

Kevin Watson
City Administrator

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The City of Vadnais Heights
800 East County Road E
Vadnais Heights, MN 55127

Memorandum:

TO: Mayor Fletcher and City Council Members

FROM: Kevin Watson, City Administrator *KW*

DATE: August 8, 2018

SUBJECT: New City Hall Roof

Recommended Council Action

Authorize City Administrator to contract with McPhillips Bros. Roofing Co. not to exceed \$114,000.

Background

In 2001, City Hall was built with a ballasted rubber roof. Over the past few years, the City has experienced more and more leaks within the system, in particular when we have the spring snow melt or a heavy down pour as we've had this summer. We patch as we identify leaks but the leaks are becoming more and more frequent. In fact, there is one leak within the Assistant City Administrators Office that we have been unable to locate and patch.

The current roof has life expectancy of 15 to 20 years, which is why we are experiencing more and more leaks. The proposed roof improvement would be a fully adhered ethylene propylene membrane roof. The new roof will be required to bring insulation up to current code standards resulting in possible energy savings. It is expected to last over 20 years and would have a guarantee to that point.

The City budgeted \$50,000 for a new roof but were surprised to see bids exceeding this amount. My plans were to wait until the 2019 budget to get funding by keeping the roofed patched together one more year. But the prevalence of leaks we've encounter this summer and the fact that we recently replaced the carpet in the building, leads me to recommend we replace the roof now. In addition, the cost of new roof will only increase in future.

The City received four quotes below:

- McPhillips Bros Roofing Co. - \$114,000
- Quality Trusted Commercial - \$125,800
- SELA Roofing - \$183,000
- Twin City Roofing - \$199,999

I recommend contracting with McPhillips to reroof the facility for \$90,000 and redo the sheet metal for a maximum \$24,000, totaling \$114,000 max. McPhillips indicated they will try to save the sheet metal where possible, although some will become unusable. A full replacement of sheet metal was \$24,000, which is unlikely to be needed. The re-roof project was budgeted for \$50,000. The additional \$64,000 would be paid from the CIP reserves.

Please let me know if you have any questions.

McPhillips Bros. Roofing Co.

2590 Centennial Drive
 St. Paul, MN 55109
 Phone: 651-770-2062 Fax: 651-770-2891

TO; Mr. Curt Hauser	Project; reroofing at 800 east cty rd.E
Building engineer	City hall building 2018
City of Vadnais Heights, mn. 55127	12,500 sq.ft. total
#651-204-6025 dir.	Date; THURSDAY JUNE 7, 2018

A. Reroofing, leaving the existing sheet metals in place.		
1. We propose to power vacuum off all gravel, remove old rubber membrane and haul away.		
2. We will then mechanically fasten, I-90, a new 2" layer of isocynaurate roofing insulation, Over the existing R21 insulations adding up to the new code R30 Insulations.		
3. We will then apply a new Johns-Manville Corp, 60mil/epdm, fully adhered single-ply system.		
4. We will then fabricate and install new matching sheet metals as needed.		
5. We will provide the city with a Johns-Manville Corp. 20year/ndi written roofing guarantee.		
6. This work will take 5-6 work days to complete		
For the contract sum of: \$90,000		
See photos and information attached.		
Alternate:	#1 all new sheet metals, except dome.	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Deduct \$24,000.00
Alternate:		<input type="checkbox"/> Add <input type="checkbox"/> Deduct \$

This is a 30 day quotation for work proposed.

Respectfully Submitted,

McPhillips Bros. Roofing Co.

Accepted by: _____

Patrick Peterson
 Patrick Peterson
 Cell: 651-402-2729
 Email pat@mcphillipsbros.com.
 Or steve@mcphillipsbros.com

Date: _____

THURS.

Images

The following aerial images show different angles of this structure for your reference.

Top View



Report: 8296982

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JM EPDM NR 60 mil

Ethylene Propylene Diene Monomer Membrane

Meets the requirements of ASTM D 4637, Type I

Features and Components

Membrane: Nonreinforced, cured EPDM (ethylene propylene diene monomer).

Fully Extruded: Produces fewer air voids, more uniform thickness and smoother sheets.

Vulcanization Process: Combines two layers of membrane to produce a fully cross-linked monolithic membrane.

Membrane Formulation: Performs in extreme temperature climates and withstands differential movement (elongation).

UV-Stabilization Properties: Offers outstanding ozone and weather resistance delivering one of the longest service lives available.

Technical Expertise: Backed by 30+ years of EPDM experience and installations.



Color
Black ✓

System Compatibility This product may be used as a component in the following systems. Please reference product application for specific installation methods and information.

Multi-Ply	BUR		APP				SBS		
	HA	CA	CA	HW	HA	CA	HW	SA	

Do not use with Multi-Ply systems

Single Ply	TPO		PVC		EPDM		
	MF	FA	MF	FA	MF	FA	BA

Compatible with the selected Single Ply systems above

Key: HA = Hot Applied CA = Cold Applied HW = Heat Weldable SA = Self Adhered MF = Mechanically Fastened **FA = Fully Adhered** BA = Ballasted

Energy and the Environment

Property	Value
Reflectivity* (ASTM C 1549)	0.06
Emissivity* (ASTM C 1371)	0.88
Post-consumer Recycled Content	0%
Pre-Consumer Recycled Content	0%

*Test methods for reflectivity and emissivity are LEED®- and CRRC®-approved.

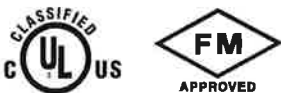
Peak Advantage® Guarantee Information

Enhanced guarantees are now available on certain systems for wind and puncture. Consult your local sales representative for more information and for specific guarantee terms and costs.

Product	Guarantee Term
When used in most JM EPDM Systems*	Up to 20 years

*Contact JM Technical Services for specific systems.

Codes and Approvals



Installation/Application



Refer to JM EPDM Application Guides and Detail Drawings for instructions.

Packaging and Dimensions

Roll Size	Roll Coverage
10' x 50' (3.05 m x 15.24 m)	500 ft ² (46.5 m ²)
10' x 100' (3.05 m x 30.48 m)	1000 ft ² (92.9 m ²)
16' 8" x 100' (5.08 m x 30.48 m)	1667 ft ² (154.8 m ²)
20' x 50' (6.1 m x 15.24 m)	1000 ft ² (92.9 m ²)
20' x 100' (6.1 m x 30.48 m)	2000 ft ² (185.8 m ²)
30' x 100' (9.14 m x 30.48 m)	3000 ft ² (278.7 m ²)
40' x 100' (12.19 m x 30.48 m)	4000 ft ² (371.9 m ²)
Extruded in:	Milan, OH

Refer to the Safety Data Sheet and product label prior to using this product. The Safety Data Sheet is available by calling (800) 922-5922 or on the Web at www.jm.com/roofing.



JM EPDM NR 60 mil

Ethylene Propylene Diene Monomer Membrane

Meets the requirements of ASTM D 4637, Type I

Tested Physical Properties

Physical Properties		ASTM Test Method	Standard for ASTM D 4637, Type I	JM EPDM – NR 60 mil
Strength	Tensile Strength (psi)	D 412	> = 1305	1456
	Elongation, Ultimate (%)	D 412	> = 300	411
	Tensile Set (%)	D 412	< = 10	0.5
	Tear Resistance (lbf/in.)	D 624	> = 150	181
	Dynamic Puncture Resistance, 5J, Type I	D 5635	pass	pass
	Static Puncture Resistance, 44.1 lbf, Type I	D 5602	pass	pass
Longevity	Overall Sheet Thickness (in.)	D 751	+/- 10%	pass
	Brittleness Point (°F)	D 2137	< = -49 _k	pass
	Ozone Resistance	D 1149	pass	pass
	Water Absorption (mass %)	D 471	< = 8	0.3
Heat Aged Performance	Heat Aged 670 hrs @ 240°F	D 573		
	Tensile Strength (psi)	D 412	> = 1205	1450
	Elongation, Ultimate (%)	D 412	> = 200	403
	Tear Resistance (lbf/in.)	D 624	> = 125	170
	Linear Dimensional Change (%)	D 1204	< +/- 1	0.4
Weathering Performance	Weathering Resistance, 5040 KJ/(m ² -nm) @ 340 nm	D 4637 / G 151 / G 155		
	Visual Inspection	–	pass	pass
	Elongation, Ultimate (%)	D 412	> = 200	351

Refer to the Safety Data Sheet and product label prior to using this product. The Safety Data Sheet is available by calling (800) 922-5922 or on the Web at www.jm.com/roofing.

Meets the requirements of ASTM C 1289, Type II, Class 1, Grade 2 (20 psi)

- ENRGY 3 / Tapered ENRGY 3

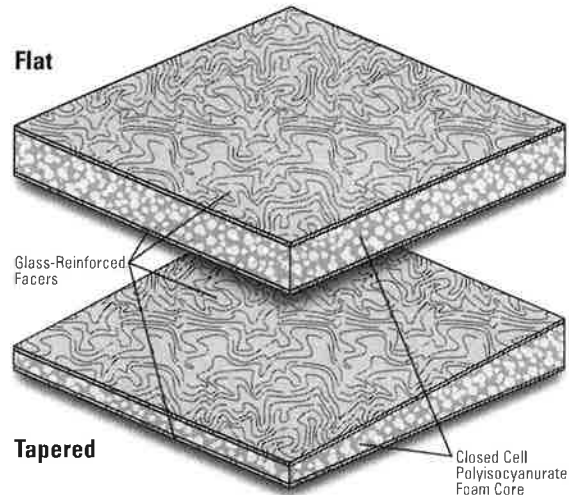
Grade 3 (25 psi)

- ENRGY 3 25 PSI / Tapered ENRGY 3 25 PSI

Features and Components

Glass-Reinforced Facers: Provides rigidity and resistance to indentation and crushing, and are compatible with BUR, modified bitumen and single ply membrane systems.

Closed Cell Polyisocyanurate Foam Core: Provides high R-value per inch in built-up, modified bitumen, metal roof and single ply roof systems, and approved for direct application to steel decks.



Component
I
 Insulation
 Multi-Ply
 Single Ply

Type
HT
 High Thermal
TP
 Tapered

System Compatibility This product may be used as a component in the following systems. Please reference product application for specific installation methods and information.

Multi-Ply	BUR		APP		SBS			
	HA	CA	CA	HW	HA	CA	HW	SA
<i>Compatible with the selected Multi-Ply systems above</i>								

Single Ply	TPO		PVC		EPDM	
	MF	FA	MF	FA	MF	FA
<i>Compatible with all Single Ply systems</i>						

Key: HA = Hot Applied CA = Cold Applied HW = Heat Weldable SA = Self Adhered MF = Mechanically Fastened FA = Fully Adhered BA = Ballasted

Energy and the Environment

LEED®	Recycled Content	Varies with thickness, see <i>Product Data and Packaging</i> table on next page.
Produced with a pentane blowing agent with zero ozone depletion and virtually no global warming potential.		

Peak Advantage® Guarantee Information

Systems
For use in approved JM Peak Advantage Roofing Guarantees

Codes and Approvals



- FM® Standards 4450/4470 Approvals (refer to FM RoofNav™)
- UL® Standard 790, 263 and 1256 (refer to UL Roofing Materials system directory)
- Meets the requirements of CAN/ULC S704, Type 2 & 3, Class 3
- California Code of Regulations, Title 24, Insulation Quality Standard License #TI-1341
- Third-party certification with the PIMA Quality Mark™ for Long-Term Thermal Resistance (LTTR) values

Refer to the Safe for Use instructions and product label prior to using this product. The Safe for Use instructions are available by calling (800) 922-5922 or on the Web at www.jm.com/roofing.

Note: Technical information on this data sheet is intended to be used as a general guideline only and is subject to change without notice. Contact your JM Sales Representative for further details.

Installation/Application



Refer to the application instructions guidelines for proper utilization of this product.

Flute Span:

Width of Rib Opening:	Up to 2 ⁵ / ₈ " (6.67 cm)	Up to 3 ³ / ₈ " (8.57 cm)	Up to 4 ³ / ₈ " (11.11 cm)
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Insulation Thickness (min):	1.0" (2.54 cm)	1.2" (3.05 cm)	1.3" (3.30 cm)
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Packaging and Dimensions

Flat Sizes ¹	4' x 4' (1.22 m x 1.22 m)	4' x 8' (1.22 m x 2.44 m)
Tapered Size ²	4' x 4' (1.22 m x 1.22 m)	
Producing Locations	Bremen, IN Hazleton, PA	Cornwall, ONT Jacksonville, FL
Stocking Locations ³	Grand Prairie, TX	Southgate, CA Tracy, CA

1. For available thicknesses, see *Product Data and Packaging* table on page 2 of this data sheet. Other sizes available by special request, some sizes are not stocked and special order with minimum order quantities. Contact your JM Sales Representative for details.
2. Tapered ENRGY 3 and Tapered ENRGY 3 25 PSI are available in thicknesses of 1/2" to 4". Available profiles are shown on page 3 of this data sheet. In some regions extended panels are also available.
3. Not all sizes, thicknesses, and products are stocked at all locations, please call Customer Service at 1-877-766-3295.



Typical Physical Properties

Test	ASTM	Values
Strength	Tensile Strength	C 209 500 psf (24 kPa) (min), 730 psf (35 kPa) (nom)
	Compressive Resistance 10% Consolidation	D 1621 Grade 2: 20 psi (138 kPa), Grade 3: 25 psi (172 kPa) (min)
	Dimensional Stability Change, (length & width)	D 2126 0.5% (nom), 2% (max)
Moisture	Moisture Vapor Permeance	E 96 <+ 1.0% perm, 57.5 ng/(Pa*s*m2), 1.5 perm, 85.8ng/ (Pa*s*m2)
	Water Absorption	C 209 1.0% (max)
Insulation	Service Temperature	D 1623 -100°F – 250°F (-73°C – 121°C)
	Flame Spread, (foam core)	E 84 20 - 30 (nom), 75 (max)
	Smoke Developed, (foam core)	E 84 55 - 250 (nom), 450 (max)

Product Data and Packaging

Thickness		Long-Term Thermal Resistance (LTTR) Values ¹			Recycled Content ² 20 PSI / 25 PSI			Boards per Pallet	Square Feet per Pallet		Pallets per Truck ³	
in.	mm	(hr*ft ² *F)/BTU	m ² *C/W	% Pre-Consumer	% Post-Consumer	% Total	4x4 and 4x8	4x4	4x8	4x4	4x8	
1.0	25.4	5.7	1.00	5.3 / 5.2	31.8 / 29.9	37.1 / 35.1	48	768	1536	48	24	
1.1	27.9	6.3	1.10	5.2 / 5.2	30.0 / 28.1	35.3 / 33.3	41	656	1312			
1.2	30.5	6.8	1.20	5.2 / 5.2	28.4 / 26.6	33.6 / 31.76	38	608	1216			
1.25	31.8	7.1	1.25	5.2 / 5.2	27.7 / 25.8	32.9 / 31.0	35	560	1120			
1.3	33.0	7.4	1.30	5.3 / 5.3	27.0 / 25.2	32.3 / 30.4	35	560	1120			
1.4	35.6	8.0	1.41	5.3 / 5.2	25.7 / 23.9	31.0 / 29.2	32	512	1024			
1.5	38.1	8.6	1.51	5.2 / 5.2	24.5 / 22.8	29.8 / 28.0	32	512	1024			
1.6	40.6	9.1	1.61	5.2 / 5.2	23.4 / 21.7	28.7 / 27.0	28	448	896			
1.7	43.2	9.7	1.71	5.2 / 5.2	22.4 / 20.8	27.7 / 26.0	27	432	864			
1.75	44.5	10.0	1.76	5.2 / 5.2	22.0 / 20.4	27.2 / 25.6	27	432	864			
1.8	45.7	10.3	1.81	5.2 / 5.2	21.5 / 19.9	26.7 / 25.1	25	400	800			
1.9	48.3	10.8	1.91	5.2 / 5.2	20.7 / 19.1	25.9 / 24.3	24	384	768			
2.0	50.8	11.4	2.01	5.2 / 5.2	19.9 / 18.4	25.1 / 23.6	24	384	768			
2.1	53.3	12.0	2.11	5.2 / 5.2	19.2 / 17.7	24.4 / 22.9	21	336	672			
2.2	55.9	12.6	2.22	5.2 / 5.2	18.5 / 17.1	23.7 / 22.3	20	320	640			
2.3	58.4	13.2	2.32	5.2 / 5.2	17.9 / 16.5	23.1 / 21.7	20	320	640			
2.4	61.0	13.8	2.43	5.2 / 5.2	17.3 / 16.0	22.5 / 21.1	19	304	608			
2.5	63.5	14.4	2.53	5.2 / 5.2	16.8 / 15.4	22.0 / 20.6	19	304	608			
2.6	66.0	15.0	2.64	5.2 / 5.1	16.3 / 15.0	21.4 / 20.1	18	288	576			
2.7	68.6	15.6	2.74	5.2 / 5.1	15.8 / 14.5	21.0 / 19.7	17	272	544			
2.8	71.1	16.2	2.85	5.2 / 5.1	15.3 / 14.1	20.5 / 19.2	16	256	512			
2.9	73.7	16.8	2.96	5.2 / 5.1	14.9 / 13.7	20.1 / 18.8	16	256	512			
3.0	76.2	17.4	3.06	5.2 / 5.1	14.5 / 13.3	19.7 / 18.4	16	256	512			
3.1	78.7	18.0	3.17	5.1 / 5.1	14.1 / 12.9	19.3 / 18.1	14	224	448			
3.2	81.3	18.6	3.28	5.1 / 5.1	13.8 / 12.6	18.9 / 17.7	14	224	448			
3.25	82.6	18.9	3.33	5.1 / 5.1	13.6 / 12.4	18.7 / 17.6	14	224	448			
3.3	83.8	19.2	3.39	5.1 / 5.1	13.4 / 12.3	18.6 / 17.4	14	224	448			
3.4	86.4	19.9	3.50	5.1 / 5.1	13.1 / 12.0	18.2 / 17.1	13	208	416			
3.5	88.9	20.5	3.61	5.1 / 5.1	12.8 / 11.7	17.9 / 16.8	13	208	416			
3.6	91.4	21.1	3.72	5.1 / 5.1	12.5 / 11.4	17.6 / 16.5	12	192	384			
3.7	94.0	21.7	3.82	5.1 / 5.1	12.2 / 11.1	17.3 / 16.3	12	192	384			
3.75	95.3	22.0	3.88	5.1 / 5.1	12.0 / 11.0	17.2 / 16.1	12	192	384			
3.8	96.5	22.3	3.94	5.1 / 5.1	11.9 / 10.9	17.0 / 16.0	12	192	384			
3.9	99.1	23.0	4.05	5.1 / 5.1	11.7 / 10.7	16.8 / 15.8	12	192	384			
4.0	101.6	23.6	4.16	5.1 / 5.1	11.4 / 10.4	16.5 / 15.5	12	192	384			
4.1	104.0	24.2	4.26	5.1 / 5.1	11.2 / 10.2	16.3 / 15.3	11	176	352			
4.2	107.0	24.9	4.39	5.1 / 5.1	10.9 / 10.0	16.0 / 15.1	11	176	352			
4.3	109.0	25.5	4.49	5.1 / 5.1	10.7 / 9.8	15.8 / 14.9	11	176	352			
4.4	112.0	26.1	4.60	5.1 / 5.1	10.5 / 9.6	15.6 / 14.7	10	160	320			
4.5	114.0	26.8	4.72	5.1 / 5.1	10.3 / 9.4	15.4 / 14.5	10	160	320			

1. The Long-Term Thermal Resistance (LTTR) values were determined in accordance with CAN/ULC S770 at 75°F (24°C). The ultimate R-Value of these products will depend on individual installation circumstances. 2. Value represents average results (Grade 2/Grade 3). 3. Assumes 48' flatbed truck.

Refer to the Safe for Use instructions and product label prior to using this product. The Safe for Use instructions are available by calling (800) 922-5922 or on the Web at www.jm.com/roofing.

Johns Manville Tapered Polyiso Offerings Please refer to the previous page for typical physical properties.

Panel Desig.	Slope	Dimension		LTTR* Value Nominal	Pieces per Unit	Square Foot per Unit	Brd Ft per Unit	Slope Profiles
		Thin	Thick					
1/16 in/ft (5.2 mm/m)								
1A	1/16	0.5	0.75	3.6	70	1120	700	<p>0.5" 0.75" 1.0" 1.25" 1.5" 1.75" 2.0" 2.25" 2.5" 2.75" 3.0"</p> <p>1A 1B 2.0" Filler</p> <p>All Panels Special Order</p>
1B	1/16	0.75	1	5.0	50	800	700	
1	1/16	1	1.25	6.4	38	608	684	
2	1/16	1.25	1.5	7.8	32	512	704	
3	1/16	1.5	1.75	9.3	28	416	676	
4	1/16	1.75	2	10.7	22	352	660	
5	1/16	2	2.25	12.1	20	320	680	
6	1/16	2.25	2.5	13.6	18	288	684	
1/8 in/ft (10.4 mm/m)								
AA	1/8	0.5	1	4.3	64	1024	768	<p>0.5" 1.0" 1.5" 2.0" 2.5" 3.0" 3.5" 4.0" 4.5" 5.0" 5.5"</p> <p>AA A 2.0" Filler</p> <p>AA A 4.0" Filler</p> <p>Extended and Special Order Panels: D, E, F, FF</p> <p>0.75" 1.25" 1.75" 2.25" 2.75" 3.25" 3.75" 4.25" 4.75"</p> <p>R S 3.0" Filler</p> <p>All Panels Special Order</p>
A	1/8	1	1.5	7.1	38	608	760	
B	1/8	1.5	2	10.0	26	416	728	
C	1/8	2	2.5	12.9	20	320	720	
D**	1/8	2.5	3	15.9	16	256	704	
E**	1/8	3	3.5	18.9	14	224	728	
F**	1/8	3.5	4	22.1	12	192	720	
FF**	1/8	4	4.5	25.3	10	160	680	
R	1/8	0.75	1.25	5.7	44	704	704	
S	1/8	1.25	1.75	8.6	30	480	720	
T	1/8	1.75	2.25	11.4	22	352	704	
U	1/8	2.25	2.75	14.4	16	256	640	
V	1/8	2.75	3.25	17.4	14	224	672	
W	1/8	3.25	3.75	20.5	12	192	672	
3/16 in/ft (15.6 mm/m)								
J	3/16	1	1.75	7.8	32	512	704	<p>1.0" 1.75" 2.5" 3.25" 4.0" 4.75" 5.5" 0.5" 1.25" 2.0" 2.75" 3.5" 4.25" 5.0"</p> <p>J K L M 3.0" Filler</p> <p>JJ KK LL MM 3.0" Filler</p> <p>All Panels Special Order</p>
K	3/16	1.75	2.5	12.1	20	320	680	
L**	3/16	2.5	3.25	16.6	16	256	736	
M**	3/16	3.25	4	21.2	12	192	696	
JJ	3/16	0.5	1.25	5.0	52	832	728	
KK	3/16	1.25	2	9.3	28	448	728	
LL**	3/16	2	2.75	13.6	18	288	691	
MM**	3/16	2.75	3.5	18.2	14	224	694	
1/4 in/ft (20.8 mm/m)								
G	1/4	1	2	8.6	30	480	720	<p>0.5" 1.50" 2.5" 3.5" 4.5" 5.5" 6.5" 1.0" 2.0" 3.0" 4.0" 5.0" 6.0"</p> <p>X Y 2.0" Filler</p> <p>X Y 4.0" Filler</p> <p>Extended and Special Order Panels: Z, ZZ</p> <p>G H I 3.0" Filler</p> <p>All Panels Special Order</p>
H	1/4	2	3	14.4	16	256	640	
I**	1/4	3	4	20.5	12	192	672	
X	1/4	0.5	1.5	5.7	48	768	768	
Y	1/4	1.5	2.5	11.4	24	384	768	
Z**	1/4	2.5	3.5	17.4	16	256	768	
ZZ**	1/4	3.5	4.5	23.6	12	192	768	
3/8 in/ft (31.2 mm/m)								
SS	3/8	0.5	2	7.1	36	576	720	<p>0.5" 2.0" 3.5" 5.0" 6.5"</p> <p>SS TT 3.0" Filler</p> <p>All Panels Special Order</p>
TT**	3/8	2	3.5	15.9	16	256	704	
1/2 in/ft (41.6 mm/m)								
Q	1/2	0.5	2.5	8.6	32	512	768	<p>0.5" 2.5" 4.5" 6.5" 0.5" 2.5" 4.5" 1.0" 3.0" 5.0"</p> <p>Q QQ 4.0" Filler</p> <p>Q 2.0"</p> <p>XX 2.0"</p> <p>Extended and Special Order Panels: QQ Special Order</p>
QQ**	1/2	2.5	4.5	20.5	12	192	672	
XX	1/2	1	3	11.4	22	352	704	

* (Inr•ft)•(F/Btu)

** Extended panels require less adhesive and less labor.

Tapered Recycle Content:

Recycled content is dependent upon average thickness. To calculate, match the average thickness of Tapered ENRGY 3 to the thickness of Flat ENRGY 3. Use the number from Flat ENRGY 3 as your recycled content.

Refer to the Safe for Use instructions and product label prior to using this product. The Safe for Use instructions are available by calling (800) 922-5922 or on the Web at www.jm.com/roofing.

Features and Components

All Purpose Fasteners are #14 case-hardened steel fasteners with a #3 Phillips head. The point is designed for quick installation in new or re-roof applications.

Use: Membranes and Insulation

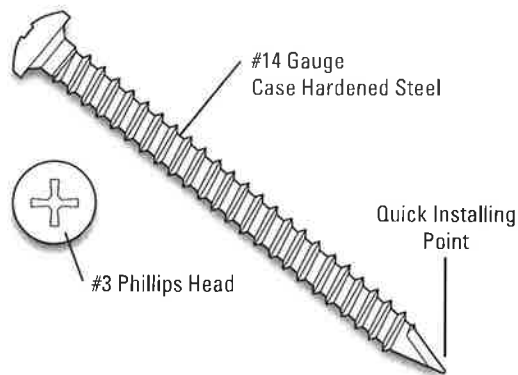
Material: Case-hardened steel

Gauge: #14

Head: #3 Phillips head

Color: Grey

Deck Types: Wood, Concrete, and 18 - 24 gauge (1.25 mm - 0.56 mm) Metal.



Component



Type

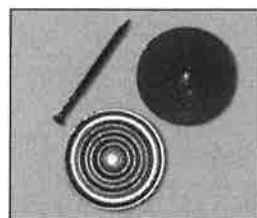


Multi-Ply
Single Ply

Plate Compatibility*

- UltraFast® Locking Plastic Plates
- UltraFast® Metal Plates
- High Load Plates (not pictured)
- APB Plates (not pictured)
- RhinoPlate (concrete decks)

* See corresponding data sheets for information regarding UltraFast, High Load, and APB Plates.



System Compatibility *This product may be used as a component in the following systems. Please reference product application for specific installation methods and information.*

Multi-Ply	BUR		APP		SBS				
	HA	CA	CA	HW	HA	CA	HW	CA	MF
<i>Use to fasten Insulation and select base sheets in Multi-Ply systems</i>									

Single Ply	TPO		PVC		EPDM		
	MF	FA	MF	FA	MF	FA	BA
<i>Use to fasten Membranes and Insulation in Single Ply systems</i>							

Key: HA = Hot Applied CA = Cold Applied HW = Heat Weldable SA = Self Adhered MF = Mechanically Fastened FA = Fully Adhered BA = Ballasted

Energy and the Environment

Recycled Content	This steel based product contains a minimum of 25% post consumer recycled materials by weight
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Peak Advantage® Guarantee Information

Systems
Approved to use with any Peak Advantage Guarantee

Codes and Approvals*



*Fastener approvals are based on system approvals

Installation/Application

Steel deck: minimum 3/4" penetration

Wood deck: minimum 1" penetration

Concrete deck: Pilot hole @ 3/16" diameter, 1-1/2" depth, minimum 1" embedment

Packaging and Dimensions

Fastener Sizes	Quantity per Container
1 1/4" to 4" (3.2 cm to 10.2 cm)	1,000/pail
5" to 11" (12.7 cm to 27.9 cm)	500/pail
12" to 24" (30.5 cm to 61.0 cm)	250/box
Producing Locations*	Agawam, MA & Itasca, IL

* The point of manufacture for fasteners and plates varies depending on the specific part. Call your local JM sales professional for assistance.