

M'GONIGAL CONSTRUCTION LTD.

245 Fifth Avenue, Arnprior, Ontario K7S 3M3
 Telephone (613) 623-3613 Fax (613) 623-8705
 Email rmcgonigal@mcgonigalconstruction.ca

SHOP DRAWING & SAMPLE SUBMITTAL

Project Title: Enterprise Rent-A-Car Palladium Dr
Project Number: _____
Date: April 2, 2020

SUBCONTRACTOR : McGonigal Construction Ltd.
 (name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle (alytle@mcgonigalconstruction.ca)
Telephone Number: (613) 623-3613

SUPPLIER : Givesco
 (name & address) 795 rue du vernon
 Gatineau, Quebec
Contract Name: Peter Champagne
Telephone Number: 819-770-5582

MANUFACTURER : Brampton Brick
 (name & address) 225 Wanless Drive
 Brampton, ON
Contact Name: _____
Telephone Number: 905-840-1011

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Brampton Profile Series Block, Peel Biege, Sauve Finish -90x90x590mm

Reviewed as noted ()
 Submitted ()
 Not reviewed ()

Date: 2020 Apr. 27
 Reviewed by: MHI

This review by J.C.F.A.Inc. is for the sole purpose of ascertaining conformance with the general design concept for architectural features only, and does not in any way constitute review of the design of engineering elements which form part of the contract documents prepared by others. This review shall not mean that J.C.F.A.Inc. approves the detailed design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of the responsibility for errors or omissions in the shop drawings or of the responsibility for meeting all requirements of the contract documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of all trades.

Jason C. Flynn Arcitect inc. (J.C.F.A.Inc.)

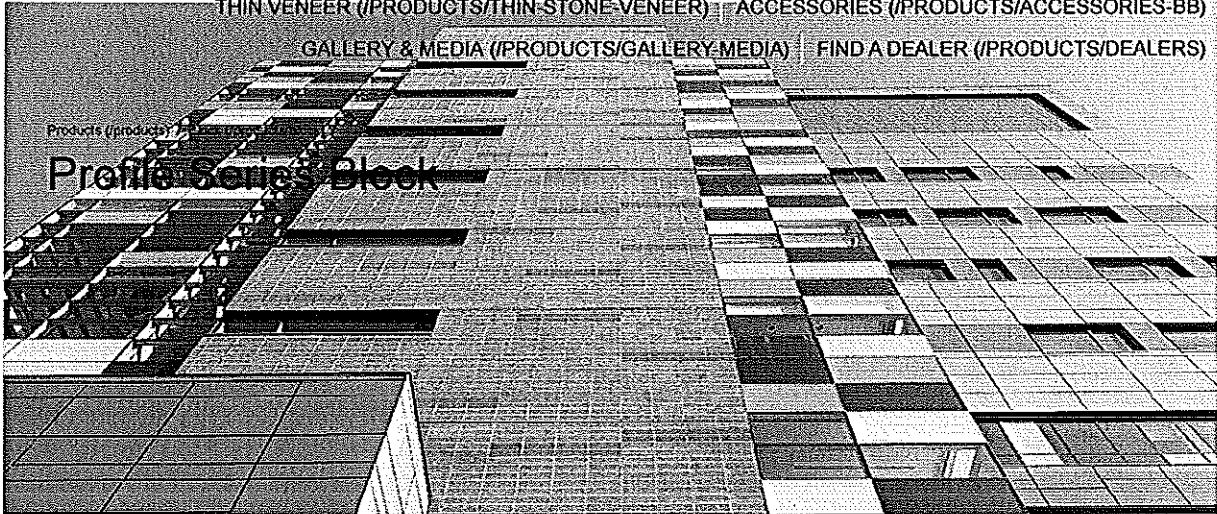


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Profile Series Block

The compressive strength of Profile Series concrete block units is suitable for use in a masonry-bearing or single wall. This product is also manufactured with a water repellent additive and is permeable to water vapor. Profile Series offers a wide variety of sizes and colour options which are available in two optional finishes (Quartz or Suave).

Available with RainBloc® (rainbloc). Click the logo to learn about RainBloc®.

RECOMMENDED APPLICATION:



Residential

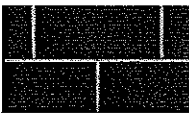


Commercial

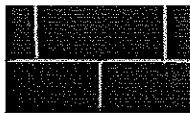
COLORS

SIZES

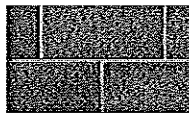
SPECIFICATIONS



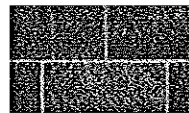
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Absolute Black Quartz



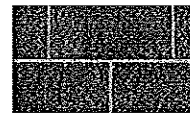
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Absolute Black Suave



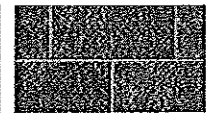
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Academy Black Quartz



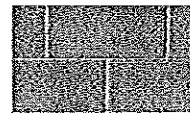
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Academy Black Suave



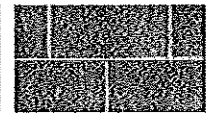
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Charcoal Quartz



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Charcoal Suave



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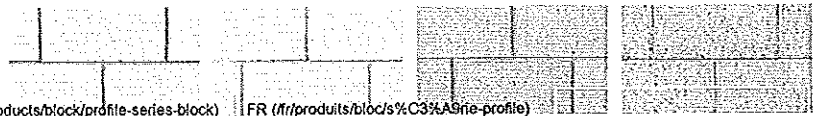
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Eclipse Quartz

Eclipse Suave



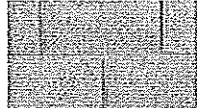
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Peel Brown Quartz

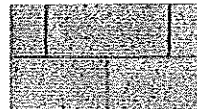
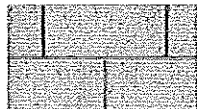
Peel Brown Suave

Peel Gold Quartz

Peel Gold Suave

Peel Silver Quartz

Peel Silver Suave

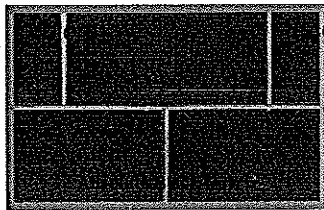


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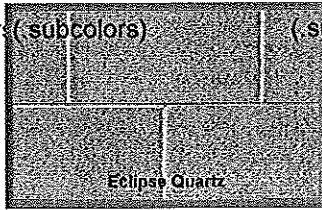
Peel Gray Quartz

Peel Gray Suave

PRODUCT COMBINATION TOOL



color (- subcolors)



(- subcolors)

Eclipse Quartz

Use this tool to compare product and styles to find YOUR perfect colour combination of brick and stone.

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Commercial

Residential



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COLORS

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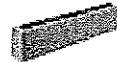
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SIZES

SPECIFICATIONS

Sizes



90 x 390 Block
Length 390 mm (15 3/8")
Height 90 mm (3 1/2")
Depth 90 mm (3 1/2")



90 x 590 Block
Length 590 mm (23 1/4")
Height 90 mm (3 1/2")
Depth 90 mm (3 1/2")



190 x 390 Block
Length 390 mm (15 3/8")
Height 190 mm (7 1/2")
Depth 90 mm (3 1/2")



190 x 590 Block
Length 590 mm (23 1/4")
Height 190 mm (7 1/2")
Depth 90 mm (3 1/2")



Smooth Profile Block Series

10 cm (4") Single Scored Standard

[ENG \(/products/bloc/profile-series-block\)](#) | [FR \(/fr/produits/bloc/s/C3%A9rie-profile\)](#)

Available Sizes

10 cm, 15 cm, 20 cm, 25 cm, 30 cm
(4", 6", 8", 10", 12")

[CLAY BRICK \(/PRODUCTS/CLAY-BRICK\)](#)

[STONE \(/PRODUCTS/STONE\)](#)

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Other Sizes Available

Dimensions (D x H x L)

90 mm x 90 mm x 290 mm
(3 1/2" x 3 1/2" x 11 3/8")

240 mm x 90 mm x 390 mm
(9 1/2" x 3 1/2" x 15 3/8")

140 mm x 90 mm x 390 mm
(5 1/2" x 3 1/2" x 15 3/8")

240 mm x 190 mm x 390 mm
(9 1/2" x 3 1/2" x 11 3/8")

140 mm x 190 mm x 390 mm
(5 1/2" x 7 1/2" x 15 3/8")

290 mm x 90 mm x 390 mm
(11 1/2" x 3 1/2" x 15 1/2")

190 mm x 90 mm x 390 mm
(7 1/2" x 3 1/2" x 15 3/8")

290 mm x 190 mm x 390 mm
(11 1/2" x 7 1/2" x 15 1/2")

190 mm x 190 mm x 390 mm
(7 1/2" x 7 1/2" x 15 3/8")

90 mm x 190 mm x 190 mm x 390 mm
(3 1/2" x 7 1/2" x 7 1/2" x 15 3/8")

PRODUCT COMBINATION TOOL



Commercial

Residential



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SIZES

SPECIFICATIONS

Product Property	CSA	ASTM	Typical Brampton Brick Range
Compressive Strength (min)	> 15 MPa	> 2000 psi	15-20 MPa
Absorption (max)	< 175 kg/m ³	< 13 lb/ft ³	103 - 126.6 kg/m ³
Density	> 2000 kg/m ³	> 125 lb/ft ³	2120 - 2172 kg/m ³

Based on A165.1 and ASTM C90

PRODUCT COMBINATION TOOL

MCGONIGAL CONSTRUCTION LTD.

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Project Title: Enterprise Rent-A-Car Palladium Dr
Project Number: _____
Date: April 2, 2020

SUBCONTRACTOR : McGonigal Construction Ltd.
(name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle (alytle@mcgonigalconstruction.ca)
Telephone Number: (613) 623-3613

SUPPLIER : Ed's Concrete
(name & address) 1266 Erie St.
Stratford, ON
Contract Name: Byron Veldjesgraaf
Telephone Number: 519-271-6590

MANUFACTURER : Ed's Concrete
(name & address) 1266 Erie St.
Stratford, ON
Contact Name: Byron Veldjesgraaf
Telephone Number: 519-271-6590

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Masonry Precast Concrete Sill

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(name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle (alytle@mcgonigalconstruction.ca)
Telephone Number: (613) 623-3613

SUPPLIER : Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER : CRH Canada
(name & address) 2391 Lakeshore Road W.
Mississauga, ON
Contact Name: John Hellyer
Telephone Number: 905-822-1653

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Type N masonry



CRH Canada Group Inc.
 2391 Lakeshore Road West
 Mississauga, Ontario
 L5J 1K1 Canada

T. 905-822-1653
 F. 905-822-7445

www.crhcanada.com

GENERAL SPECIFICATION

Mason's Choice®
TYPE 'N' Masonry Cement



PRODUCT:

Grey, Type N Masonry Cement

Masonry Cement, Grey Type N as defined by CSA A3002

COMPOSITION:

Masonry cement Type N is a blended material containing Portland cement clinker and plasticizing materials. Type N cement can be used when high-strength mortar is not required to suit the project requirements.

PHYSICAL PROPERTIES - CSA A3002:

		<u>Typical</u>
Fineness	Retained on 45µm Sieve	7 %
	Blaine	575
Soundness	Expansion	0.1 %
Water Retention Value		82%
Setting Time	Initial »	360 min
	Final »	580 min.
Compressive Strength	Age Tested 7 day	6 MPa
	28 day	10 MPa
Air Content		19 %
Specific Gravity		2.90

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Contact Name: Art Lytle (alytle@mcgonigalconstruction.ca)
Telephone Number: (613) 623-3613

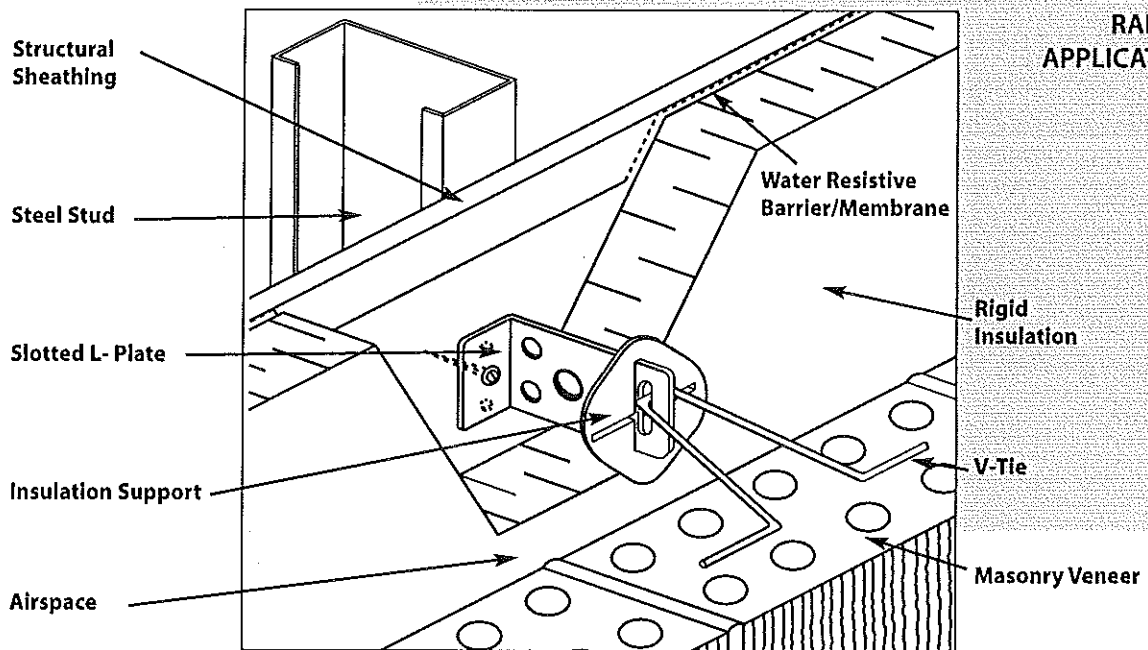
SUPPLIER : Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER : Fero
(name & address) 450 1st SW Suite 2100
Calgary, AB
Contact Name: _____
Telephone Number: 866-583-2583

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Rap Tie- Hot Dipped Galvanized

SLOTTED RAP-TIE

SLOTTED RAP-TIE APPLICATION



Introduction

The Slotted Rap-Tie (Rod Adjustable Plate Tie) system consists of a Slotted L-Plate (a vertically oriented L-shaped steel plate), a V-Tie™ (a V-shaped steel wire), and an Insulation Support (optional, but recommended). These individual components are shown in Figures 1, 2 and 3, respectively. The installed tie system is shown in the Cover illustration and Figure 4.

Tensile and compressive lateral loads acting on the masonry veneer are transferred through the V-Tie™ to the Slotted L-Plate which bears against, and is fastened to, the structural backing. Attachment may be directly to a steel stud or by surface mounting to a sheathing over the stud, as shown in Figures 4 and 5, respectively. Requirements for the structural integrity and moisture protection of any intervening material in the tie load-path, such as a sheathing, are contained in CSA Standard A370, "Connectors for Masonry", ACI 530/ASCE 5/TMS 402 "Building Code Requirements for Masonry Structures" and the International Codes (International Building Code and International Residential Code). The vertical slot along the outboard end of the Slotted L-Plate through which the V-Tie™ is inserted provides a positive connection without the possibility of V-Tie™ disengagement during construction and in-service (in accordance with requirements in CSA A370 and ACI 530/ASCE 5/TMS 402). It permits up to 30 mm (1.2") of in-situ vertical adjustment so that a bed joint in the outer wythe will always be coincident with the V-Tie™. The slot accommodates differential movement between the masonry veneer and the structural backing to which the L-Plate is connected.

Introduction...cont.

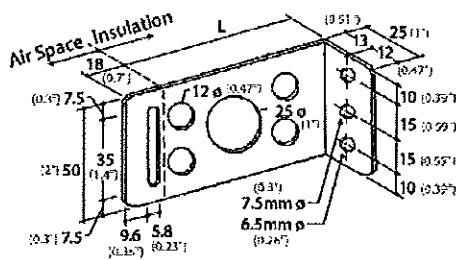


Figure 1 Slotted L-Plate

Components and Specifications

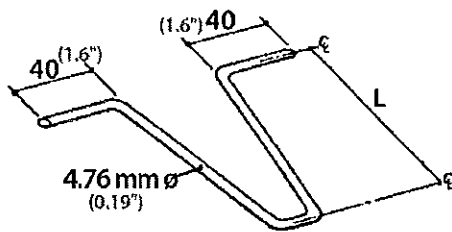


Figure 2 V-Tie™

Where vertical adjustment greater than 30 mm (1.2") is required, use of the Slotted Heavy-Duty Rap-Tie should be considered. The Slotted Heavy-Duty Rap-Tie offers 50 mm (2") of construction adjustability and in-service movement. See Ferro literature for the "Slotted Heavy-Duty Rap-Tie".

The Insulation Support, which is inserted over the end of the L-Plate and restrained by the V-Tie™, is used to securely and mechanically fix cavity rigid insulation in place.

The Slotted Rap-Tie can accommodate a range of insulation thicknesses from 0 to 102 mm (0 to 4"), and air space widths of 25.4 mm (1") and greater. The Slotted L-Plate has sufficient length to accommodate the thickness of the cavity insulation, and further extends 18 mm (0.7") into the air space to expose its leading edge and facilitate in-situ placement of the V-Tie™ and Insulation Support. The V-Tie™ is inserted through the vertical slot along the leading edge of the L-Plate, coincident with a mortar bed joint, so as to extend horizontally normal to the structural backing without reducing tie capacity. The legs of the V-Tie™ are positioned along the centreline of the veneer within the placement tolerances permitted by the building code having jurisdiction. Adjustment normal to the wall is facilitated by selecting an appropriate length of V-Tie™.

Slotted L-Plate: The Slotted L-Plate (Figure 1) is manufactured from 16 gauge sheet steel [1.367 mm (0.0538") minimum base steel thickness] and is available in both hot-dip galvanized finish and stainless steel. The weight of hot-dip galvanized finish is not less than 460 g/m²/side (1.5 oz/ft²/side), and satisfies the requirements of CSA A370 (which references ASTM A123), ACI 530.1/ASCE 6/TMS 602 (which references ASTM A153, Class B), and the International Building Code (IBC) (which reference ASTM A153, Class B). The incorporation of holes through the body of the Slotted L-Plate minimizes thermal conductivity through the tie system.

The overall length of the Slotted L-Plate is 18 mm (0.7") longer than the specification length (L). The specification length is the total distance between the exterior face of the insulation and the exterior face of the component of the structural backing to which the Slotted L-Plate is fastened/bears. The Slotted L-Plate is available in standard specification lengths (L) of 0 (0"), 28 (1.1"), 41 (1.6"), 54 (2.1"), 67 (2.6"), 79 (3.1"), 92 (3.6") and 105 (4.1") mm. Intermediate sizes are also available.

V-Tie™: The V-Tie™ (Figure 2) is manufactured from 4.76 mm (0.19") diameter steel wire and is available in both hot-dip galvanized finish and stainless steel. The weight of hot-dip galvanized finish is not less than 460 g/m² (1.5 oz/ft²) and satisfies the requirements of CSA A370 (which references ASTM A123), ACI 530.1/ASCE 6/TMS 602 (which references ASTM A153, 458 g/m²) and the International Building Code (IBC) (which reference ASTM A153, Class B, 458 g/m²).

The V-Tie™ is available in a variety of standard lengths to accommodate different specified thicknesses of masonry veneer and design widths of air space. Varying lengths of V-Tie™ also facilitate in-situ adjustment normal to the structural backing (to accommodate construction tolerances) where the constructed width of air space differs from the design width of air space. Standard lengths of V-Tie™ include 60 mm (2.4"), 80 mm (3.1"), 100 mm (3.9"), 120 mm (4.7"), 140 mm (5.5"), 160 mm (6.3"), 180 mm (7.1"), 200 mm (7.9"), 225 mm (8.9") and 250 mm (9.8").

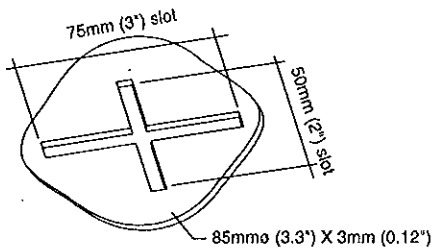


Figure 3 Insulation Support/Retainer

Insulation Support: The Insulation Support (Figure 3) is manufactured from polyethylene. It is pressed over the outboard end of the Slotted L-Plate tightly against the cavity insulation to prevent the insulation from separating from the structural backing/air barrier. The friction fit between the Insulation Support and the Slotted L-Plate restrains the insulation during construction which is commonly installed in advance of the exterior masonry wythe. Subsequent installation of the V-Tie™ sandwiches the Insulation Support between the insulation and V-Tie™, thereby locking the Insulation Support in place and ensuring a reliable and permanent insulation support system.

The insulation Support is a standard component of the system, but it is optional where the insulation is otherwise supported, and not required where insulation is not placed within the cavity.

The Slotted Rap-Tie is designed to transfer the lateral load from the exterior masonry wythe (the veneer) axially and normal to the structural backing. The connection between the V-Tie™ and the Slotted L-Plate by way of the vertical slot does not resist differential movement between the structural backing and masonry veneer in the vertical direction and therefore does not offer composite action between the structural backing and the masonry veneer. For the design of shear connected masonry veneer/(steel) stud systems (i.e., wall construction using composite action) see Fero Stud Shear™ Connector product literature. A single fastener will usually prove adequate to connect the L-Plate to the structural backing.

In addition to its use in unit masonry veneer applications (Figures 4 and 5), including both clay brick and concrete masonry, the Slotted Rap-Tie system can be utilized in the application of stone or thin masonry veneer, as illustrated in Figure 6.

Structural Action

Note: Refer to the FERRO-FASTENERS brochure for complete specifications.

Unit Masonry, Dimension Cut, and Manufactured Stone Veneer Applications

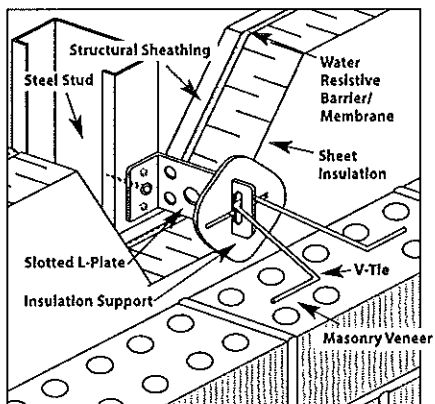


Figure 4
Slotted Rap-Tie Attached Directly to a Steel Stud

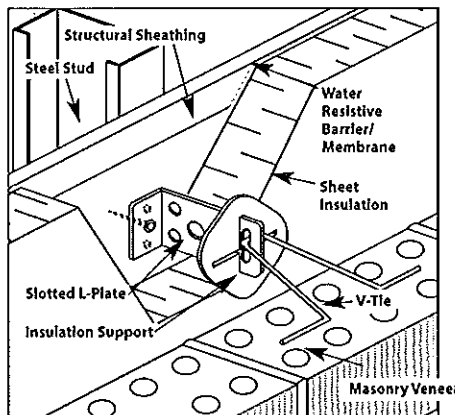


Figure 5
Slotted Rap-Tie Surface Mounted on Protected Structural Sheathing

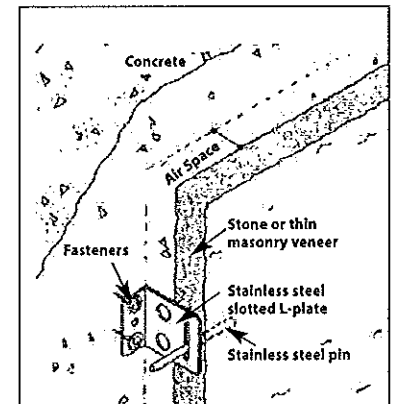


Figure 6
Slotted Rap-Tie System Application for Dimension Cut-Stone Veneer

SLOTTED RAP-TIE

Slotted Rap-Tie Design Data

Design data for the Slotted Rap-Tie are reported separately for Canada and the United States in the following tables because design methods and requirements for masonry ties and their uses differ between their respective codes and standards.

Slotted Rap-Tie Design Data (Canada)

Design Parameter	Design Data ^{(i),(ii)}	
1. Mechanical Free Play: ^(vi) (with FERRO V-Tie™)	1.04 mm (max) (0.041")	
2. Serviceability at 0.45 kN (100 lbs): ^(vi)	Tie Mounted Directly to Steel Stud	Tie Mounted on Surface of Protected Exterior Gypsum Sheathing Over Steel Stud ⁽ⁱ⁾
Displacement:	0.63 mm (0.025")	0.66 mm (0.026")
Displacement + Mechanical Free Play:	1.67 mm (max) (0.066")	1.7 mm (max) (0.067")
3. Factored Resistance (ϕP_n): ^{(v),(vi),(vii)}	1.5 kN (340 lbs.)	
4. Maximum Recommended Spacing: ^(viii)	Horizontal: 820 mm (32")	Vertical: 600 mm (24")

Notes:

- (i) These design data are based on connector testing in accordance with CSA A370-14, *Connectors for Masonry*, with no surcharge and with test samples having the following configuration: 127 mm [5"] cavity; 102 mm [4"] Slotted L-Plate; 25 mm [1"] air space; one (1) fastener located in the centre hole of the L-Plate; standard FERRO V-Tie™; and V-Tie™ engaged into L-Plate at position of maximum vertical adjustment. Smaller cavity widths and/or the addition of insulations providing lateral support to the tie L-Plate will increase the tabled factored resistance of the tie and reduce tie deflection.
- (ii) Protected exterior gypsum sheathing consisting of Perma-Barrier (W.R. Grace) adhered to 12.7 mm (0.5") exterior gypsum board.
- (iii) These design data reflect both the windward (compression) and leeward (tension) capacities of the Slotted Rap-Tie system, with the governing values listed.
- (iv) The Slotted Rap-Tie satisfies the limiting requirements for serviceability (tie displacement and mechanical free play) in CSA A370-14. Tabled mechanical free play is for stainless steel components. The mechanical free play for hot-dip galvanized components is less.

- (v) The ultimate strength of the Slotted Rap-Tie, P_u , is determined in accordance with CSA A370-14 and is calculated by multiplying the average tie strength established by testing by (1 - 1.64 cov). The factored resistance of the tie system, ϕP_n , is calculated using the Limit States Design procedures of CSA A370-14.
- (vi) The stated tie factored resistance does not consider fastener resistance. A compatible fastener (or fasteners) having an adequate factored resistance must be selected (by design in accordance with CSA A370-14).
- (vii) The factored resistance of the mortar pull-out or push-through for the V-Tie™ embedded at the centreline of 90 mm (3.5") brick veneer utilizing Type S or N mortar exceeds or equals the tabled factored resistance, ϕP_n . That is, failure by pull-out/push-through of the mortar joint does not govern.
- (viii) Maximum recommended tie spacings are the maximum spacings permitted by CSA S304-14. For a particular design, the actual tie spacings are calculated such that the factored resistance of the tie (ϕP_n) equals or exceeds the effect of factored loads. See S304-14 for the design of masonry veneer systems.

Slotted Rap-Tie Design Data (United States)

Design Parameter	Design Data ^{(i),(ii)}	
1. Mechanical Free Play: ^(vi)	0.41" (max) (1.04 mm)	
2. Serviceability at 0.45 kN (100 lbs): ^(vi)	Tie Mounted Directly to Steel Stud	Tie Mounted on Surface of Protected Exterior Gypsum Sheathing Over Steel Stud ⁽ⁱ⁾
Displacement:	0.025" (0.63 mm)	0.026" (0.66 mm)
Displacement + Mechanical Free Play:	0.066" (max) (1.67 mm)	0.067" (max) (1.7 mm)
3. Nominal Strength: ^{(v),(vi),(vii),(ix),(x)}	450 lb (2.0 kN)	
4. Recommended Design Load: ^{(v),(vi),(vii),(ix),(x)}	200 lb (0.89 kN)	
5. Maximum Recommended Spacing: ^(viii)	Horizontal: 32" (813 mm)	Vertical: 18" (457 mm)

Notes:

- (i) These design data are based on connector testing in accordance with CSA A370-14, *Connectors for Masonry*, with no surcharge and with test samples having the following configuration: 5" [127 mm] cavity; 4" [102 mm] Slotted L-Plate; 1" [25 mm] air space; one (1) fastener located in the center hole of the L-Plate; standard FERRO V-Tie™; and V-Tie™ engaged into L-Plate at position of maximum vertical adjustment. The test method for ties in CSA A370-14 is comparable to that of ASTM E754, *Test Method for Pullout Resistance of Ties and Anchors Embedded in Masonry Mortar Joints*, and provides similar and more conservative results. Smaller cavity widths and/or the addition of insulations providing lateral support to the tie L-Plate will increase the nominal strength of the tie and reduce tie deflection. Prescriptive requirements for anchored masonry veneer under ACI 530/ASCE 5/TMS 402 limit the cavity to a maximum width of 4-1/2" (114 mm) unless the veneer is alternatively designed using a rational, engineered design method (termed "Alternative Design of Anchored Masonry Veneer").
- (ii) Protected exterior gypsum sheathing consisting of Perma-Barrier (W.R. Grace) adhered to 12.7 mm (0.5") exterior gypsum board.
- (iii) These design data reflect both the windward (compression) and leeward (tension) capacities of the Slotted Rap-Tie system, with the governing values listed.

- (iv) The Slotted Rap-Tie L-Plate with V-Tie™ satisfies the 1/16" (1.6 mm) maximum permissible clearance between connecting parts required by ACI 530/ASCE 5/TMS 402. Tabled mechanical free play is for stainless steel components. The mechanical free play for hot-dip galvanized components is less.
- (v) The nominal strength of the Slotted Rap-Tie is determined by test and is reported as the average ultimate strength of the tie samples. In accordance with ACI 530/ASCE 5/TMS 402, using Strength Design, a suitable strength-reduction factor must be applied to the nominal strength to determine the tie design strength. Similarly, under Allowable Stress Design, an appropriate safety factor must be applied to determine an allowable load value. The tabled "Recommended Design Load" reflects a safety factor of 2.25 (that is, 75% of 3.0). [See also Note (vii) when assigning a strength-reduction factor to the nominal strength].
- (vi) The stated nominal strength and recommended design load do not consider fastener capacity. A compatible fastener (or fasteners) having an adequate strength must be selected (by design in accordance with ACI 530/ASCE 5/TMS 402).
- (vii) The nominal strength (and corresponding recommended design load) of the mortar pull-out or push-through for the V-Tie™ embedded at the centerline of 3.5" (90 mm) brick veneer utilizing Type M, S or N mortar exceeds or equals the tabled nominal strength (and recommended design load). That is, failure by pull-out/push-through of the mortar joint does not govern.
- (viii) Maximum recommended tie spacings are the maximum spacings permitted by ACI 530/ASCE 5/TMS 402 using prescriptive requirements for anchored masonry veneer. The prescriptive requirements in ACI 530/ASCE 5/TMS 402 further limit a tie tributary area to not more than 2.67 ft² (0.25 m²) wall area [with reduced areas for high Seismic Design Categories and in areas of high winds] unless the veneer is alternatively designed using a rational, engineered method (termed "Alternative Design of Anchored Masonry Veneer"). Where an Alternative Design is used, the required tie spacing must be calculated such that the design strength of the tie equals or exceeds the required strength. See ACI 530/ASCE 5/TMS 402 for the design of masonry veneer systems.
- (ix) The Slotted Rap-Tie L-Plate with V-Tie™ satisfies ACI 530/ASCE 5/TMS 402 requirements for minimum wire size of W1.7 (MW1.7) and for ends bent to form a minimum 2" (50.8 mm) extension.
- (x) ACI 530/ASCE 5/TMS 402 requires joint reinforcement in masonry veneer in high Seismic Design Categories to be mechanically attached to the masonry tie.

Patent Pending

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Fero Corporation

15305 - 117 Avenue, Edmonton, Alberta T5M 3X4

Phone: (780) 455-5098 Fax: (780) 452-5969

www.ferocorp.com info@ferocorp.com

MCGONIGAL CONSTRUCTION LTD.

245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Telephone (613) 623-3613 Fax (613) 623-8705
Email rmcgonigal@mcgonigalconstruction.ca

SHOP DRAWING & SAMPLE SUBMITTAL

Project Title: Enterprise Rent-A-Car Palladium Dr
Project Number: _____
Date: April 2, 2020

SUBCONTRACTOR : McGonigal Construction Ltd.
(name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle (alytle@mcgonigalconstruction.ca)
Telephone Number: (613) 623-3613

SUPPLIER : Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER : Henry Bakor
(name & address) 15 Wallsend Ave
Scarborough, Ontario
Contact Name: _____
Telephone Number: 800-387-9598

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Blueskin TWF Flexible Flashing



Blueskin[®] TWF

Self-Adhesive Thru-Wall Flashing Membrane

Color	Yellow	Low Temperature	Pass
Thickness	40 mils (1.0 mm)	Flex. at -22° F.	
Application Temperature	Min. 20°F (-7°C)	(CGSB37-GP-56M)	
Service Temperature	Minus 40°F to 212°F	Water Vapor	0.03 perms
Elongation	200% minimum	Permeance	(1.6 ng/Pa.s.m ²)
(ASTM D412 Die C)		(ASTM E96 Method B) -	
Tensile Strength	800 psi minimum	Tear resistance Initiation	45 lbs. MD
(Membrane)		(ASTM D1004) -	
(ASTM D412 Die C)		Propagation	17 lbs. MD
Tensile Strength (Film)	5000 psi minimum	(ASTM D1938)	
ASTM D882		Lap Peel Strength at	5.0 lbf/in. width
Puncture Resistance -	134 lbf	25° F. (ASTM D1876)	
Membrane (ASTM E154)	Pass	Adhesion to Concrete	8.75 N/cm (5.0 lb./in.)
Water tightness		(ASTM D903) -	width
(CAN/CGSB-37.58-M86)		Moisture Absorption	0.1 %max.
		(ASTM D570-81)	

Thickness	40 mils (1.0 mm)	Gross Coverage	
Roll Length	75 ft	36"	225 ft ²
Roll Widths	36", 24", 18", 12"	24"	150 ft ²
	+ custom widths available	18"	112.5 ft ²
Top Surface	Yellow, Cross-Laminated	12"	75 ft ²
	HDPE		
Bottom Surface	Siliconized Release Paper		

Description

Blueskin[®] TWF is a self-adhered membrane consisting of an SBS rubberized asphalt compound which is integrally laminated to a tough, yellow cross-laminated polyethylene film. The membrane is specifically designed for use as a thru-wall flashing. Available in standard: 12", 18", 24" and 36" widths. Custom widths also available.

Features

- Impermeable to air, moisture vapor and water.
- Flexible at low temperatures.
- Excellent adhesion to prepared substrates.
- Excellent compatibility with Henry adhesives, waterproofing and liquid air barrier membranes.
- Exceptional puncture and abrasion resistance.
- Membrane is self-gasketing when penetrated with self-tapping screw

Uses

Used as a thru-wall flashing membrane in conjunction with Henry Air Barrier and Waterproofing Systems.

Henry Company, 999 N. Sepulveda, Ste. 800 El Segundo CA 90245
Tel: 800-486-1278 Email: techservices@henry.com
www.henry.com

Blueskin® TWF Self-Adhesive Thru-Wall Flashing Membrane

Limitations

Non-resistant to oils and solvents not designed for permanent exposure. Yellow surface film may release on extended exposure to U.V. Good practice calls for covering as soon as possible. Do not extend Blueskin® TWF beyond face of exterior wall or veneer. With exception of Henry HE925 BES Sealant: avoid sealant contact with the underside (compound side) of Blueskin TWF. Some sealants other than HE925 BES Sealant may discolor if in contact with asphalt compound or may soften the asphalt compound. Contact sealant manufacturer for more information on compatibility with TWF.

Top or leading edge of Blueskin® TWF should be sealed with a HE925 BES Sealant or Polybitume® 570-05 to help avoid rainwater from migrating behind the membrane.

Not to be used in direct contact with flexible PVC/vinyl membranes or gaskets.

Some sealants other than HE925 BES Sealant may discolor if in contact with the asphalt compound or may soften the asphalt compound. Contact sealant manufacturer other than Henry for more information on compatibility with TWF.

Storage

Store rolls on end, in original cartons on pallets or elevated platform. Protect from weather or store in an enclosed area not subject to heat over 120° F.

Surface Preparation

Acceptable substrates are precast concrete, cast-in place concrete, concrete block, primed steel, aluminum mill finish, anodized aluminum, galvanized metal, gypsum board and wood. All surfaces to receive Blueskin® TWF must be clean of oil, dust and excess mortar. Strike masonry joints flush. Concrete surfaces must be smooth and without large voids, spalled areas or sharp protrusions. Concrete must be cured a minimum of 14 days and must be dry before Blueskin® TWF is applied.

Apply Blueskin® Primer, Spray Prep or Aquatac™ Primer by brush or roller at the rate of approximately 300 ft²/gal, depending on porosity and texture of surface and allow to dry for a minimum of 30 minutes before Blueskin® TWF is applied. Allow additional time for primer to set if wet to the touch or can be easily rubbed off. Ensure that all primed surfaces receive Blueskin® TWF in the same day or re-priming may be required.

Application

Material should be conditioned at room temperature for ease of application.

Cut the desired length of Blueskin® TWF and remove siliconized release paper. Position into place and apply positive pressure using a roller. Use care to avoid blisters or wrinkles. Overlap all joints by 2". Keep Blueskin® TWF back ½" to 1" from outside face of wall or veneer. At all laps, seams, penetrations, and along top edges of membrane apply a continuous bead of HE925 BES Sealant or Polybitume as termination seal. Form end dams as required with same sealant.

Limited Warranty

We, the manufacturer, warranty only that this product is free of defects, since many factors which affect the results obtained from this product - such as weather, workmanship, equipment utilized and prior condition of the substrate - are all beyond our control. We will replace at no charge any product proved to be defective within 12 months of purchase, provided it has been applied in accordance with our written directions for uses we recommended as suitable for this product. Proof of purchase must be provided. DISCLAIMER OF WARRANTIES: The Limited Warranty is IN LIEU OF any other warranties express or implied including but not limited to any implied warranty of MERCHANTABILITY or fitness for a particular purpose, and we, the manufacturer, shall have no further liability of any kind including liability for consequential or incidental damages resulting from any defects or any delays caused by replacement or otherwise. <>

M^cGONIGAL CONSTRUCTION LTD.

245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Telephone (613) 623-3613 Fax (613) 623-8705
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(name & address) 15 Wallsend Ave
Scarborough, Ontario
Contact Name: _____
Telephone Number: 800-387-9598

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Blueskin VP160



TECHNICAL DATA SHEET
Blueskin[®] VP160
Self-Adhered Water Resistive Air Barrier

Physical Property	Typical Value	Test Method
Color	Blue	-
Thickness, nominal	23 mils (0.58 mm)	-
Application Temperature, min	+20 °F (-7 °C)	-
Service Temperature	-40 °F to +180 °F (-40 °C to +82 °C)	-
Water Vapor Permeance (Blueskin [®] VP160)	29 Perms	ASTM E96, Method A
Water Vapor Permeance (Blueskin [®] VP160 + Primer + DensGlass [®] sheathing)	18 Perms	ASTM E96, Method A
Tensile Strength, dry	41 lbf / 182 N MD 29 lbf / 129 N CD	ASTM D882
Average Breaking Force, dry	127 lbf / 565 N MD 91 lbf / 405 N CD	ASTM D5034
Accelerated Aging	Pass	ICC-ES AC48
Cycling and Elongation	Pass	ICC-ES AC48
Flame Spread Index	0, Class A	ASTM E84
Smoke Developed	105, Class A	ASTM E84
Air Permeance @ 75Pa	0.003 cfm/ft ² (0.0147 L/s.m. ²)	ASTM E2178, CAN/ULC-S741-08
Air Leakage	Pass	ASTM E2357
Air Leakage Rate	Classification A1	CAN/ULC-S742-11
Water Resistance	Pass	AATCC TM127
Low Temperature Flexibility	Pass	ICC-ES AC38/3.3.4
Peel-Adhesion to Unprimed Plywood	Pass	ICC-ES AC38, AAMA 711-07
Nail Sealability	Pass	AAMA 711-07, ASTM D1970 modified

Approvals and Certifications

- ICC ESR-2975
- ICC AC188
- CGSB 51.32
- NFPA 285 Compliant
- AAMA 711-07
- ASTM E331

Description

Blueskin[®] VP160 is a self-adhered vapor permeable, water resistive air barrier consisting of an engineered film surface and a patented, permeable adhesive technology with split-back poly-release film. **Blueskin[®] VP160** is fully adhered to the wall substrates in a weatherboard method without mechanical attachment.

Features

- Meets highest industry standards for commercial air barriers
- Sheds water while allowing vapor to pass through allowing walls to drain and substrates to dry
- Creates a continuous plane of air-tightness helping to improve building thermal performance
- Fully adheres to substrates eliminating water migration

Usage

Designed for commercial construction applications, **Blueskin[®] VP160** creates a water resistive air barrier when applied outside of the wall sheathing and behind the exterior wall cladding. Used for transitions, rough openings, fenestrations, and full-wall applications.

Blueskin[®] VP160 complies with NFPA 285 standard fire test method in various wall assemblies. For further details, refer to Henry[®] Tech-Talk Bulletin "NFPA 285 Assemblies."

Blueskin® VP160 Self-Adhered Water Resistive Air Barrier

Application

Surface Prep: All surfaces to receive Blueskin® VP160 must be dry and clean of oil, dust, frost, bulk water and other contaminants that would limit adhesion of membrane. Acceptable substrates are exterior-grade gypsum sheathing, plywood, OSB, precast or cast-in-place concrete, concrete block, steel, aluminum and galvanized metal. Strike masonry joints full-flush. Concrete surfaces must be smooth and without large voids, spalled areas or sharp protrusions. Concrete must be cured a minimum of 14 days. Curing compounds and release agents used in concrete construction must be resin based without oil or wax.

If appropriate adhesion is not obtained due to conditions beyond the control of the installer, the application of adhesive-primer will be required. Approved adhesive-primers include Blueskin® Adhesive, Blueskin® LVC Adhesive or Aquatac™ Primer. In addition, Blueskin® Spray Prep Primer can be used with light coats that are allowed to dry fully prior to covering. Availability may vary by region. Coated surfaces not covered by air barrier during the working day must be recoated.

Apply: Blueskin® VP160 must be installed in a consecutive weatherboard method starting at bottom or base of wall and working up providing minimum of 2" (5 cm) overlaps. Position Blueskin® VP160 for alignment with release paper in place; roll back, peel away split-back film and apply pressure to assure adhesion. **Surface must be rolled after application** with a countertop or J-roller with adequate pressure to ensure adhesion to substrate and laps and to remove fish-mouths and wrinkles. Seal membrane terminations, heads of mechanical fasteners, masonry tie fasteners, around penetrations, duct work, electrical and other apparatus extending through the Blueskin® VP160 around the perimeter edge of membrane, and terminations at window and door frames with **212 All Purpose Crystal Clear Sealant**. Apply **212 All Purpose Crystal Clear Sealant** in a 1/4" (6mm) bead and tool to thickness of approximately 40 mils (1mm) prior to sealant skinning over. Note: excessive or heavy application of **212 All Purpose Crystal Clear Sealant** may cause superficial wrinkling of Blueskin® VP160 in some situations.

Fenestrations must be flashed per window and door manufacturers' recommendations, local building code requirements, ASTM 2112, and AAMA guidelines. Use pre-cut rolls of Blueskin® SA, Blueskin® WB or Blueskin® Butyl Flash for sill pan flashings per Henry® published window flashing guidelines. Air-Bloc® LF liquid-applied flashing can also be used around the entire rough opening.

Refer to Blueskin® VP160 Installation Guidelines for detailed application information.

Limitations: Blueskin® VP160 is designed for exposure of up to 150 days, but is not designed for permanent exposure to ultra-violet light and should be covered as soon as practical after application. Excessive moisture in substrate or laps can inhibit adhesion or result in loss of adhesion prior to installation of cladding. Do not expose the backside of the substrate to moisture or rain. Protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed air barrier installation.

For installations less than 40 °F (4 °C), an approved Henry® primer is required for all substrates. For further details, refer to Henry® Tech-Talk Bulletin "Blueskin® VP160 Cold Weather Application."

Packaging

4" x 100' (10 cm x 30.5 m)
6" x 100' (15.2 cm x 30.5 m)
9" x 100' (22.8 cm x 30.5 m)
12" x 100' (30.5 cm x 30.5 m)
48" x 100' (122 cm x 30.5 m)

Storage

Store rolls on end, on original pallets or elevated platform. Protect from weather or store in an enclosed area not subject to heat over 120 °F (49 °C). In cold weather, it is recommended to warm rolls to 50 °F (10 °C) or above prior to application to assure adhesion to substrate.

For more information, visit www.henry.com or for technical assistance call us at 800-486-1278. For more information on Henry's® product warranty and liability disclaimer please visit www.henry.com/warranty. Refer to the Safety Data Sheet prior to using this product. The Safety Data Sheet is available at www.henry.com or by emailing Henry® Product Support at productsupport@henry.com or by calling 800-486-1278.

© Henry, Blueskin, and Air-Bloc are registered trademarks of Henry Company.
Covered by US patent 6,901,712; Canadian patent 2,413,550.

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M'GONIGAL CONSTRUCTION LTD.

245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Telephone (613) 623-3613 Fax (613) 623-8705
Email rmcgonigal@mcgonigalconstruction.ca

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SUPPLIER : Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER : Hohmann & Bernard
(name & address) 30 Rasons Court
Hauppauge, NY
Contact Name: _____
Telephone Number: 800-645-0616

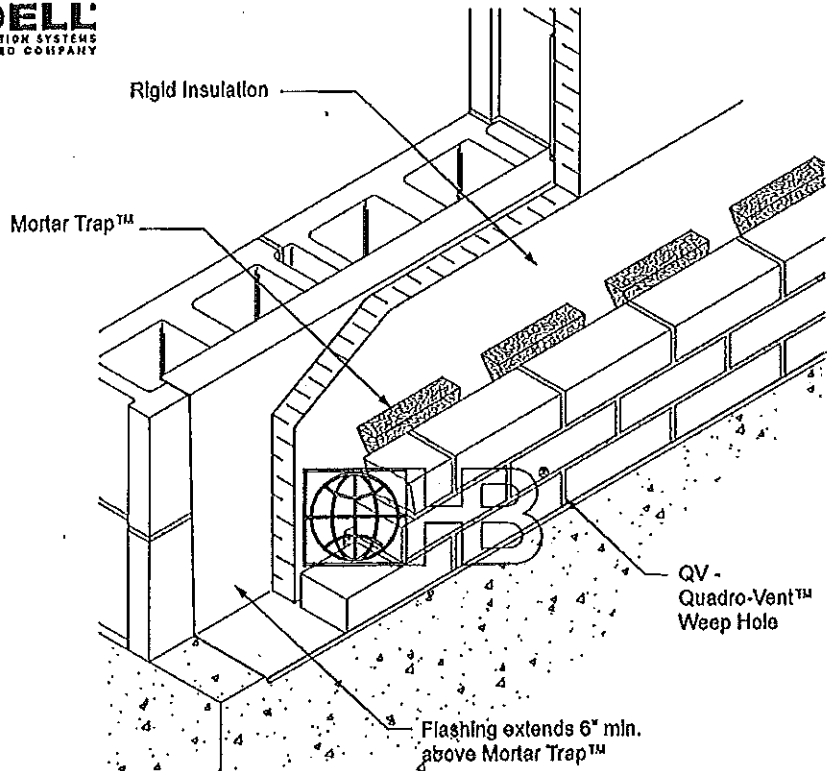
Specification Name: Masonry

Specification Section: 4200

Paragraph Number: _____

Product Submission: Mortar Trap

Mortar Collection Systems Mortar Trap™



DRAWINGS FOR ILLUSTRATIVE PURPOSES ONLY

Mortar Trap™

Mortar Trap™ is manufactured from high-density polyethylene (HDPE) strands woven into a 90% open mesh. Its unique shape breaks up mortar droppings and prohibits mortar from creating a moisture retaining barrier, allowing water to flow freely to the weep holes.

Features:

- 90% open mesh construction allows unobstructed passage of air & water through the material itself so walls breathe, drain & dry quicker.
- Will not react with common building products (PVC, polystyrene, copper, rubberized-asphalt, lead, stainless steel or galvanized metal).
- Will not: absorb or trap moisture, support mold or fungus, and is inedible to insects.
- Will not degrade as a result of temperature variations and is designed to last for the life of the building.
- Keeps weep holes open - catches and permanently suspends mortar-droppings so blockage can't occur.
- Fast, easy installation by masons - does not require fasteners or adhesives, no special skills or tools.
- Slightly compressible to allow for cavity variations in the field.

Thickness: (Mortar Trap™ is 10" high x 4' long)

- 0.4"
- 1"
- 1 ½"
- 2"

NOTE: When Mortar Trap™ is used with the Quadro-Vent™ Weep Hole additional insect screening is not required.

M'GONIGAL CONSTRUCTION LTD.

245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Telephone (613) 623-3613 Fax (613) 623-8705
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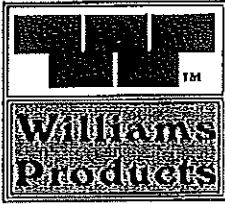
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Contact Name: Art Lytle (alytle@mcgonigalconstruction.ca)
Telephone Number: (613) 623-3613

SUPPLIER: Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER: Goodco
(name & address) 3400-14th Ave Unit 41
Markham, ON
Contact Name: _____
Telephone Number: 905-475-3336

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: PVC Brick Vents

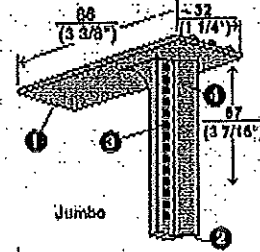
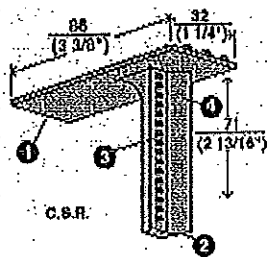
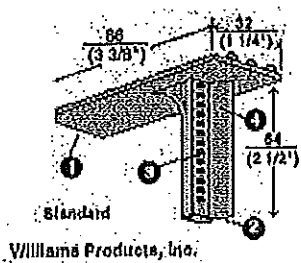
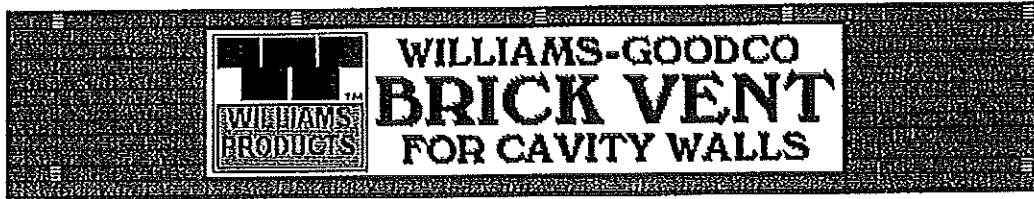


Williams Products, Inc.

1750 Maplelawn
Troy, MI, 48064

Toll Free: 800-521-9524 Phone: 248-643-6400

Fax: 248-643-7117



Description

The Williams-Goodco brick vent is an injection molded vent made from flexible polyvinyl chloride in an offset "T" shape. When inserted in vertical mortar joints between two bricks the slotted leg of the vent allows air to pass in and out allows water to weep out and prevents water from penetrating in.

Spacing of Brick Vents

Tests indicate that for interior/exterior air pressure equalization and for ventilation one Williams-Goodco Brick Vent to every 10 square feet of wall surface is acceptable. One per 100 square feet is a minimal number. For drainage of condensation and moisture the vents act as weepholes and should be placed directly on top of the thru-wall flashing. One vent for every 24 inches of horizontal flashing is acceptable to provide weephole drainage.

The vents are hardly noticeable after installation but a regular symmetrical spacing pattern gives the best appearance.

Functions

When rain contacts an exterior brick surface water can enter openings through any combination of the following actions: momentum of raindrops, capillary action, gravity and air currents. Cracks, joints between wall components, surface pores and inadequately bonded interfaces may provide the openings for water penetration through walls. Much of the water penetration through brick cavity walls is caused not by the driving wind and rain on the exterior face but by the suction created within the air cavity by the lower interior air pressure. This force is controlled by installing brick vents in sufficient frequency and size to allow almost immediate air pressure equalization. Since winds gust, rather than create steady pressure, vents must have enough opening area to allow a continuous exchange of air. Small tubes and wicks have generally proved inadequate because of their limited opening size and because they clog quickly.

Efflorescence

Efflorescence is reduced by minimizing rain wetting within the exterior wall. However, more absorptive brick will hold moisture from exterior rain, or condensation on the back face resulting from air leakage from the building interior, and under certain environmental conditions (particularly in late Fall) this presence of moisture can trigger efflorescence.

Glazed Brick, Paints or Silicones

When these materials are used, cavity walls are necessary to avoid serious problems. In most buildings, moisture laden air will leak from the building interior and unless some free passage is available to the outside, spelling, ice lensing or blistering can occur.

Test Reports

Tests have been conducted to determine the rates of air flow through the Williams-Goodco brick vent and to indicate acceptable spacing for exterior walls. The test procedures and results are published and available on request.

Material Specifications

The Williams-Goodco brick vent is manufactured from a polyvinyl chloride compound specifically designed for continuous exposure to weathering. This compound possesses excellent sunlight resistance, good low temperature properties and contains a polymeric plasticizer to ensure permanence. Physical Properties as determined on molded specimens by ASTM procedures:

Packaging

200 vents per carton.

Color

Light gray.

Special Colors Available.

Sizes

2-1/4", 3-5/8"

will fabricate special sizes

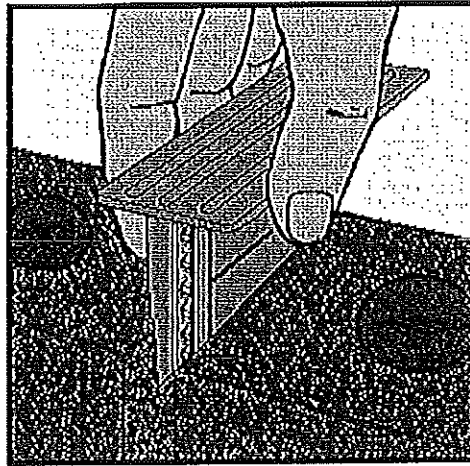
Short Form Specification

Williams-Goodco brick vents as supplied by Williams Products, Inc. shall be installed in the vertical mortar joints in the exterior masonry brick wall...

(a) As detailed on the drawings. (b) Directly above all through-wall flashings at (spacing). (c) Throughout the wall in every (i.e. 4th mortar joint) horizontally and every (i.e. 10th course) vertically.

Features

- (1) Top-flap - overlaps two adjacent bricks to stop mortar from falling into the air passage.
- (2) Flexible Wings - to adjust to variation in mortar joint widths ($5/16'' - 3/4''$).
- (3) Louvers - to allow air passages while creating a water barrier.
- (4) Water ridges - when water buildup on the exterior wall surface is blown into the air passage these ridges create a barrier which directs the rain down and out of the cavity



- Provide adequate opening for immediate air pressure equalization.
- Act as weeper.
- Provide neat, attractive appearance.
- Install easily.
- Impede passage of insects, dirt and rodents.
- Block entrance to rain.
- Resist clogging and the corrosive effects of masonry mortars.