ADDENDUM#2

Renovation of Commons A

WBA 21-034.01

TO: All Bidders

DATE: 27 January 2023

This addendum forms a part of the Contract Documents and modifies the original Bid Documents dated December 16, 2022. Acknowledge receipt of this Addendum by inserting its number in the Bid Form. Failure to do so may subject Bidder to disqualification. This serves as an addendum to the construction documents and modifies and/or supplements them as follows:

I. CLARIFICATIONS & SUBSTITUTION REQUESTS

- 1. Question: Masonry Anchors, A5.2 Current Specification is unknown; we are making a good-faith attempt to submit this product for the purpose of our bid. We are proposing the Spira-Lok retrofit wall tie system for use. Product Data is attached.
 - a. Response: The design was based on Torq-Lok 530 used in the renovation of Commons E and G (also by Blok-Lok). The proposed Spira-Lok appears to be an equal product.
- 2. Question: Windows 08 5313 Ply-Gem Windows. 1500 Vinyl Collection
 - i. Design Pressure Acceptable
 - ii. Condensation Resistance Factor -
 - iii. U-Value Under 0.29 Available
 - iv. Forced Entry Resistance Standard
 - v. Acoustic Performance STC up to 34
 - vi. Test Standards/Performance requirements are met or exceeded
 - 1. AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS-11)
 - 2. Windows have up to an LC classification, Exceeding the R15 classification
 - vii. Construction type appears to be acceptable
 - viii. Other items listed in specifications available as options.
 - Product Data is attached
 - Response: The proposed Ply-Gem product appears to be an equal to the Basis of Design.
- 3. Question: Do we need to replace the dryer vent in each apartment?
 - a. Response: Yes, all exterior dryer vents are to be replaced as part of this scope.
- 4. Question: Do we hook up clothes dryer and clean existing vent pipe?
 - a. Response: Final connections of all appliances are by GC.
- 5. Question: Do we clean and paint exterior louvers or replace them?
 - a. Response: Existing exterior louvers are to be stripped, primed, and painted.
- 6. Question: We are requesting direction on waterproofing water closet per owner.
 - a. Response: See attached diagrams (Exterior Sheathing Repair) of the proposed solution, as detailed on sheet A5.2
- 7. Question: At the site visit, the 2nd and 3rd floors were unstable do to rot. Please advise.
 - a. Response: No unstable floors were observed during conditions assessment. Please identify locations.
- 8. Question: If OSB structural flooring has to be replaced; we are requesting an allowance so each GC has an equal price.
 - a. Response: Assume 500sf of plywood subfloor replacement and provide appropriate unit price.
- 9. Question: Existing drywall on walls and ceiling that Serve Pro has left has a lot of mold on every floor. We suggest a complete demolition. Please advise.
 - a. Response: The University is aware of new mold growth and is contracting separately for that scope as part of pre-demolition.

- 10. Question: A-Sheets: Demolition Items 1: "Remove all water damaged and sagging floor construction"-Will this be covered by the Quantity Price Allowance E. "Gypsum Concrete Floor Underlayment Repair?
 - a. Response: Refer to question above (Question 8) regarding OSB.
- 11. Question: Please verify we are to get a certified mold remediation done on all mold areas rather than Serve Pro including it in the pre demolition.
 - a. Response: Mold remediation is part of the pre-demolition scope.
- 12. Question: Please note the cost for the GC to get a mold remediation done through a subcontractor will cost more than Serve Pro including removing the drywall in their scope.
 - a. Response: Refer to previous question.
- 13. Question: We are requesting an Allowance for replacing rotten subfloor on 2nd and 3rd floor with ¾" tongue and groove plywood. Recommendation would be 2,000 SF for each floor totaling 4,000 SF.
 - a. Response: Refer to question above (Question 8) regarding OSB.
- 14. Question: Section 01 2100 1.05 Quantity Price Allowances Schedule: Requesting direction on B. Acoustical & Thermal Wall Insulation Replacement. It does not list the \$__/SF with the est. quantity as the rest of the items have.
 - a. Response: Estimated quantity = 6,000sf. Will be updated in forthcoming Addendum.
- 15. Question: (Firestopping) LS1.1 indicates that all walls, partitions, floors, etc carry a 0 hour rating. Observation of the existing conditions in construction indicate that no firestopping materials have been used in floor or wall penetrations, to our best knowledge. Please confirm that penetration firestopping is not required in this project outside of allowances.
 - a. Response: Firestopping was not observed during conditions assessment, but the allowance is included for contingency.
- 16. Question: (C1.0) Notes for the HVAC units state to "remove and replace" the condensing units where the new concrete housekeeping pads will be installed. Additionally, AC units on the ends of the buildings call to be "reset." Conversations at the site visit indicated that the University would be responsible for removing and resetting/replacing and recharging the units. Please confirm who will be responsible for this SOW
 - a. Response: Civil is OK however WBA and the University would like to handle this item. Please advise as required – MBA
 Response: HVAC scope is under separate contract (with the exception of brick vents and bathroom exhaust vent) -- WBA
- 17. Question: (A2.1) Many of the water-damages areas are inside of HVAC/AHU closets. Will the University be removing and reinstalling the AHU's, or is this the Contractor's responsibility? If this is the contractor's responsibility; CF RFI above; who will ne responsible for refrigerant reclamation and recharge?
 - a. Response: HVAC scope is under separate contract (with the exception of brick vents and bathroom exhaust vent)
- 18. Question: (A2.1) Many AHU's were observed to be damaged; disconnected; blowers missing; etc.
 - a. Response: HVAC scope is under separate contract (with the exception of brick vents and bathroom exhaust vent)
- 19. Question: (Demolition of existing Gyp Board A2.1, A2.2, A2.3) While on site, several areas had the demolition "Completed" by the owner, and several others were still in progress. In some of the "Complete" demolition areas; visible mold growth was observed both on the finish face of the remaining gyp board and also in the wall-cavity-side. Furthermore, given the presence of biological growth, we will be unable to quantify precisely the locations and quantities that will need to be mitigated, as there will be a lapse in time between the pre-bid survey and start of construction. It is our position that there is too much biological growth in the building to effectively mitigate, and the project scope should be amended to remove all gyp board from the building in the demolition phase and to replace all with new.

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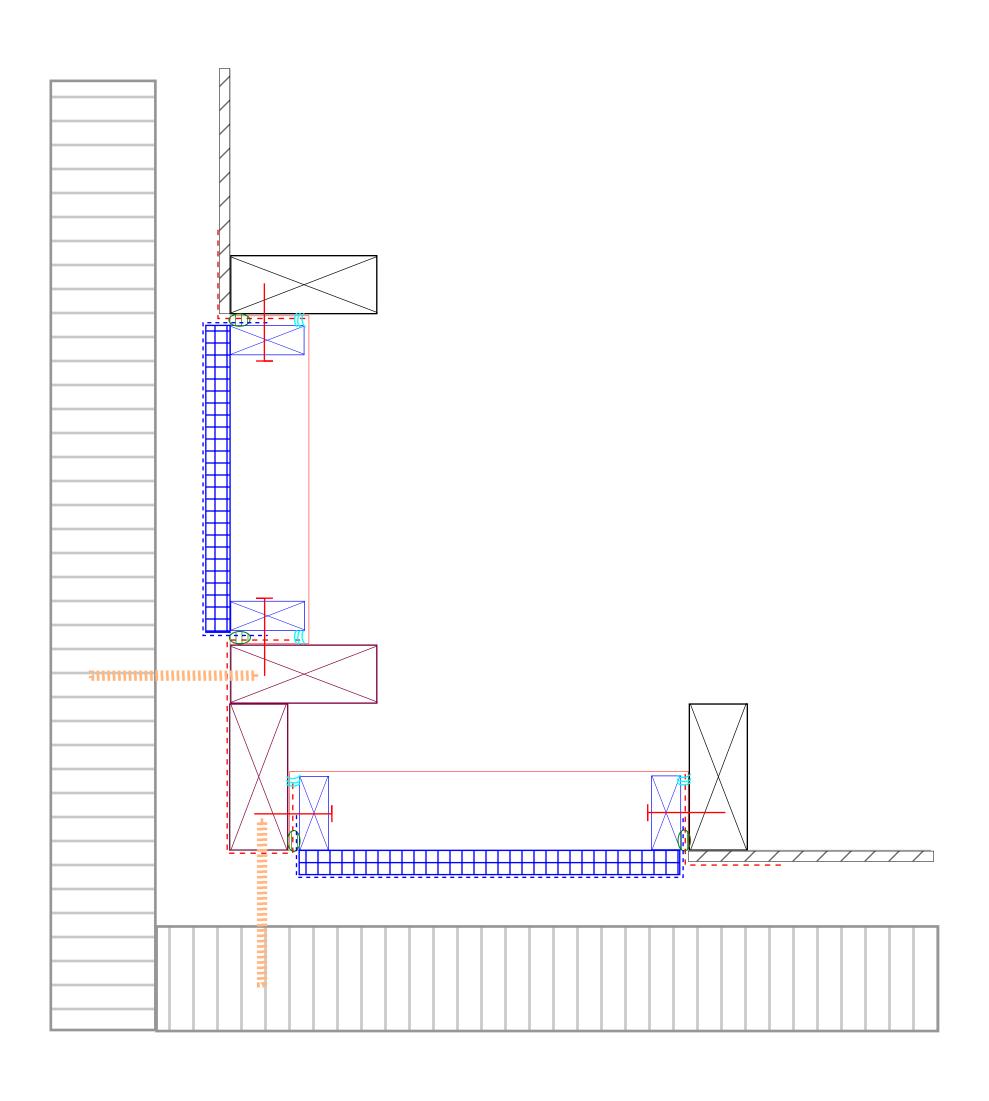
- a. Response: The University is aware of new mold growth and is contracting separately for that scope as part of pre-demolition.
- 20. Question: (Roof Drain Leader Piping C3.1 & C2.0) The detail on C3.1 indicates the roof drain leaders shall be Ductile Iron Pipe. All other stormwater piping per C2.0 shall be PVC. Is PVC Roof Drain leader Piping Acceptable?
 - a. Response: Yes, PVC piping is acceptable MBA
- 21. Question: (Roof Drain Leader Piping C3.1 & C2.0) Is JR Downspout Boot with integral cleanout acceptable to satisfy the requirement for cleanouts on C2.0 and C3.1?
 - a. Response: Yes, J.R. Hoe Downspout Boot is acceptable MBA
- 22. Question: (Unit Masonry Assemblies Spec 04 2000) Spec appears to be missing form the spec book; can this please be provided.
 - a. Response: Section 04 2000 will be included in forthcoming Addendum.
- 23. Question: (Specified Masonry Anchors A5.2) Please provided a basis of design for these masonry anchors.
 - a. Response: See above substitution request and attached product data for masonry anchors.
- 24. Question: (A5.2 Panel/Sheathing replacement) In the water heater closet areas, there appears to be a total degradation of the structural framing members. Could the replacement panels In these areas incorporate the structural stud members?
 - a. Response: See attached diagrams of the proposed solution, as detailed on sheet A5.2
- 25. Question: E1.1, Demo note 1, notes to remove all branch circuit wiring complete. E2.1, General note 2 and Dem note 1 seem to indicate that existing circuitry can be re-used, so long as it is labeled and tested. Can you please clarify.
 - a. Response: Bid documents assumes all interior wiring could potentially require removal if damaged. Demo sheet E2.1 allows contractor to re-use existing wiring where such has been inspected and found to be in first class condition to ensure electrical safety. Extent of re-use of existing wiring is left to the determination of the contractor based upon their field verification and testing of existing. Electrical engineer has not inspected existing wiring to determine if such can be safely re-used. Muya Engineering
- 26. Question: (01 2100 Allowances) Number 2 does not have a specified quantity. Can this be provided?
 - a. Response: Estimated quantity = 6,000sf. Will be updated in forthcoming Addendum.
- 27. Question: (10 400 Signage) Is an emergency evacuation sign required for each unit? 2.02 D
 - a. Response: No. Emergency evacuation signage is not required for each unit.
- 28. Question: (10 2800 Accessories) The list of items in 2.04 appears geared towards a commercial restroom. Please confirm that only Mirrors and Toilet Paper Dispensers should be provided by the contractor on this project.
 - a. Response: Toilet Accessories Basis of Design: Better Home Products Boardwalk Color: Satin Nickel.
 - Framed Mirror Basis of Design: Gallery Services Profile 93-154 Color: Florentine Gray. Spec section will be revised.
- 29. Question: (10 2800 Accessories) Please confirm that Utility Room Accessories (2.05) are not required for this project.
 - a. Response: Correct. Utility Room Accessories are not required. Spec section will be revised.
- 30. Question: (07 800 -Traffic Coating) The note on the finish schedule states to provide "typical at 2nd and 3rd floor balconies." Does this mean nothing on the ground floor receives nothing?
 - a. Response: Correct. No traffic coating on the first floor
- 31. Question: (07 800 -Traffic Coating) On the units where the balconies are part of the entries; should the coating stop at the breezeway?
 - a. Response: Refer to A9.2 and A9.3 for traffic coating locations and extents
- 32. Question: (07 800 -Traffic Coating) Is it intended for the breezeways and stairs to be coated as well?

- a. Response: Refer to A9.2 and A9.3 for traffic coating locations and extents
- 33. Question: New window sills are not specified. Should these be painted wood, or solid surface?
 - a. Response: Damaged window sills\stools should be replaced with painted wood to match existing.
- 34. Question: (11 3013 OFCI Residential Appliances) Please confirm that the Owner will supply all necessary connections and accessories (ice maker lines, power pigtails, washer supply and drain lines, dishwasher water lines, etc) for a complete installation.
 - a. Response: Final connections of all appliances are by GC.
- 35. Question: (Exterior Painting Scope) Should the metal deck ceilings in the breezeways and decks be cleaned and painted, only; no metal stripping or sandblasting required?
 - a. Response: Refer to Demolition Item #9 (typical on A2 sheets).

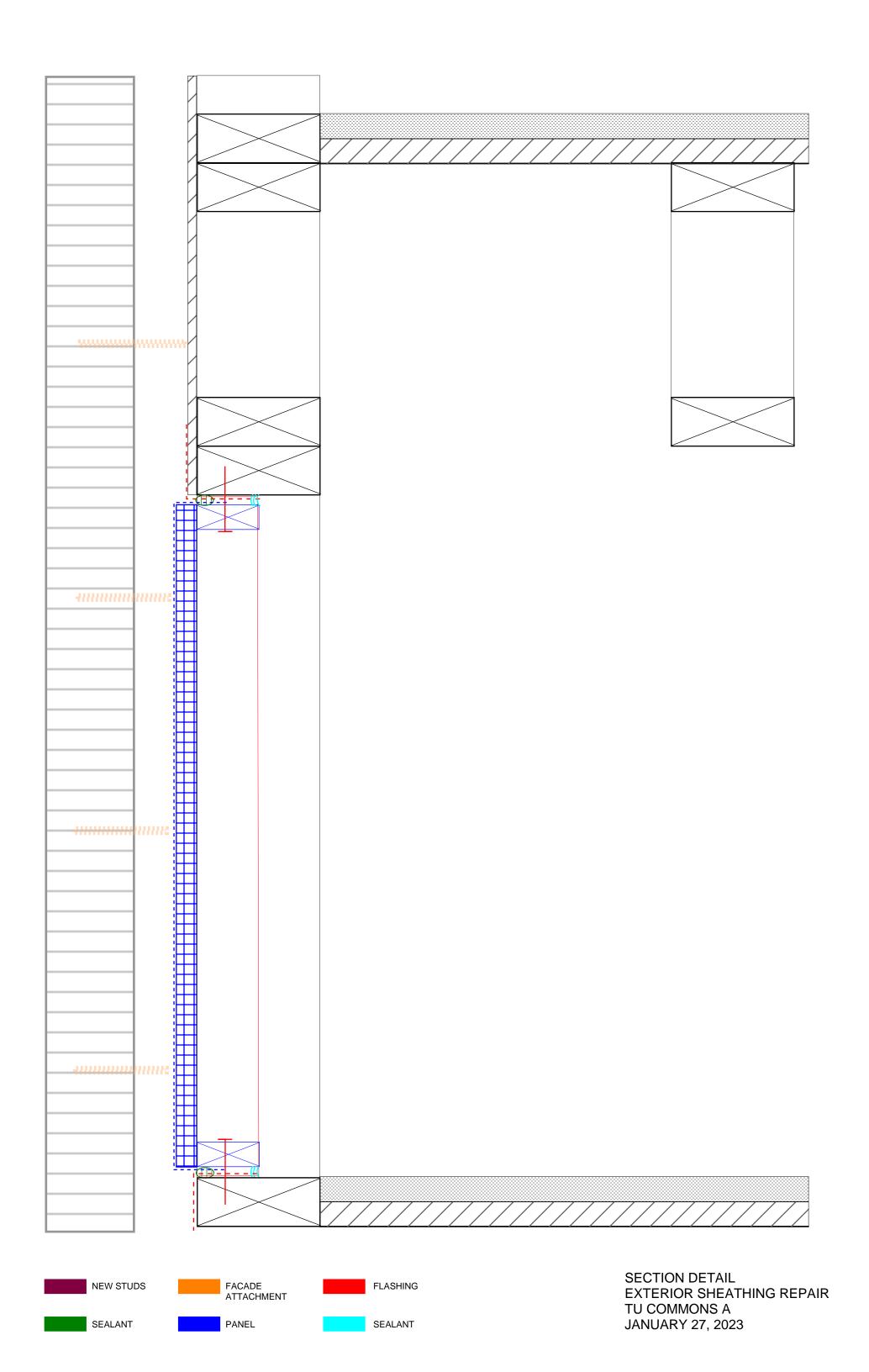
Attachments:

 Exterior Sheathing Repair 	8.5 x 11
2. Spira-Lok – Blok-Lok	8.5 X 11
3. Torq-Lok 530 – Blok-Lok	8.5 X 11

END OF ADDENDUM #2

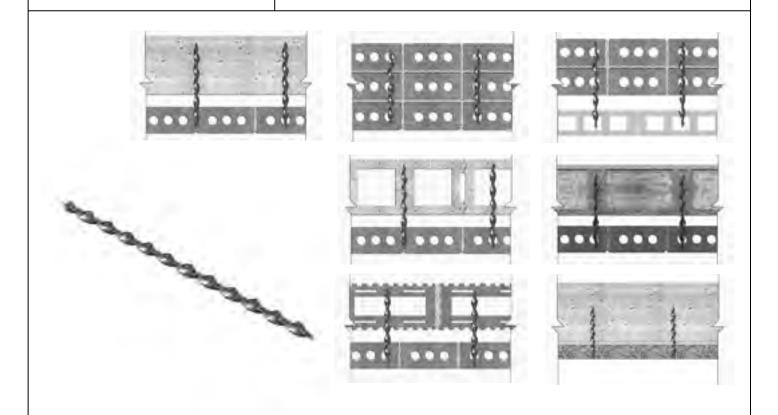








Repair & Restoration Systems Spira-Lok®



DRAWINGS FOR ILLUSTRATIVE PURPOSES ONLY

Spira-Lok®

A one-piece, flexible stainless steel wall tie for pinning masonry to new or existing walls. Also suitable for temporary support for lintel and shelf angle replacement. The dry-set technique may involve various tie diameters, drill bits and installation tools.

An on-site survey should be carried out prior to project tendering to determine material strength, tie diameter & length, pilot hole size and appropriate drilling technique.

Spira-Lok® Asymmetrical Ties are dual diameter Spira-Lok® Stainless Steel Helical Wall Ties designed for use in connecting soft veneer materials to a hard back-up.

See Blok-Lok web site for Spira-Lok Installation Video.

ın	isn:
	Stainless Steel Type 304

Stainless Steel Type 316 (special order)

Length (available 6 1/8"-24"): Select desired length ____

Star	Standard Spira-Lok® Diameter:					
	8 mm					
	10 mm					

Asymmetrical	Spira-L	ok® Diar	neters.
Asymmetrical	Spira-L	JNW Diai	neters.

8/6.5 mm 10/8.5 mm



SPIRA-LOK®

THE ORIGINAL HELICAL WALL TIE SYSTEM









ABOUT

The **Spira-Lok**® Stainless Steel Wall Tie System is an easy to use, cost effective method of re-connecting existing veneers to their structural back-up by means of a corrosion resistant tie assembly. The process eliminates the need to tear down an existing veneer. **Spira-Lok**® is the least invasive way of retrofitting wall ties into an existing structure and is particularly well suited to historical restoration. The combination of material and tie geometry provides for long-term durability and structural stability for the design life of the structure.

Spira-Lok® is installed into a pre-drilled pilot hole, and cuts its own thread in both the veneer and substrate to form a flexible threaded connection between the two components of the wall being rehabilitated. No pre-load or toxic chemicals are introduced into the structure, and the helical form of the tie acts as a "spring" to absorb differential movement without inducing cracking. Once installed, the anchors resist veneer loading in both compression and tension. The design of the system provides two threaded connections that do not create tension between wythes. This presents a sound solution for façade stabilization to prevent collateral damage caused during a seismic event. Basically, the **Spira-Lok®** system replicates the original wall tie's design performance. That is, live loads on the veneer are transferred to the backup thereby stiffening the veneer and minimizing crack potential. All **Spira-Lok®** ties are installed in the bed joints, concealed with a mortar patch or sealant, and have no exposed hardware. Since the entry point is small, the installation is virtually undetectable upon completion.

The **Spira-Lok**® ties are manufactured from AISI Type 300 series austenitic stainless steel. They are available in a variety of lengths, and can be made to special lengths upon request. Variants include Patch-Lok™ to mechanically key patching compounds in concrete and other materials, and Spira-Bar® for laying horizontally in the mortar joints to stitch cracks or form load-bearing beams in masonry.

BASIC APPLICATIONS

Use where facades have missing or corroded wall ties or anchors. Can be applied at peripheral areas that are bulging or areas that are to be removed. Use as a mechanical key for patching. In bar form, can be installed horizontally into mortar joints for crack control and forming beams in masonry.









SPIRA-LOK® THE ORIGINAL HELICIAL WALL TIE SYSTEM

A one-piece, flexible stainless steel wall tie for pinning masonry to new or existing walls. Also suitable for temporary support for lintel and shelf angle replacement. The dry-set technique may involve various tie diameters, drill bits and installation tools.

AVAILABLE: 8 mm or 10 mm diameter x 6-1/8" (155 mm) up to 24" (600 mm) long in Stainless Steel Type 304. (316 available by special order).

SPECIAL FEATURES:

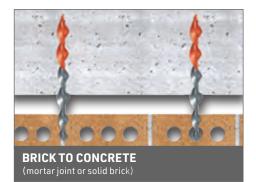
- » Only a small diameter pilot hole required
- No toxic adhesives or expansion devices
- Functional in a wide variety of building materials
- Able to withstand cyclic loading
- Accommodates differential movement between materials
- Does not stress or fracture fragile substrates

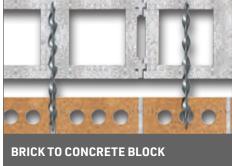
NOTE: An on-site survey should be carried out prior to project tendering to determine material strength, tie diameter & length, pilot hole size and appropriate drilling technique

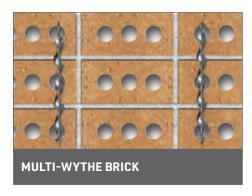


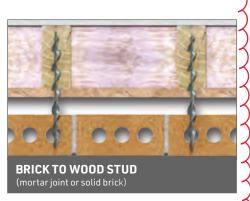


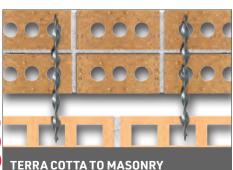


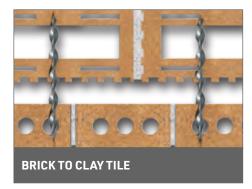
















SPIRA-LOK® INSTALLATION

Installation techniques have evolved to optimize the performance of the **Spira-Lok® Wall Tie System.** Installation procedures are available along with product specifications for typical masonry stabilization. Rotary percussion drilling usually achieves the best results.

TOOLS AND ACCESSORIES

All installation components required, whether it be new construction, refacing, or a dry set pinning application are available from Blok-Lok. Blok-Lok drill bits and setting tools are required for proper **Spira-Lok**® anchor installations.

TYPICAL SPIRA-LOK® MASONRY BIT SIZE (MM)

		BACK-UP MATERIAL					
Facade Material	Spira-Lok	Mortar Joint	Brick	СМИ	Concrete	Wood Stud	Metal Stud
Mortar	8mm	5.0	AS	5.0	AS	5.0	5.0
Joint	10mm	6.5	AS	6.5	AS	6.5	6.5
Brick	8mm	6.5/5.0	6.5	6.5/5.0	6.5	6.5/5.0	6.5/5.0
Brick	10mm	8.0/6.5	8.0	8.0/6.5	8.0	8.0/6.5	8.0/6.5
СМИ	8mm	5.0	AS	5.0	AS	5.0	5.0
CMO	10mm	6.5	AS	6.5	AS	6.5	6.5
Precast	8mm	6.5/5.0	6.5	6.5/5.0	6.5	6.5/5.0	6.5/5.0
Concrete	10mm	8.0/6.5	8.0	8.0/6.5	8.0	8.0/6.5	8.0/6.5
Ctono	8mm	6.5/5.0	6.5	6.5/5.0	6.5	6.5/5.0	6.5
Stone	10mm	8.0/6.5	8.0	8.0/6.5	8.0	8.0/6.5	8.0
		Facade Hole / Back-up Hole AS = Asymm					r Required

TIE SELECTION

- » Available in 8.0 mm and 10.0 mm diameters.
- » Tie length to suit wall conditions having a nominal facade width of 4 inches.
- » Ties are produced from austenitic stainless steel Type 304. Type 316 Stainless is also available for more severe corrosive environments.

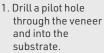
SPIRA-LOK® LENGTH SELECTION

Catalog #	Nominal	Minimum Drilled	Cavity	/ Range
Catalog #	Length Hole Depth		CMU	Concrete
HWT-155	6-1/8"	6-5/8"	1-1/8" - 0	1-1/2" - 0
HWT-170	6-5/8"	7-1/8"	1-5/8" - 0	2-1/2" - 1-1/2"
HWT-195	7-5/8"	8-1/8"	2-5/8" - 0	3-1/2" - 2-1/2"
HWT-220	8-5/8"	9-1/8"	3-5/8" - 0	4-1/2" - 3-1/2"
HWT-245	9-7/8"	10-1/8"	4-7/8" - 0	5-5/8" - 4-5/8"
HWT-270	10-7/8"	11-3/8"	5-7/8" - 0	6-5/8" - 5-5/8"
HWT-295	11-7/8"	12-3/8"	6-7/8" - 0	7-5/8" - 6-5/8"
HWT-330	13-1/4"	14"	8-1/4" - 0	8-3/4" - 7-3/4"

NOTE: The SDS rotary hammer is ALWAYS used with the dry set insertion tool to install the **Spira-Lok® Wall Tie.**

INSTALLATION MECHANISM







2. Tie cuts a helical channel through both wythes of the wall.



3. Helical channel with "slots" offers resistance to compressive and tensile loads.

SPIRA-LOK® INSTALLATION



STEP 1: Drill a pilot hole using percussion hammer drill (3-jaw chuck type) through the mortar joint and into the block back-up.



STEP 2: Insert the Spira-Lok Wall Tie into the dry set installation tool mounted on the rotary hammer S.D.S. drill.



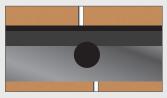
STEP 3.1: Drive the Spira-Lok Wall Tie through the mortar joint and into the back-up.



STEP 3.2: Drive the Tie until the nose of the dry set installation tool is hard against the veneer.



STEP 4: The dry set installation tool automatically recesses the Spira-Lok Wall Tie into the face of the masonry.



STEP 5: Cap the pilot hole with an aesthetically compatible material.



PATCH-LOK

Helical Patch Reinforcement

APPLICATION

Patch-Lok Helical Patch Reinforcement is used for providing a powerful mechanical key between the damaged substrate and the patching compound used to effect a repair. Primarily designed for spalled concrete repairs, **Patch-Lok** can also be used wherever a strong, non-chemical bond between a substrate and patching compound is required.

SPECIAL FEATURES

- » Forms a powerful bond without chemicals
- » Maintains structural stability
- » Minimizes the need to build patch up to required profile
- » Quick and easy to install
- » Drill bit and installation tool required for installation provided

SIZES

Patch-Lok Helical Patch Reinforcement is manufactured from ASTM 304 or 316 austenitic stainless steel and is available in 8.0mm diameters and in lengths of 3" (75mm). Should the patch profile require shorter lengths, **Patch-Lok** can be bent or cut to suit.

INSTALLATION PROCEDURE

- » Clean area to be patched, removing any loose material, and preparing any exposed reinforcing steel.
- » Drill 1/4" (6.5mm) pilot holes to a depth of 1-3/4" (45mm) using an SDS Hammer Drill. Patch-Lok reinforcement is to be placed according to the engineer's instruction.
- » Using an SDS Hammer Drill and the Patch-Lok Installation Tool provided, insert the Patch-Lok reinforcement into the pilot holes ensuring that they remain below the intended finished profile of the repair. Patch-Lok may be bent or cut if it is too long.
- » Apply the patching compound.

LOAD DATA

The "pull-out" load data for **Patch-Lok** is dependent upon the substrate in which it is installed. Load Tests in a variety of different grades of reinforced poured concrete have yielded results having a minimum "pull-out" strength of 350 lbf when **Patch-Lok** pins are installed in accordance with the above procedure. Results may vary for other substrate materials, but Blok-Lok's technical department will be pleased to advise the optimum pilot hole size to use in order to maximize "pull-out" performance. The average Shear Load capacity of **Patch-Lok** is in excess of 2,000 lbf, and the average Tensile Load bearing capacity of the pin itself is in excess of 2,600 lbf.

LINTEL AND SHELF ANGLE REPLACEMENT

Using Spira-Lok® Helical Wall Ties

APPLICATION

Spira-Lok® Stainless Steel Helical Wall Ties can be used for providing temporary support to the masonry wall when removing three or four courses of masonry veneer to enable the replacement of lintels, shelf angles and or flashing. The installation procedure described below is for lintel or shelf angle replacement in walls with brick veneer and block back-up. Cavity width is a limiting factor, please contact Blok-Lok for more information.

SPECIAL FEATURES

- » Maintains structural stability of the wall
- » Alleviates the need to use shoring systems which restrict the work area
- » Quick and easy to install
- » Only minor touch-up required upon completion

SIZES

The length of tie to use is determined by the wall make-up. The ties should, however, be imbedded into the back-up wall to a depth of at least 2".

LOAD DATA

The "pull-out" load data for **Spira-Lok*** **Stainless Steel Helical Wall Ties** is dependent upon the material into which it is installed, and Blok-Lok's technical department will be pleased to advise the optimum pilot hole size to use in order to maximize "pull-out" performance. The average Shear Load capacity of 8.0 mm Blok-Lok Helical Wall Ties is in excess of 2,000 lbf, and the average Tensile Load bearing capacity of the tie itself is in excess of 2,600 lbf. The bending moment introduced into the wall by removing masonry courses will vary with cavity width and is countered by using multiple rows of ties as shown.







SPIRA-LOK® FEATURES AND BENEFITS

One Piece Anchor	Simplified handling and increased site productivity.		
Austenitic Stainless Steel	Long term durability.		
Helical Configuration	Acts as a drip and maximizes cutting edge contact. Provides self-tapping action. Simulates thread conditions without pre-load stress. Accommodates in-plane cyclic loading. Provides flexibility to accommodate differential movement between wythes.		
Central Core Cruciform Shape	Optimizes axial strength in tension and compression. Dissipates installation energy and centralizes load transfer.		
Pointed End Symmetry	Easy installation.		
Only a Small Pilot Hole Required	Minimal visual impact.		
No Adhesive Required	Can be used in any climatic condition. Eliminates substrate preparation, enhances in-plane ductility and is less problematic.		
Pullout Resistance	Up to TEN (10) times conventional wall tie capacity.		
Engineered Design	Can be tested for performance verification on site and will work in various building materials.		

SPIRA-LOK® PHYSICAL CHARACTERISTICS

(nominal dimensions)

Outside Tie Diameter	8mm	10mm	
Pitch Length: in. (mm)	0.84 (21.4)	1.0 (25.4)	
Tie Cross-Sectional area: in.2 (mm2)	0.017 (11.6)	0.022 (14.2)	
Yield Strength: ksi (MPa)	65.9 (455)	73.8 (509)	
Tensile Strength: ksi (MPa)	137.0 (950)	137.0 (950)	
*Material: ASTM A-167 TYPE 304 Stainless Steel)			

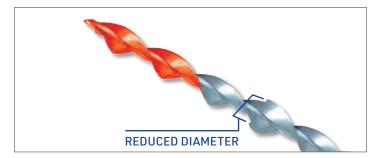
SPIRA-LOK® PROPERTIES

(ultimate buckling strength)

Unsupported Length	Сарас	city (lb.)
in. (mm)	8mm	10mm
1 (25)	1638	2335
2 (50)	1290	1613
4 (100)	690	1185
6 (150)	375	614

SPIRA-LOK® PERFORMANCE CHARACTERISTICS

Material	Effective Min- imum Embed	Ultimate Tension/Compression (lbs.)	
r iditeriat	(inches)	8mm	10mm
Mortar Joint (100 psi)	3-1/4	616	780
Solid Brick (9000 psi)	3-1/4	700	700
Cavity Brick	3-1/4	1280	1390
Normal Weight CMU	1-1/4	801	907
Light Weight CMU	2	550	550
Concrete (3500 psi)	1-1/2	1200	1300
Kiln Dried Wood Stud 2x4	3	517	N/R
2x6	3	520	N/R
Metal Stud	16 Gauge	310	N/R
Granite	1-1/8	620	650
Travertine	7/8	590	800
Limestone	3	600	620
3/16" Steel	3/16	520	N/R



Spira-Lok° Asymmetrical Ties are dual diameter Spira-Lok° Stainless Steel Helical Wall Ties designed for use in connecting soft veneer materials to a hard back-up. Typically a larger installation pilot hole is required in hard substrates, such as concrete or brick, than, for example, in a soft veneer mortar.

Since drilling a larger diameter pilot hole behind a small entry hole in the veneer is not possible, Blok-Lok supplies a dual diameter **Spira-Lok* Asymmetrical Tie** with a smaller diameter on the end being installed in the substrate. This ensures the connection in both the veneer and substrate attain optimum pull-out loading in service.



SPIRA-BAR®

Helical Reinforcement for Masonry Crack Repair

APPLICATION

Used for stitching distressed masonry. **Spira-Bar**° is "grouted" in mortar joints to bridge cracked sections. Restores structural stability with minimal building disfiguration or disturbance to building occupants. **Spira-Bar**° installs easily with no special equipment required.

SPECIAL FEATURES

- » Restores structural stability
- » No special equipment required for installation
- » Quick and easy to install
- » Minimal disturbance to building occupants
- » Minimal disfiguration of the building

LOCKING-CLIP for Seismic Applications

SIZES

Spira-Bar° is available in 6 mm or 8 mm diameter x 39′ long or in a 34.5′ (10.5 m) coil. Manufactured in Type 304 Stainless Steel. Type 316 by special order.





Standard application shown left. Locking-clip for seismic application shown right and at top.

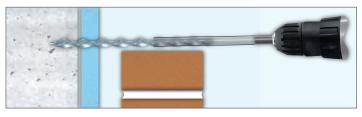
INSTALLATION PROCEDURE

- Rake out or grind slots into horizontal mortar joints to specified depth at each location and at required vertical spacing. Unless otherwise specified, the ground slot depth should be 1.3/8", and the vertical spacing four brick courses.
- 2. Blow out slots and thoroughly flush with water.
- Using a grout gun, insert a bead of cementitious non-shrink grout into the back of the slot.
- 4. Push the **Spira-Bar®** reinforcement into the wet grout to obtain good coverage (minimum 5/8" cover).
- Continue filling joint with cementitious non-shrink grout over the exposed Spira-Bar® and iron into the slot using a finger trowel.
- 6. Point up or fill the joint.

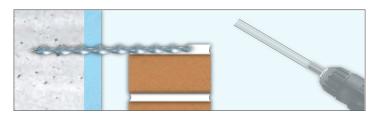
INSTRUCTIONS FOR RE-FACING



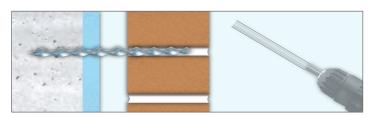
 A pilot hole is drilled into the back-up to a pre-determined depth.



The Spira-Lok® Tie is loaded into a Re-facing Tool mounted on an SDS Hammer Drill & driven into position.



 When the tip of the Re-facing Tool touches the back-up and is withdrawn, the length of exposed Spira-Lok® Tie is sufficient to bridge the cavity and provide embedment in the new mortar coursing of the veneer as it is constructed.



 If required, a longer Spira-Lok® Tie may be installed and bent through 90 degrees before being wet set in mortar prior to the next brick course being laid.

SITE TESTING

Wherever possible we strongly urge on-site testing be conducted to verify pull out loads particular to the specific situation.

Spira-Lok® Wall Ties may be load tested replicating the installation to verify the strength of the connection. The Blok-Lok field test apparatus is custom designed for this purpose. A test key, sized for the appropriate diameter of the helical tie, is quickly installed and a test load applied. The easily read dial indicates the tensile load applied to the tie.



BLOK-LOK

sales@blok-lok.com www.blok-lok.com

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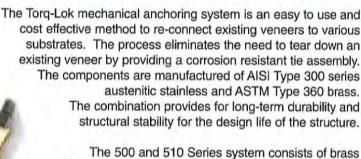




Established in 1961, we are one of North America's leading suppliers of masonry reinforcing and tie systems. Our products have been developed in accordance with accepted building practices and meet or exceed local, regional and national codes and standards. Blok-Lok remains committed to setting the standard in the industry. Please call us anytime for technical assistance or recommendations.

Mechanical Repair Anchors for Stabilizing Veneers

TORQ-LOK



The 500 and 510 Series system consists of brass expansion elements that are situated in the veneer and backup segments of the wall system being rehabilitated. They are torque activated which provides a method of inspection for both the façade and backup connection.

The two independent expanders are connected via a stainless steel shaft and hardware.

The 520 and 530 Series System utilizes the brass expander as a connection means for the outer wythe. The backup has either a lag thread or self-drilling/self-tapping screw on a stainless steel shaft. The installation accuracy can be inspected via torque for both connectors in the two wythes.

Once installed, the anchors resist veneer loading in

both compression and tension. The design of the system provides two independently activated expanders that do not create tension between wythes. Basically, the Torq-Lok system replicates a wall tie's performance. That is, live loads on the veneer are transferred to the backup thereby stiffening the veneer and minimizing crack potential.

All Torq-Lok anchors are installed at "T" joint or bed joint locations, concealed with a mortar patch or sealant, and have no exposed hardware.

The Torq-Lok anchors are manufactured of applicable ASTM materials. They are available in a variety of lengths, and can be made to special lengths upon request.



Basic Applications

Use where facades have missing or corroded wall ties or anchors. Can be applied at peripheral areas that are bulging or around areas that are to be removed. Use as a replacement tie for broken or cracked headers in composite walls. Use in high stress areas, which require load resistance greater than provided by typical wall ties. Can also be applied or modified to reattach thin clad stone to various backup materials.

TORQ-LOK

Mechanical Repair Anchors for Stabilizing Veneers



Advantages

Quality Control

Independent activation provides for methods to inspect immediately upon installation or at a later date by using a torque measuring technique and equipment.

No Lateral Tensile Stress

Does not pull the two wythes of material together.

No Assembly Required

Anchors are factory assembled and are installed as a complete unit in the field.

Versatile

Available in multiple configurations for various backup building materials and cavities.

Mechanical Lock

Positive connection technique for questionably soft material or dense building material.

Simple to Install

Designed to be installed with screw guns or by hand using standard sockets or Blok-Lok installation tools.

Corrosion Resistant Materials

Provides for long-term durability and dependability in most normal corrosion environments.

Flexible

Provides for in plane ductility while resisting out of plane loads.

Performance

Capable of supplying ultimate tension and compression capacity 10-20 times typical wall tie performance.

Anchor Spacing

Torq-Lok anchors are typically installed at one anchor per 2 - 5 square feet of veneer area to be retrofitted. It is recommended that you refer to your local building codes and standards for spacing condition requirements of wall ties and anchors for appropriate compliance.

Performance

Each construction site is unique and the appropriate use of this product is the responsibility of the engineers, architects, and other professionals who are familiar with the specific requirements of the project. The data reflects results of lab, field and in-house tests and are provided as a guideline for the designer. Site testing is encouraged for verification of load capacity.

Typical Torq-Lok Mechanical Anchor Performance Characteristics

	Anchor Location	Anchor Series	Hole Size (in)	Ultimate Tension (lb)	Ultimate Comp. (lb)
~		500	1/2		
H	Mortar Joint	510	1/2	000 4000	000
VENEER	(1500 psi)	520	1/2	900 – 1600	800
>	(1000 po.)	530	1/2		
	Light Weight CMU	510	3/8	1000	1200
	Normal Weight CMU	510	3/8	1100	1300
	Concrete	500	1/2	2000	1500
	(3500 psi)	510	3/8	1500	1500
۵.	Solid Brick	500	1/2	1500	1500
	(9000 psi)	510	3/8	1200	1500
BACK-UP	Clay Tile (Hollow)	510	3/8	700	600
	Wood Kiln Dried Stud, 2x4	530	N/R	840	840
	16 gauge	520	N/R	450	450
	Metal Stud	530	3/16	550	550
	Steel	510	3/8	2000	2000

Typical Torq-Lok Mechanical Anchor Selection Chart

Note: Anchor selection is based on a typical veneer of 3 5/8" thick

BACK-UP	TORQ	-LOK AN	CHOR S	ERIES
MATERIAL	500	510	520	530
Hollow CMU				
Solid CMU				
Concrete				
Brick				
Clay Tile				
Wood				
Metal Stud				
Steel				

Typical Torq-Lok Shaft Properties

and the state of t		
ULTIMATE SHAFT BI	UCKLING STRENGTH	
SHAFT LENGTH (in)	CAPACITY (Ib)	
5 1/2	1620	
6 1/2	1425	
9 1/2	1100	
11 1/2	725	





Catalog #	Shaft #	Shaft L.	Cavity Range
505054	502054	5.5"	0 – 1"
505064	502064	6.5"	0 – 2"
505074	502074	7.5"	0 – 3"
505084	502084	8.5"	0 – 4"
505094	502094	9.5"	0 – 5"

NOTE

- 1. Hole in Veneer = 1/2"
- 2. Hole in Back-Up = 1/2"
- 3. Installation Torque:

Veneer = 50 - 100 in-lbs.

Back-Up = 50 - 100 in-lbs.

510	SERIES ANCHO HOLLOW BACK-UP	OR
360 Brass Expander	Shaft: 304 S.S.	360 Brass Expander
*	Hardware: 300 S.S.	1

Shaft #	Shaft L.	Cavity Range
502054	5.5"	3/8 - 1 3/8"
502064	6.5"	1 3/8 - 2 3/8*
502074	7.5"	2 3/8 - 3 3/8"
502084	8.5"	3 3/8 - 4 3/8"
502094	9.5"	4 3/8 - 5 3/8"
	502054 502064 502074 502084	502054 5.5" 502064 6.5" 502074 7.5" 502084 8.5"

NOTE

- 1. Hole in Veneer = 1/2"
- 2. Hole in Back-Up = 3/8"
- 3. Installation Torque:

Veneer = 50 - 100 in-lbs.

Back-Up = 50 - 100 in-lbs.

Installation Procedure and Criteria for Masonry and Concrete

Select proper anchor length based on wall make-up.

Drill appropriate hole at mortar joint (preferably "T" location) using a rotary hammer or hammer drill. Rotary only in soft material.

Drill 1/2" hole through outer wythe of material.

For solid back-up, continue 1/2" hole drilling to a 2 - 2 1/2" depth minimum. (or total depth 1/2" deeper than anchor length)

For Hollow Back-up, drill a 3/8" diameter hole through the cavity face of the inner wythe material.

4. Blow out excess drill fines.

Assemble threaded portion of complete anchor assembly to the setting tool. Hex bolt on the setting tool must be fully seated, thread anchor shaft into setting tool until it stops. Insert entire assembly into drilled hole until it bottoms in the solid back-up, or until the washer contacts inner cavity face of hollow back-up.

Rotate tool clockwise and tighten back-up anchor 50 - 100 in-lb, remove setting tool.

To remove setting tool, loosen bolt head while holding setting tool firmly, spin off by hand.

9. Slide socket drive tool over hex segment of setting tool on to the hex nut of the anchor and tighten to 50 - 100 in-lb.

10. Remove socket and plug hole.



Catalog #	Shaft #	Shaft L.	Cavity Range
505244	502044	4.5"	0 – 1"
505254	502054	5.5"	1 – 2"
505264	502064	6.5"	2-3"
505274	502074	7.5"	3 – 4"
505284	502084	8.5"	4 – 5"

NOTE

1. Hole in Veneer = 1/2"

Stud back-up hole sizes:

Self Drilled

530 SERI	IES ANCHOR BACK-UP
Shaft: 3	Self Tapping Lag Threa Hardware: 300 S.S.

Catalog #	Shaft #	Shaft L.	Cavity Range	
505344	502344	4.5"	0 – 1"	
505354	502354	5.5"	1 – 2"	
505364	502364	6.5"	2 – 3"	
505374	502374	7.5"	3 – 4"	
505384	502384	8.5"	4 – 5"	
	505344 505354 505364 505374	505344 502344 505354 502354 505364 502364 505374 502374	505344 502344 4.5" 505354 502354 5.5" 505364 502364 6.5" 505374 502374 7.5"	505344 502344 4.5" 0 - 1" 505354 502354 5.5" 1 - 2" 505364 502364 6.5" 2 - 3" 505374 502374 7.5" 3 - 4"

1. Hole in Veneer = 9/16'

2. Stud back-up hole sizes

Metal Stud 16 ga = 3/16 18 ga = 5/32'

3. Torque to install: Veneer = 50-100 in-lb. 16 ga = 30-60 in-lb. = 20-40 in-lb.

Wood stud = 30-50 in-lb. Installation Procedure and Criteria for Metal or Wood Stud

1. Select proper anchor length based on wall make-up.

Drill appropriate hole at mortar joint at stud location using a rotary hammer or hammer drill. Rotary only in soft material.

Drill 9/16" hole through outer wythe of material

Confirm stud location and blow out excess drill fines.

Assemble threaded portion of complete anchor assembly to the Screw Gun setting tool. Hex bolt (7/16" hex) on the setting tool must be fully seated, thread anchor shaft into setting tool until it stops

Insert entire assembly into drilled hole until the pointed end of the shaft makes contact with the stud, firmly trigger screw gun until anchor is seated.

Remove socket drive and rotate tool counterclockwise to loosen and remove from anchor.

To torque check installed anchor in back-up, leave setting tool attached as a means to connect to a torque wrench, metal stud = 25 - 50 in-lb., (50 - 100 in-lb. in 16 ga.) and

wood stud = 35 - 100 in-lb., remove setting tool.
Using a 5/16" deep well socket, tighten hex nut (with screw gun or by hand) of the anchor to 50 - 100 in-lb.

10. Remove socket and plug hole.

Select proper anchor length based on wall make-up.

Drill appropriate hole in mortar joint at stud location using a rotary hammer or hammer drill. Rotary only in soft material.

Drill 9/16" hole through outer wythe of material.

For metal stud, a 5/32" pilot hole is needed for 18, 20 and 22 guage stud, a pilot hole of 3/16" for 16 guage and greater is required.

For wood stud back-up, a pilot may not be needed, 3/16" if necessary.

Blow out excess drill fines.

Assemble threaded portion of complete anchor assembly to the setting tool. Hex bolt on the setting tool must be fully seated, thread anchor shaft into setting tool until it stops.

Insert entire assembly into drilled hole until the pointed end of the shaft makes contact with the stud, firmly thread by hand in drilled hole back-up.

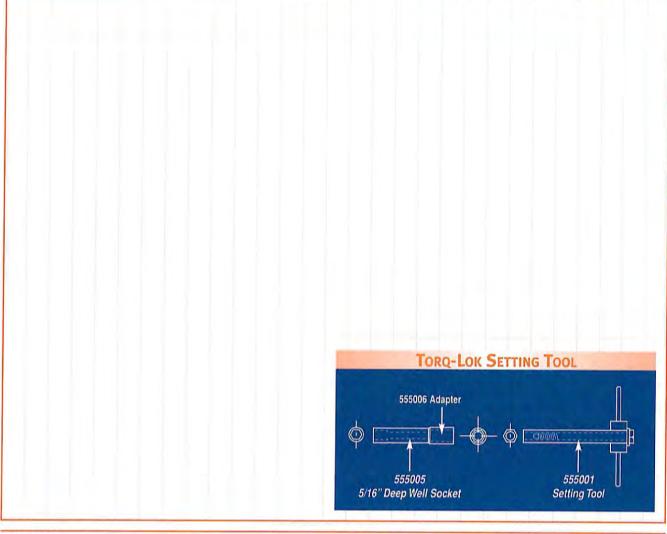
Rotate tool clockwise and tighten back-up anchor in metal stud 25 - 50 in-lb. (50 - 100 in-lb. in 16 ga.) and wood stud, remove setting tool.

To remove setting tool, loosen bolt head while holding setting tool firmly, spin off by hand.

Slide socket drive tool over hex segment of setting tool on the hex nut of the anchor and tighten to 50 - 100 in-lb.

10. Remove socket and plug hole.





Warranty

Seller makes no warranty of any kind, expressed or implied, except that the goods sold under this agreement shall be of the standard quality of the seller, and buyer assumes all risk and liability resulting from the use of the goods, whether used singly or in combination with other goods. Seller neither assumes nor authorizes any person to assume for seller any other liability in conjunction with the sale or use of the goods sold, and there is no oral agreement or warranty collateral to or affecting this transaction.

Warning

The information contained in this publication does not constitute any professional opinion or judgement and should not be used as a substitute for competent professional determinations. Each construction project is unique and the appropriate use of this product is the responsibility of the engineers, architects, and other professionals who are familiar with the specific requirements of the project.

Approval			



12 Ashbridge Circle Woodbridge, Ontario L4L 3R5 Telephone: (905) 266-2277 Fax: (905) 266-2272 www.blok-lok.com sales@blok-lok.com

U.S.A: 1-800-561-3026



TORQ-LOK SERIES 530 INSTALLATION PROCEDURE

ALL MASONRY VENEER IS TO BE STABILIZED TO THE STUD BACK-UP BY MEANS OF A TORQ-LOK SERIES 530 MECHANICAL ANCHOR BY BLOK-LOK LIMITED

INSTALLATION PROCEDURE

Install Torq-Lok Series 530 Anchors at specified spacing as per the following procedure:

- Drill a 14mm (9/16 inch) diameter entry hole through the outer wythe at the stud location. This drilling procedure shall be carried out by means of an SDS Hammer Drill (Rotary Percussion Drill for soft material).
- Drill a pilot hole through the metal stud, a 4mm (5/32 inch) diameter pilot hole is needed for 18 or 20 gauge stud, and a pilot hole of 5mm (3/16 inch) diameter is required for 16 gauge stud. For wood stud back-up a pilot hole may not be needed but drill 5mm. (3/16 inch) diameter to a 13mm (1/2 inch) penetration if necessary.
- Assemble the threaded shaft of the complete anchor assembly to the setting tool. The hex bolt on the setting tool must be fully seated, thread the anchor shaft into the setting tool until it stops.
- Insert the entire assembly into the drilled hole until the pointed end of the shaft makes contact with the stud, firmly thread by hand into the drilled pilot hole.
- Rotate the setting tool clockwise and tighten in the stud back-up until the anchor shaft is fully engaged in the stud.
- Remove the setting tool by spinning off by hand. Loosen the bolt head while holding setting tool firmly to prevent the anchor shaft being unscrewed, if necessary.
- Install the socket and adapter on to the square segment of Torq-Lok setting tool and slide it over the anchor shaft to engage the hex nut of the anchor and tighten to approx 35-100 in-lb (typically hand tight plus a quarter turn).
- Patch all penetrations to match existing as approved by the specifier

Site testing will verify drill entry hole size and any necessary adjustments may be made at that time

All relevant drill bits and setting tools shall be supplied by Blok-Lok Limited

CONTACT

BLOK-LOK LIMITED 12 Ashbridge Circle Woodbridge, Ontario L4L 3R5 Canada Email: sales@blok-lok.com Tel: (905) 266-2277



1 800-645-0616 www.h-b.com









Products [https://www.blok-lok.com/index.php/products/]

Masonry Systems

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Air Barrier Systems

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Q



Products (https://www.blok-lok.com/index.php/products/) / Repair & Restoration Systems (https://www.blok-lok.com/index.php/product-category/repair-restoration-systems/) / Torq-Lok® (https://www.blok-lok.com/index.php/product-category/repair-restoration-systems/torq-lok/) / Torq-Lok® 530 Series Anchor

Torq-Lok® 530 Series Anchor

Torque-Activated Mechanical Restraining Anchor for WoodStud Backup

Product Documents

Submittal Sheets

- Torq-Lok 530 Submittal (https://www.blok-lok.com/wp-content/uploads/2020/04/REPRTRQLOK530.pdf)
- Torq-Lok 530 Brochure (https://www.blok-lok.com/wp-content/uploads/2020/04/Torq-Lok.pdf)
- Torq-Lok 530 Installation Sheet (https://www.blok-lok.com/wp-content/uploads/2020/04/T-L-530-Installation.pdf)

AVAILABLE

AISI Type 300 series austenitic stainless steel and ASTM Type 360 brass

FINISHES

PACKAGING

25 pieces per box

DIMENSIONS

LENGTHS: 3 1/2", 4 1/2", 5 1/2" 6 1/2", 7 1/2", 8 1/2", 9 1/2", 10 1/2", or 11 1/2" (Longer anchors

available by special order)

DESCRIPTION

ADDITIONAL INFORMATION

Description

The Torq-Lok® 530 Series Anchor for with self-tapping screw for wood or metal stud backup, features 360 Brass expanders with Type 304 St/Steel shaft and 300 St/Steel hardware. Can be used with wood or metal stud.

The Torq-Lok® mechanical anchoring system is an easy to use and cost-effective method to reconnect existing veneers to various substrates. The process eliminates the need to tear down an existing veneer by providing a corrosion-resistant tie assembly. They are torque-activated which provides a method of inspection for both the façade and backup connection.

Once installed, the anchors resist veneer loading in both compression and tension. The design of the system provides two independently activated expanders that do not create tension between wythes. All Torq-Lok® anchors are installed at "T" joint or bed joint locations, concealed with a mortar patch or sealant, and have no exposed hardware.

Basic Applications

Use where facades have missing or corroded wall ties or anchors. Can be applied at peripheral areas that are bulging or around areas that are to be removed. Use as a replacement tie for broken or cracked headers in composite walls. Use in high stress areas, which require load resistance greater than provided by typical wall ties. Can also be applied or modified to reattach thin clad stone to various backup materials.

TECH DATA:

- · Self-tappng lag thread
- Hole in Veneer = 9/16"
- Stud backup hole sizes:

- Metal Stud: 16ga. = 3/16", 18ga. = 3/16"
- Wood Stud: 2 x 4 = 3/16" (opt), 4 x 4 = 3/16"

Installation Torque:

- Veneer = 50-100 in,-lbs.
- 16ga. = 30-60 in.-lbs.
- 18ga. = 20-40 in.-lbs.
- Wood Stud = 30-50 in.-lbs.

Typical Torq-Lok® Shaft Properties

Ultimate Shaft Buckling Strength*

Shaft Length (in.)	5-1/2	6-1/2	9-1/2	11-1/2
Capacity (lb.)	1620	1425	1100	725

TORQ-LOK® Installation Video

^{*}Based on a typical 3-5/8" veneer



RELATED PRODUCTS



[https://www.blok-lok.com/index.php/product/bl-523-brass-expansion-bolt/]

Anchors & Ties (https://www.blok-lok.com/index.php/product-category/masonry-systems/masonry-anchors-ties/), Brick-Lok® (https://www.blok-lok.com/index.php/product-category/repair-restoration-systems/brick-lok-repair-restoration-systems/), Masonry Systems (https://www.blok-lok.com/index.php/product-category/masonry-systems/), Repair & Restoration Systems (https://www.blok-lok.com/index.php/product-category/repair-restoration-systems/), Veneer Anchors (https://www.blok-lok.com/index.php/product-category/masonry-systems/masonry-anchors-ties/veneer-anchors/)

BL-523 Brass Expansion Bolt (https://www.bloklok.com/index.php/product/bl-523-brass-expansion-bolt/)

READ MORE (HTTPS://WWW.BLOK-LOK.COM/INDEX.PHP/PRODUCT/BL-523-BRASS-EXPANSION-BOLT/)



Brick-Lok® (https://www.blok-lok.com/index.php/product-category/repairrestoration-systems/brick-lok-repair-restoration-systems/), Repair & Restoration Systems (https://www.blok-lok.com/index.php/productcategory/repair-restoration-systems/)

BL-5407 Brick-Lok® System (https://www.blok-lok.com/index.php/product/bl-5407/)

READ MORE (HTTPS://WWW.BLOK-LOK.COM/INDEX.PHP/PRODUCT/BL-5407/)





Anchors & Ties (https://www.blok-lok.com/index.php/product-category/masonry-systems/masonry-anchors-ties/), Masonry Systems (https://www.blok-lok.com/index.php/product-category/masonry-systems/), Masonry to Concrete (https://www.blok-lok.com/index.php/product-category/masonry-systems/masonry-anchors-ties/masonry-to-concrete/), Masonry to Masonry (https://www.blok-lok.com/index.php/product-category/masonry-systems/masonry-anchors-ties/masonry-to-masonry/), Masonry to Steel Stud (https://www.blok-lok.com/index.php/product-category/masonry-systems/masonry-anchors-ties/masonry-to-steel-stud/), Veneer Anchors (https://www.blok-lok.com/index.php/product-category/masonry-systems/masonry-anchors-ties/veneer-anchors/)

HB-213 Veneer Anchor (https://www.blok-lok.com/index.php/product/hb-213-veneer-anchor/)

READ MORE (HTTPS://WWW.BLOK-LOK.COM/INDEX.PHP/PRODUCT/HB-213-VENEER-ANCHOR/)



Repair & Restoration Systems (https://www.blok-lok.com/index.php/productcategory/repair-restoration-systems/], Torq-Lok® (https://www.bloklok.com/index.php/product-category/repair-restoration-systems/torq-lok/)

Torq-Lok® 500 Series Anchor (https://www.blok-lok.com/index.php/product/torq-lok-500-series-anchor/)

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Repair & Restoration Systems Torq-Lok® 530 Series Anchor





DRAWINGS FOR ILLUSTRATIVE PURPOSES ONLY

Torq-Lok - 530 Series The 530 Series Anchor, for stud backup, features ASTM 360 Brass Expanders with a Type 304 Stainless Steel shaft and AISI Type 300 series austenitic stainless steel hardware. **Technical Data:** Typical Torq-Lok® Shaft Properties Ultimate Shaft Buckling Strength Shaft Length (in.) 5 1/2 6 1/2 9 1/2 11 1/2 Capacity (lb.) 1620 1425 1100 725 Hole in veneer = 9/16" Hole in backup: Metal Stud = 3/16" Wood Stud = 3/16", hole is optional if stud is 2x4 Installation Torque: Veneer = 50 - 100 in. lbs. 16 gauge = 30 - 60 in. lbs.

	ft Length:
Ц	3 ½"
Ш	4 1/2"
	5 ½"
	6 ½"
	7 ½"
7	8 ½"
	9 ½"
	10 ½"
	11 ½"
Long	ger anchors available by special order.
	d on a typical 3 5/4" veneer, the 530 Series Anchor can be with: wood, metal stud or steel.

18 gauge = 20 - 40 in. lbs. Wood Stud = 30 - 50 in. lbs.