



Mosaic Powerhouse I.S.R.S. Panel

Mechanical Installation Guide

Accessory Section for Mosaic Batten-System Roof Assemblies



Powerhouse integrated roof display, shown as part of a Mosaic batten-system roof assembly.

Primary use: This guide is intended to be used with the current Mosaic Installation Manual and the project-specific stamped engineering set. It covers mechanical placement of the Powerhouse panel body only.

Document Control	Information
Document title	Mosaic Powerhouse I.S.R.S. Panel - Mechanical Installation Guide
Reference	MOSAIC Installation Manual (current edition) - Batten-System Roof Assemblies
Prepared for	Mosaic Roofing Systems Corp
Address	1750 Longleaf Blvd Ste 2-3, Lake Wales, FL 33859
Technical services	Ph: 844-312-7663 Email: hello@mosaicroof.com



Table of Contents

- 1. Purpose and Use
- 2. Scope, Exclusions, and Governing Documents
- 3. System Overview
- 4. Pre-Installation Conditions
- 5. Batten Framework and Course Layout
- 6. Powerhouse Panel Placement Sequence
- 7. Overlap, Water Management, and Fit-Up
- 8. Mechanical Fastening Requirements
- 9. Sealant, Screw-Head Coverage, and Granule Finish
- 10. Electrical Accommodation Boundary
- 11. Installer Do / Do Not Field Rules
- 12. Final QC and Documentation Checklist
- Appendix A - Field Photo Reference Plates

Field note: The goal is boring repeatability: every panel seated, every lap aligned, every fastener compressed correctly, every exposed screw head dressed, and every deviation kicked back to engineering before the roof becomes a very expensive guessing game.

1. Purpose and Use

This document provides mechanical installation guidance for the Mosaic Powerhouse I.S.R.S. panel when installed as part of a Mosaic batten-framed roofing system.

The Powerhouse panel is treated as an integrated Mosaic roof accessory. It is placed, overlapped, fastened, and finished within the same roof-assembly logic used for the applicable Mosaic profile, including Sicily Tile, Grande Shingle, Shakewood, and related Mosaic panel assemblies.

This guide does not replace the current Mosaic Installation Manual. It supplements that manual by addressing the Powerhouse panel body, panel placement sequence, fastening locations, overlap interface, and visible finish requirements.

Use this guide for	Do not use this guide for
Mechanical placement of Powerhouse panels	Standalone electrical installation design
Panel overlaps, nesting, and roof-course integration	Inverter, rapid-shutdown, optimizer, or battery wiring instructions
Mosaic panel fastener placement and screw-head finishing	Grounding, bonding, commissioning, or utility interconnection
Installer QC and photo documentation	Substitution for stamped engineering or AHJ-approved plans

2. Scope, Exclusions, and Governing Documents

2.1 Included

- Mechanical placement and visual alignment of the Powerhouse panel body.
- Panel course integration, overlap sequence, and interlock relationship with Mosaic panels.
- Fastening locations and fastening density guidance, subject to engineering.
- Sealant/granule dressing of exposed Mosaic panel screw heads.
- Field quality-control items for installers and supervisors.

2.2 Not Included

- Electrical interconnection, conductor sizing, stringing, inverter selection, and rapid-shutdown equipment.
- Grounding/bonding design or electrical inspection procedures.
- Structural engineering calculations, wind uplift design, or AHJ-specific approval packages.
- Project-specific changes to fastening schedule, edge-zone width, or substrate attachment details.

Engineering governs: Wind-zone fastening schedules, uplift design values, structural attachment, and submitted product approvals shall follow the project-specific stamped engineering set accepted by the AHJ.

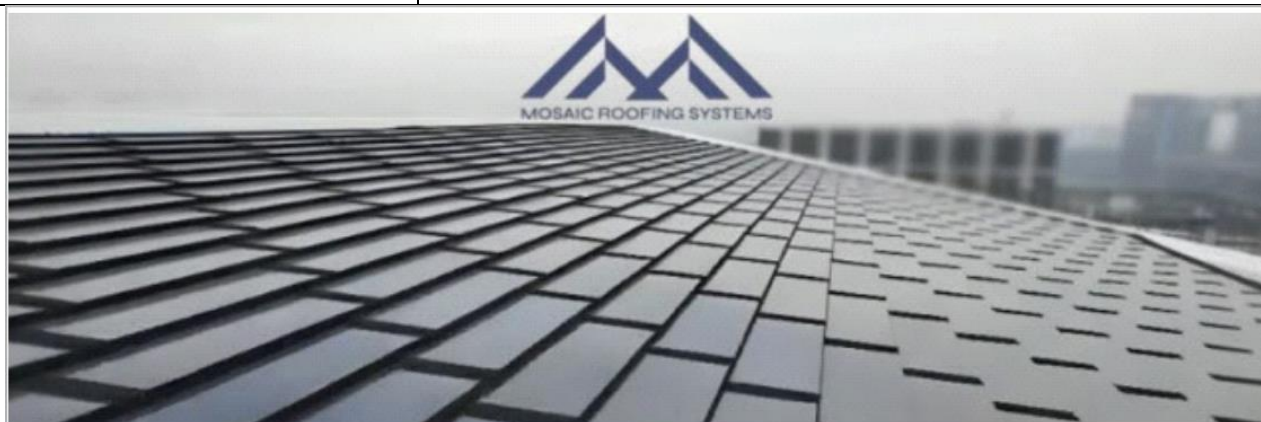
Governing hierarchy	Document / authority
1	AHJ-approved permit documents and project-specific stamped engineering set.
2	Applicable product approvals, listings, and evaluation documents submitted for the project.
3	Current Mosaic Installation Manual for the selected Mosaic roof profile.
4	This Powerhouse mechanical accessory section.

5	Mosaic Technical Services written project clarification.
---	--

3. System Overview

The Mosaic Powerhouse panel integrates a photovoltaic collector zone into the weather-shedding Mosaic roof panel format. Mechanically, the Powerhouse panel must be installed as part of the roof, not as a rack-mounted object placed over the roof after the fact.

Assembly component	Mechanical function
Roof deck / existing approved substrate	Provides base support for underlayment, insulation layer where used, counter-battens, and the batten framework.
Approved underlayment / low-E layer	Provides project-required secondary water-resistive and/or thermal layer per Mosaic profile manual and approved project details.
Vertical counter-battens, where used	Create service/ventilation space and provide attachment pathway to framing when shown in project details.
Horizontal 2x batten courses	Provide the primary seating and fastening foundation for Mosaic and Powerhouse panels.
Mosaic field panels	Establish the roof profile, water-shedding laps, and course continuity around the Powerhouse panel.
Powerhouse I.S.R.S. panel	Provides integrated solar collection while maintaining Mosaic roof-course integration and weather management.



Completed roof perspective showing the Powerhouse panel as an integrated roof element rather than a separate rack-mounted attachment.

4. Pre-Installation Conditions

4.1 Before Powerhouse panels are staged on the roof

- Verify the roof area has been prepared under the current Mosaic Installation Manual and project-approved details.
- Confirm the underlayment, low-E layer, counter-battens, and horizontal battens are installed, fastened, and accepted before panel placement begins.
- Confirm Powerhouse panel layout matches the project electrical layout before any mechanical fastening occurs.

- Inspect each Powerhouse panel for shipping damage, cracked glazing, damaged leads, crushed edges, deformed seams, or foreign material.
- Keep panel surfaces clean and protected. Do not drag panels over battens, fastener heads, granules, or debris.
- Do not field cut, drill, grind, notch, or modify the Powerhouse PV collector area.

Hold point: If the Powerhouse array layout, roof-course layout, or electrical routing conflicts with field conditions, stop and obtain direction before fastening panels.

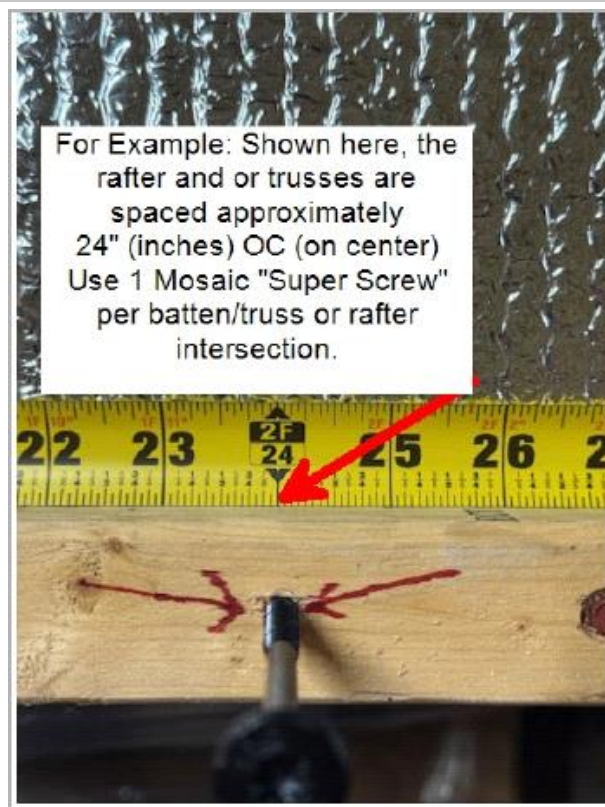
5. Batten Framework and Course Layout

Install the Mosaic batten framework per the current Mosaic profile manual and stamped project documents. The Powerhouse panel depends on accurate batten spacing, straight courses, and sound structural attachment.

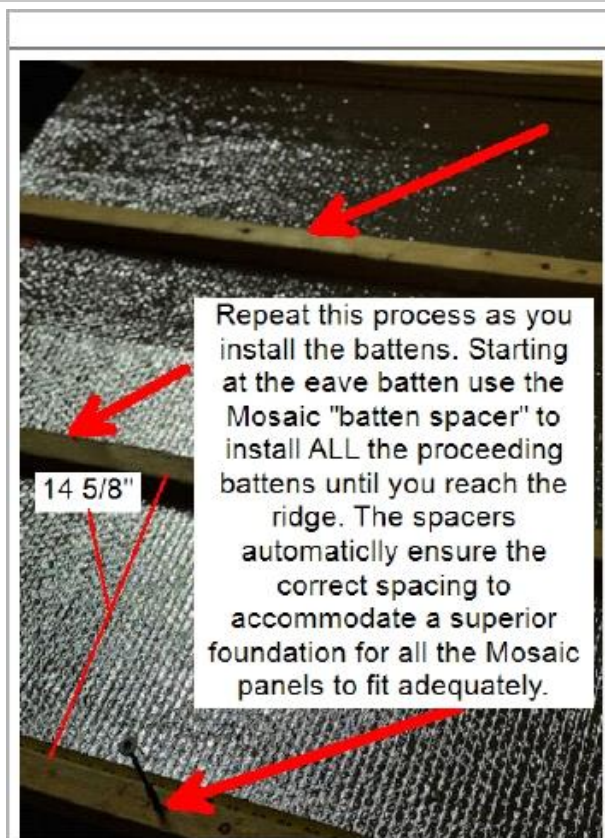
Item	Field requirement / verification
Eave starter batten	Install the first 2x batten at the eave per Mosaic profile requirements. Secure the batten to framing or approved substrate as shown in the project details.
Rafter / truss attachment	Where framing is exposed or located, align fastening with truss/rafter lines. Photo reference shows framing at approximately 24 inches on center on the example mock-up.
Course spacing	Use the Mosaic batten spacer and profile-specific coursing method to maintain consistent spacing. Photo reference shows an example course interval of approximately 14 5/8 inches.
Prepared field	Do not begin Powerhouse placement until the roof field is fully prepared, battens are secure, and layout lines are confirmed.



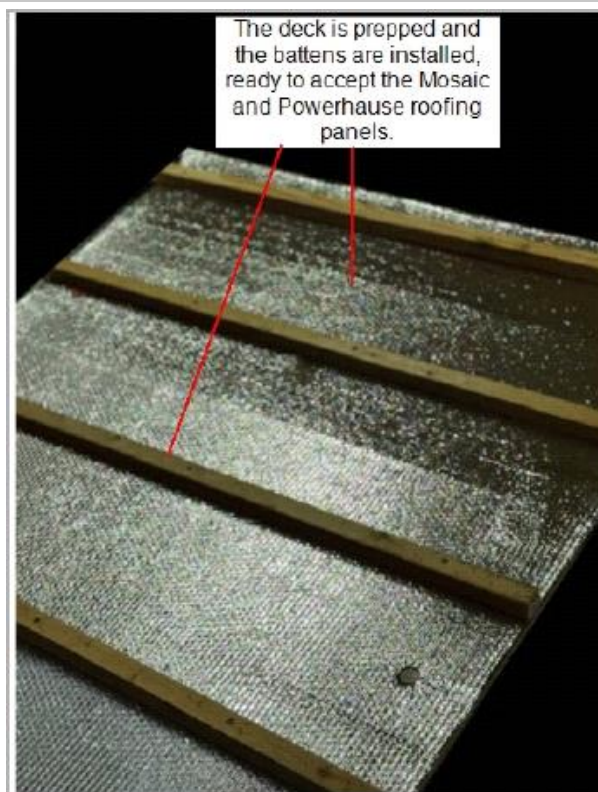
Eave starter batten and initial low-E/underlayment condition.



Example framing alignment at approximately 24 inches on center.



Mosaic spacer used to establish consistent batten spacing.



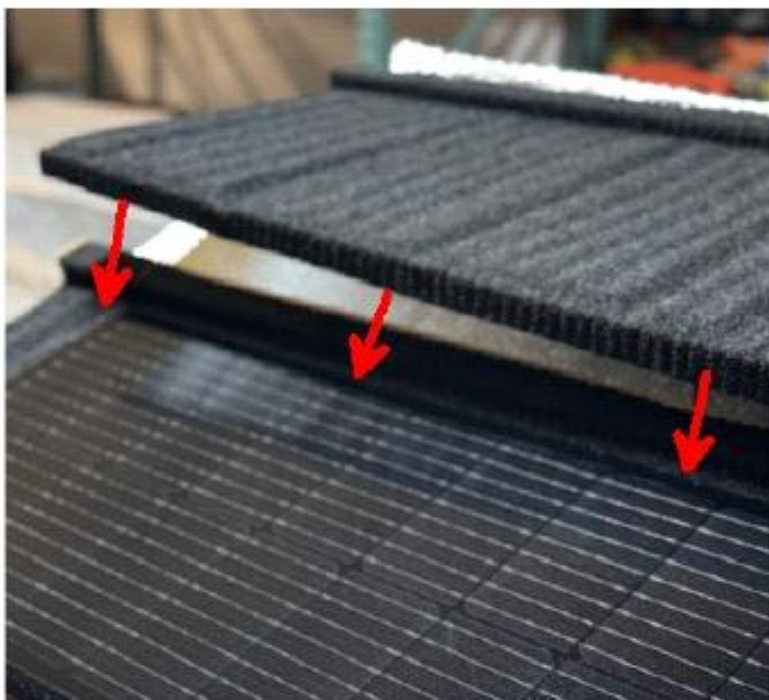
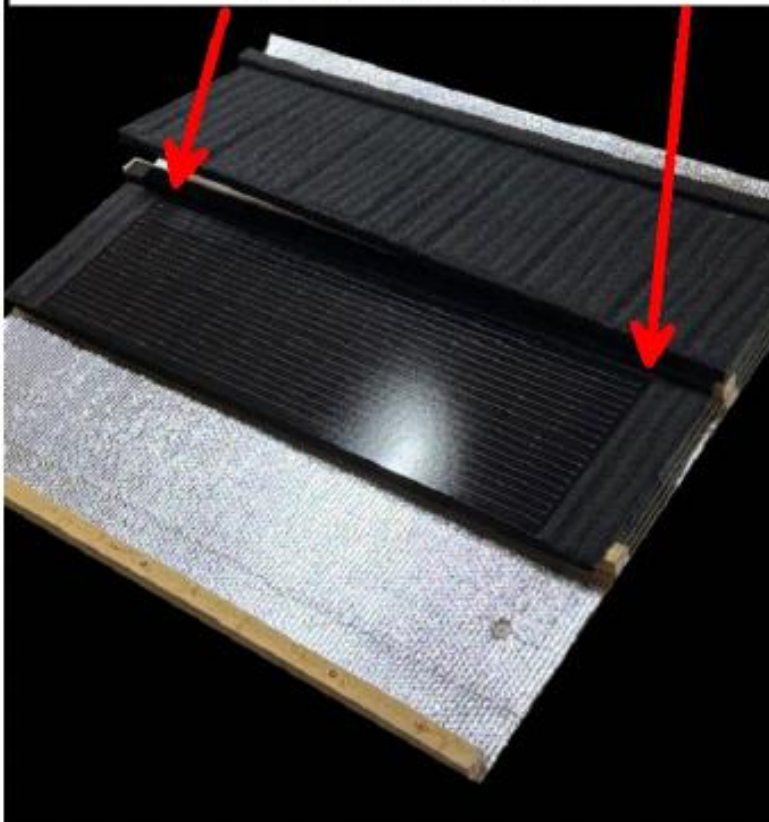
Prepared deck/batten field ready to accept Mosaic and Powerhouse panels.

6. Powerhouse Panel Placement Sequence

Powerhouse placement is coordinated with the Mosaic field-panel course sequence. The panel is integrated into the lap system so the finished roof sheds water in the same directional logic as the surrounding Mosaic panel field.

1. Establish the Powerhouse panel location from the approved layout before setting the surrounding courses.
2. Install the adjacent Mosaic field panels at the high side of the target course as required for the selected profile.
3. Lift the bottom edge of the upper Mosaic panel enough to receive the Powerhouse panel without damaging either panel.
4. Tuck the upper portion of the Powerhouse panel under the preceding/high-side panel so the lap is fully seated.
5. Press the lower portion of the Powerhouse panel into position while maintaining a straight course line and uniform side overlap.
6. Fasten only after fit, lap, side alignment, and batten contact are confirmed.

Starting from the top, lift the bottom edge of the panel and tuck the Mosaic's Shakedown PV (Powerhouse) panel underneath. Then, press the lower portion of the panel down to overlap the preceding panel and start securing it onto the batten through the nose as indicated in the following photos.

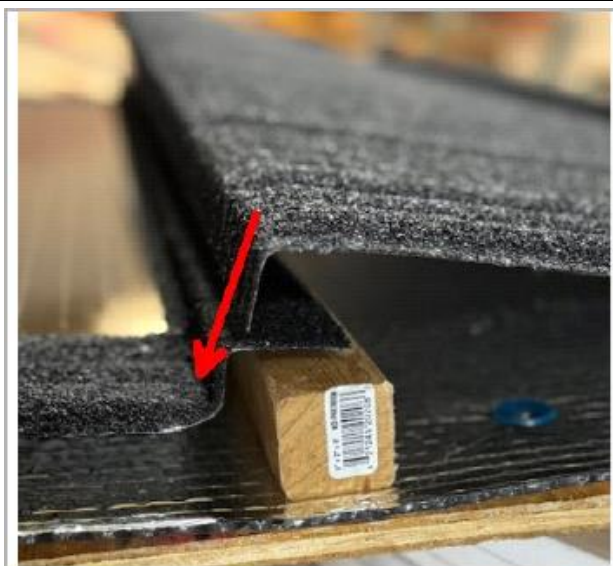


Top-down overlap process: the Powerhouse panel is tucked into the course relationship before final fastening.

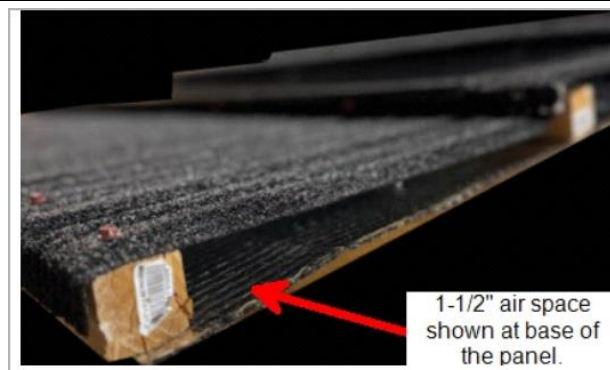
7. Overlap, Water Management, and Fit-Up

The Powerhouse panel must be seated so its top edge, side overlap, and lower face align with the adjacent Mosaic panels. The installation must not create reverse laps, open water pathways, trapped debris pockets, or unsupported edges.

Check point	Acceptance condition
Top lap	Upper edge tucked under the preceding Mosaic panel with no exposed reverse-lap condition.
Side lap	Side overlap engaged and aligned with surrounding panel coursing.
Lower edge	Panel seated against the batten support without rocking, bowing, or visible uplift.
Collector surface	PV surface clean, protected, and free from scratched, cracked, or crushed conditions.
Component clearance	Underside clearance maintained where shown for mechanical accommodation. Electrical component placement remains per electrical design.



Lap condition shown during the tuck-in sequence.



Base air space shown in the mock-up condition.

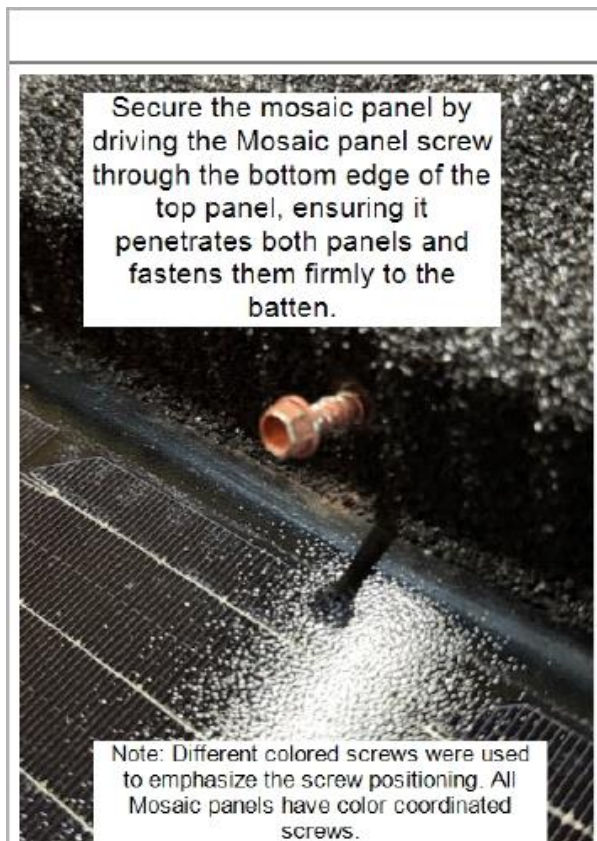
8. Mechanical Fastening Requirements

Fastener schedule warning: The minimum fastener quantities below are guide-level references from the guide. Project-specific engineering may increase, modify, or supersede them. Use the stamped schedule where provided.

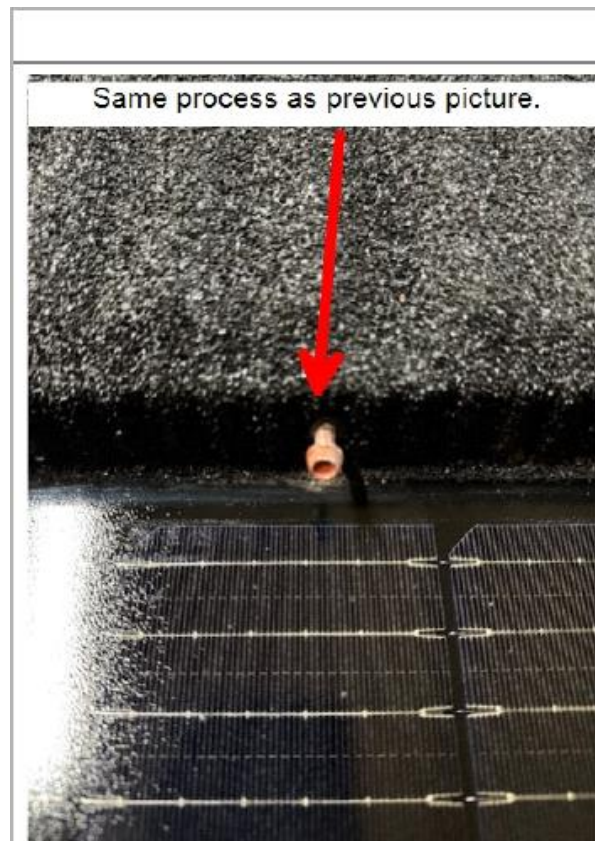
Roof zone / condition	Guide-level minimum	Notes
Main field panels	Minimum 5 Mosaic panel screws per Powerhouse panel, approximately 10 inches on center.	Includes each side overlap. Used only where outside high-velocity wind zones and permitted by engineering.
Corner / perimeter / high-velocity zones	Minimum 10 Mosaic panel screws per Powerhouse panel, approximately 5 inches on center.	Includes one screw at each side overlap. Use project engineering for final zone limits and schedule.
Panel overlap screw	Drive the Mosaic panel screw through the bottom edge of the upper/top panel where it penetrates both panels and fastens into the batten.	Screw must compress the built-in gasket and secure both panel layers to the batten.

8.1 Fastening execution

- Confirm the panel is fully seated before driving fasteners.
- Drive screws straight and at the intended fastening line. Crooked screws are not craftsmanship; they are a confession.
- Compress the built-in gasket enough to form a watertight seal without crushing, spinning out, or over-driving the screw.
- Confirm the screw penetrates the required panel layers and fastens securely into the batten.
- Replace stripped, misdriven, or under-compressed fasteners immediately.

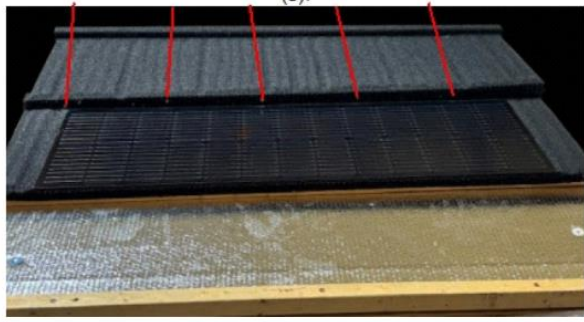


Mosaic screw driven through overlapping panels into the batten.



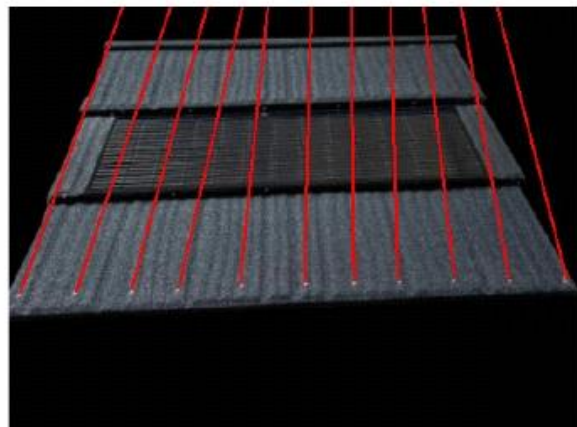
Gasket compression shown after the screw is seated.

On the main field panels, a minimum of 5 Mosaic panel screws per panel (apprx. 10" on center) are required, including each side overlap. This is sufficient for a full system installation outside of any high-velocity wind zone (s).



Field fastening pattern reference from the v1 photo guide.

For corner and perimeter panels, a minimum of 10 Mosaic panel screws per panel (approximately 5 inches on center) is required, including one at each side overlap. This installation meets high-velocity hurricane zone requirements (TAS-125). Outside of high-velocity hurricane zones, 5 screws per panel are sufficient for corner and perimeter panels.



Perimeter/corner fastening pattern reference from the v1 photo guide.

9. Sealant, Screw-Head Coverage, and Granule Finish

All exposed Mosaic panel screw heads in the Powerhouse field must be dressed so the fastener head is protected and visually integrated into the stone-coated finish.

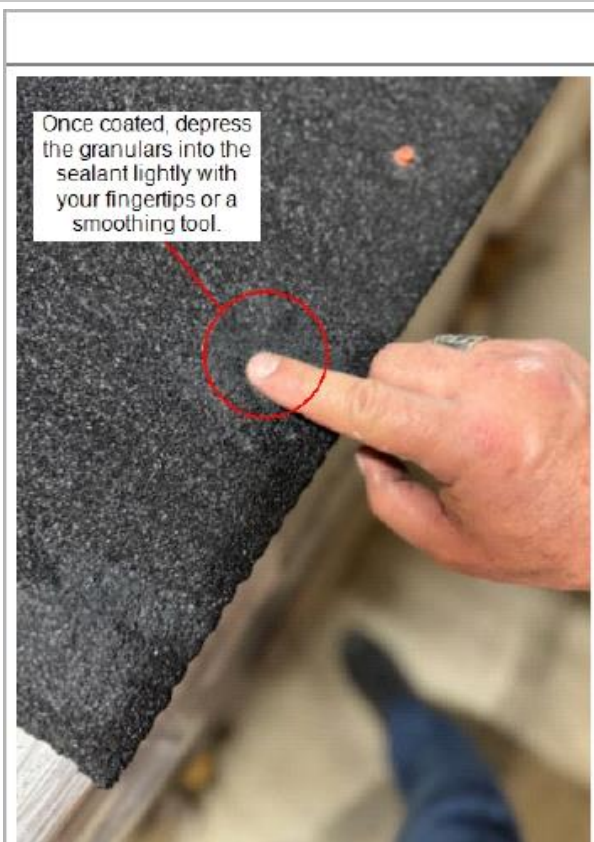
Step	Requirement
1. Sealant	Apply high-grade polyurethane sealant over the exposed screw head.
2. Coverage	Cover the screw head completely. No exposed metal head should remain visible.
3. Smooth-out	Tool the sealant into a smooth, low-profile patch without leaving excessive buildup.
4. Granules	Apply matching granules across the entire wet sealant area.
5. Final finish	Lightly press and smooth the granules to create a blended appearance with the surrounding panel surface.



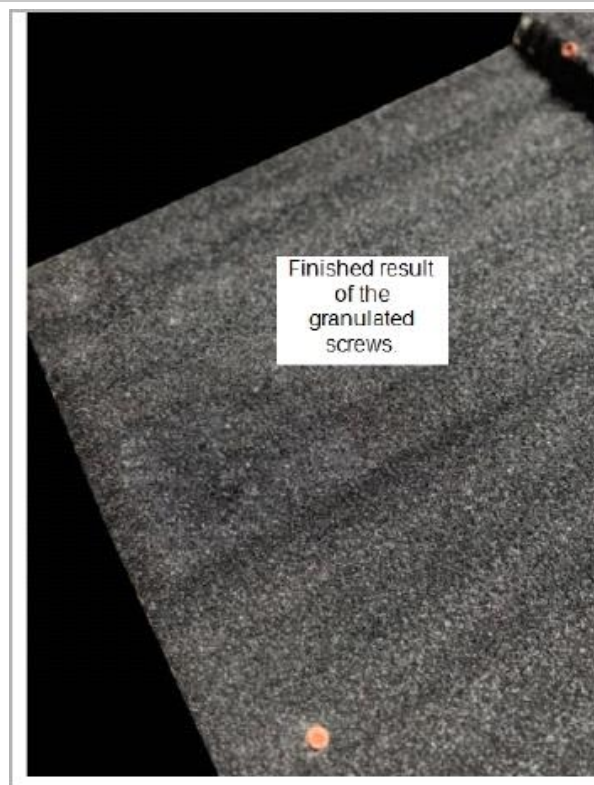
Polyurethane sealant applied over screw head.



Screw head fully covered with sealant.



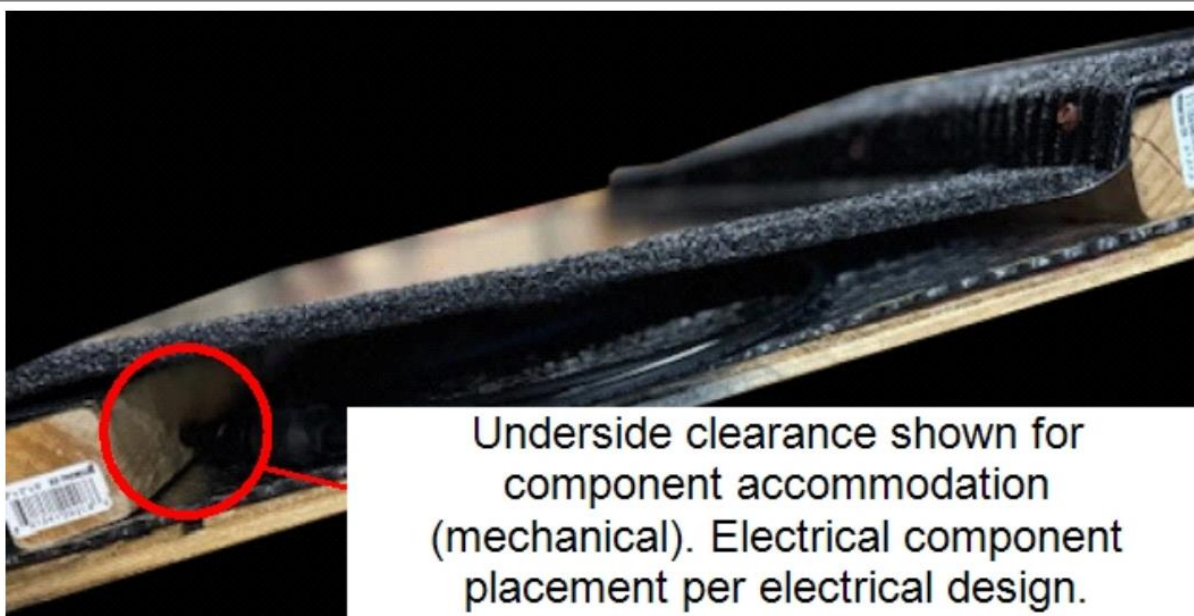
Granules pressed into wet sealant.



Finished screw-head dressing after granulation.

10. Electrical Accommodation Boundary

The mechanical installation must preserve the intended underside clearance and service space for component accommodation. However, this guide does not provide electrical component placement, conductor routing, grounding/bonding, or rapid-shutdown installation instructions.



Underside clearance reference for mechanical accommodation. Electrical component placement is per project electrical design.

Mechanical installer responsibility	Electrical contractor / design responsibility
Maintain the mechanical panel clearance shown in the approved roof assembly.	Determine final electrical component placement, wiring route, string layout, grounding/bonding, and rapid-shutdown equipment.
Avoid crushing, pinching, dragging, or fastening through conductors or component areas.	Inspect and approve electrical routing before commissioning.
Coordinate hold points before covering areas that require electrical access.	Complete electrical testing, commissioning, labeling, and AHJ electrical inspection.

11. Installer Do / Do Not Field Rules

Do	Do Not
Use the current Mosaic Installation Manual for the selected profile.	Do not treat the Powerhouse panel as a standalone solar rack or afterthought.
Follow the stamped engineering set for fastening and structural attachment.	Do not reduce fastener counts because the roof “feels solid.” Buildings do not care about confidence.
Protect the PV collector surface during handling, staging, and installation.	Do not walk directly on, drag tools across, or stage materials on the PV collector area.
Verify lap, overlap, course line, and gasket compression before moving to the next panel.	Do not leave exposed, unsealed, or poorly dressed screw heads.
Photograph critical steps and completed fastener/sealant conditions.	Do not conceal unresolved conflicts with layout, electrical routing, or engineering.

12. Final QC and Documentation Checklist

Use this checklist at the end of each Powerhouse installation area before the crew releases the section. Fill in project details, mark pass/fail, and attach photos to the job record.

QC item	Pass / Fail	Notes / Photo Ref.
Project / roof area identified		
Powerhouse layout matches approved roof/electrical plan		
Underlayment / low-E / battens accepted before panel placement		
Panel surface undamaged and clean		
Top lap fully tucked and seated		
Side overlap aligned with surrounding Mosaic panel field		
Fastener quantity matches project schedule		
All screws seated straight with gasket compression		
No over-driven, stripped, missed, or loose fasteners		
All exposed screw heads sealed with polyurethane		
Granules applied and dressed flush/blended		
Underside clearance/component accommodation preserved		
Electrical hold point complete before concealment, where applicable		
Final field photos uploaded to job record		

Appendix A - Field Photo Reference Plates

The following plates preserve the useful photo evidence from the supplied v1 guide while presenting it in a cleaner reference format. Final production artwork should replace low-resolution screenshots with original high-resolution photos wherever available.

A.1 Finished display conditions

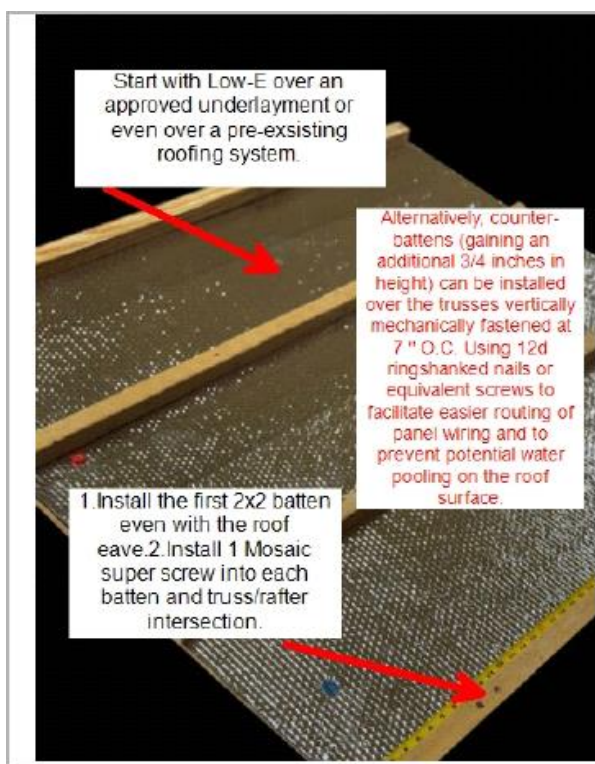


Finished Powerhouse display - front elevation.

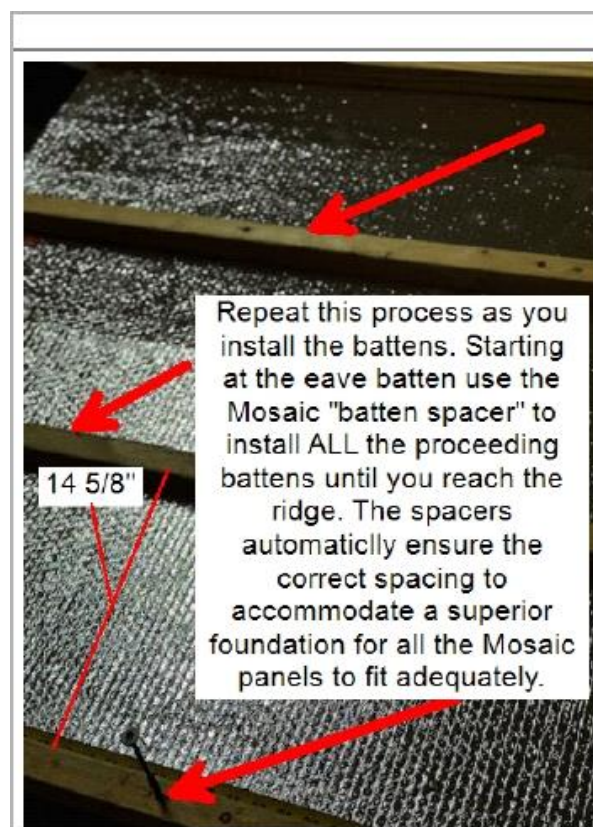


Finished Powerhouse display - side elevation.

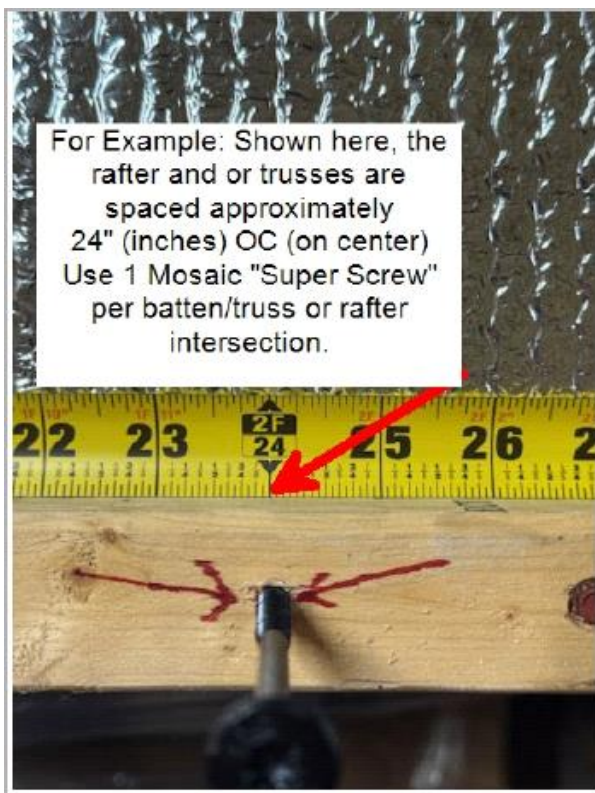
A.2 Batten layout and prepared roof field



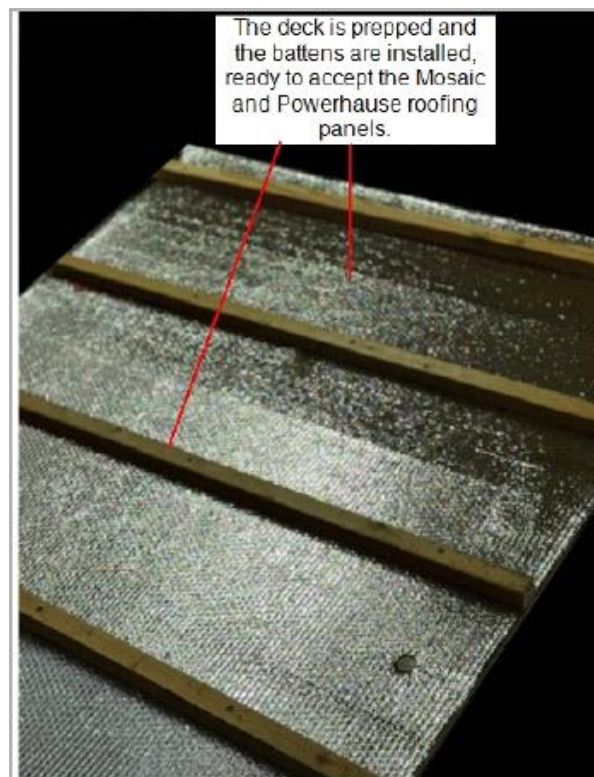
Starter batten / low-E field condition.



Batten spacing and Mosaic spacer reference.



Framing spacing reference in the mock-up.

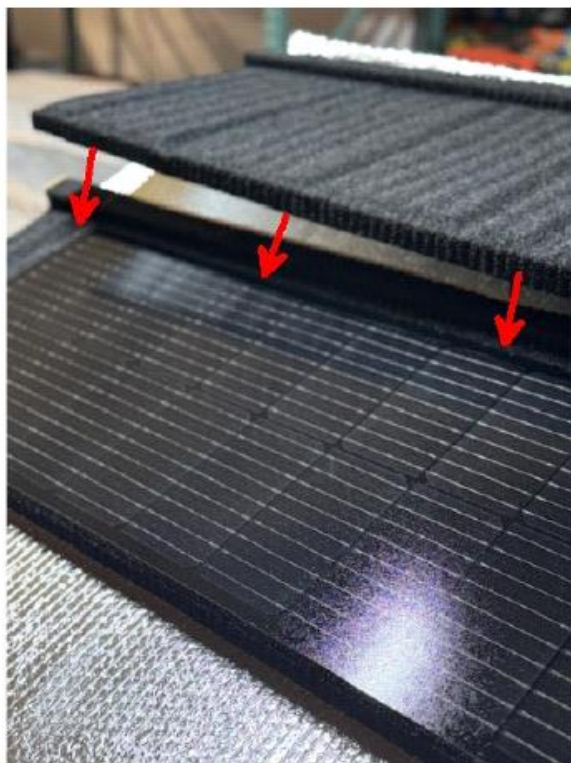
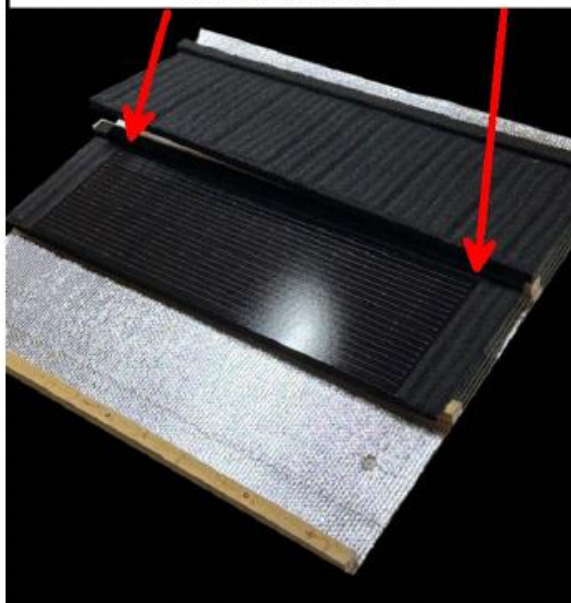


Prepared batten field ready for panel installation.

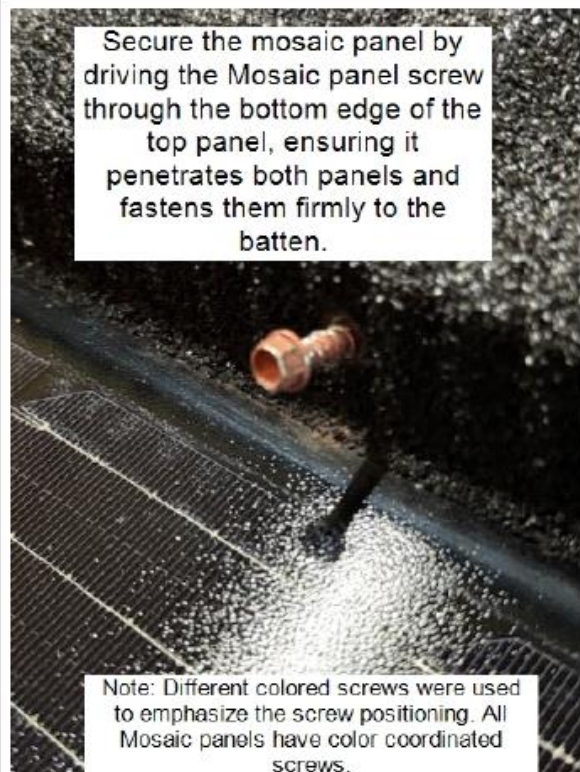


A.3 Panel placement, fastening, and finish

Starting from the top, lift the bottom edge of the panel and tuck the Mosaic's Shakedown PV (Powerhouse) panel underneath. Then, press the lower portion of the panel down to overlap the preceding panel and start securing it onto the batten through the nose as indicated in the following photos.



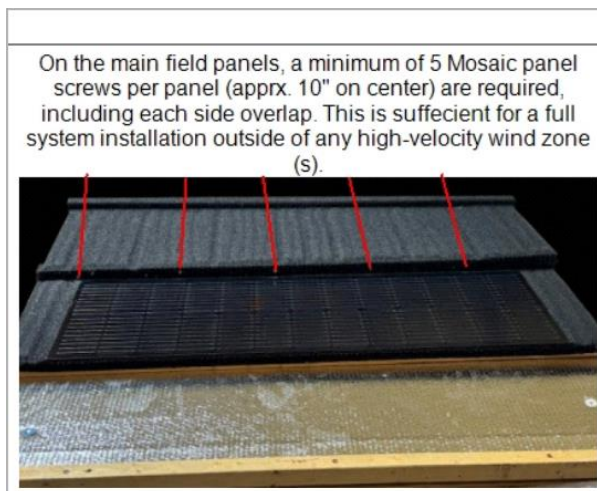
Secure the mosaic panel by driving the Mosaic panel screw through the bottom edge of the top panel, ensuring it penetrates both panels and fastens them firmly to the batten.



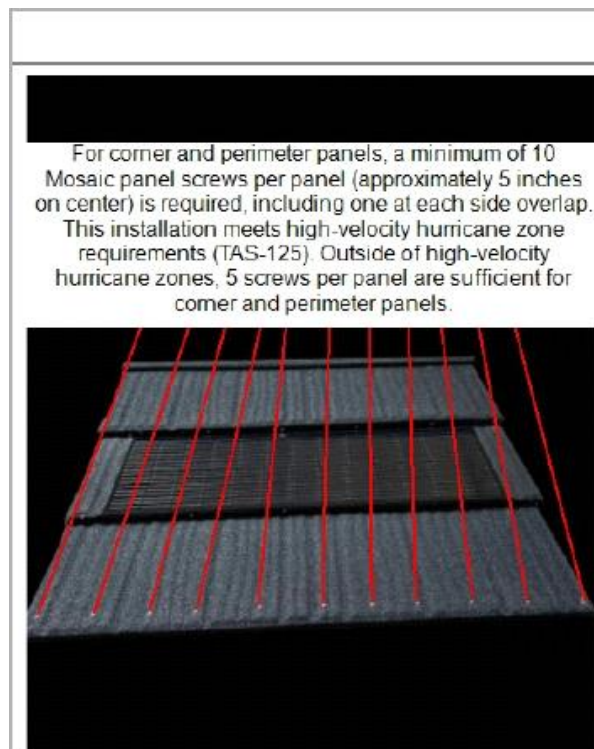
Note: Different colored screws were used to emphasize the screw positioning. All Mosaic panels have color coordinated screws.

Screw driven through overlap into batten.

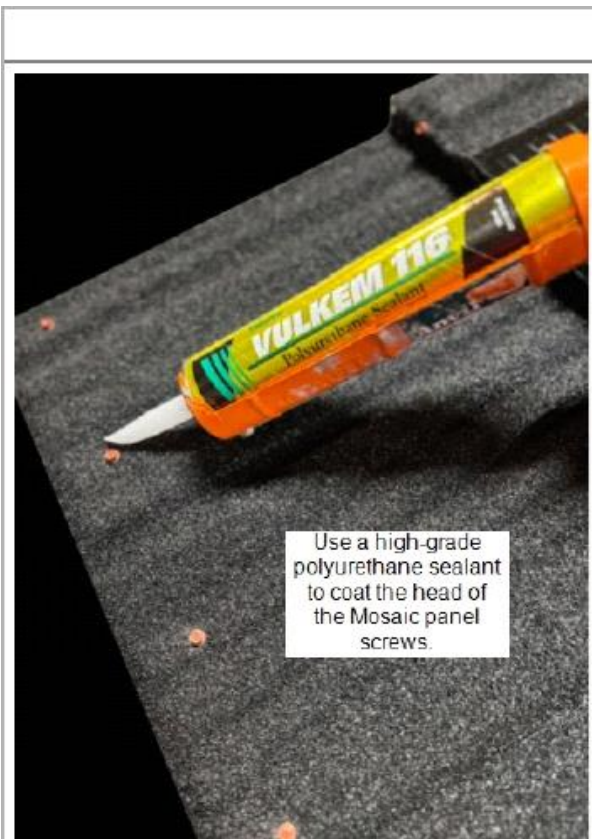
Powerhouse tuck-in and overlap sequence.



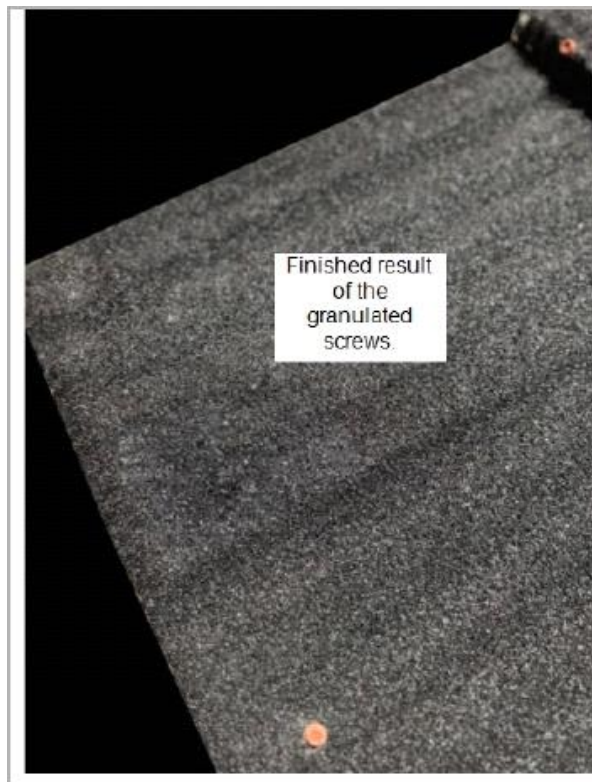
Guide-level field fastening pattern.



Guide-level perimeter/corner fastening pattern.

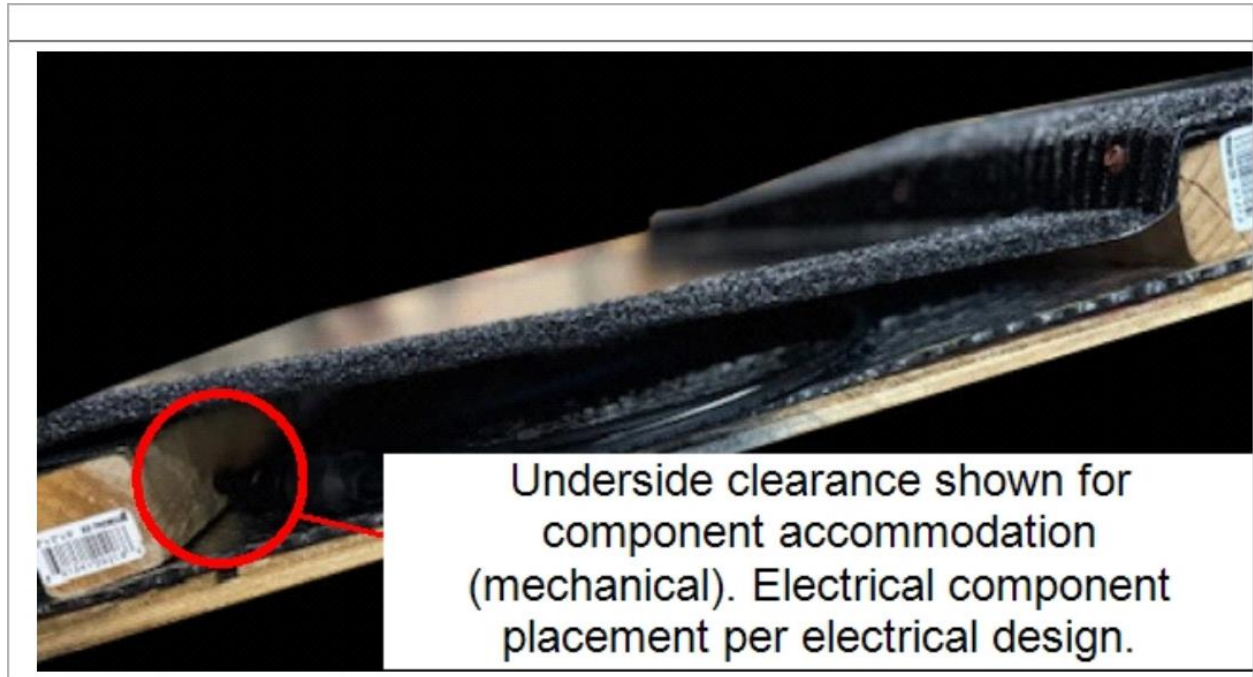


Sealant application over screw head.



Finished granulated screw-head condition.

A.4 Clearance reference



Clearance at underside of the panel for mechanical accommodation. Electrical design governs component placement.