

LIVING SEAWALLS



INSTALLATION MANUAL

JULY 2023

ENHANCING THE ECOLOGICAL VALUE OF
ARTIFICIAL MARINE STRUCTURES





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Methodology.

Living Seawall panels are attached to sandstone or concrete walls using M16 SS 316 threaded rod. There are 4 connection points per panel; the recommended number will depend on the wave energy at the installation site. For high energy sites, all 4 connection points can be used with the panel positioned flush to the seawall. For low energy sites 3 connection points can be used with a maximum of 100mm gap between the back of panel and seawall. Panels can also be glued to a flat seawall with a marine grouting system and a single centre connection point. We recommend consultation with the Living Seawalls team before installation.

*Bolt holes for securing the threaded rod must be cleaned prior to inserting adhesive.

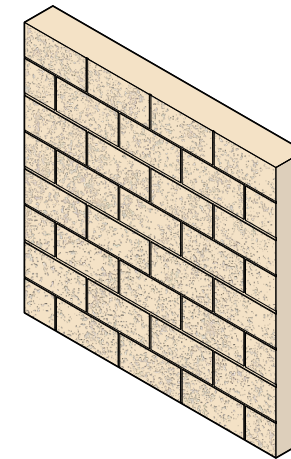
*It is the discretion of the client and installation contractor to determine if the sea wall is of sound structural quality.

To order a Living Seawalls template for installation contact info@livingseawalls.com.au

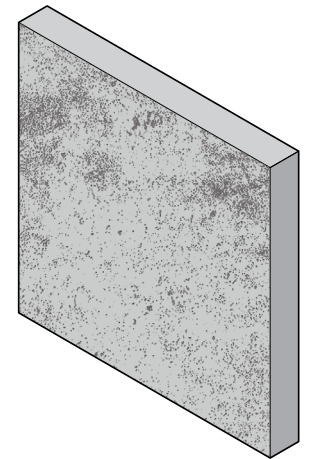
Required Equipment.

- HAMMER DRILL OR CORE DRILL
- M18 MASONARY DRILL BIT
- M16 SS 316 THREADED ROD
- M16 SS 316 NYLOC NUT
- M16 SS 316 NUT
- M16 SS 316 WASHER
- M16 SS 316 SPRING WASHER
- M16 SPANNER OR WRENCH
- HILTI HIT-RE500 OR CHEMSET 101

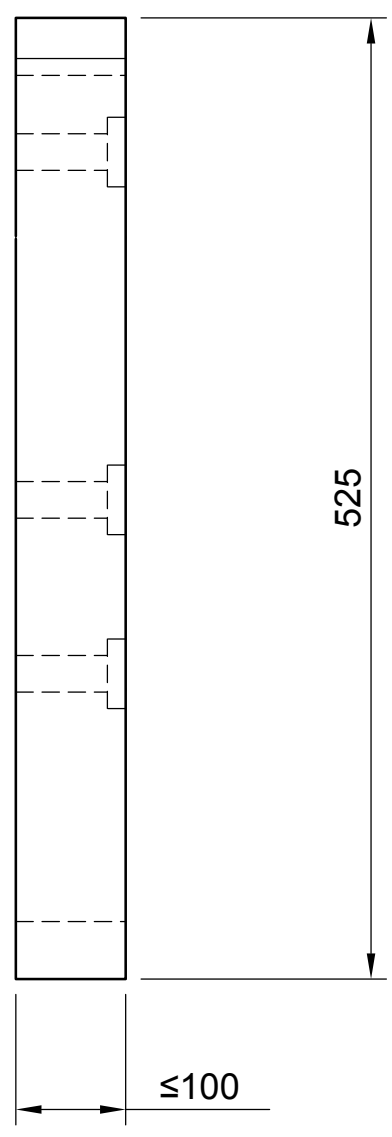
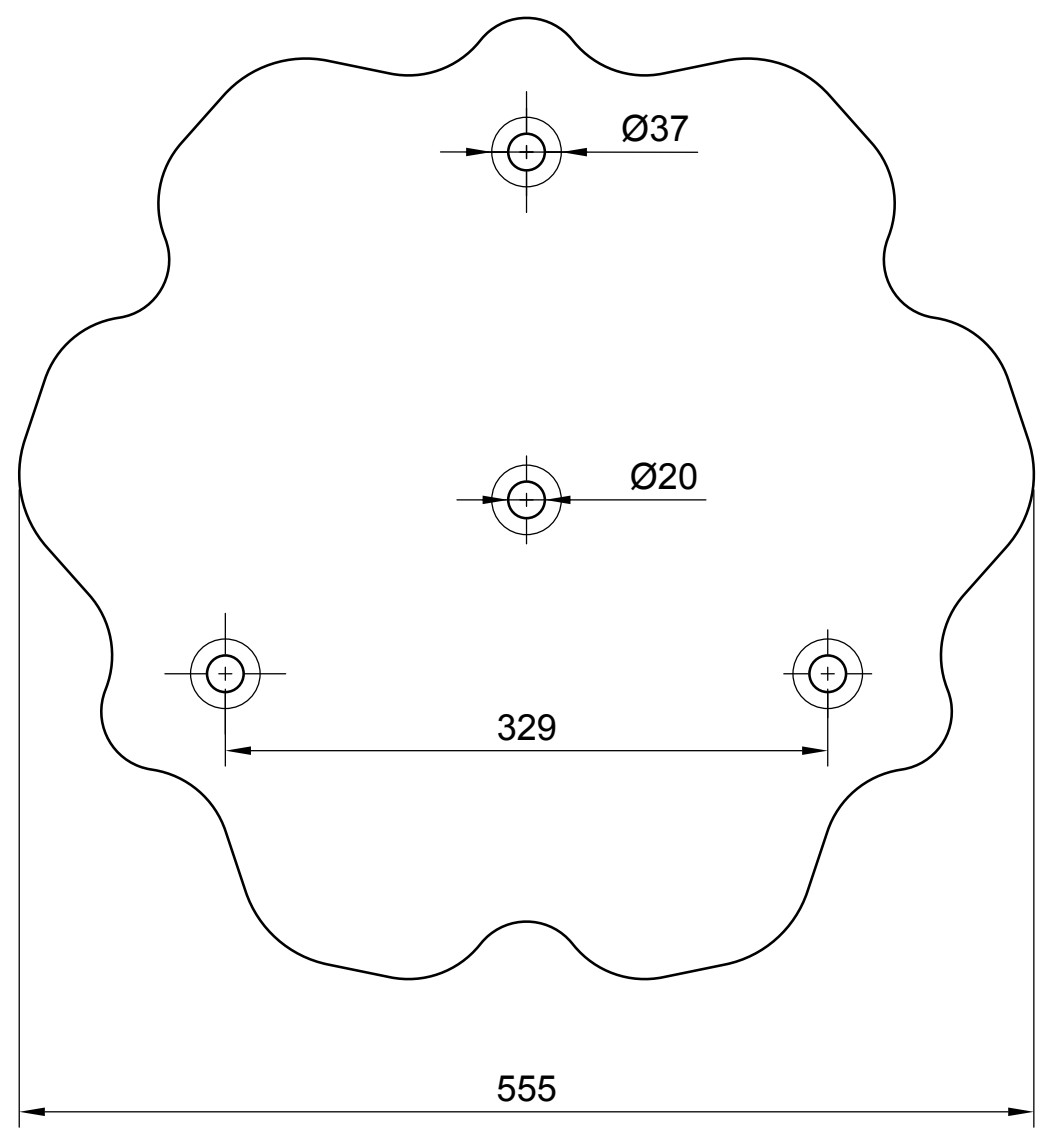
Wall Types.



SANDSTONE



CONCRETE



Panel Dimensions.

Fastening Options.

ARRANGEMENT DEPENDS ON INSTALLATION
SITE WAVE ENERGY

— — EPOXY: HILTRI HITRE 500 OR CHEMSET 101

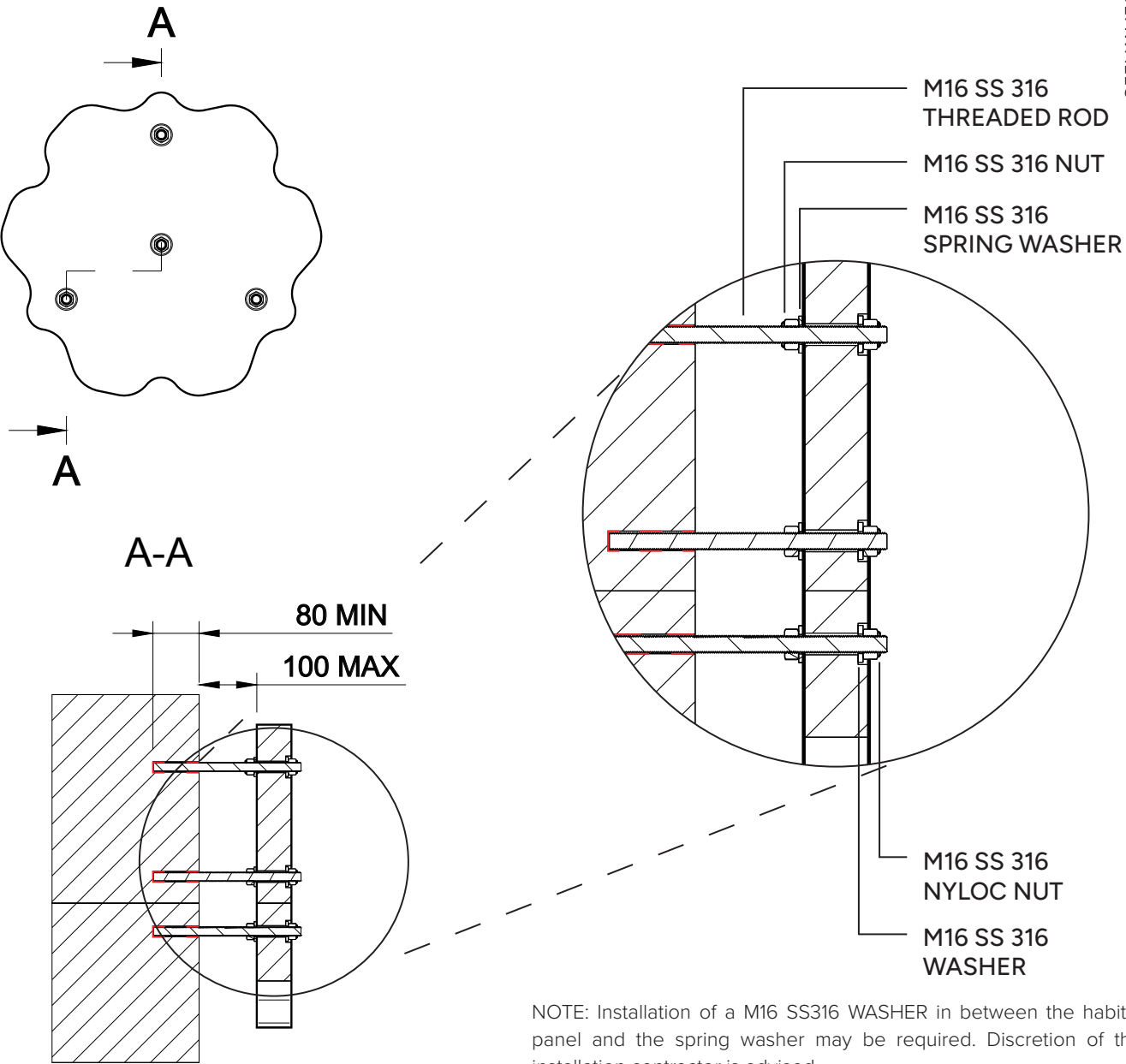
Option A is suitable for sites that have high wave energy because they are close to harbour/estuarine mouths or have high exposure to boat traffic. Panels should be installed using all four bolting holes and offset from the seawall to mitigate disturbing established local marine habitat.

Option B is suitable for sites where seawalls experience moderate to low to high wave energy. Panels should be installed using at least three bolting holes and offset from the seawall to enhance habitat potential.

Option C is suitable for sites where high wave energy is experienced and the seawall surface is flat. Panels should be secured with at least one bolt and thread and a generous coating of epoxy on the backside of each panel

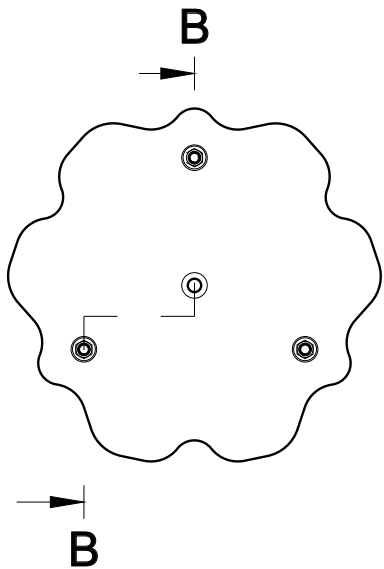
DIMENSIONS IN mm UNLESS OTHERWISE STATED

OPTION A: FOUR-BOLT ARRANGEMENT OFFSET FROM SEAWALL

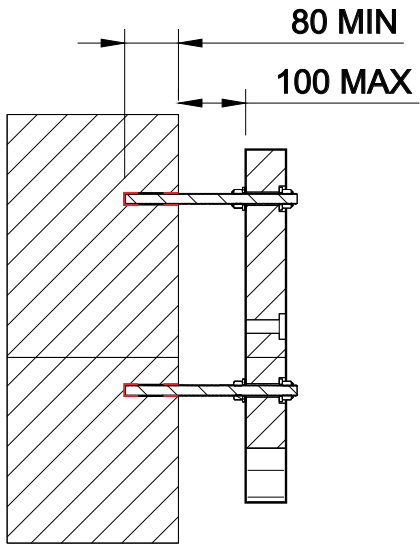


NOTE: Installation of a M16 SS316 WASHER in between the habitat panel and the spring washer may be required. Discretion of the installation contractor is advised.

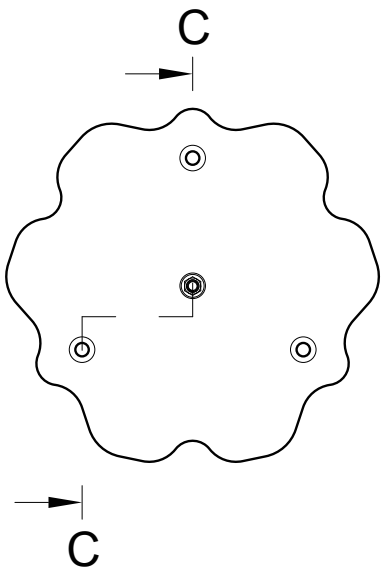
OPTION C: ONE-BOLT ARRANGEMENT FLUSH WITH SEAWALL



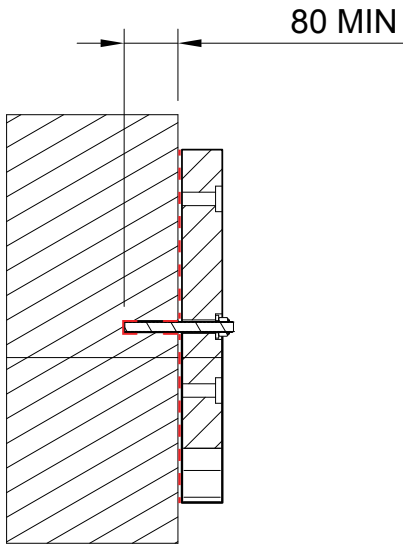
B-B



OPTION C: ONE-BOLT ARRANGEMENT FLUSH WITH SEAWALL



C-C





Installation Guide.

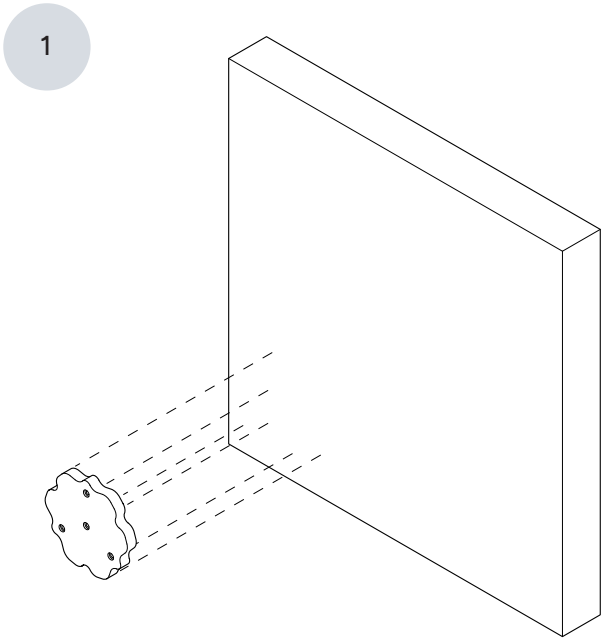
1. MEASURE AND DRILL

Mark out height and length of installation area as per panel configuration diagram. Use a panel template to mark drill points along length of seawall.

Panels can be positioned to interlock snugly or be separated. Avoid disturbing existing growth except where holes must be drilled.

Cut the stainless steel threaded rods to required length. Core-drill or hammer drill out the designated bolt hole locations using a M18 masonry drill bit. The number of drill holes depends on the wave energy of the site. Drill holes should be 80-100 mm deep, dependent on seawall condition.

If using 3 connection points per panel, any of the panel's 4 available connection points can be used.



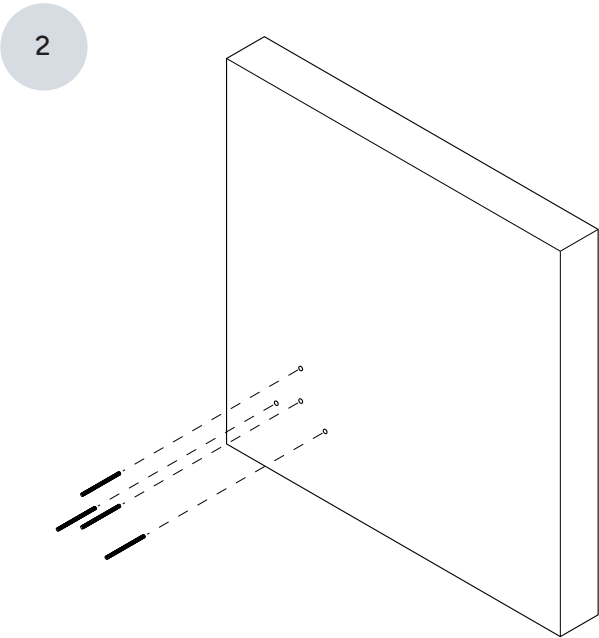


2. CLEAN HOLES & FIX RODS

Thoroughly flush and clean the drill holes with wire brush.

Fill the cleaned drill holes with HILTI HIT-RE 500 injection mortar and slowly insert steel rod. Twist during insertion of the rod.

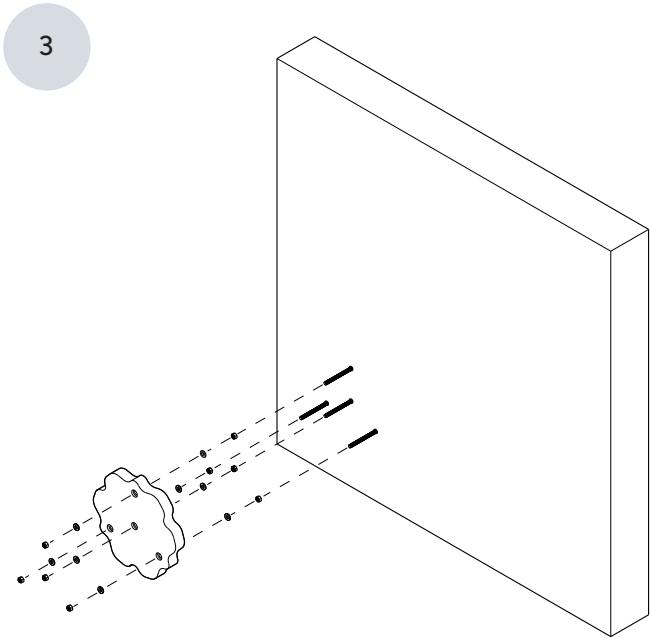
Allow epoxy to cure for 24 hours.





3.1 MOUNT PANELS

Place panels, nuts and washers onto wall by attachment points. See fastening options for use of A - 4 bolts offset; B - 3 bolts offset; or C - 1 bolt flush with wall.





3.2 MOUNT PANELS

For panels offset from the seawall, first thread a hex nut and spring washer, then mount the panel. Secure the panel with a flat washer then nyloc nut.

NOTE: Installation of a flat washer in between the habitat panel and the spring washer may be required. Discretion of the installation contractor is advised.

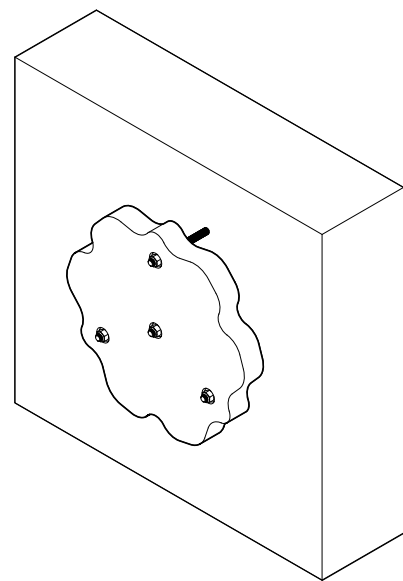




4. SECURE PANELS & TRIM RODS

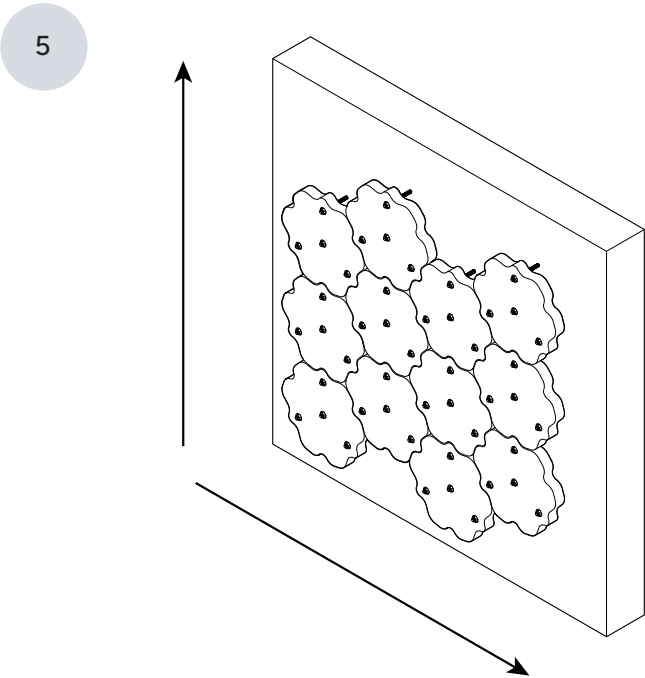
Tighten the nuts so that the panel is secure. Tighten nuts evenly across the panel. Do not over-tighten as this may cause the panel to fracture.

4





5. CONTINUE UP & ALONG THE WALL





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