

# AA408 TENSILE DOUBLE BOLT ANCHOR

## INSTALLATION INSTRUCTIONS

### Things To Know:

AA408 is designed for installation in concrete and steel. It has been specifically developed for tensile loading applications. It is suitable as a re-belay/ aid climbing anchor, tensile rope access anchor or fall arrest anchor. It should be used in place of collared eye bolts in all applications where they are loaded under an angle greater than 20° with the surface they are installed in.

Minimum distance to the edge of the slab or between any 2 eyebolts must be at least 200mm unless certified by a structural engineer!

### Fixing Options:

- 2 x Through bolt M12 (HOLE 14 DIA)
- 2 x Chemical HILTI HVU M12 or injectable equivalent (HOLE 14 DIA)
- 2 x HSL 3 GR M12 (HOLE 18 DIA) or 2 HSL 3 GR M10
- 2x Hilti HST3-R M12x125mm (HOLE 12 DIA)
- 2x FRIULSIDER FM-753 CRACK M12x120/20 (HOLE 12 DIA)

### Loading:

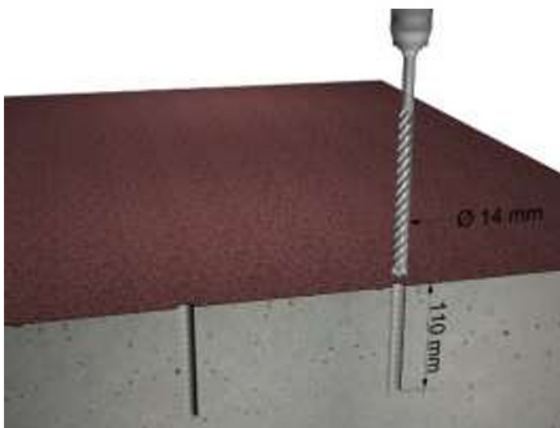
Tensile or sheer (360 degree in any possible way of loading)

### Tools Needed For Installation:

Rebar detector, Rotary hammer drill, Masonry drill bit 12, 14 or 18, air pump, cleaning brush and torque wrench.

### Installation Steps – M12 chemset in concrete:

1. Use Hilti Reo Scan or similar device to avoid drilling the steel reinforcement in concrete.
2. Mark the positions for holes to be drilled.
3. Drill two M14x110mm holes. When you start drilling the second hole, double check your holes line up with the anchor holes. Ensure the holes are parallel and 90° with the drilled surface.



4. Clean the holes 3 times with compressed air and cleaning brush.



5. Insert one Hilti HVU M12 chemical pack in each hole.



6. Using rotary hammer with appropriate setting tool, install 2 stainless steel M12 rods through the holes in the base of AA408 anchor. The rods must have their tips cut on 45° angle to allow for correct mixing of chemical.



7. Allow sufficient drying time as per Hilti HVU instructions. Once cured, remove the hex nuts.



8. Install one M12 washer and one M12 nylock nut on each rod ensuring minimum of 5 threads are showing when nuts are fully tightened.

**Note:** The 5 threads are important for a secure attachment of a separate M12 eye nut which is needed to complete the proof load of individual rods/fixings on annual basis.



**Note a:** When installing through water proofing membrane, a full gasket of a membrane compatible sealant is recommended between and around the anchor base plate and the membrane.

**Note b:** Install M16 chemset as per the above instructions with re-drilled anchor body holes to take M16 rods

### **Installation Steps – M12 Hilti HSL 3 GR fixings in concrete:**

1. Use Hilti Reo Scan or similar device to avoid drilling the steel reinforcement in concrete.
2. Mark the positions for holes to be drilled.
3. Assemble both HSL's onto the anchor body and check they line up with the marked holes.
4. Drill two M18 x 125mm holes. When you start drilling the second hole, double check the holes line up with the HSL's in your assembly. Ensure the holes are parallel and 90° with the drilled surface.
5. Clean the holes with compressed air and cleaning brush.
6. Offer the whole assembly to the drilled holes and tap both HSL's repeatedly with hammer until fully in.
7. Use a spanner to apply correct torque as per Hilti HSL-3B instructions.
8. Once a prescribed torque is achieved in both fixings, the installation is complete. In the overhead applications, the original hex nuts and washers will suffice or may be upgraded to M12 nylock nuts. As an alternative, a heavy-duty thread locker (Loctite Red 271) or s/s spring washers can be used with the original nuts. Ensure minimum of 5 threads are showing when nuts are fully tightened.

**Note:** The 5 threads are important for a secure attachment of a separate M12 eye nut which is needed to complete the proof load of individual rods/fixings on annual basis.

### **Installation Steps – M12 through bolt:**

1. Use Hilti Reo Scan or similar device to avoid drilling the steel reinforcement in concrete.
2. Mark the positions for holes to be drilled.
3. Drill two M14 holes. When you start drilling the second hole, double check your holes line up with the anchor holes. Ensure the holes are parallel and 90° with the drilled surface.
4. Insert two M12 stainless steel rods cut to size. Add two backing plates (BP2 or BP3) to each rod on the back side and M12 washer to each rod on the front side.
5. Install four M12 lock nuts; one for each end of the rod and tighten to 40 Nm using two spanners. Ensure minimum of 5 threads are showing when nuts are fully tightened.

### **Installation Steps – M12x125mm Hilti HST3-R fixings in concrete:**

1. Use Hilti Reo Scan or similar device to avoid drilling the steel reinforcement in concrete.
2. Mark the positions for holes to be drilled.
3. Assemble both M12x125mm HST3-Rs onto the anchor body and check they line up with the marked holes.
4. Drill two M12 x 110mm holes. When you start drilling the second hole, double check the holes line up with the M12x125mm HST3-Rs in your assembly. Ensure the holes are parallel and 90° with the drilled surface.
5. Clean the holes with compressed air and cleaning brush.
6. Offer the whole assembly to the drilled holes and tap both M12x125mm HST3-R's repeatedly with hammer until fully in. You can also use a setting tool with SDS drill attachment to do this.
7. Use a torque wrench to apply correct torque as per Hilti M12x125mm HST3-R instructions.
8. Once a prescribed torque is achieved in both fixings, the installation is complete. Original hex nuts and washers will suffice or may be upgraded to M12 nylock nuts. As an alternative, a heavy-duty thread locker (Loctite Red 271) or s/s spring washers can be used with the original nuts. Ensure minimum of 5 threads are showing when nuts are fully tightened.

**Note:** The 5 threads are important for a secure attachment of a separate M12 eye nut which is needed to complete the proof load of individual rods/fixings on annual basis.

## Installation Steps – FRIULSIDER FM-753 CRACK M12x120/20 heavy duty fixings in concrete:

1. Use Hilti Reo Scan or similar device to avoid drilling the steel reinforcement in concrete.
2. Mark the positions for holes to be drilled.
3. Assemble both FRIULSIDER FM-753 CRACK M12x120/20 heavy duty fixings onto the anchor body and check they line up with the marked holes.
4. Drill two M12 x 100mm holes. When you start drilling the second hole, double check the holes line up with the FRIULSIDER FM-753 CRACK M12x120/20 heavy duty fixings in your assembly. Ensure the holes are parallel and 90° with the drilled surface.
5. Clean the holes with compressed air and cleaning brush.
6. Offer the whole assembly to the drilled holes and tap both FRIULSIDER FM-753 CRACK M12x120/20 heavy duty fixings repeatedly with hammer until fully in. You can also use a setting tool with SDS attachment to do this.
7. Use a torque wrench to apply correct torque as per FRIULSIDER FM-753 CRACK M12x120/20 heavy duty fixings instructions.
8. Once a prescribed torque is achieved in both fixings, the installation is complete. Original hex nuts and washers will suffice or may be upgraded to M12 nylock nuts. As an alternative, a heavy-duty thread locker (Loctite Red 271) or s/s spring washers can be used with the original nuts. Ensure minimum of 5 threads are showing when nuts are fully tightened.

**Note:** *The 5 threads are important for a secure attachment of a separate M12 eye nut which is needed to complete the proof load of individual rods/fixings on annual basis.*

### Proof load and certification:

All chemical and friction anchorages must be proof loaded before their initial use and subsequently on regular basis to satisfy the requirements set out in AS/NZS 1891.4:2009, AS/NZS 4488.2:1997 & ISO 22846.

- Proof load each rod (fixing) individually to 7.5 kN
- Do not proof load the bracket. Proof loading each rod individually is the best practice!

Through bolts must be visually inspected – do not proof load!

**Note:** *The structure must be assessed by a structural engineer unless it is clear to a suitably qualified person that it can withstand the forces imposed on it during arresting of a fall and during work positioning.*

### Disclaimer:

*All product specifications and technical descriptions, recommendations and other information provided in this document are given as general guidance and advice, and are to be considered in conjunction with Safety Roof Anchors installation instructions and any other data available and applicable to each particular standard product or system. Use of such data is however the user's sole responsibility taking into account the intended application and actual conditions existing on the specific worksite. Consequent selection of the right product for any particular use remains the user's ultimate responsibility.*

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