missing sensor calibration protocols: false alarm triggers or undetected hazardous gas accumulation (methane, CO) in bulk material storage applications
- Airlock system leakage: improperly sealed cargo doors or pedestrian revolving doors causing continuous pressure loss and inflated operating costs
- Absence of commissioning test protocols: no 24/72-hour continuous operation validation, no emergency failover simulation, no thermal performance verification
- Incomplete as-built documentation: missing hidden work certificates, no weld inspection logs, no equipment calibration records — voiding manufacturer warranties and insurance coverage
- Untrained operational personnel: inability to interpret PLC alarm codes, incorrect seasonal mode switching, delayed response to emergency scenarios

- Project schedule overruns: 2–3 week delays per unanticipated technical issue, cascading to contractual penalties and seasonal weather windows

Our Solution: Certified Supervisory Installation with Full Documentation Compliance

Metal-Asia.pw provides integrated procurement and installation supervision services for industrial equipment from China, including tender documentation support for public and private procurement frameworks, supply chain compliance auditing, and full commissioning protocols with operator certification. Our supervisory engineers hold international welding certifications (EN ISO 9606), electrical safety qualifications (IEC 60364), and PLC programming credentials for major automation platforms.

Installation Supervision Phases

Phase 1. Pre-Installation Preparation (Day -7 to Day 0)

Item	Activity	Responsible Party	Duration
1	Production work plan alignment	Client + Supervisor	3 days
2	Site-specific adaptation drawing review	Client + Supervisor	2 days
3	Functional system schematic approval	Client + Supervisor	2 days
4	Equipment fabrication drawing verification	Client + Supervisor	2 days
5	Building Management System (BMS) specification alignment	Client + Supervisor	3 days
6	Fabrication of site-specific metal components per supplier drawings	Client	5–7 days
7	Appointment of client's responsible technical officer	Client	1 day
8	Site preparation: technological openings, foundation readiness	Client	3–5 days
9	Equipment storage and security arrangements	Client	Continuous
10	Site grading and soil compaction	Client	3–5 days

Phase 2. Foundation and Anchor Works (Day 1 to Day 7)

Item	Activity	Responsible Party	Duration	Acceptance Criteria
1	Earthworks, grading, and soil compaction	Client under supervision	2–3 days	Soil density ≥95% Proctor

Item	Activity	Responsible Party	Duration	Acceptance Criteria
2	Reinforced concrete anchor contour construction	Client under supervision	3–5 days	Concrete B25–B30 (C25/30–C30/37), A500C rebar
3	Embedded anchor plate installation	Client under supervision	1 day	500 mm spacing, ±2 mm deviation
4	External utility connections (electrical, gas/thermal, communications)	Client under supervision	2–3 days	Hidden work certificate
5	Steel equal-leg angle section perimeter installation	Client under supervision	1 day	50×5 / 63×6 / 80×6 mm, 500 mm spacing
6	Anchor contour geometry verification	Supervisor	0.5 day	Measurement report, acceptance protocol

Phase 3. Technological Opening Installation (Day 8 to Day 12)

Item	Activity	Responsible Party	Duration
1	Cargo airlock frame and dock frame installation	Client under supervision	2–3 days
2	Pedestrian revolving door (airlock) installation	Client under supervision	1–2 days
3	Emergency exit door installation	Client under supervision	1 day
4	Airlock system leak testing	Supervisor	0.5 day

Phase 4. Dome Deployment and Erection (Day 13 to Day 20)

Item	Activity	Responsible Party	Duration	Acceptance Criteria
1	Ground protection sheeting deployment	Client	0.5 day	PVC protective film, no membrane contact with soil
2	Membrane panel layout and field joint preparation	Client under supervision	2–3 days	Panel marking alignment, wrinkle elimination
3	HF welding (RF welding) of field seams	Supervisor + crew	2–3 days	Seam strength ≥80% of base material, weld inspection log
4	Steel cable net (tensile system) installation over membrane	Client under supervision	2–3 days	Tension per engineering calculation, ±5% deviation
5	Membrane skirt hermetic anchoring to foundation contour	Client under supervision	1–2 days	Zero gap tolerance, leak test protocol

Item	Activity	Responsible Party	Duration	Acceptance Criteria
6	Ventilation unit electrical connection	Supervisor	0.5 day	Electrical schematic compliance, grounding verification
7	Initial dome inflation (pressure buildup)	Supervisor	0.5 day	Pressure monitoring, visual inspection

Phase 5. Internal Systems Installation (Day 21 to Day 28)

Item	Activity	Responsible Party	Duration
1	Suspended LED lighting system installation	Client under supervision	2–3 days
2	Instrumentation and sensor mounting (pressure, methane, CO, fire alarm)	Client under supervision	1–2 days
3	Internal dust suppression / aspiration system installation	Client under supervision	2–3 days
4	Air conditioning system installation (if specified)	Client under supervision	2–3 days

Phase 6. Commissioning and Handover (Day 29 to Day 35)

Item	Activity	Responsible Party	Duration
1	Automatic pressure maintenance system integration	Supervisor	1–2 days
2	Emergency scenario testing (grid failure simulation, automatic EDG startup)	Supervisor	0.5 day
3	Heating and ventilation commissioning across temperature ranges	Supervisor	1–2 days
4	24/72-hour continuous operational testing	Supervisor + Client	1–3 days
5	Hidden work certificates and as-built documentation compilation	Supervisor + Client	1 day
6	Operator training and handover briefing	Supervisor	1 day

Standard Installation Supervision Schedule

Week	Days	Phase	Key Deliverables
Week 0	Day -7 to Day 0	Preparation	Aligned work plan, verified drawings, site readiness certificate
Week 1	Day 1 to Day 7	Foundation	Anchor contour, embedded plates, utility connections, geometry report
Week 2	Day 8 to Day 14	Openings + Dome Start	Airlock frames, membrane layout, HF welding initiation
Week 3	Day 15 to Day 21	Dome Completion + Internal	Cable net, skirt sealing, dome inflation, lighting, sensors
Week 4	Day 22 to Day 28	Internal + Commissioning	Dust suppression, climate systems, automation integration
Week 5	Day 29 to Day 35	Testing + Handover	24/72-hour test, emergency failover, documentation, training

> Total cycle from site readiness to operational handover: 5 weeks (35 working days). Small structures (span ≤30 m): 2–3 weeks. Mega-structures (span ≥100 m): 6–8 weeks.

Client Workforce Requirements

Position	Quantity	Qualification
Responsible Technical Officer	1	Construction or installation engineering background
Crew Foreman	1	Experience with membrane roofing, tent structures, or flexible cladding preferred
Installation Workers	4–8	Physical fitness, height work certification (up to 5 m)
Electrician	1	Electrical safety certification up to 1000 V
Welder (if required)	1	Rebar and structural steel welding certification

Operator Training Program

Topic	Duration	Format
ASS structural principles and operational theory	1 hour	Classroom
BMS/PLC control system operation	2 hours	Hands-on equipment
Ventilation unit operation and maintenance	1 hour	Hands-on equipment
Heating generator startup, adjustment, emergency shutdown	1 hour	Hands-on equipment
Emergency diesel generator manual/automatic operation	1 hour	Hands-on equipment
Fault diagnosis and common issue resolution	2 hours	Classroom + hands-on

Topic	Duration	Format
Airlock system operational procedures	0.5 hour	Hands-on equipment
Health and safety and fire safety protocols	1 hour	Classroom
Seasonal preparation (winter/summer mode switching)	1 hour	Classroom
Total	**10.5 hours**	**Theory + Practice**

Warranty and Documentation Package

Component	Warranty Term
Membrane (factory)	15–20 years
Field welds (installation)	5 years
Ventilation equipment	2–3 years
Automation and sensors	2 years
Airlock door systems	2 years
Supervisory installation works	1 year

Deliverables

- Site readiness certificate
- Metal component acceptance protocol
- Hidden work certificates (foundation, anchor contour, airlocks)
- HF weld inspection log with ultrasonic test records
- Dome hermeticity test report
- 24/72-hour continuous operation test protocol
- Emergency failover test protocol
- As-built drawings and electrical schematics
- Operation and maintenance manual (English/Chinese)
- Operator training attendance log with signatures
- Operational handover certificate

Why Metal-Asia.pw — Direct Access, Transparency, Compliance

- Certified supervisory engineers with 50+ international facility track records
- Full as-built documentation package for warranty claims and insurance underwriting
- Operator certification program with competency verification
- Warranty and post-warranty service with spare parts inventory
- Remote diagnostic capability and technical hotline support
- Tender documentation support for public and private procurement frameworks
- Transparent milestone-based billing with no hidden charges
- Direct manufacturer liaison for technical escalations beyond supervisory scope

Contact Information

For detailed service specifications and portfolio references, visit Metal-Asia.pw.

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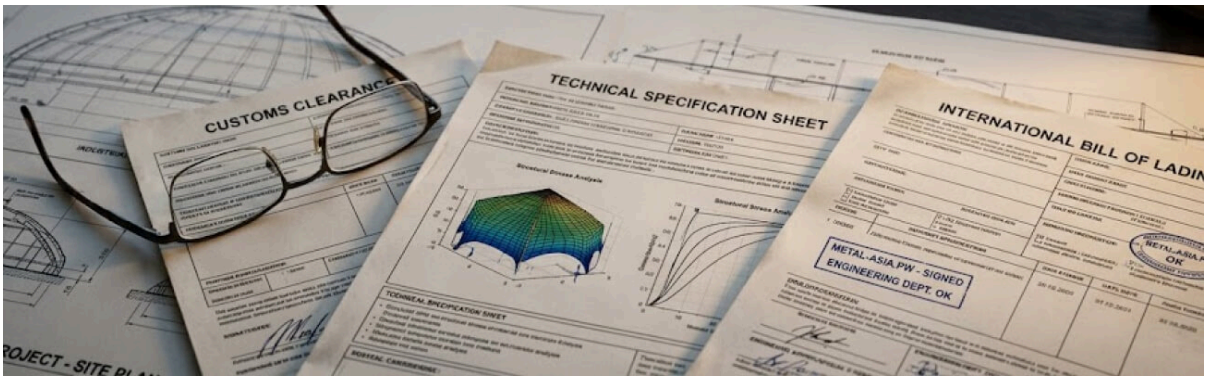

Request installation supervision quotation — email zakaz@metal-asia.pw with project location and timeline