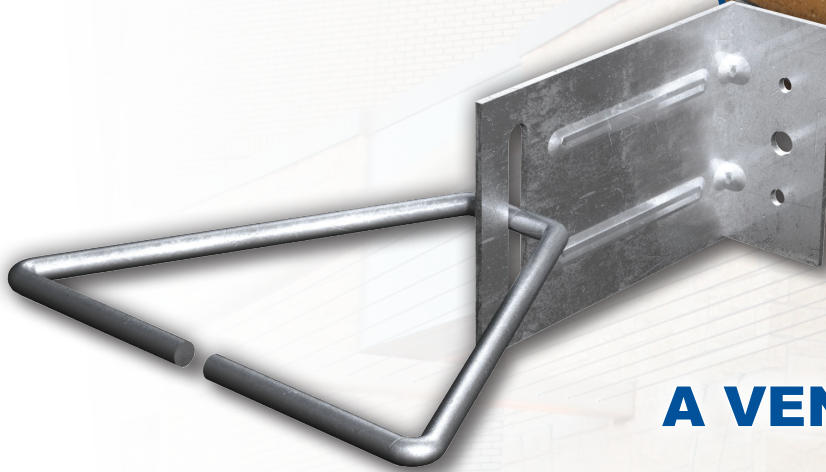
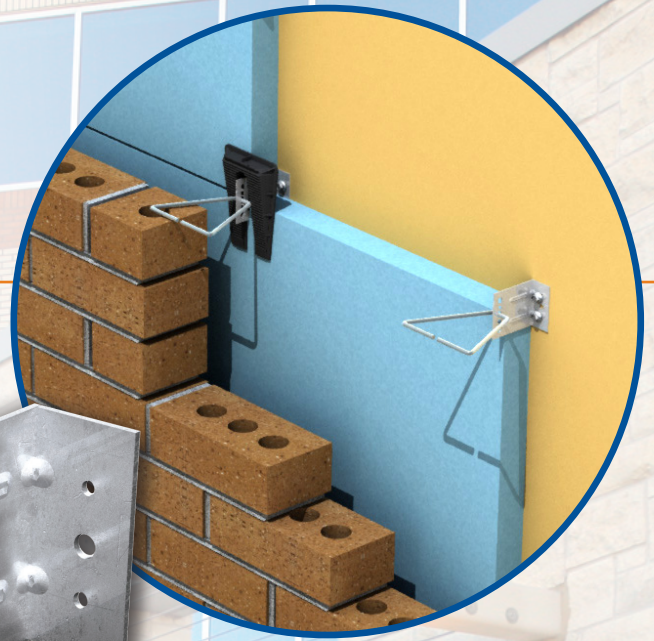
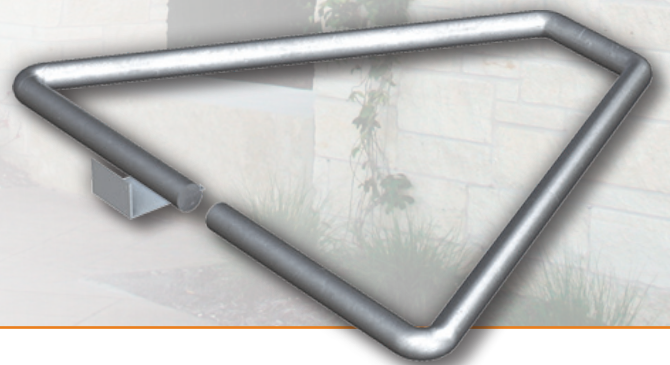


BL-407

Brick Veneer Anchoring System for
Steel Stud and Masonry Construction
from Blok-Lok, Ltd.



**A VENEER ANCHORING
SOLUTION TO MAINTAIN
AIR BARRIER INTEGRITY**



BLOK-LOK

A HOHMANN & BARNARD COMPANY

800-561-3026
www.blok-lok.com

BLOK-LOK HAS DEVELOPED A VERSATILE VENEER ANCHORING SYSTEM DESIGNED TO MEET OR EXCEED RELEVANT CODES AND BUILDING STANDARDS FOR VENEER TIES IN NORTH AMERICA.

The **BL-407** is a wire tie and plate combination system which provides adjustability, minimal free-play, strength, stiffness, positive connection, corrosion resistance, and is test rated. The system provides for in-plane differential movement and can be installed on metal stud, wood stud, masonry, steel or concrete back-up with or without insulation. Using the **FLEX-O-LOK® SEISMIC TIE**, the **BL-407** meets relevant seismic tie qualifications. The anchor plate has been designed for mounting on the surface of sheathing or stud, and accommodates insulation board without puncture. When used with the patented wedge Lok insulation retainer to secure the insulation, this unique anchoring system is more effective at eliminating air pockets than wire pintles, impaling tabs, plates or self-drilling ties.

BASIC APPLICATIONS

For anchored veneers, the **BL-407** assembly should be applied for cavity wall construction of Level 1 institutional type and Level 2 industrial type buildings for seismic performance categories A through E. The **BL-407** system can be used with and without rigid insulation board and is recommended for optimum air barrier integrity. This system is recommended for veneer anchorage to metal stud, wood stud, masonry, and concrete substrates. Use in new construction or retrofit masonry applications.

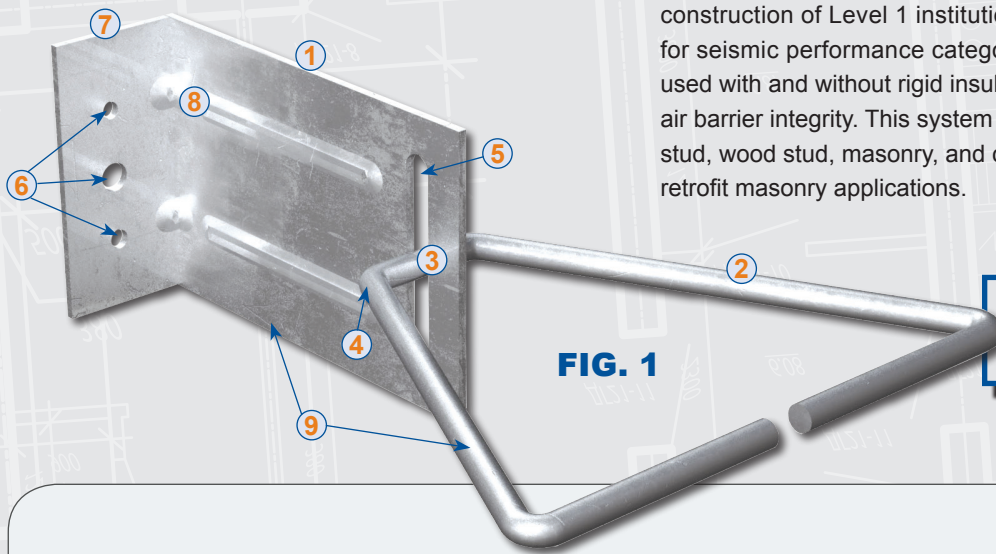
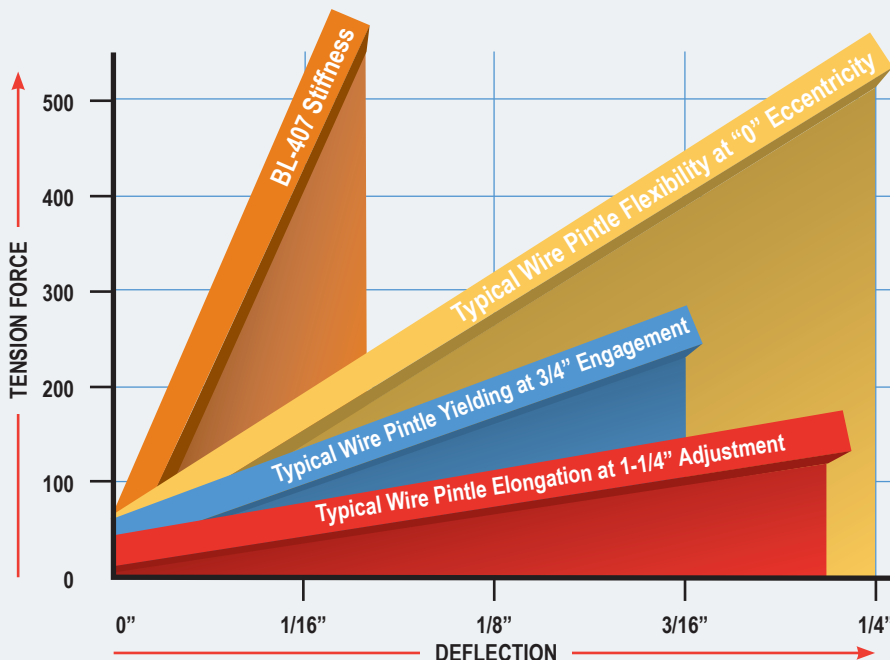


FIG. 1

See page 5 for performance benefits, code compliance and material conformance data.



PERFORMANCE COMPARISON

The BL-407 anchor was designed to exceed performance standards set forth by CSA A370-14. As shown in this chart, the BL-407 was able to withstand tension equal to or greater than a standard plate and pintle combination at 1/4" the deflection, even when using a lighter gauge material than traditional masonry anchors.

BL-407 uses a 16 gauge (1/5 mm/.006 in.) backplate with a 3/16" wire tie compared to 14 gauge (1.9 mm/.0075 in.) for a standard pintle plate.

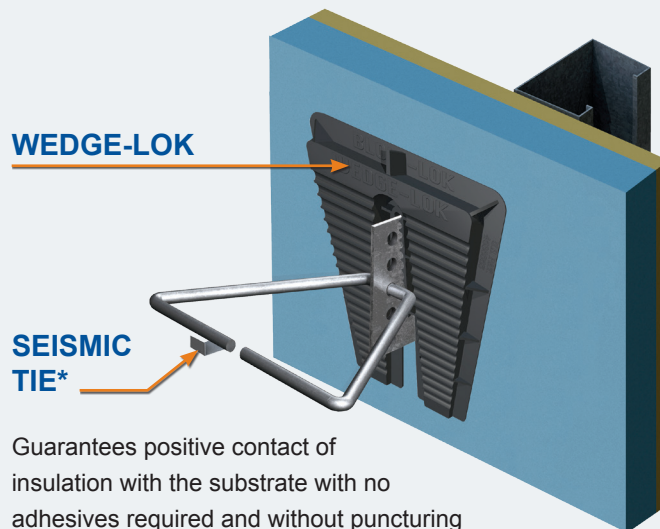
ACCESSORIES AND UPGRADES

BL-407S SHEAR ANCHOR



- Uses holes instead of a slot to attach Flex-O-Lok when shear transfer is an issue.
- BL-407S plates have been tested to meet code compliance up to 8 in. long.

WEDGE-LOK® FASTENER

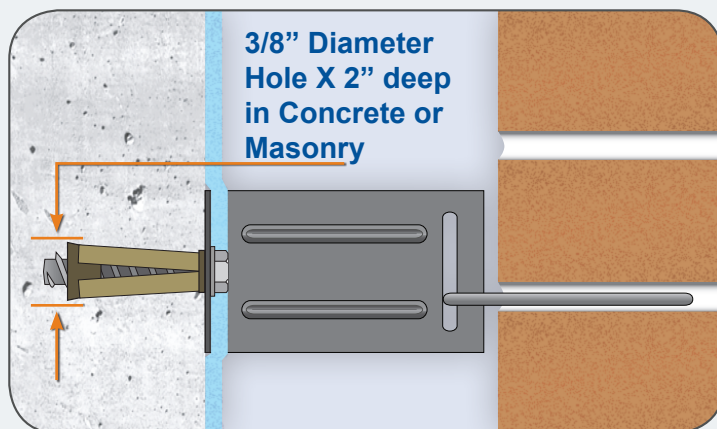


Guarantees positive contact of insulation with the substrate with no adhesives required and without puncturing the air/vapor barrier.

*Seismic Flex-O-Lok Tie available for standard 407 or 407S Shear anchor allows for easy installation of continuous wire in seismic applications.

BL-5407 VENEER RESTORATION ANCHOR

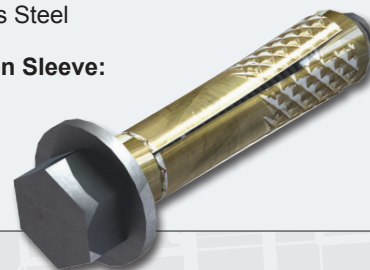
The **BL-5407** combines the BL-407 back plate and Flex-O-Lok Tie with a **BL-523 Brass Expansion Bolt** for an easy way to re-fasten an existing or brand new veneer to masonry, concrete, or brick back up. Low profile hex head bolt installation provides an easy point of inspection without interfering with the insulation.



- Torque Activated: 30 - 80 in-lbs.
- Hex Head Finish - Low Profile.
- Bolt Head Provides Inspection Source
- Low Profile Avoids Insulation or Tie Interference
- Fastener preload > Four Times Design Load

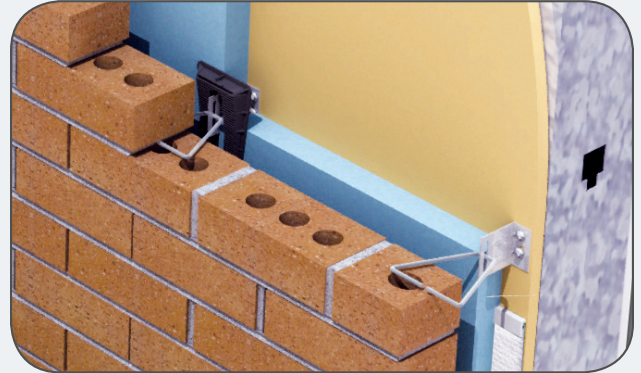
BL-523 BOLT COMPONENTS

- **Internal Bolt:**
Type 304 Stainless Steel
- **Washer:**
Type 18-8 Stainless Steel
- **Knurled Expansion Sleeve:**
Brass 260 Alloy
- **Expander Cone:**
Brass 260 Alloy



INSTALLATION PERFORMANCE

		FASTENER PERFORMANCE		
		Gauge	Ultimate Tension	Ultimate Shear
Steel Stud	Dual Hardened Grade 3 Stalgard N. 12-14	18	396 lbs. (180 kg)	1,315 lbs. (597 kg)
		16	527 lbs. (239 kg)	1,655 lbs. (750 kg)
		14	710 lbs. (322 kg)	2,118 lbs. (962 kg)
	300 Stainless Steel	14	855 lbs. (388 kg)	1,390 lbs. (631 kg)
		16	610 lbs. (277 kg)	1,390 lbs. (631 kg)
Hollow Lightweight Block			900 lbs. (409 kg)	
N.W. Concrete (3500 psi)			2,100 lbs. (963 kg)	
Solid Brick			900 lbs. (409 kg)	



Recommended minimum spacing of one tie per 2.67 square feet of wall area, spaced not more than 32" horizontal, and 18" vertical in the U.S.; 24 in. horizontal (600 mm.) x 32 in. vertical (800 mm.) per CSA.

PERFORMANCE CHARACTERISTICS

Design Parameter	Mounted on Hollow Steel Section (recommended design loads and deflections as per Intertek Testing Services in order to simulate an incompressible backup)	CSA A370-14 Specifications	U.S. Standards*
Free play: mm (in)	0.44 mm maximum (0.017 in)	Total Free Play ≤ 1.2 mm (0.048 in)	≤ 1.6 mm (0.063 in)
0.45 kN (101 lb) deflection: mm Free play not included *Free play included	0.66 mm (0.026 in) 1.10 mm (0.043 in)	Sum of displacement Free Play not to exceed 2.0 mm (0.08 in)	≤ 1.25 mm (0.05 in) ≤ 0.3 mm (0.118 in)
Recommended design load: kN (lb)	0.79 (178 lb)		A) ≤ 25 psf (1200 Pa) x (spacing area) = 68 lb (31 kg) OR B) $\leq 2 \times 0.35$ (spacing area) = 189 lb (31 kg)
Recommended design load - tension Deflection: mm (in) Free play not included		0.84 mm (0.033 in)	A) 0.23 mm (0.009 in) OR B) 0.61 mm (0.025 in)
Maximum recommended spacing	As per design professional	For non-conventional ties: 600 mm (24 in) o.c. vertically and 800 mm (32 in) o.c. horizontally except as permitted by CSA standard S304.1	≤ 800 mm (32 in) horizontally ≤ 450 mm (18 in) vertically one tie per 0.25 m ² (2.7 ft ²)
In-plane differential momentum	$\pm 1/2"$		

NOTES

- The tie system recommended design load values were formulated following the procedures of **CSA Standard A370-14 "Connectors for Masonry"**. A factor of safety of 2.0 was used to determine the working load as per clause 8.4.3.1.
- The allowable pull-out or push-out design load for the **FLEX-O-LOK®** tie imbedded at the centerline of 90 mm. (3-5/8") brick veneer utilizing Type N mortar, exceeds or equals the recommended design loads listed in Table 1 above.
- The above design values relate to the capacity of the tie components supplied by **BLOK-LOK LTD.** assembled in a manner similar to the laboratory simulation used to arrive at the above recommendations.
- The above design values are based on test results utilizing a **16 G. T304 ST. Slotted L-Bracket, and a T304 ST. ST. Flex-O-Lok tie** measuring 4.76 mm. in diameter, 80 mm. long with 40 mm. long imbedment legs. The L-Bracket was mounted onto 2" x 2" 1.25" hollow steel section using 1/4" steel bolts, in order to simulate an incompressible backing.
- *Codes and Standards Compliance:** Meets or exceeds relevant veneered masonry construction sections and recommendations of the following Building Code Requirements and Building Standards:
 - CSA Standard A370-14, Connectors for Masonry
 - ACI 530-99/ASCE 5-99/TMS 402-99 Building Code Requirements for Masonry Structures
 - ACI 530.1-99/ASCE 6-99/TMS 602-99 Specification for Masonry Structures
 - International Building Code 2000
 - Western States Clay Products BV/SS Design Guide
 - Brick Industry Association Technical Notes 28b, 44b, 21a & b
 - Uniform Building Code 97

MATERIAL CONFORMANCE & PERFORMANCE DATA

COMPONENTS*

- ① **BL-407 Base Plate** – 25 mm (1 in) x 50 mm (2 in), 16 gauge (1.5 mm) Carbon Steel ASTM A 366, Hot Dipped Galvanized per ASTM A153, C1 B2; Stainless Steel per ASTM 167
- ② **Flex-O-Lok Tie and Seismic Tie** – 4.76 mm (3/16 in) Diameter Wire, Carbon Steel per ASTM A 82, Hot Dip Galvanized per ASTM A153, C1 B2; Stainless Steel per ASTM A580

PERFORMANCE DATA*

- ③ **Adjustability** – *to accommodate differential wall movement* – 38 mm (1-1/2 in) vertical, 25 mm (1 in) horizontal.
- ④ **Tie Cannot Disengage** – Per ASCE 5/ACI 530/TMS 402 requirements.
- ⑤ **Free Play** – *maintaining optimum stability of the veneer* – 0.3 mm (0.012 in) ~ 0.45 mm (0.018 in), maintaining optimum stability of the veneer, maximum.
- Capacity at Maximum Eccentricity**
 - 430 lbs. (1907 N) Tension.
 - 608 lbs. (2703 N) Compression at 100 mm (4 in) cavity.
- ⑥ **Positive Connection to Back Up Material** – *mechanically connected with fasteners*
 - Single center attachment for Torq-Lok Masonry Fastener to masonry, concrete, or bolting back-up
 - Blok-Lok® Self Drilling, Self Tapping Washer head screws (either Co-Polymer carbon steel or 300 series stainless); one per plate or two screws for maximum stiffness (to meet CSA standard).
- ⑦ **Bearing Area** – *optimal stud bearing area to maintain air seal* – Plate bearing area @ 1250 sq.mm (2 in. square) keeps sheathing stress less than 304 psi (2138 kPa) at maximum compressive loads.
- ⑧ **Stiffness** – *minimal veneer wall deflection under load*
 - 1109 N per mm (7,687 lbs. per in.) Tension @ maximum eccentricity.
 - 2413 N per mm (11,515 lbs. per in.) Compression, at 4' cavity.
- ⑨ **Corrosion Resistance** – *long term durability*
Hot Dip Galvanized or Austenitic (300 Series) Stainless Steel.

Test Rated – Performance verifications by Intertek Testing Service NA LTD.

Vertical Mount – Eliminates mortar build up and eases insulation installments with no insulation punctures.

WEDGE-LOK®

for airtight insulation board retention
Gap range 1/16" to 5/8" of space
between wire tie and insulation
board face.

CAN. PAT. #1271614 :: US. Pat. #4688363



*See FIG. 1 on page 2 for reference

ORDERING INFORMATION

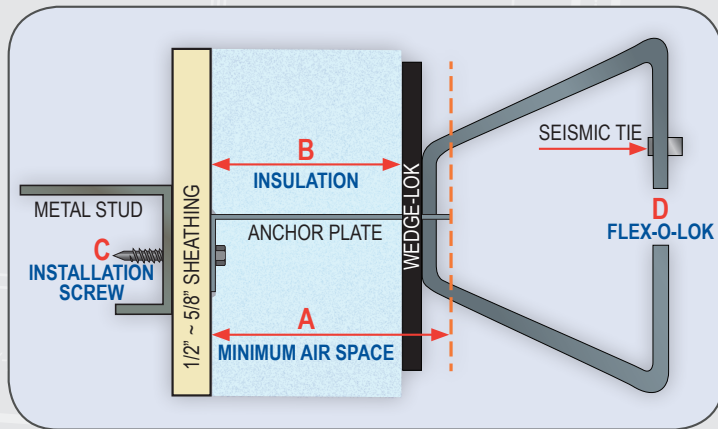
SPECIFICATIONS

BL-407 Base Plate

1-3/16" (30mm) X 2" (50mm), 16 gauge (1.5mm) Carbon Steel
ASTM A 366, Hot Dipped Galvanized (H.D.G.) per ASTM A153
or Stainless Steel (S.S.) Type 304 per ASTM 167

Flex-O-Lok® Tie and Seismic Tie

4.76mm (3/16") Diameter Wire, Carbon Steel per ASTM A 82,
Hot Dipped Galvanized (H.D.G.) per ASTM A153, C1 B2 or
Stainless Steel (S.S.) Type 304 per ASTM A580



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.

BASE PLATE ORDERING CHART

Wall Cavity Conditions		Product Selection			
Minimum Air Space	Insulation	Stud Back-Up		Masonry/Concrete Back-Up*	
A	B	H.D.G.	S.S.	H.D.G.	S.S.
3/4"	0"	40702	40705	540702	540705
1-1/2"	≤ 1"	40712	40715	540712	540715
2"	≤ 1-1/2"	407152	407155	5407152	5407155
2-1/2"	≤ 2"	40722	40725	540722	540725
3"	≤ 2-1/2"	407252	407255	5407252	5407255
3-1/2"	≤ 3"	40732	40735	540732	540735
4"	≤ 3-1/2"	407352	407355	5407352	5407355
4-1/2"	≤ 4"	40742	40745	540742	540745

INSTALLATION SCREW ORDERING CHART*

Length C	Self Drilling / Self Tapping Screw	Finish	Part #
1-1/2"	No Sealant Washer	Co-Polymer Carbon Steel	51015SC
		300 Series Stainless Steel	53015SX
2"	With Sealant Washer	Co-Polymer Carbon Steel	51020SCW
		300 Series Stainless Steel	53020SXW

*Masonry/Concrete Series Anchors come with Brass Expansion Bolt included.

FLEX-O-LOK® ORDERING CHART

Length D	Standard		Seismic	
	H.D.G.	S.S.	H.D.G.	S.S.
3"	T9F 332	T9F 335	T9F 332S	T9F 335S
4"	T9F 432	T9F 435	T9F 432S	T9F 435S
5"	T9F 532	T9F 535	T9F 532S	T9F 535S
6"	T9F 632	T9F 635	T9F 632S	T9F 635S
7"	T9F 732	T9F 735	T9F 732S	T9F 735S

