

NORTHWEST BERGEN COUNTY UTILITIES AUTHORITY

RESOLUTION

No. CS-JAN-2016

Date: January 12, 2016

**RESOLUTION OF THE GOVERNING BODY OF THE NORTHWEST BERGEN
COUNTY UTILITIES AUTHORITY TO ENTER CLOSED SESSION
PURSUANT TO THE OPEN PUBLIC MEETINGS ACT**

WHEREAS, the Open Public Meetings Act, N.J.S.A. 10:4-6 to 10:4-21, requires that meetings of public bodies shall be open to the public at all times, except that the public body may exclude the public only from that portion of a meeting at which the public body discusses matters set forth in N.J.S.A. 10:4-12b; and

WHEREAS, the Northwest Bergen County Utilities Authority ("Authority") Board of Commissioners intends to hold a closed meeting on the following subject matters which are authorized by N.J.S.A. 10:4-12b:

Pending Litigation, Privileged Attorney-Client Communication
Regarding Contractual Dispute.

NOW, THEREFORE, BE IT RESOLVED by the Authority's Board of Commissioners,
that:

1. The aforesaid recitals are incorporated herein as though fully set forth at length.
2. The Authority's Governing Body shall meet in closed session on January 12, 2016, to discuss the above-referenced matters.
3. The minutes, or parts thereof, of the closed session discussion may be disclosed to the public upon the determination by the Board of Commissioners that the public interest will no longer be served by such confidentiality.
4. This Resolution shall be effective immediately.

ADOPTED: January 12, 2016

[illegible]

NORTHWEST BERGEN COUNTY UTILITIES AUTHORITY

RESOLUTION

No. 02-2016

Date: January 12, 2016

**APPROVAL OF VOUCHERS, PAYROLL TRANSFERS, PAYROLL TAX DEPOSITS AND
PENSIONS & BENEFITS TRANSFERS**

WHEREAS, the Northwest Bergen County Utilities Authority has received vouchers in claim for payment of materials supplied and/or rendered; and

WHEREAS, the said vouchers have been reviewed and the amount indicated on each voucher has been determined to be due and owing; and

WHEREAS, the Northwest Bergen County Utilities Authority has made payroll transfers, payroll tax deposits and Pensions & Benefits transfers for the month of December 2015 and Health Benefits and Dental Benefits transfers for January 2016; and

WHEREAS, the Commissioners of the Authority have reviewed the vouchers, payroll transfers, payroll tax deposits, Pensions and Benefits, and Health and Dental Benefits transfers listing on the attached reports and have found them to be in order.

NOW, THEREFORE, BE IT RESOLVED,

RESOLVED, by the Commissioners of the Northwest Bergen County Utilities Authority, that all vouchers, payroll transfers, payroll tax deposits, Pensions & Benefits and Health and Dental Benefits transfers listed and reports attached hereto, dated January 12, 2016 be and they hereby are approved for payment from the proper accounts as follows:

ACCOUNT: Payroll Account
Net Payroll: \$203,218.19

ACCOUNT: Tax Deposit Account
Total: \$91,750.10

ACCOUNT: Health Benefits Contribution Employer
Total Transfer: \$117,532.12

ACCOUNT: Health Benefits Contribution Employee
Total: \$9,167.97

NORTHWEST BERGEN COUNTY UTILITIES AUTHORITY

RESOLUTION

No. 02-2016

Date: January 12, 2016

APPROVAL OF VOUCHERS, PAYROLL TRANSFERS, PAYROLL TAX DEPOSITS AND PENSIONS & BENEFITS TRANSFERS

ACCOUNT: Dental Benefits
Total Transfer: \$4,231.68

ACCOUNT: PERS and Contributory Insurance
Total Transfer: \$29,537.59

ACCOUNT: Operating Account
Total: \$408,914.54

ACCOUNT: General Improvement Account
Total: \$130,941.51

ACCOUNT: 2014 WWT Project Account
Total: \$1,846.25

ACCOUNT: 2015 WWT Project Account
Total: \$1,239,327.15


SECRETARY


CHAIRMAN

	Bonagura	DaPuzzo	DePhillips	Gabbert	Kasparian	Kelaher	Plumley	Salazer	Chewcaskie
Offered		✓							
Seconded						✓			
Aye	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nay									
Absent									
Abstain									
Recuse									

[illegible]

NORTHWEST BERGEN COUNTY UTILITIES AUTHORITY

RESOLUTION

NO. 04-2016

DATE: January 12, 2016

**APPROVING CHANGE ORDER NO. 4 FOR
CONTRACT #268
INCINERATOR EMISSIONS UPGRADE PROJECT**

WHEREAS the Northwest Bergen County Utilities Authority (the "Authority") awarded Contract No. 268 – Incinerator Emissions Upgrade Project ("the Project") to Tomar Construction, LLC ("the Contractor") on February 17, 2015; and

WHEREAS the Contractor has requested certain changes to the Project as more particularly set forth in Change Order No. 4 attached hereto ("the Change Order"); and

WHEREAS the Authority's Engineer has reviewed the Contractor's proposed Change Order and determined that the Change Order is necessary to address work and materials for installation of Helical Tie System to tie back failing brick veneer; and

WHEREAS the Authority's Engineer has recommended that the Change Order be approved by the Authority; and

WHEREAS the increase in the total cost of the Project as a result of this Change Order is \$21,554.01; and

WHEREAS the Authority's staff has indicated that the Authority has sufficient funds to pay the Contractor for the Change Order; and

WHEREAS the Commissioners of the Authority have determined that the Change Order should be approved; and

NOW, THEREFORE, BE IT RESOLVED by the Commissioners of the Authority that Change Order No. 4, to Authority Contract No. 268, is approved; and be it

FURTHER RESOLVED by the Commissioners of the Authority that the Authority's Engineer is directed to coordinate and oversee the work consistent with all other work on the Project; and be it

FURTHER RESOLVED that the Commissioners of the Authority direct that processing of payment to the Contractor for the Change Order be in accordance with the payment procedures of Contract No. 268; and

NORTHWEST BERGEN COUNTY UTILITIES AUTHORITY

RESOLUTION

NO. 04-2016

DATE: January 12, 2016

**APPROVING CHANGE ORDER NO. 4 FOR
CONTRACT #268
INCINERATOR EMISSIONS UPGRADE PROJECT**

IT IS HEREBY CERTIFIED that this is a true copy of a Resolution adopted by the Authority upon a roll call vote of all Commissioners of the Authority eligible to vote at the meeting held on **January 12, 2016**.


SECRETARY



CHAIRMAN

	Bonagura	DaPuzzo	DePhillips	Gabbert	Kasparian	Kelaher	Plumley	Salazer	Chewcaskie
Offered		✓							
Seconded						✓			
Aye	✓	✓		✓	✓	✓	✓	✓	✓
Nay									
Absent									
Abstain			✓						
Recuse									

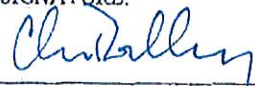
CONTRACT MODIFICATION PROPOSAL AND ACCEPTANCE

1. ISSUING OFFICE Northwest Bergen County Utilities Authority	2. PROJECT NO. S-340700-12	3. CONTRACT NO. 268	4. MODIFICATION NO. 004
5. TO (CONTRACTOR) Tomar Construction, llc 18 Connerty Court East Brunswick, NJ 08816		6. PROJECT LOCATION AND DESCRIPTION Incinerator Emissions Upgrade Project Northwest Bergen County Utilities Authority Borough of Waldwick, Bergen County	
7. A proposal is required for making the hereinafter described change in accordance with specification and drawing revisions cited herein or listed in attachment hereto. Submit your proposal in space indicated on page 2; attach detailed breakdown of prime and sub-contract costs (See the clause of this contract entitled, "Changes". DO NOT start work under this proposed change until you receive a copy signed by the Contracting Officer or a directive to proceed).			
Date	Type Name and Title	Signature	
8. DESCRIPTION OF CHANGE: Pursuant to the clause of this contract covering changes, the contractor shall furnish all labor and material, and all work necessary to accomplish the following described work: Work and materials for installation of Helical Tie System to tie back failing brick veneer. RFI #055, RFI #064, and PCO #009 are attached.			
As a result of the above, the contract price is revised as follows:			
ITEM NO.	ITEM DESCRIPTION	UNIT PRICE	ESTIMATED QUANTITY
001	PCO #009 - Spira-Lok tie system Proposal		\$21,554.01
TOTAL COST OF THIS MODIFICATION \$21,554.01			
The contract time is hereby: increase <input type="checkbox"/> decrease <input type="checkbox"/> or remains the same <input checked="" type="checkbox"/> by zero calendar days as a result of this modification.			
The foregoing modification is hereby accepted:			
Tomar Construction, llc		NBCUA	
CONTRACTOR		OWNER	
BY: <u>[Signature]</u>		BY: <u>[Signature]</u>	
DATE: <u>1/11/2016</u>		DATE: <u>1/12/2016</u>	
APPROVAL:			
STATE OF NEW JERSEY		DATE	

CONTRACT MODIFICATION PROPOSAL AND ACCEPTANCE

9. ISSUING OFFICE Northwest Bergen County Utilities Authority	10. PROJECT NO. S-340700-12	11. CONTRACT NO. 268	12. MODIFICATION NO. 004
13. CONTRACTOR'S PROPOSAL -- CHANGE IN CONTRACT PRICE (Detailed breakdown, attach additional sheets as necessary)			
(Proposed)			
Supporting documentation attached: <ul style="list-style-type: none"> - Tomar PCO #009 - Spira-Lok Tie system proposal - RFI #055 - RFI #064 			
NET INCREASE \$ 21,554.01		NET DECREASE \$ 0.00	
		CALENDER DAYS INCREASE zero DAYS	
DATE: 1/11/2016	TYPE NAME AND TITLE: MATT KURIAN, PROJECT MANAGER		SIGNATURE: 

CONTRACT MODIFICATION PROPOSAL AND ACCEPTANCE

14. ISSUING OFFICE & PROJECT NO. S-340700-12 Northwest Bergen County Utilities Authority	15. CONTRACT NO. 268	16. MODIFICATION NO. 004
17. ORIGINAL CONTRACT BID PRICE \$ 5,948,000.00 TOTAL OF PREVIOUS CHANGE ORDERS \$ 143,305.59 TOTAL CONTRACT COST INCLUDING CHANGE ORDERS ... \$ 6,112,859.60		
18. NECESSITY FOR CHANGE AND REASON FOR OMISSION FROM PLANS AND SPECIFICATIONS: Brick facade on the South-side of the incinerator building, inside wall of new Adsorber room, is in disrepair, and in danger of peeling off wall		
19. OTHER IMPACTS RESULTANT OF THIS CHANGE: The structural engineering consultant for the project (T&M Associates) was utilized to develop design changes. The Consulting structural engineer also reviewed the Contractor's proposal, and aided in the development and submission of the change order. This work had no impact upon other contractors.		
20. RESUME OF NEGOTIATIONS OR RECOMMENDATIONS (Loanee's Representative): In order to ensure the Authority was receiving a "fair and reasonable" price, the contract changes were reviewed by the Consulting Structural Engineer (T&M Associates). PCO #009- proposal for installation of a helical tie system was reviewed, negotiated and accepted by the Consulting Structural Engineer.		
DATE: 11/12/2016	TYPE NAME AND TITLE OF LOANEE'S REPRESENTATIVE: Christopher Doelling, CBE	SIGNATURE: 

Item 20. Document that negotiations were held as required by the regulations and explain the events leading to the final settlement in price and time. This statement should include, at a minimum, date and location of negotiations, persons attending, summary of negotiations leading to final price and time settlements, and a statement that the agreed-to price is "fair and reasonable".

We are pleased to submit the following estimate for the additional work

Project: NBCUA, Incinerator Emissions Upgrade Project (Contract No. 268)

PCO #009; Item: Installation of Helical Tie System (Spira-Lok) per RFI 55 & 64 b/w Columns 6 & 10

[illegible]



TOMAR CONSTRUCTION LLC

18 CONNERTY COURT
EAST BRUNSWICK, NJ-08816
TEL (732) 238-0700 FAX (732) 238-0701

Request For Information

Date of Request: 08/18/2015
RFI#: 55
Info Req By: Matt Kurian
Info required by: 08/19/2015
Description: Issue with brick facade at
southside of bldg extension
Division: 4
Project: 69
NWBCUA-Incinerator Emissions
30 Wyckoff Avenue
at Authority Drive
Waldwick NJ 07463

To: Chavond-Barry Engineering
400 County Routes 518
P.O. BOX 205
Blawenburg
NJ 08504

Attn: Christopher M. Doelling

You are hereby requested to provide information on the following items.
Information must be received prior to 08/19/2015 to be considered.

Attachments: ☐

☒ Potential Change in
Project Schedule

☒ May require a
Change Order

☐ Requires a Change
of Plans/Specifications

As discussed in the weekly progress meeting on Monday, 8/17/2015, the brick façade on the south-side of the Incinerator building is in disrepair and deteriorating and appears to have been initially improperly installed.

As indicated in the attached picture, the bricks within the clouded portion are in disrepair and has deteriorated sufficiently that it is readily peeling off the wall. This upper portion of the wall at the south side of the Incinerator building will have new base flashing (part of the roofing system on the extension) as indicated in Detail (3/A3.1) on Dwg. No. A3.1. Any potential instance of the existing brick delaminating off the wall will compromise the roofing system.

Further, the red straight line indicated (shown on the picture) across the brick façade, identifies areas of bricks that have to be removed off the wall to accommodate the new horizontal beam, since these bricks appear improperly installed (insufficient tie-backs), it is expected that any bricks not removed could potentially delaminate and fall inwards possibly damaging the new extension to the building.

It is also noted that removal of the bricks at the column locations (column line 8 & 10 on Dwg. No. S3.0 etc.) revealed that the existing brick façade does not have the proper number of ties and the appropriate tie-backs to adequately secure the bricks onto the CMUs. This conveys that brick delamination could occur within the new extension.

Please review and advise.

Information Supplied:

Tomar is to provide a quote for additional services to the Authority for review. Provide your quote to install Hojmann & Barnard Helix Spiro Ties at a grid spacing of 2' by 2' over the affected area of column grids 6 to 10 of the existing building.

Frank S. Buczek Jr., P.E.
T&M Associates 9-15-15



TOMAR CONSTRUCTION LLC

18 CONNERTY COURT
EAST BRUNSWICK, NJ-08816
TEL (732) 238-0700 FAX (732) 238-0701

Request For Information

Date of Request: 09/30/2015
RFI#: 64
Info Req By: Matt Kurian
Info required by: 10/01/2015
Description: Helical Wall Ties selection

Division: 16

Project: 69
NWBCUA-Incinerator Emissions
30 Wyckoff Avenue
at Authority Drive
Waldwick NJ 07463

To: Chavond-Barry Engineering
400 County Routes 518
P.O. BOX 205
Blawenburg
NJ 08504

Attn: Christopher M. Doelling

You are hereby requested to provide information on the following items.
Information must be received prior to 10/01/2015 to be considered.

Attachments: ☐

☐ Potential Change in
Project Schedule

☐ May require a
Change Order

☐ Requires a Change
of Plans/Specifications

We need a selection of the intended model of the Spira-Lok™ Stainless Steel Helical Wall Ties (see attached product data sheet) planned for use per the change order directions in the response to RFI No. 55. Specifically, we need confirmation on the length of the tie, diameter of the tie, intended location for insertion of ties (i.e. at the mortar joint or on the face of brick) and or style of tie and this should include confirmation of the intended embedment depth. Assessment of the existing South wall of the Incinerator building reveals that the wall is composed of:

- a. 3.75" thick Brick Veneer
- b. ½" thick cavity (air gap)
- c. 7.75 (8") thick Block (CMU) - CMU is hollow

Please review and provide selection at the earliest so we may conclude preparation of the change order proposal.

Information Supplied:

1. Length = 9 7/8"
2. Diameter = 8mm
3. Location = Install into mortar joint of brick facade, recess 1/4"
4. Style = Spira-Lok HWT-245

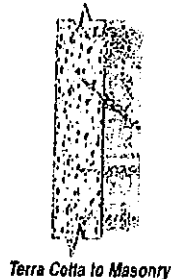
Frank A. Barry
T&M Associates
10/18/15

SPIRA-LOK™

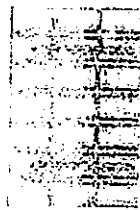
The Original Helical Wall Tie System

Standard Details

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 and length, pilot hole size and appropriate drilling technique. Standard sample specifications are available.



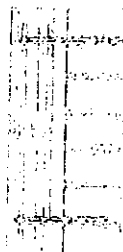
Terra Cotta to Masonry



Multi-Wythe
Brick



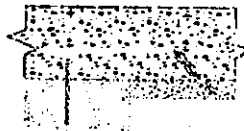
Brick to Concrete
(mortar joint or solid brick)



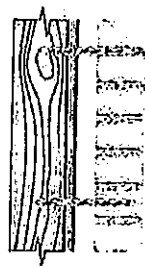
Brick to Clay Tile



Brick to Concrete Block



Stone, Marble or Granite Panels
to Concrete or Masonry



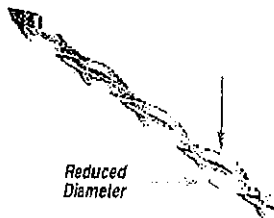
Brick to Wood Stud
(mortar joint or solid brick)

- Masonry pinning for new walls and restoration; Temporary support for lintel and shelf angle replacement; Available in 6, 8 and 10mm diameters plus 8 and 10mm asymmetric sizes with lengths up to 3 feet.
- A one-piece wall tie produced from flexible austenitic stainless steel Type 304. Type 316 stainless also available for more severe corrosive environments.
- Economical to install.
- Only a small diameter pilot hole required.
- No toxic adhesives or expansion devices.
- Site tested immediately after installation.
- Used in a wide variety of building materials.
- Able to withstand cyclic loading.
- Accommodates differential movements between materials.
- Combines flexibility with strength.
- Does not stress or fracture fragile substrates.
- Usable in all weather conditions, environments and temperatures.
- Widely used throughout the world.

Load Requirements

The primary function of a wall tie system is to enable the outer masonry to withstand wind loads while allowing differential movement between adjacent wythes. Masonry walls should not be considered as a continuous panel but rather as a series of load sharing units. Spira-Lok™ wall ties function as a flexible load sharing connection for masonry walls rather than as a rigid anchor. The use of rigid anchoring systems should be avoided because of their difficulty in accommodating normal building movement. Minimum pull-out load requirements are usually obtained from even the weakest masonry. Tie performance in weak masonry is accommodated by tightening the tie spacing.

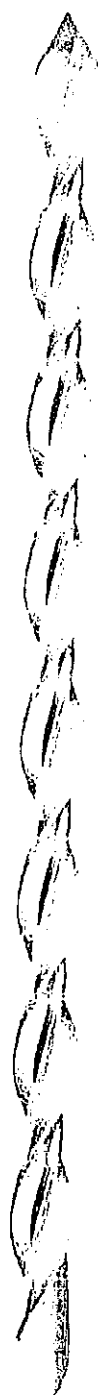
Asymmetrical Ties



Reduced
Diameter

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.



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

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)								
Facade Material	Spira-Lok™	BACK-UP MATERIAL						
		Mortar Joint	Brick	Hollow CMU	Solid CMU	Concrete	Wood Stud	Metal Stud
Mortar Joint	8mm	5.0	AS	5.0	5.0	AS	5.0	5.0
	10mm	7.0	-	7.0	7.0	-	7.0	7.0
Brick	8mm	6.5/5.0	6.5	6.5/5.0	6.5/5.0	6.5	6.5/5.0	6.5/5.0
	10mm	8.0/7.0	8.0	8.0/7.0	8.0/7.0	8.0	8.0/7.0	8.0/7.0
Hollow CMU	8mm	5.0	AS	5.0	5.0	AS	5.0	5.0
	10mm	7.0	-	7.0	7.0	-	7.0	7.0
Solid CMU	8mm	5.0	AS	5.0	5.0	AS	5.0	5.0
	10mm	7.0	-	7.0	7.0	-	7.0	7.0
Precast Concrete	8mm	6.5/5.0	6.5	6.5/5.0	6.5/5.0	6.5	6.5/5.0	6.5/5.0
	10mm	8.0/7.0	8.0	8.0/7.0	8.0/7.0	8.0	8.0/7.0	8.0/7.0
Stone	8mm	6.5/5.0	6.5	6.5/5.0	6.5/5.0	6.5	6.5/5.0	6.5
	10mm	8.0/7.0	8.0	8.0/7.0	8.0/7.0	8.0	8.0/7.0	8.0

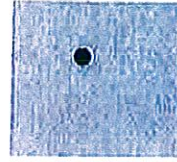
Facade hole / Back-up hole AS = asymmetric anchor required

Tie Selection

- Spira-Lok™ Wall Ties** are available in 6.0 mm, 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 Tie Length Selection				
Cat Ref - Length	Nominal Length	Minimum Drilled Hole Depth	Cavity Range (solid & hollow) 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"

Installation Mechanism



A pilot hole is drilled through the substrate.



Tie cuts a helical channel through the substrate.



Effective cross-section of helical channel with "slots" that offer resistance to compressive and tensile loads

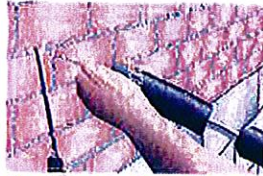
Spira-Lok™ Installation



Step 1: Drill a pilot hole using percussion hammer drill (3-jaw chuck type) through the mortar joint.



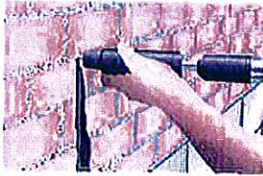
Step 1: ...and into the back-up block.



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



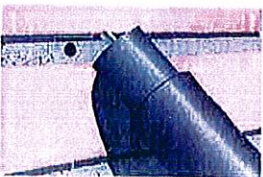
Step 3: Drive the Spira-Lok™ Wall Tie through the mortar joint.



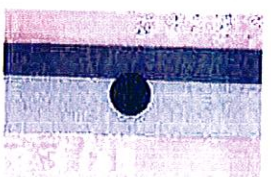
Step 3: ...and into the block back-up



Step 3: Drive the Spira-Lok™ Wall Tie until the nose of the dry set installation tool is hard against the veneer.



Step 3: The dry set installation tool automatically recesses the Spira-Lok™ Wall Tie into the face of the masonry



Step 4: The pilot hole is then aesthetically finished with a compatible material

LINTEL AND SHELF ANGLE REPLACEMENT

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.

Special Features

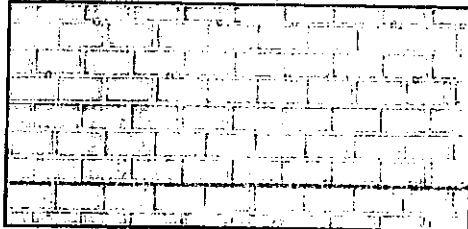
- Maintains structural stability of the wall
- Alleviates the need to use shoring systems which restrict the work area
- Quick and easy to install
- Only minor touch-up required upon completion

Sizes

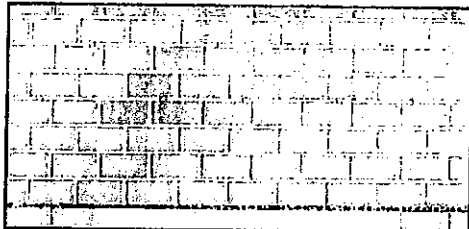
The length of tie to use is determined by the wall make-up. The ties should, however, be imbedded into the back-up wall to a depth of at least 2".

Installation Procedure

- 1 Three or four courses of masonry above the shelf angle are to be removed as highlighted in the drawing.



For lintel replacement, the area to be supported is defined by drawing lines at 45° from the corner points of each side of the opening.



- 2 Drill 3/16" (5.0mm) diameter pilot holes through the mortar joint to a depth of penetration in the back block of at least 3" (75mm) using an Rotary Percussion (3-jaw type) Drill in the pattern shown above or according to the engineer's instruction.
- 3 Using an SDS Hammer Drill and the Dry-Set Installation Tool provided, insert the **Spira-Lok™ Stainless Steel Helical Wall Ties** into the pilot holes. The Installation Tool will automatically recess the tie 3/8" when the tool nose is hard up against the veneer surface.
- 4 The masonry courses above the shelf angle may now be removed using the newly installed **Spira-Lok™ Stainless Steel Helical Wall Ties** as temporary support to counter both the shear forces and bending moment.

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

- 1 Clean area to be patched, removing any loose material, and preparing any exposed reinforcing steel.
- 2 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, but normally 2" (50mm) from the edge of the repair and with a nominal grid of 6-8" (150-200mm) centers, and not less than two **Patch-Lok** per patch.
- 3 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.
- 4 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.

Load Data

The "pull-out" load data for **Spira-Lok™ Stainless Steel Helical Wall Ties** is dependent upon the substrate in 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 8.0mm 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

The Original Helical Wall Tie System

BLOK
A NORMANN & BARBARO COMPANY

Features

• One Piece Anchor

• Austenitic
Stainless Steel

• Helical Configuration

• Central Core
Cruciform Shape

• Pointed End Symmetry

• Only a Small Pilot
Hole Required

• No Adhesive Required

• Pullout Resistance

• Engineered Design

Benefits

Simplified Handling

Long Term Durability

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.

Optimizes Axial Strength in Tension and Compression. Dissipates installation energy. Centralizes load disaster.

Installation Ease

Minimal Visual Impact

Can Be Used in Any Climactic Condition Eliminates substrate preparation. Enhances in-plane ductility. Less problematic.

Up to Ten (10) Times Conventional Wall Tie Capacity

Can Be Immediately Tested for Performance Verification on Site. Can be used 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 (mm ²)	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

Typical Spira-Lok Performance Characteristics

Material	Effective Minimum Embed (inches)	Ultimate Tension/Compression (lbs.)	
		8mm	10mm
Mortar Joint (1500 psi)	3"	780	616
Solid Brick (9000 psi)	3 5/8"	700	700
Cavity Brick	3 5/8"	1280	1390
Normal Weight CMU	1"	801	907
Light Weight CMU	2"	550	550
Concrete (3500 psi)	1 1/4"	1200	1300
Wood Kln Dried Stud: 2 x 4 2 x 6	3"	517	N/R
	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

* Note: 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. This data reflects the results of lab, field and in-house results and provided as a guideline for the designer. Site testing is encouraged for verification of load carrying capacity. (N/R = not recommended)

Typical Spira-Lok[™] Properties

ULTIMATE BUCKLING STRENGTH		
UNSUPPORTED LENGTH (mm)	CAPACITY (lb)	
	8mm	10mm
1 inch (25mm)	1638	2335
2 inch (50mm)	1290	1613
4 inch (100mm)	690	1185
6 inch (150mm)	375	614

SPIRA-LOK

The Original Helical Wall Tie System

BLOK-
A HOHMANN & BARNARD COMPANY

SPIRA-BAR

HELICAL REINFORCEMENT FOR MASONRY CRACK REPAIR

Application

Spira-Bar Helical Crack Repair Reinforcement is used in existing masonry facades for crack stitching, lintel reinforcement, the stabilization of cracking in masonry walls caused by ground movement, and to reconnect wythes of structures built using different construction materials.

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

Sizes

Spira-Bar Helical Crack Repair Reinforcement is manufactured from ASTM 304 or 316 austenitic stainless steel and is available in 6.0mm and 8.0mm diameters and in lengths up to 10 meters. Standard lengths are 39.4 inches (1,000mm).

Installation Procedure

1. 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.
3. Using a grout gun, insert a bead of cementitious grout into the back of the slot.
4. Push the **Spira-Bar** reinforcement into the **Bond-Lok SB** wet grout to obtain good coverage (minimum 5/8" cover).
5. Continue filling joint with **Bond-Lok SB** cementitious grout over the exposed **Spira-Bar** and iron into the slot using a finger trowel.
6. Point up or fill the joint.

BOND-LOK SB

CEMENTITIOUS GROUT

Bond-Lok SB (Spira-Bar) Cementitious Grout is a non-shrink, pumpable, thixotropic, high performance, cement based grout suitable for injection with a hand or power applicator. Supplied in a 16 litre (4 gallon) bucket, **Bond-Lok SB** contains the dry powder and liquid component individually packed to make 3 or 6 liters (3/4 or 1 1/2 gallon) of mixed injectable grout. The low liquid to powder ratio ensures a thixotropic grout which develops its compressive strength rapidly. It is designed to fill all voids into which it is injected and the bond stress is greatly enhanced by its non-shrink properties. **Bond-Lok SB** is a non-flammable odorless material specially formulated for bonding **Spira-Bar** into masonry veneers.

Site Testing

Wherever possible we strongly urge in-situ testing be conducted to verify pull out loads particular to the specific situation. **Spira-Lok™ Wall Ties** may be load tested immediately after 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 applied load.



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

BLOK-
A HOHMANN & BARNARD COMPANY

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