CREEK
TECHNICAL SERVICES, LLC

Registry No. 29824
17520 Edinburgh Dr
Tampa, FL 33647
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EVALUATION REPORT

FLORIDA BUILDING CODE, 7TH EDITION (2020)

Issued February 14, 2021

Manufacturer: JOHNS MANVILLE CORPORATION
P.O. Box 5108
Denver, CO 80217
(303) 978-2478
www.jm.com

Manufacturing Plants: Scottsboro, AL

Quality Assurance: UL LLC (QUA9625)

SCOPE

Category: Roofing
Subcategory: Single Ply Roof System
Code Edition; Florida Building Code, 7th Edition (2020) including High-Velocity Hurricane Zones (HVHZ)
Code Sections: 1504.3.1, 1504.6, 1504.7, 1507.13, 1515.1.1 , 1515.1.4, 1515.2.4, 1523.1.1, 1523.6.2, 1523.6.5.2.9
Properties: Wind Resistance, Physical Properties, Impact Resistance

PRODUCT DESCRIPTION

Products	Specification	Description
JM TPO-45	ASTM D 6878 TAS 110	Nominal 45-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement
JM TPO-60	ASTM D 6878 TAS 110	Nominal 60-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement
JM TPO-80	ASTM D 6878 TAS 110	Nominal 80-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement
JM TPO FB 115	ASTM D 6878 TAS 110	Nominal 60-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement and polyester fleece backing
JM TPO FB 135	ASTM D 6878 TAS 110	Nominal 80-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement and polyester fleece backing
JM TPO FB 150	ASTM D 6878 TAS 110	Nominal 60-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement and heavy polyester fleece backing
JM TPO FB 175	ASTM D 6878 TAS 110	Nominal 80-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement and heavy polyester fleece backing
JM TPO SA-60 mil	ASTM D 6878 TAS 110	Nominal 60-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester scrim reinforcement and a self-adhesive backing

REFERENCES

Entity	Report No.	Standard
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-026	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-027	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-028	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-029	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-030	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-031	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-032	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-033	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-034	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-035	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-036	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-037	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-038	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-039	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-040	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-041	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-042	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-043	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-044	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-045	TAS 114(D) (2011)
Atlantic & Caribbean Roof Consulting (TST4671)	ACRC 14-046	TAS 114(D) (2011)
FM Approvals (TST1867)	3009502	FM 4470 (2016)
FM Approvals (TST1867)	3012321	FM 4470 (2016)
FM Approvals (TST1867)	3014692	FM 4470 (2016)
FM Approvals (TST1867)	3014751	FM 4470 (2016)
FM Approvals (TST1867)	3015444	FM 4470 (2016)
FM Approvals (TST1867)	3016629	FM 4470 (2016)
FM Approvals (TST1867)	3018579	FM 4450 (1989)
FM Approvals (TST1867)	3018807	FM 4470 (2016)
FM Approvals (TST1867)	3025168	FM 4470 (2016)
FM Approvals (TST1867)	3025170	FM 4470 (2016)
FM Approvals (TST1867)	3025245	FM 4470 (2016)
FM Approvals (TST1867)	3025881	FM 4470 (2016)
FM Approvals (TST1867)	3028040	FM 4470 (2016)
FM Approvals (TST1867)	3030259	FM 4470 (2016)
FM Approvals (TST1867)	3030351	FM 4470 (2016)
FM Approvals (TST1867)	3030383	FM 4470 (2016)
FM Approvals (TST1867)	3031670	FM 4470 (2016)
FM Approvals (TST1867)	3033308	FM 4470 (2016)
FM Approvals (TST1867)	3035191	FM 4470 (2016)
FM Approvals (TST1867)	3035538	FM 4470 (2016)
FM Approvals (TST1867)	3037110	FM 4470 (2016)
FM Approvals (TST1867)	3037540	FM 4450 (1989)
FM Approvals (TST1867)	3039813	FM 4470 (2016)
FM Approvals (TST1867)	3040105	FM 4470 (2016)
FM Approvals (TST1867)	3043824	FM 4470 (2016)
FM Approvals (TST1867)	3044716	FM 4470 (2016)
FM Approvals (TST1867)	3046174	FM 4470 (2016)
FM Approvals (TST1867)	3051609	FM 4470 (2016)
FM Approvals (TST1867)	3052787	FM 4470 (2016)
FM Approvals (TST1867)	3053026	FM 4470 (2016)
FM Approvals (TST1867)	3055227	FM 4470 (2016)
FM Approvals (TST1867)	3055491	FM 4470 (2016)
FM Approvals (TST1867)	3055845	FM 4470 (2016)
FM Approvals (TST1867)	3056049	FM 4470 (2016)
FM Approvals (TST1867)	3056303	FM 4470 (2016)
FM Approvals (TST1867)	3056677	FM 4470 (2016)
FM Approvals (TST1867)	3058201	FM 4470 (2016)
FM Approvals (TST1867)	3058326	FM 4470 (2016)
FM Approvals (TST1867)	3058374	FM 4470 (2016)
FM Approvals (TST1867)	3059030	FM 4470 (2016)
FM Approvals (TST1867)	3059662	FM 4470 (2016)
FM Approvals (TST1867)	3060138	FM 4470 (2016)
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Entity	Report No.	Standard
FM Approvals (TST1867)	3060614	FM 4470 (2016)
FM Approvals (TST1867)	3061218	FM 4470 (2016)
FM Approvals (TST1867)	3061328	FM 4470 (2016)
FM Approvals (TST1867)	3062897	FM 4470 (2016)
FM Approvals (TST1867)	3063554	FM 4470 (2016)
FM Approvals (TST1867)	PR449524	FM 4470 (2016)
FM Approvals (TST1867)	PR450753	FM 4470 (2016)
FM Approvals (TST1867)	PR451795	FM 4470 (2016)
FM Approvals (TST1867)	PR452385	FM 4470 (2016)
FM Approvals (TST1867)	PR452580	FM 4470 (2016)
FM Approvals (TST1867)	PR453724	FM 4470 (2016)
FM Approvals (TST1867)	PR454134	FM 4470 (2016)
FM Approvals (TST1867)	PR454134	FM 4470 (2016)
FM Approvals (TST1867)	PR454135	FM 4470 (2016)
FM Approvals (TST1867)	PR454167	FM 4470 (2016)
FM Approvals (TST1867)	PR454270	FM 4470 (2016)
FM Approvals (TST1867)	PR454361	FM 4470 (2016)
FM Approvals (TST1867)	PR454859	FM 4470 (2016)
FM Approvals (TST1867)	PR454859	FM 4470 (2016)
FM Approvals (TST1867)	PR455344	FM 4470 (2016)
FM Approvals (TST1867)	PR455671	FM 4470 (2016)
FM Approvals (TST1867)	PR455897	FM 4470 (2016)
Intertek – York (ATI) (TST1558)	J0079.01-109-18	FM 4474 (2011); TAS 114(J) (2011); UL 1897 (2012)
Intertek – York (ATI) (TST1558)	J0080.01-109-18	FM 4474 (2011); TAS 114(J) (2011); UL 1897 (2012)
Intertek – York (ATI) (TST1558)	J0082.01-109-18	FM 4474 (2011); TAS 114(J) (2011); UL 1897 (2012)
Intertek – York (ATI) (TST1558)	J0083.01-109-18	FM 4474 (2011); TAS 114(J) (2011); UL 1897 (2012)
Miami-Dade (EVL1528)	12-0216.01	TAS 114(J) (2011)
Miami-Dade (EVL1528)	13-0307.02	TAS 114(J) (2011)
Miami-Dade (EVL1528)	13-0617.20	TAS 114(J) (2011)
Miami-Dade (EVL1528)	14-0627.08	TAS 114(J) (2011)
Momentum Technologies (TST2508)	RX10A8A	TAS 110 (2000)
Momentum Technologies (TST2508)	RX10A8B	TAS 110 (2000)
Momentum Technologies (TST2508)	RX14C8A	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	JMC-086-02-01	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-088-02-01	ASTM D 1876 (2008); TAS 117(B) (1995)
PRI Construction Materials Technologies (TST5878)	JMC-088-02-01.8	ASTM D 1876 (2008); TAS 117(A&B) (1995); TAS 114 (2011); FM 4474 (2011)
PRI Construction Materials Technologies (TST5878)	JMC-107-02-01 Rev 4	ASTM D 903 (1998); ASTM D 1876 (2008); ASTM D 5147 (2011a); TAS 117(A&B) (1995); TAS 114(C) (1995)
PRI Construction Materials Technologies (TST5878)	JMC-108-02-01	FM 4474 (2011); TAS 114 (J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-109-02-01	FM 4474 (2011); TAS 114 (J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-114-02-01	FM 4474 (2011); TAS 114 (J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-131-02-01	FM 4474 (2011); TAS 114 (D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-132-02-01	FM 4474 (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-132-02-02	FM 4474 (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-141-02-01	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-143-02-01	FM 4474 (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-162-02-01	FM 4474 (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-163-02-01	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-168-02-01	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-193-02-01	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-193-02-01A	FM 4474 (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-196-02-01	TAS 117(A&B) (1995)
PRI Construction Materials Technologies (TST5878)	JMC-201-02-01A	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-201-02-01B	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-205-02-01	ASTM D 3746 [(1985(2015)]
PRI Construction Materials Technologies (TST5878)	JMC-209-02-01	FM 4474 (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-216-02-01	ASTM D 6878 (2013)
PRI Construction Materials Technologies (TST5878)	JMC-216-02-03	ASTM D 6878 (2013)
PRI Construction Materials Technologies (TST5878)	JMC-225-02-01	FM 4474 (2011)
PRI Construction Materials Technologies (TST5878)	JMC-226-02-01	ASTM D 6878 (2013)

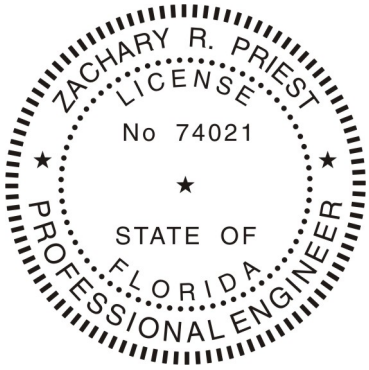
Entity	Report No.	Standard
PRI Construction Materials Technologies (TST5878)	JMC-242-02-01	FM 4474(D) (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-245-02-02	FM 4474(B) (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-246-02-01	FM 4474(B) (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-267-02-02	FM 4474(B) (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-277-02-01	FM 4474(B) (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-278-02-01A	FM 4474(C) (1995)
PRI Construction Materials Technologies (TST5878)	JMC-278-02-02	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	JMC-278-02-03	FM 4474(D) (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-303-02-01	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	JMC-306-02-01	FM 4474(B) (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-306-02-02	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	JMC-306-02-03	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	JMC-311-02-01	FM 4474(B) (2011); TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-319-02-01.1	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	JMC-319-02-01A	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	JMC-319-02-02.1	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	JMC-319-02-02A	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	JMC-325-02-01.1	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	JMC-339-02-03	ASTM C 1289 (2015); ASTM E 84 (2016)
PRI Construction Materials Technologies (TST5878)	JMC-339-02-04	ASTM C 1289 (2015); ASTM E 84 (2016)
PRI Construction Materials Technologies (TST5878)	JMC-343-02-01	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	JMC-343-02-01	ASTM D 413 (1998(2017)); TAS 117(B) (1995);
PRI Construction Materials Technologies (TST5878)	JMC-353-02-01	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	JMC-353-02-02	TAS 114(D) (2011)
PRI Construction Materials Technologies (TST5878)	JMC-354-02-01	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	JMC-360-02-01	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	507T0008	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	507T0019	ASTM D 1970/D 1970M (2015a)
PRI Construction Materials Technologies (TST5878)	507T0019	ASTM D 2178 (2015)
PRI Construction Materials Technologies (TST5878)	507T0009	FM 4474(C) (2011)
PRI Construction Materials Technologies (TST5878)	507T0031	FM 4474(C) (2011)
PRI Construction Materials Technologies (TST5878)	507T0031A.1	FM 4474(C) (2011)
PRI Construction Materials Technologies (TST5878)	507T0036	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	507T0036B	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)
PRI Construction Materials Technologies (TST5878)	507T0037C	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	507T0040A	TAS 110 (2000)
PRI Construction Materials Technologies (TST5878)	507T0040B	ASTM D 6878 (2013)
PRI Construction Materials Technologies (TST5878)	507T0058	ASTM D 6878 (2013)
PRI Construction Materials Technologies (TST5878)	507T0059	FM 4474(D) (2011); TAS 114(J) (2011)
PRI Construction Materials Technologies (TST5878)	507T0062	FM 4474(D) (2011); TAS 114(J) (2011)
Robert J.M. Nieminen, P.E.	Compliance Letter 02/09/2017	TAS 114 (2011)
Trinity|ERD (TST6049)	J33600.08.13	TAS 110 (2000)
Trinity|ERD (TST6049)	J45020.05.13-1	TAS 114(C) (1995)
Trinity|ERD (TST6049)	J45020.09.13-1-R1	TAS 114(C) (1995)
Trinity|ERD (TST6049)	JM-SC11190.03.16	TAS 114(J) (2011)
Trinity|ERD (TST6049)	JM-SC11320.03.16	TAS 114(D) (2011)
Trinity|ERD (TST6049)	JM-SC12145.02.17	FM 4474(C) (2011)
Trinity|ERD (TST6049)	SC4910	FM 4474 (2011); TAS 114(J) (2011)
Trinity|ERD (TST6049)	SFS-SC10010.02.16-R1	FM 4474(D) (2011); TAS 114(J) (2011); UL 1897 (2012)

LIMITATIONS

1. Fire classification is not within the scope of this evaluation.
2. Foam plastic insulation shall be separated from the building interior in accordance with the FBC 2603.4 and 2603.6.
3. The roof deck and the roof deck attachment information are provided based on testing. FBC requirements for the rational design of the roof deck, including the attachment, are not within the scope of this evaluation.
4. In the HVHZ, fastener spacing for insulation attachment is determined using a Minimum Characteristic Force (F') of 275 lbf as demonstrated via testing to TAS 105. If the field tested fastener value is below 275 lbf, then insulation attachment shall not be acceptable.
5. In the HVHZ, fastener spacing for base sheets or membrane attachment shall meet the minimum fastener resistance value and the *MDP* for the specified assembly. It is permissible for a qualified professional to submit a revised fastener spacing utilizing the withdrawal resistance value obtained from TAS 105 testing and calculations performed in accordance with RAS 117 and/or RAS 137, when the fastener resistance is found less than required.
6. In the HVHZ, if mechanical attachment through the lightweight insulating concrete to the structural deck is proposed, a field fastener withdrawal test shall be conducted in compliance with TAS 105 to determine equivalent or increased attachment densities. Revised fastener densities shall be submitted utilizing the withdrawal resistance value obtained from TAS 105 testing and calculations performed in accordance with RAS 117 and/or RAS 137.
7. **HVHZ:** For assemblies containing mechanical attachment, the allowable uplift pressure for the selected assembly shall meet or exceed the minimum design loads as determined in accordance with the FBC Chapter 16. The attachment density may be increased by a qualified design professional, as necessary, to meet the design pressure requirements in the periphery zones. Calculations shall be conducted in compliance with RAS 117 and/or RAS 137.
   Non-HVHZ: For assemblies containing mechanical attachment or adhered in ribbon-applied adhesive, the allowable uplift pressure for the selected assembly shall meet or exceed the minimum design loads as determined in accordance with the FBC Chapter 16. The attachment density may be increased by a qualified design professional, as necessary, to meet the design pressure requirements in the periphery zones. Calculations shall be conducted in compliance with RAS 117, RAS 137, or Section 2.2.10.1 FM LPDS 1-29 (February 2020).
8. Reroofing applications shall be examined in accordance with FBC Section 1511 outside of the HVHZ and FBC Section 1521 within the HVHZ. For mechanically fastened systems, a field withdrawal resistance test (TAS 105 in the HVHZ; ANSI/SPRI FX-1 or TAS 105 in the non-HVHZ) shall be conducted by a qualified professional to ensure the fastener meets the minimum design load requirements of the system. For adhered systems, a field uplift resistance test (TAS 124 in the HVHZ; ASTM E 907, FM LPDS 1-52, ANSI/SPRI IA-1, or TAS 124 in the non-HVHZ) shall be conducted to confirm conformance of the existing to the minimum design loads.
9. **HVHZ:** For assemblies containing fully adhered or ribbon adhered attachment, or where extrapolation of the assembly is not permitted, the *MDP* for the selected assembly shall meet or exceed the minimum design loads as determined in accordance with the FBC Chapter 16 without augmentation.
   Non-HVHZ: For assemblies adhered in ribbon-applied adhesive, the allowable uplift pressure for the selected assembly shall meet or exceed the minimum design loads as determined in accordance with the FBC Chapter 16. The attachment density may be increased by a qualified design professional, as necessary, to meet the design pressure requirements in the periphery zones. Calculations shall be conducted in compliance with Section 2.2.10.1 FM LPDS 1-29 (February 2020).
10. Installation of the evaluated products shall comply with this report, the FBC, and the manufacturer's published application instructions. Where discrepancies exist between these sources, the more restrictive and FBC compliant installation detail shall prevail.
11. The minimum roof slope shall be 1/4:12 for new construction.
12. All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

COMPLIANCE STATEMENT

The products evaluated herein by Zachary R. Priest, P.E. have demonstrated compliance with the Florida Building Code, 7th Edition (2020) including High-Velocity Hurricane Zones (HVHZ) as evidenced in the referenced documents submitted by the named manufacturer.



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Zachary R. Priest, P.E.
Florida Registration No. 74021
Organization No. ANE9641

CERTIFICATION OF INDEPENDENCE

CREEK Technical Services, LLC does not have, nor will it acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

CREEK Technical Services, LLC is not owned, operated, or controlled by any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

APPENDICES

1) APPENDIX A – Installation (5 pages)
2) APPENDIX B – Nomenclature (5 pages)
3) APPENDIX C – Approved Assemblies for JM TPO Single-Ply Membranes (61 pages)

INSTALLATION

*Note - Refer to the **APPROVED ASSEMBLIES** section of this report for specific installation details of a selected assembly.*

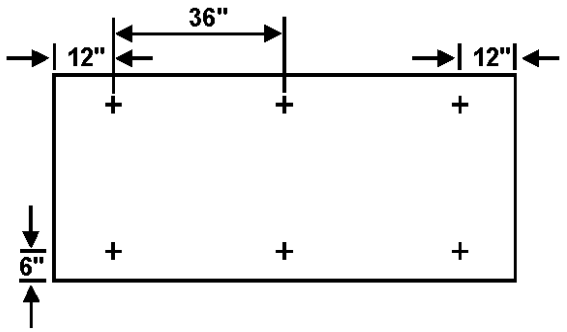
Unless otherwise specified in this report the following installation details shall be met for the named products:

Component	Product	Installation Detail
Fasteners, Battens & Plates	JM All Purpose Fastener	#14 fasteners; Min. 3/4-inch penetration through the top rib of the steel deck or wood deck; Min. 1-inch penetration into concrete deck
	JM APB Plates	2-inch diameter; Galvalume steel plate with reinforcing ribs and barbs
	JM Extra High Load Fastener	#21 fastener; Min. 3/4-inch penetration through the top rib of the steel deck;
	JM Extra High Load Plates	3-inch diameter; Galvalume steel plate with eyehooks
	JM High Load Plates	2 3/8-inch diameter; Galvalume steel plate with eyehooks
	JM High Load Plus Plates	2 3/4-inch diameter; Galvalume steel plate with barbs
	JM High Load Fastener	#15 fastener; Min. 3/4-inch penetration through the top rib of the steel deck or wood deck;
	JM High Load LH Fastener	#15 fastener with oversized head; Min. 3/4-inch penetration through the top rib of the steel deck or wood deck;
	JM UltraFast Fastener	#12 fastener; Min. 3/4-inch penetration through the top rib of the steel deck or wood deck
	JM UltraFast Metal Plate (Round)	3-inch diameter round; Galvalume steel plate; Only for use with the following products: ENRGY 3, ENRGY 3 AGF, ENRGY 3 CGF, ENRGY 3 FR, ENRGY 3 C1, ENRGY 3 C1 CGF, RetroPlus, Retro-Fit, SeparatoR, SeparatoR CGF, SeparatoR CGF FR, DuraBoard, DuraFoam, Fesco, and Fesco Foam
	JM UltraFast Metal Plate (Square)	3-inch square; Galvalume steel plate
	JM UltraLok Fastener	Min. 1.8-inch galvanized steel tube and coated-steel locking staple pre-assembled with 2.7-inch diameter Galvalume steel plate
	JM Polymer Membrane Batten	Membrane anchors and plastic strips
	JM Purlin Fastener	Min. 3/4-inch penetration through purlin
	JM TPO RhinoPlate	Min. 3-inch diameter for TPO membranes; Induction welded in the field of membrane; welds not permitted at lap seams; For use only with min. 60 mil thick bareback membrane
	OMG CR Base Sheet Fastener	Base sheet fastener with 1.75-inch galvanized steel shank coated with CR-10 and integrated 2.75-inch diameter Galvalume plate.
	SFS Intec Dekfast DF-#12-PH3 Fastener	#12 fasteners; Min. 3/4-inch penetration through the top rib of the steel deck or wood deck;
	SFS Intec Dekfast DF-#14-PH3 Fastener	#15 fasteners; Min. 3/4-inch penetration through the top rib of the steel deck or wood deck; Min. 1-inch penetration into concrete deck
	SFS Intec Dekfast DF-#15-PH3 Fastener	#15 fasteners; Min. 3/4-inch penetration through the top rib of the steel deck or wood deck; Min. 1-inch penetration into concrete deck
	SFS Intec FI-P-6.8-TPO	Min. 3-inch diameter for TPO membranes; Induction welded in the field of membrane; welds not permitted at lap seams; For use only with min. 60 mil thick bareback membrane
	Trufast Deep Well Batten Bar	Galvalume steel membrane batten with recessed holes
	Trufast Straight Line Batten Bar	Galvalume steel membrane batten for use with Twin-Loc Nail without integrated plate
	Trufast Twin Loc-Nail	Min. 1.4-inch shank; Base sheet fastener with and without integrated 2.7-inch diameter plate.

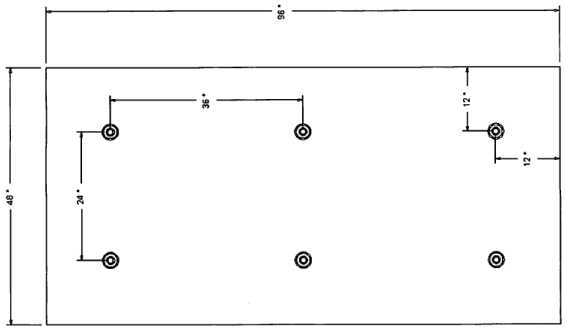
Component	Product	Installation Detail
Insulation Adhesives	JM MBR Bonding Adhesive	Fully adhered at a rate of 1.5-2.0 gal/100 ft^2
	JM One-Step Foamable Adhesive	Ribbon adhered in 3/4 to 1-inch wide beads
	ICP Adhesives CR-20	
	OMG OlyBond 500	Ribbon adhered in 3/4 to 1-inch wide beads
	JM Two Part Urethane Insulation Adhesive Canister or JM Two-Part UIA Canister	
	JM Two Part Urethane Insulation Adhesive or JM Two-Part UIA	
	JM Roofing System Urethane Adhesive	
	JM Urethane Insulation Adhesive	Ribbon adhered in 1/2-inch wide beads
	ASTM D 312, Type IV asphalt	Fully adhered within the EVT range at a rate of 25-40 lbs/100 ft^2
Insulation/Cover Boards	EPS	Min. 0.5-inch, min. 1.8 pcf (HVHZ) or min. 1.5 pcf (non-HVHZ) expanded polystyrene; Adhered boards shall be a maximum 4-ft x 4-ft
	Georgia-Pacific DensDeck	Min. 1/4-inch thick
	Georgia-Pacific DensDeck Prime	
	Georgia-Pacific DensDeckStorm X	Min. 5/8-inch thick
	JM ENRGY 3	Min. 1/2-inch thick; Min. 20 psi; Adhered boards shall be a maximum 4 ft x 4 ft
	JM ENRGY 3 C1	
	JM ENRGY 3 AGF	
	JM ENRGY 3 CGF	
	JM ENRGY 3 C1 CGF	
	JM ENRGY 3 FR	
	JM Fesco Board	Min. 3/4-inch thick; Min. 20 psi
	JM Fesco Foam	Min. 1.5-inch thick; Min. 20 psi; Adhered boards shall be a maximum 4 ft x 4 ft
	JM Invinsa Roof Board	1/4-inch thick; Adhered boards shall be a maximum 4 ft x 4 ft
	JM Invinsa Foam Roof Board	
	JM Invinsa FR Roof Board	
	JM ProtectoR Foam	Min. 2-inch thick; Min. 80psi top layer; Min. 20psi bottom layer; Adhered boards shall be a maximum 4 ft x 4 ft
	JM ProtectoR HD	1/2-inch thick; Min. 80 psi; Adhered boards shall be a maximum 4 ft x 4 ft
	JM ProtectoR HD FR	
	JM Retro-Fit Board	1/2-inch thick; Adhered boards shall be a maximum 4 ft x 4 ft
	JM RetroPlus Roof Board	
	JM SECUROCK Glass-Mat Roof Board	Min. 1/4-inch thick
	JM SECUROCK Gypsum-Fiber Roof Board	
	JM SeparatoR	1/2-inch thick; Min. 25 psi; Adhered boards shall be a maximum 4 ft x 4 ft
	JM SeparatoR CGF	
	JM SeparatoR FR	
	National Gypsum DEXcell Cement Roof Board	Min. 7/16-inch thick; Adhered boards shall be a maximum 4 ft x 4 ft
	National Gypsum DEXcell Glass Mat Roof Board	Min. 1/4-inch thick
	National Gypsum DEXcell FA Glass Mat Roof Board	
TPO Membrane Adhesives	ASTM D 312, Type IV asphalt	Fully adhered within the EVT range at a rate of 25-40 lbs/100 ft; For use only with JM TPO FB 150 and 175 membranes only
	JM All Season Sprayable Bonding Adhesive	Applied at a rate of 1,000ft^2/canister; Applied simultaneously to underside of membrane and substrate; For use with JM TPO smooth backed membranes only
	JM Roofing System Urethane Adhesive	Ribbon adhered in 3/4 to 1-inch wide beads; For use only with JM TPO Fleece Backed membranes only

Component	Product	Installation Detail
TPO Membrane Adhesives (Cont'd)	JM Membrane Bonding Adhesive (TPO & EPDM)	Fully adhered at rate of 50-90 ft^2/gal(1.1-2.0 gal/100ft^2); Applied simultaneously to underside of membrane and substrate; For use with JM TPO smooth backed membranes only
	JM LVOC Membrane Adhesive (TPO & EPDM)	Fully adhered at rate of 50-90 ft^2/gal(1.1-2.0 gal/100ft^2); Applied simultaneously to underside of membrane and substrate; For use with JM TPO smooth backed membranes only
	JM TPO 1168 Membrane Adhesive	Fully adhered at rate of 50-90 ft^2/gal(1.1-2.0 gal/100ft^2); Applied simultaneously to underside of membrane and substrate; For use with JM TPO smooth backed membranes only
	JM TPO Water Based Membrane Adhesive	Bareback TPO shall be fully adhered in two-sided application at a combined rate of 0.6-0.8 gal/100ft^2or one-sided application applied to the substrate at a rate of 0.4-0.5 gal/100ft^2; Fleeceback TPO shall be fully adhered in one-sided application applied to the substrate at a rate of 0.6-0.8 gal/100ft^2
	JM Two Part Urethane Insulation Adhesive Canister	Applied in spatter pattern at a rate of 0.32 gal/100ft^2 or 1/2-inch wide beads; For use only with JM TPO Fleece Backed membranes only
SA Primer	JM SA Primer Low VOC	Applied at rate of 0.5 gal/100ft^2
	JM SA Primer	Applied 0.75-1.25 gal/100ft^2 on porous surfaces and 0.25-0.75 gal/100ft^2 on nonporous surfaces
	JM All Season Sprayable Bonding Adhesive	Applied at rate of 500 ft^2/canister
Vapor Barriers	JM DynaBase HW	Min. 3-inch wide side-laps; Min. 6-inch end laps; Torch adhered to primed concrete deck
	JM DynaBase	Min. 3-inch wide side-laps; Min. 6-inch end laps; Applied with hot or cold *approved* adhesives
	JM DynaGrip Base SD/SA	Min. 3-inch wide side-laps; Min. 6-inch end laps; Self-adhered
	JM Vapor Barrier SA	Self-adhered to primed wood, gypsum or concrete decks; Min. 3-inch sides laps; Min. 6-inch end laps
	JM Vapor Barrier SAR	Self-adhered to primed wood, gypsum or concrete decks; Min. 3-inch sides laps; Min. 6-inch end laps
Base Sheets	JM DynaBase	Min. 3-inch wide side-laps; Min. 6-inch end laps; Applied with hot or cold *approved* adhesives
	JM DynaBase HW	Min. 3-inch wide side-laps; Min. 6-inch end laps; Torch adhered
	JM DynaFast 180 S	Min. 3-inch wide side-laps; Min. 6-inch end laps; Side-laps shall be installed perpendicular to the direction of the steel deck ribs and parallel to the direction of the wood trusses for mechanically attached systems
TPO Single-Ply Membranes	JM TPO-45	Min. 2-inch wide side-laps with min. 1.5-inch wide heat weld for adhered systems; In-lap fastened systems shall have min. 6-inch wide side-laps with min. 1.5-inch wide heat weld; Side-laps shall be installed perpendicular to the direction of the steel deck ribs and parallel to the direction of the wood trusses for mechanically attached systems
	JM TPO-60	
	JM TPO-80	
	JM TPO FB 115	
	JM TPO FB 135	
	JM TPO FB 150	
	JM TPO FB 175	
	JM TPO SA-60 mil	
Cellular Lightweight Concrete	Celcore MF with HS Rheology Admixture	Slurry coat min. 1/8-inch thick; 1-inch thick EPS board (1 lbs/ft^3); Min. 2-inch thick top coat; Celcore PVA curing compound applied at rate of 300 ft^2/gal.
	Mearlcrete	Slurry coat min. 1/8-inch thick; 1" thick EPS board (1 lbs/ft^3); Min. 2-inch thick top coat;
	Elastizell	
	Concrecel	
	Cellular Lightweight Concrete	

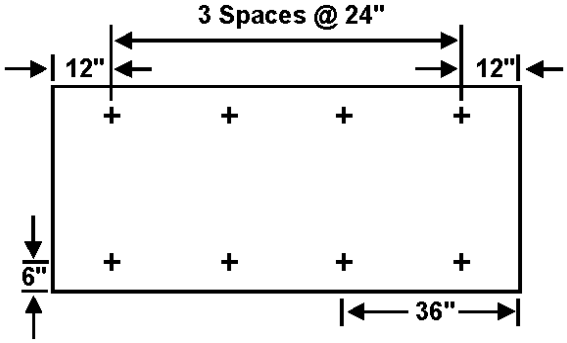
Insulation/Cover Board Fastening Patterns



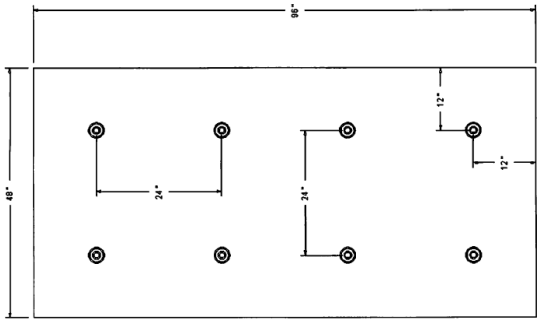
6 per 4-ft x 8-ft board Pattern #1
(Max. 5.33-ft^2 contributory area per fastener)



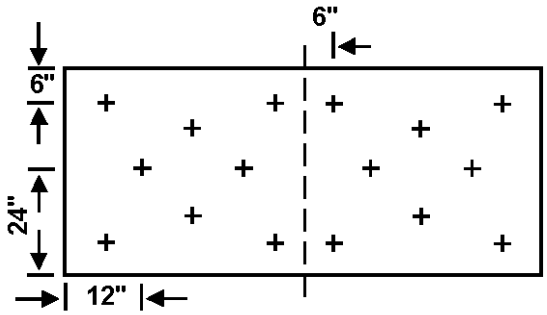
6 per 4-ft x 8-ft board Pattern #2
(Max. 5.33-ft^2 contributory area per fastener)



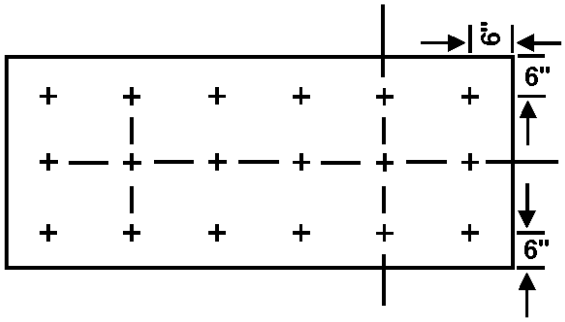
8 per 4-ft x 8-ft board Pattern #1
(Max. 4.0-ft^2 contributory area per fastener)



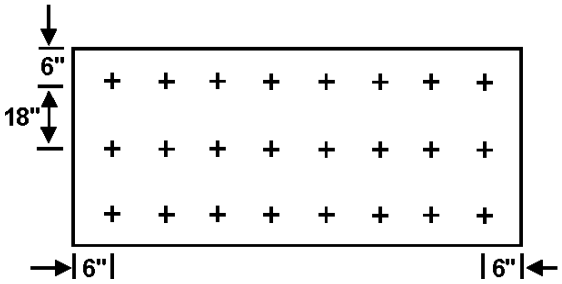
8 per 4-ft x 8-ft board Pattern #2
(Max. 4.0-ft^2 contributory area per fastener)



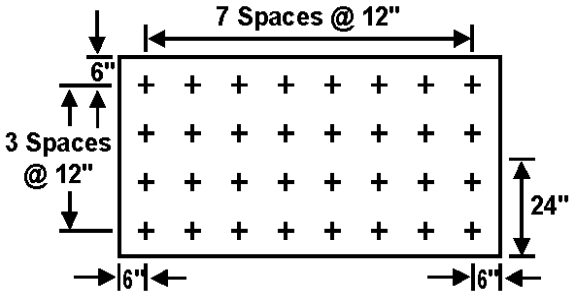
16 per 4-ft x 8-ft board
(Max. 2.0-ft^2 contributory area per fastener)



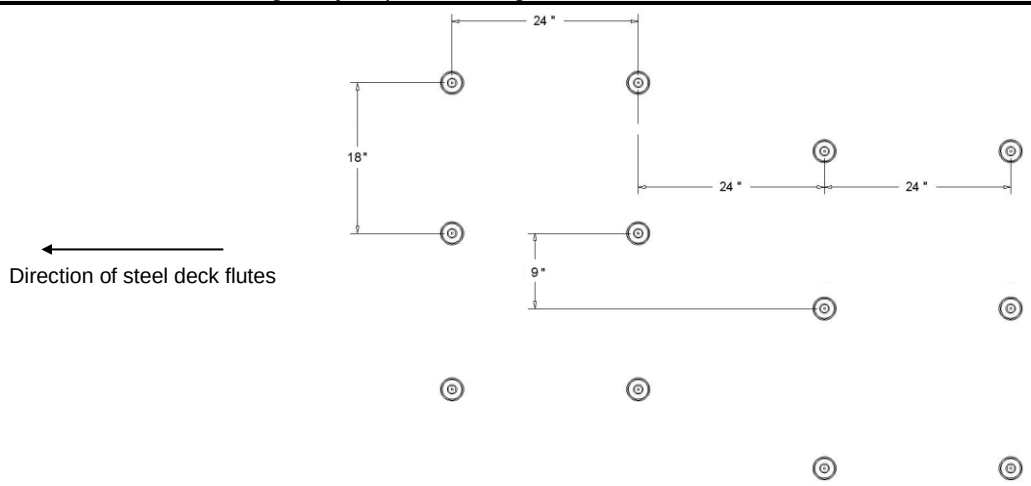
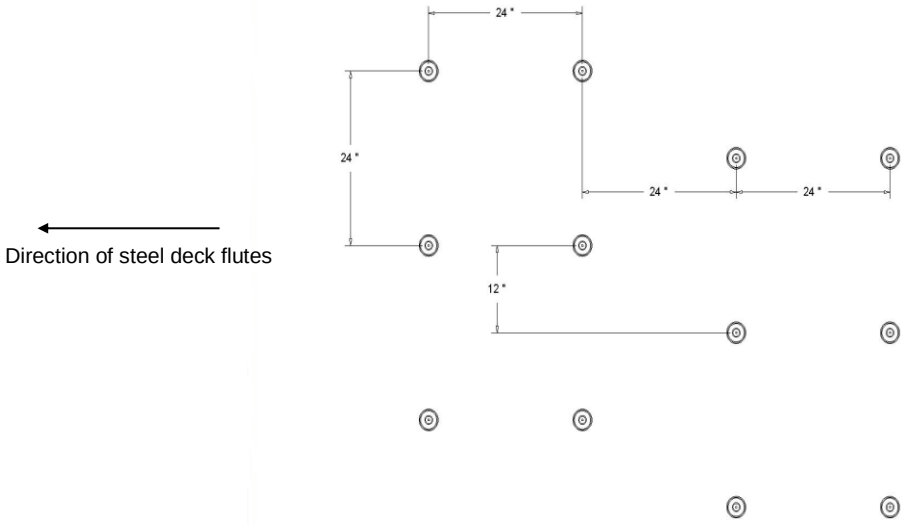
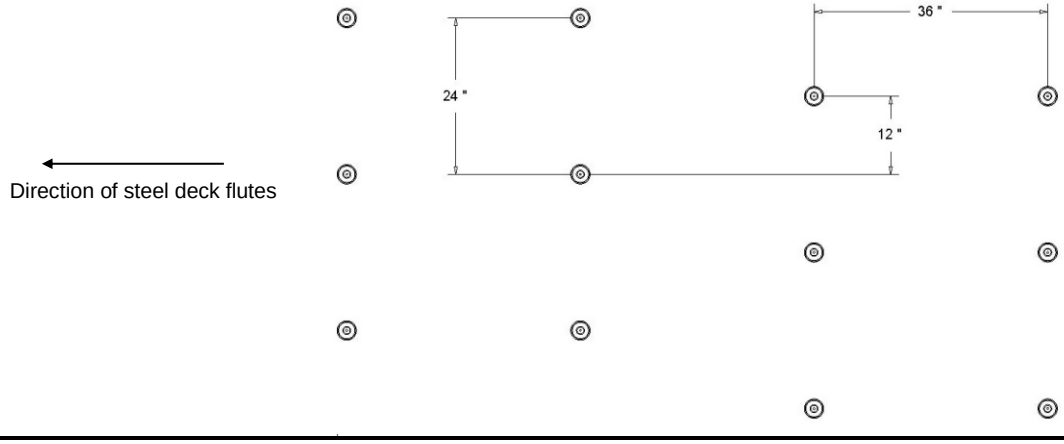
18 per 4-ft x 8-ft board
(Max. 1.78-ft^2 contributory area per fastener)



24 per 4-ft x 8-ft board
(Max. 1.33-ft^2 contributory area per fastener)



32 per 4-ft x 8-ft board
(Max. 1.0-ft^2 contributory area per fastener)

Alternate Fastener Patterns for Induction Weld Assemblies Only	
Description	Fastening Array Repeated Using the Geometric Grid Shown Below
1.5-ft x 2-ft staggered grid	
2-ft x 2-ft staggered grid	
2-ft x 3-ft staggered grid	

NOMENCLATURE

The following naming conventions are utilized to specify products in the APPROVED ASSEMBLIES section of this report. Refer to the nomenclature below when deciphering the allowable products for use in the selected assembly. Installation requirements shall be as noted in the APPROVED ASSEMBLIES section of this report.

Name	Definition	
1168	JM 1168 Membrane Adhesive	
2-Part UIA	JM Two Part Urethane Insulation Adhesive, JM Two-Part UIA, JM Two Part Urethane Insulation Adhesive Canister, or JM Two-Part UIA Canister	
2-Part UIA-C(B)	JM Two Part Urethane Insulation Adhesive Canister or JM Two-Part UIA Canister applied in 1/2-inch wide beads	
2-Part UIA-C(S)	JM Two Part Urethane Insulation Adhesive Canister or JM Two-Part UIA Canister applied in spatter application at a rate of 3.5-3.9 lbs/100ft^2	
AP Fasteners & Plates	All Purpose Fastener or Structural Concrete Deck Fastener (concrete only) and UltraFast Metal Plate (Round) or UltraFast Metal Plate (Square)	
AP Fasteners & Plates (Square)	All Purpose Fastener or Structural Concrete Deck Fastener (concrete only) and UltraFast Metal Plate (Square)	
APB Fasteners & Plates	JM APB Plates and JM High Load Fasteners (*Wood Deck* or *Steel Deck*) or JM All Purpose Fasteners (*Concrete Deck*)	
As Tested	Information provided to the report user based on the as tested condition of the roof system	
ASBA	JM All Season Sprayable Bonding Adhesive	
Cover Board	One layer of any of the following products: -Georgia-Pacific DensDeck -Georgia-Pacific DensDeck Prime - Georgia-Pacific DensDeck StormX Prime -JM Invinsa Roof Board -JM Invinsa FR Roof Board -JM ProtectorR HD -JM ProtectorR HD FR -JM SECUROCK Glass-Mat Roof Board -JM SECUROCK Gypsum-Fiber Roof Board -JM SeparatoR -JM SeparatoR CGF -JM SeparatoR FR -National Gypsum DEXcell FA Glass Mat Roof Board -National Gypsum DEXcell Glass Mat Roof Board -National Gypsum DEXcell Cement Roof Board	
Deck Detail	All decks shall be designed by others in accordance with FBC requirements. *As Tested* deck construction details are described as follows:	
	Concrete Deck	Min. f'_c = 2,500 psi at 28 days
	CWF Deck	Min. 2.5-inch thick Tectum I cementitious wood fiber panels

APPENDIX B – NOMENCLATURE

Name	Definition		
Deck Detail (Cont'd)	*Steel Deck*	Min. 22 ga, Wide Rib Deck (Type WR) conforming to ANSI/SDI-RD1.0 & FBC; 0.5% Vented for *LWIC* applications only. The following nomenclature is used to further describe the *As Tested* condition.	
		F<#>	<#> of #12-24 HWH self-drilling screws or equivalent fasteners at each flute used to secure the deck to the structural supports; Min. 1/4-inch penetration
		G<#>	Min. Grade <#> of *Steel Deck*
		H<#>	<#> of Hilti X-HSN 24 fastener or equivalent fasteners at each flute used to secure the deck to the structural supports; Min. 1/4-inch penetration
		L<#>	Max. span of <#> ft
		P	Min. 5/8-inch diameter puddle welds at each flute used to secure the deck to the structural supports
		S<#>	1/4 "-14 HWH x7/8" self-drilling screws or equivalent fastener secured <#>-inch o.c. along the panel side laps
		SD<#>	<#> of SFS Intec SD5-#12-HW5/16 Fasteners at each flute used to secure the deck to the structural supports; Min. 1/4-inch penetration
		SDL<#>	SDL-#14-HW5/16 secured <#>-inch o.c. along the panel side laps
		HS<#>	Hilti S0SLC 01M fastener or equivalent fastener secured <#>-inch o.c. along the panel side laps
		W	3/4-inch O.D. flat washer used with indicated fastener
	Wood Deck	**HVHZ:** APA Span-Rated sheathing. The following nomenclature is used to further describe the *As Tested* condition:	
		T<#>P	Min. <#>-inch thickness of the plywood
		T<#>O	Min. <#>-inch thickness of the OSB
		L<#>	Max. span of <#> inches
		N<#>	Min. 0.113-inch diameter x 2-3/8-inch ring shank nails spaced <#>-inch o.c. at all intermediate supports and at the perimeter of each board
		16S<#>	Min. 16 ga. staples, 1.5-inch x 1-inch crown spaced <#>-inch o.c. at all intermediate supports and at the perimeter of each board
DensDeck	Min. 1/4-inch Georgia-Pacific DensDeck		
DensDeck Prime	Min. 1/4-inch Georgia-Pacific DensDeck Prime; or Georgia-Pacific DensDeck StormX Prime		
DEXcell CB	Min. 1/4-inch National Gypsum DEXcell Cement Roof Board		
DEXcell FA	Min. 1/4-inch National Gypsum DEXcell FA Glass Mat Roof Board		
E3	JM ENRGY 3, JM ENRGY 3 AGF, JM ENRGY 3 CGF or JM ENRGY 3 FR		
E3 C1	JM ENRGY 3 C1 or JM ENRGY 3 C1 CGF		
EPS	ASTM C 578 expanded polystyrene insulation board, min. Type IX in HVHZ		
Extra HL Fasteners & Plates	JM Extra High Load Fasteners (*Wood Deck* or *Steel Deck*) or JM All Purpose Fasteners (*Concrete Deck*) and JM Extra High Load Plates		
HL Fasteners & Plates	JM High Load Fasteners (*Wood Deck* or *Steel Deck*) or JM All Purpose Fasteners (*Concrete Deck*) and JM High Load Plates		

APPENDIX B – NOMENCLATURE

Name	Definition
INSULATION	One of more layers in any combination of the following products: -ENRGY 3 -ENRGY 3 AGF -ENRGY 3 CGF -ENRGY 3 FR -ENRGY 3 C1 -ENRGY 3 C1 CGF -Fesco Board -Fesco Foam -Invinsa Roof Board -Invinsa FR Roof Board -ProtectoR Foam -ProtectoR HD -ProtectoR HD FR -Retro-Fit Board -RetroPlus Roof Board -SECUROCK Glass-Mat Roof Board -SECUROCK Gypsum-Fiber Roof Board -SeparatoR -SeparatoR CGF -SeparatoR FR -EPS (flute fill only)
INVINSA	JM Invinsa or JM Invinsa FR Roof Board
ISOWELD -#15	isoweld FI-P-6.8-TPO plates and DEKFAST DF-#15-PH3 Fasteners
ISOWELD-#12	isoweld FI-P-6.8-TPO plates and DEKFAST DF-#12-PH3 Fasteners
JM TPO	One ply of any one of the following products: JM TPO-45, JM TPO-60, or JM TPO-80
JM TPO FB	One ply of any one of the following products: JM TPO FB 115 or JM TPO FB 135
JM TPO HFB	One ply of any one of the following products: JM TPO FB 150 or JM TPO FB 175
JM TPO SA	One ply of any one of the following products: JM TPO SA-60 mil
LVOC MA	JM LVOC Membrane Adhesive (TPO & EPDM)
LWIC	Poured-in-place Cellular Lightweight Concrete with encapsulated insulation board
MBA	JM Membrane Bonding Adhesive (TPO & EPDM)
MCRF	Minimum Characteristic Resistance Force as determined by TAS 105 for the named fastener in the selected assembly
MDP	Maximum Design Pressure
OSFA	JM One-Step Foamable Adhesive
Preliminarily Secured	Fastened at minimum rate of 5 per 4 ft x 8 ft board or 4 per 4 ft x 4 ft board.
ProtectoR	JM ProtectoR HD or JM ProtectoR HD FR Roof Board

APPENDIX B – NOMENCLATURE

Name	Definition
Recover	Where assemblies are used to recover an existing roof, the existing roof shall consist of only one layer of roofing, i.e. recovering a previously recovered roof is not permitted. Recover roofing shall be conducted in compliance with FBC Section 1511 outside of the HVHZ and FBC Section 1521 within the HVHZ. For mechanically fastened roof assemblies and induction welded assemblies, i.e. systems x-M-# and x-W-#, the insulation layer is optional, or any INSULATION board or slip sheet may be used as separation layer prior to installing the approved roof assembly.
Retro-Fit	JM Retro-Fit Board
RetroPlus	JM RetroPlus Roof Board
RSUA	JM Roofing System Urethane Adhesive
SECUROCK	Min. 1/4-inch JM SECUROCK Gypsum-Fiber Roof Board
TPO Bonding Adhesives	Any one of the following products: -JM Membrane Bonding Adhesive (TPO & EPDM) -JM LVOC Membrane Adhesive (TPO & EPDM) -JM TPO Water Based Membrane Adhesive
TPO WBMA	JM TPO Water Based Membrane Adhesive
UIA	JM Urethane Insulation Adhesive
UltraFast Fasteners & Plates	JM UltraFast Fasteners (*Steel Deck* and *Wood Deck*) or JM All Purpose Fasteners (*Concrete Deck*) and JM UltraFast Metal Plates (Round or Square)
UltraFast Fasteners & Plates (Square)	JM UltraFast Fasteners (*Steel Deck* and *Wood Deck*) or JM All Purpose Fasteners (*Concrete Deck*) and JM UltraFast Metal Plates (Square)
UltraFast Plates	JM UltraFast Metal Plates (Round or Square)
Vapor Barrier	One of the following vapor barriers installed over the deck: -4mil or 6mil Polyethylene, loose laid -JM Vapor Barrier SA or JM Vapor Barrier SAR, self-adhered to minimum 0.5-inch thick SECUROCK Gypsum-Fiber Roof Board, DEXcell FA Glass Mat Roof Board or DEXcell Cement Roof Board. The thermal barrier may be primed with JM SA Primer Low VOC, or SA Primer -DynaGrip Base SD/SA, self-adhered to minimum 0.5-inch thick SECUROCK Gypsum-Fiber Roof Board or DEXcell FA Glass Mat Roof Board -DynaBase HW, torch applied to minimum 0.5-inch thick DEXcell FA Glass Mat Roof Board
VB DynaBase HW	One ply of DynaBase HW torch adhered to concrete deck up to a maximum *MDP* as shown below. The *MDP* of the roof assembly shall be limited to the lesser of rating of the *Approved Assembly* and the *MDP* below. 1. Board layers adhered in *OSFA* applied at 12” o.c.; *MDP* = -172.5psf 2. Board layers adhered in *2-Part UIA* applied at 12” o.c.; *MDP* = -135psf 3. Board layers adhered in *RSUA* applied at 12” o.c.; *MDP* = -195psf
VB DynaGrip Base SD/SA	One ply of DynaGrip Base SD/SA self-adhered to concrete deck primed with ASTM D 41 primer up to a maximum *MDP* as shown below. The *MDP* of the roof assembly shall be limited to the lesser of rating of the *Approved Assembly* and the *MDP* below. 1. Board layers adhered in *OSFA* applied at 12” o.c.; *MDP* = -90psf 2. Board layers adhered in *2-Part UIA* applied at 12” o.c.; *MDP* = -97.5psf 3. Board layers adhered in *RSUA* applied at 12” o.c.; *MDP* = -82.5psf
VB DynaWeld Base	One ply of DynaGrip Base SD/SA self-adhered to concrete deck primed with ASTM D 41 primer up to a maximum *MDP* as shown below. The *MDP* of the roof assembly shall be limited to the lesser of rating of the *Approved Assembly* and the *MDP* below. 1. Board layers adhered in *OSFA* applied at 12” o.c.; *MDP* = -150psf 2. Board layers adhered in *2-Part UIA* applied at 12” o.c.; *MDP* = -120psf 3. Board layers adhered in *RSUA* applied at 12” o.c.; *MDP* = -195psf

APPENDIX B – NOMENCLATURE

Name	Definition
VB SAR	One ply of JM Vapor Barrier SAR applied to concrete deck primed with JM SA Primer Low VOC up to a maximum *MDP* as shown below. The *MDP* of the roof assembly shall be limited to the lesser of rating of the *Approved Assembly* and the *MDP* below. 1. Board layers adhered to Vapor Barrier SAR in *OSFA* applied at 12" o.c.; *MDP* = -135psf 2. Board layers adhered to Vapor Barrier SAR in *2-Part UIA* applied at 12" o.c.; *MDP* = -82.5psf 3. Not for use with *RSUA*

APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

The following notes shall be observed when using the assembly tables below.

1. Allowable pressures were calculated using a 2:1 margin of safety per FBC Section 1504.9.
2. Refer to **LIMITATIONS** and **NOMENCLATURE** sections of this evaluation when using the table(s) below.
3. Refer to **INSTALLATION** section of this report for installation detail when the information is not explicitly stated for the selected assembly.
4. The on-center (o.c.) spacing given is the maximum allowable attachment spacing for the rated system.
5. JM Vapor Barrier SA or JM Vapor Barrier SAR may be installed direct to deck prior to installing the roof assembly components for the following assembly types: C-M-#, C-W-#, LC-M-#, LC-W-#, LS-M-#, LS-W-#, S-M-#, S-W-#, W-M-#, and W-W-#
6. *As Tested* information for roof deck construction is provided for information only. The addition of the *As Tested* deck information does not obviate the requirement for rational design of the roof deck and roof deck attachment in accordance with FBC requirements.

Assembly System Numbers and Definitions	
C-A-#	Adhered Assemblies over *Concrete Deck* (New or Existing)
C-AM-#	Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)
C-M-#	Mechanically Fastened Assemblies over *Concrete Deck*
C-W-#	Induction Welded Assemblies over *Concrete Deck*
CW-A-#	Adhered Assemblies over Cementitious Wood Fiber Decks (New or Existing)
G-A-#	Assemblies with All Layers Adhered over Gypsum Deck (New or Existing)
G-AM-#	Assemblies with Adhered Membranes over Insulated Gypsum Deck (New or Existing)
LC-A-#	Adhered Lightweight Concrete Assemblies over *Concrete Deck* (New or Existing)
LC-AM-#	Lightweight Concrete Assemblies with Adhered Membranes over *Concrete Deck* (New or Existing)
LC-M-#	Mechanically Fastened Lightweight Concrete Assemblies over *Concrete Deck* (New, Existing, or *Recover*)
LC-W-#	Induction Welded Lightweight Concrete Assemblies over *Concrete Deck* (New, Existing, or *Recover*)
LS-A-#	Adhered Lightweight Concrete Assemblies over *Steel Deck* (New or Existing)
LS-AM-#	Lightweight Concrete Assemblies with Adhered Membranes over *Steel Deck* (New or Existing)
LS-M-#	Mechanically Fastened Lightweight Concrete Assemblies over *Steel Deck* (New, Existing, or *Recover*)
LS-W-#	Induction Welded Lightweight Concrete Assemblies over *Steel Deck* (New, Existing, or *Recover*)
R-A-#	Adhered *Recover* Assemblies
R-M-#	Mechanically Fastened *Recover* Assemblies
R-W-#	Induction Welded *Recover* Assemblies
S-AM-#	Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)
S-M-#	Mechanically Fastened Assemblies over *Steel Deck* (New, Existing or *Recover*)
S-W-#	Induction Welded Assemblies over *Steel Deck*
W-M-#	Mechanically Fastened Assemblies over *Wood Deck* (New or Existing)
W-W-#	Induction Welded Assemblies over *Wood Deck* (New or Existing)

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Assemblies over *Concrete Deck* (New or Existing)						
System No.	Vapor Barrier	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
C-A-1	OPTIONAL JM Vapor Barrier SA applied over deck primed with JM SA Primer Low VOC, *VB DynaBase HW, VB DynaGrip Base SD/SA,* or *VB DynaWeld Base*	Min. 1.5-inch *E3* in *RSUA* or *2-Part UIA* applied 12-inch o.c.	OPTIONAL *SECUROCK* or JM Invinsa in *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO FB*	*RSUA* applied 12-inch o.c. or *2-Part UIA-C(S)*	**-67.5 (Lim. 9)**
C-A-2	OPTIONAL JM Vapor Barrier SA applied over deck primed with JM SA Primer Low VOC, *VB DynaBase HW, VB DynaGrip Base SD/SA,* or *VB DynaWeld Base*	Min. 1.5-inch *E3* in *RSUA* or *2-Part UIA* applied 12-inch o.c.	OPTIONAL *SECUROCK*, JM Invinsa or ProtectoR HD in *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-67.5 (Lim. 9)**
C-A-3	OPTIONAL *VB SAR*, *VB DynaBase HW,* or *VB DynaWeld Base*	Min. 1.5-inch ENRGY 3 in *OSFA* or *2-Part UIA* applied 12-inch o.c.	OPTIONAL JM Invinsa or ProtectoR HD in *2-Part UIA* applied 12-inch o.c.	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate, *TPO WBMA,* ASBA	**-105 (Lim. 9)**
C-A-4	OPTIONAL *VB SAR*, *VB DynaBase HW,* or *VB DynaWeld Base*	Min. 1.5-inch ENRGY 3 in *OSFA* or *2-Part UIA* applied 12-inch o.c.	OPTIONAL JM Invinsa or ProtectoR HD in *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-105 (Lim. 9)**
C-A-5	OPTIONAL *VB SAR, VB DynaBase HW,* or *VB DynaWeld Base*	*INVINSA* in *2-Part UIA, OSFA,* or *RSUA* applied 12-inch o.c.	-	*JM TPO SA*	Self-adhered	**-105 (Lim. 9)**
C-A-6	OPTIONAL *VB SAR*, *VB DynaBase HW,* or *VB DynaWeld Base*	Min. 1.5-inch *E3* or ProtectoR Foam in *OSFA*, *RSUA* or *2-Part UI* applied 12-inch o.c.	-	*JM TPO SA*	Self-adhered	**-105 (Lim 9)**
C-A-7	-	*RetroPlus* in ASTM D 312, Type IV asphalt	-	*JM TPO*	*MBA*	**-105 (Lim. 9)**
C-A-8	OPTIONAL *VB SAR*, *VB DynaBase HW,* or *VB DynaWeld Base*	Min. 1.5-inch *E3* or ProtectoR Foam in *OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	-	*JM TPO FB*	*RSUA* applied 4-inch o.c.; or *2-Part UIA-C(S)*	**-112.5 (Lim 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Assemblies over *Concrete Deck* (New or Existing)						
System No.	Vapor Barrier	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
C-A-9		Min. 1.5-inch ENRGY 3 CGF, ENRGY 3 FR or ProtectoR Foam in *2-Part UIA* applied 12-inch o.c.	-	*JM TPO*	*TPO WBMA*, *ASBA,* or *MBA*	**-142.5 (Lim. 9)**
C-A-10	- OPTIONAL *VB DynaBase HW* or *VB DynaWeld Base*	Min. 1.5-inch ENRGY 3 in *OSFA*, *RSUA* or *2-Part UIA;* applied 12-inch o.c.	Min. 1-inch ENRGY 3 in *OSFA*, *RSUA* or *2-Part UIA;* applied 12-inch o.c.	*JM TPO*	*ASBA* or *MBA*	**-157.5 (Lim. 9)**
C-A-11	-	Min. 1.5-inch ENRGY 3 or ProtectoR Foam applied in *2-Part UIA* at 12-inch o.c.	-	*JM TPO*	*TPO WBMA* or *ASBA*	**-165 (Lim. 9)**
C-A-12		Min. 1.5-inch *E3* or ProtectoR Foam in *2-Part UIA* applied 12-inch o.c.	-	*JM TPO*	*LVOC MA*	**-172.5 (Lim. 9)**
C-A-13	-	OPTIONAL Min. 1.5-inch ENRGY 3, ENRGY 3 CGF or ENRGY 3 FR in *2-Part UIA* applied 12-inch o.c.	*SECUROCK* in *2-Part UIA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA*, *ASBA*, *1168*, or *MBA*	**-180 (Lim. 9)**
C-A-14		OPTIONAL Min. 1.5-inch ENRGY 3, ENRGY 3 CGF or ENRGY 3 FR in *2-Part UIA* applied 12-inch o.c.	*DEXcell CB* or *DEXcell FA* in *2-Part UIA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA* or *ASBA*	**-180 (Lim. 9)**
C-A-15	- OPTIONAL *VB DynaBase HW* or *VB DynaWeld Base*	Min. 1-inch ENRGY 3, in *OSFA*, *RSUA* or *2-Part UIA;* applied 12-inch o.c.	*ProtectoR* in *OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA*, *ASBA*, or *MBA*	**-187.5 (Lim. 9)**
C-A-16		Min. 1.5-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR, or ProtectoR Foam in *2-Part UIA* applied 12-inch o.c.	-	*JM TPO FB*	*TPO WBMA*	**-187.5 (Lim. 9)**
C-A-17		Min. 1.5-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR, or ProtectoR Foam in *2-Part UIA* applied 12-inch o.c.	-	*JM TPO*	*TPO WBMA* (Two-sided application only) or *ASBA*	**-195 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Assemblies over *Concrete Deck* (New or Existing)						
System No.	Vapor Barrier	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
C-A-18	DynaWeld Base over deck primed with ASTM D 41 primer	Min. 0.5-inch *E3 C1* or *E3* (less ENRGY 3 FR) in *2-Part UIA, RSUA,* or *OSFA* applied12-inch o.c.	*DensDeck Prime* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-195 (Lim. 9)**
C-A-19	-	Min. 1.5-inch ENRGY 3, in *OSFA* or *RSUA* applied 12-inch o.c.	*ProtectoR* in *OSFA* or *RSUA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: LVOC MA* or *MBA* *JM TPO FB: 2-Part UIA-C(S)*	**-210 (Lim. 9)**
C-A-20	-	Min. 1.5-inch ENRGY 3, in *OSFA* or *RSUA* applied 12-inch o.c.	*ProtectoR* in *OSFA* or *RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-210 (Lim. 9)**
C-A-21	-	Min. 1.5-inch ENRGY 3 in *OSFA*, *RSUA* or *2-Part UIA;* applied 12-inch o.c.	*DEXcell FA* in *OSFA or RSUA;* applied 12-inch o.c.	*JM TPO*	*ASBA*	**-217.5 (Lim. 9)**
C-A-22	-	Min. 1.5-inch ENRGY 3 in *OSFA*, *RSUA* or *2-Part UIA;* applied 12-inch o.c.	ProtectoR HD in *OSFA*, *RSUA* or *2-Part UIA;* applied 12-inch o.c.	*JM TPO*	*ASBA* or *MBA*	**-225 (Lim. 9)**
C-A-23	-	Min. 1-inch ENRGY 3 in *OSFA*, *RSUA* or *2-Part UIA;* applied 12-inch o.c.	*DensDeck Prime* in *OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA*, *ASBA,* or *1168*	**-232.5 (Lim. 9)**
C-A-24	DynaBase HW	*SECUROCK* in *RSUA* applied 12-inch o.c.	-	*JM TPO SA*	Self-adhered	**-247.5 (Lim. 9)**
C-A-25	DynaBase HW torch adhered over deck primed with ASTM D 41 primer	Min. 1.5-inch ENRGY 3 CGF in *RSUA* applied 12-inch o.c.	*SECUROCK* in *RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-247.5 (Lim. 9)**
C-A-26	-	*SECUROCK* in *2-Part UIA, OSFA,* or *RSUA* applied 12-inch o.c.	-	*JM TPO SA*	Self-adhered	**-247.5 (Lim. 9)**
C-A-27	DynaWeld Cap over deck primed with ASTM D 41 primer	Min. 0.5-inch *E3 C1* or *E3* (less ENRGY 3 FR) in *2-Part UIA, RSUA,* or *OSFA* applied12-inch o.c.	*DensDeck Prime* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-247.5 (Lim. 9)**
C-A-28	-	*INVINSA* in *2-Part UIA, OSFA,* or *RSUA* applied 12-inch o.c.	-	*JM TPO*	*TPO WBMA* (Two-sided application only) or *ASBA*	**-255 (Lim. 9)**
C-A-29	-	*INVINSA* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	-	*JM TPO FB*	*TPO WBMA*	**-277.5 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Assemblies over *Concrete Deck* (New or Existing)						
System No.	Vapor Barrier	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
C-A-30	-	Min. 1.5-inch ENRGY 3 in *2-Part UIA-C(B)* applied 12-inch o.c.	-	*JM TPO FB*	*2-Part UIA-C(S)*	**-277.5 (Lim. 9)**
C-A-31	DynaBase HW	*SECUROCK* in *RSUA* applied 12-inch o.c.	-	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA* (Two-sided application only), *LVOC MA, ASBA*, or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-292.5 (Lim. 9)**
C-A-32	DynaBase HW torch adhered over deck primed with ASTM D 41 primer	Min. 1.5-inch ENRGY 3 CGF in *RSUA* applied 12-inch o.c.	*SECUROCK* in *RSUA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA* (Two-sided application only), *LVOC MA*, *ASBA*, or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-292.5 (Lim. 9)**
C-A-33	-	Min. 1.5-inch *E3* or ProtectoR Foam in *2-Part UIA* applied 12-inch o.c.	-	*JM TPO*	*MBA*	**-322.5 (Lim. 9)**
C-A-34	-	*DEXcell CB* in *2-Part UIA* or OlyBond 500 applied 12-inch o.c.	-	*JM TPO FB*	*TPO WBMA*	**-322.5 (Lim. 9)**
C-A-35	-OPTIONAL DynaGrip SD/SA over deck primed with ASTM D 41 primer	Min. 1-inch *E3 C1* or *E3* (less ENRGY 3 FR) in *2-Part UIA, RSUA,* or *OSFA* applied12-inch o.c.	*DensDeck Prime* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-337.5 (Lim. 9)**
C-A-36	-	*SECUROCK* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	-	*JM TPO FB*	*TPO WBMA* or *2-Part UIA-C(S)*	**-345 (Lim. 9)**
C-A-37	-	*SECUROCK* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	-	*JM TPO*	*LVOC MA*	**-360 (Lim. 9)**
C-A-38	-	*DEXcell CB* or *DEXcell FA* in *2-Part UIA* or OlyBond 500 applied 12-inch o.c.	-	*JM TPO*	*LVOC MA*, *TPO WBMA* (Two-sided application only), *MBA*, or *1168* (*DEXcell FA* only)	**-390 (Lim. 9)**
C-A-39	-	*DEXcell FA* in *2-Part UIA* or OlyBond 500 applied 12-inch o.c.	-	*JM TPO SA*	Self-adhered	**-390 (Lim. 9)**
C-A-40	-	*DEXcell FA* in *2-Part UIA* or OlyBond 500 applied 12-inch o.c.	-	*JM TPO*	*ASBA*	**-390 (Lim. 9)**
C-A-41	-	*DEXcell FA* in *2-Part UIA* or OlyBond 500 applied 12-inch o.c.	-	*JM TPO FB*	*TPO WBMA* or *2-Part UIA-C(S)*	**-390 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Assemblies over *Concrete Deck* (New or Existing)						
System No.	Vapor Barrier	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
C-A-42	-	*DEXcell FA* in *2-Part UIA* or OlyBond 500 applied 12-inch o.c.	-	*JM TPO HFB*	ASTM D 312, Type IV Asphalt	**-390 (Lim. 9)**
C-A-43	-	-	-	*JM TPO FB*	*2-Part UIA-C(S)*	**-457.5 (Lim. 9)**
C-A-44	-	*SECUROCK* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	-	*JM TPO*	*TPO WBMA*	**-465 (Lim. 9)**
C-A-45	-	*INVINSA* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	-	*JM TPO*	*MBA* applied 0.83 gal/100ft^2	**-465 (Lim. 9)**
C-A-46	-	*SECUROCK* in *2-Part UIA, OSFA* or *RSUA* applied 12-inch o.c.	-	*JM TPO FB*	*2-Part UIA-C(S)*	**-465 (Lim. 9)**
C-A-47	-	*SECUROCK* in *2-Part UIA, OSFA,* or *RSUA* applied 12-inch o.c.	-	*JM TPO*	*MBA* applied 0.83 gal/100ft^2	**-495 (Lim. 9)**
C-A-48	-	-	-	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-502.5 (Lim. 9)**

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-1	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.375-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2 or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-45 (Lim. 7; Non-HVHZ)**
C-AM-2	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 4.0ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-45 (Lim. 7; Non-HVHZ)**
C-AM-3	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*AP Fasteners & Plates* secured 1 fastener per 2.0ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2, *TPO WBMA*, *ASBA* or *LVOC MA*	**-45 (Lim. 7; Non-HVHZ)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-4	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 2.0ft^2	*RetroPlus*	*RSUA* or *2-Part UIA* applied 12-inch o.c	*JM TPO*	*MBA*	**-45 (Lim. 7; Non-HVHZ)**
C-AM-5	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	ProtectoR HD	*RSUA* or *2-Part UIA* applied 12-inch o.c	*JM TPO SA*	Self-adhered	**-45 (Lim. 7)**
C-AM-6	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	ProtectoR HD	*RSUA* or *2-Part UIA* applied 12-inch o.c	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*; *MBA* applied at 0.83 gal/100ft^2; *LVOC MA* or *ASBA* *JM TPO FB: RSUA* applied 12-inch o.c., *2-Part UIA-C(S)* or *TPO WBMA*	**-45 (Lim. 7)**
C-AM-7	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	*ProtectoR*	*AP Fasteners & Plates (Square)* secured 1 fastener per 4ft^2	*JM TPO SA*	Self-adhered	**-45 (Lim. 9)**
C-AM-8	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	*ProtectoR*	*AP Fasteners & Plates (Square)* secured 1 fastener per 4ft^2	JM TPO (Min. 60 mil) or *JM TPO FB*	*JM TPO: TPO WBMA*; *MBA* applied at 0.83 gal/100ft^2; *LVOC MA* or *ASBA* *JM TPO FB: RSUA* applied 12-inch o.c., *2-Part UIA-C(S)* or *TPO WBMA*	**-45 (Lim. 9)**
C-AM-9	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 4.0ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-45 (Lim. 7)**
C-AM-10	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 4.0ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-45 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-11	OPTIONAL *Vapor Barrier*	Min. 2-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1ft^2	Min. 1.5-inch ENRGY 3	*OSFA*, *RSUA* or *2-Part UIA* applied 4-inch o.c.	*JM TPO FB*	*TPO WBMA* or *RSUA* applied 12-inch o.c.	**-45 (Lim. 7)**
C-AM-12	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-52.5 (Lim. 7)**
C-AM-13	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
C-AM-14	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-52.5 (Lim. 7)**
C-AM-15	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
C-AM-16	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured at a rate of 1 fastener per 1.45ft^2	JM Invinsa	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-52.5 (Lim. 7)**
C-AM-17	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured at a rate of 1 fastener per 1.45ft^2	JM Invinsa or ProtectoR HD	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
C-AM-18	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO*	*MBA* applied 0.83 gal/100ft^2 to both membrane and substrate, *TPO WBMA* or *ASBA*	**-52.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-19	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-52.5 (Lim. 7)**
C-AM-20	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
C-AM-21	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO*	*MBA* applied 0.83 gal/100ft^2 to both membrane and substrate or *TPO WBMA*	**-52.5 (Lim. 7)**
C-AM-22	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
C-AM-23	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	Base Ply: DynaBase HW Membrane: *JM TPO HFB*	Base Ply: Torch Adhered Membrane: ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
C-AM-24	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
C-AM-25	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	Base Ply: DynaBase HW Membrane: *JM TPO HFB*	Base Ply: Torch Adhered Membrane: ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
C-AM-26	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch *E3*	*AP Fasteners & Plates* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
C-AM-27	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
C-AM-28	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA* applied at 0.83 gal/100ft^2; *LVOC MA*, or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-52.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-29	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA, LVOC MA, ASBA* or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-52.5 (Lim. 7)**
C-AM-30	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
C-AM-31	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
C-AM-32	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured at a rate of 1 fastener per 1.78ft^2	Min 1/2-inch *SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-60 (Lim. 7)**
C-AM-33	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured at a rate of 1 fastener per 1.78ft^2	Min 1/2-inch *SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-60 (Lim. 7)**
C-AM-34	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-60 (Lim. 7)**
C-AM-35	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.00ft^2	*JM TPO SA*	Self-adhered	**-60 (Lim. 7)**
C-AM-36	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch *E3* or ProtectoR Foam	*AP Fasteners & Plates* secured 1 fastener per 1.78ft^2	*JM TPO*	*LVOC MA*	**-60 (Lim. 7)**
C-AM-37	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-60 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-38	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch *E3*	*AP Fasteners & Plates* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-60 (Lim. 7)**
C-AM-39	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-60 (Lim. 7)**
C-AM-40	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA*, *LVOC MA*, or *ASBA* *JM TPO FB: 2-Part UIA-C(S)*	**-60 (Lim. 7)**
C-AM-41	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1.6ft^2	Min. 1.5-inch *E3* or *E3 C1*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-60 (Lim. 7)**
C-AM-42	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3	*AP Fasteners & Plates* secured 1 fastener per 1.6ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-60 (Lim. 7)**
C-AM-43	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*AP Fasteners & Plates* secured 1 fastener per 1ft^2	*SECUROCK,* or JM Invinsa	*RSUA* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-67.5 (Lim. 7)**
C-AM-44	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured at a rate of *24 per 4-ft x 8-ft Board*	Min. 1/2-inch *SECUROCK*	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*TPO WBMA*	**-67.5 (Lim. 7)**
C-AM-45	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min 1.5-inch ENRGY 3	*AP Fasteners & Plates* secured at a rate of *24 per 4-ft x 8-ft Board*	Min. 1/2-inch *SECUROCK*	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-67.5 (Lim. 7)**
C-AM-46	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate, *TPO WBMA* or *ASBA*	**-67.5 (Lim. 7)**
C-AM-47	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO SA*	Self-adhered	**-67.5 (Lim. 7)**
C-AM-48	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENERGY 3 or ProtectoR Foam	*AP Fasteners & Plates s* secured 1 fastener per 2ft^2	*JM TPO*	*MBA* or *LVOC MA* applied at 1.1 gal/100ft^2, *TPO WBMA* (two-sided application only) or *ASBA*	**-67.5 (Lim. 7)**
C-AM-49	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENERGY 3	*AP Fasteners & Plates* secured 1 fastener per 2ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-67.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-50	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO*	*TPO WBMA*, *ASBA*, or *MBA*	**-67.5 (Lim. 7)**
C-AM-51	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1.6ft^2	Min. 0.5-inch ProtectoR HD, *DEXcell FA,* or *SECUROCK*	*OSFA, RSUA, 2-Part UIA-C(B)* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*RSUA* 6-inch o.c.	**-67.5 (Lim. 7)**
C-AM-52	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.5-inch DensDeck Prime	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA, LVOC MA, ASBA,* or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-67.5 (Lim. 7)**
C-AM-53	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.5-inch DensDeck Prime	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-67.5 (Lim. 7)**
C-AM-54	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.5-inch DensDeck Prime	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-67.5 (Lim. 7)**
C-AM-55	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* at a rate of 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-75 (Lim. 7)**
C-AM-56	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* at a rate of 1 fastener per 1.33ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA* applied 0.83 gal/100ft^2, *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-75 (Lim. 7)**
C-AM-57	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)*, *E3 C1,* or ProtectoR Foam	*AP Fasteners & Plates* secured 1 fastener per 1.6ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.1 gal/100ft^2, *TPO WBMA* (two-sided application only) or *ASBA*	**-75 (Lim. 7)**
C-AM-58	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)* or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1.6ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-75 (Lim. 7)**
C-AM-59	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch Invinsa Foam	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA*, or *ASBA*	**-75 (Lim. 7)**
C-AM-60	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch Invinsa Foam	*AP Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO SA*	Self-adhered	**-75 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-61	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA*, or *ASBA*	**-75 (Lim. 7)**
C-AM-62	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-75 (Lim. 7)**
C-AM-63	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*TPO WBMA*, *ASBA*, or *MBA*	**-82.5 (Lim. 7)**
C-AM-64	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-82.5 (Lim. 7)**
C-AM-65	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
C-AM-66	OPTIONAL *Vapor Barrier*	Min. 1-inch *E3*	Simultaneously secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO*	*MBA, LVOC MA,* or *ASBA*	**-82.5 (Lim. 7)**
C-AM-67	OPTIONAL *Vapor Barrier*	Min. 1-inch *E3*	Simultaneously secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
C-AM-68	OPTIONAL *Vapor Barrier*	Min. 1-inch *E3*	Simultaneously secured with top layer	ProtectoR HD	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-82.5 (Lim. 7)**
C-AM-69	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1.6ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO*	*TPO WBMA*, *MBA*, *LVOC MA,* or *ASBA*	**-82.5 (Lim. 7)**
C-AM-70	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plate* secured 1 fastener per 1.6ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
C-AM-71	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plate* secured 1 fastener per 1.6ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B)* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-82.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-72	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plate* secured 1 fastener per 1.6ft^2	Min. 0.5-inch *DensDeck Prime, DEXcell FA*, or *SECUROCK*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO*	*ASBA, TPO WBMA, MBA* or *LVOC MA*	**-82.5 (Lim. 7)**
C-AM-73	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plate* secured 1 fastener per 1.6ft^2	Min. 0.5-inch *DensDeck Prime, DEXcell FA*, or *SECUROCK*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
C-AM-74	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plate* secured 1 fastener per 1.6ft^2	Min. 1.5-inch *E3* or *E3 C1*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO*	*ASBA, TPO WBMA, MBA* or *LVOC MA*	**-82.5 (Lim. 7)**
C-AM-75	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plate* secured 1 fastener per 1.6ft^2	Min. 1.5-inch *E3* or *E3 C1*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
C-AM-76	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.625-inch *DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA, MBA, LVOC MA, ASBA,* or *1168* *JM TPO FB: TPO WBMA*	**-90 (Lim. 7)**
C-AM-77	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.625-inch *DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-90 (Lim. 7)**
C-AM-78	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.625-inch *DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-90 (Lim. 7)**
C-AM-79	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate or *TPO WBMA*	**-105 (Lim. 7)**
C-AM-80	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-105 (Lim. 7)**
C-AM-81	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DEXcell FA*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA,* or *ASBA*	**-105 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Concrete Deck* (New, Existing, or *Recover*)								
System No.	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-AM-82	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA, ASBA*, or *1168*	**-112.5 (Lim. 7)**
C-AM-83	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO SA*	Self-adhered	**-112.5 (Lim. 7)**
C-AM-84	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF), E3 C1,* or ProtectoR Foam	*AP Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.1 gal/100ft^2 or *TPO WBMA* (Two-sided application only)	**-120 (Lim. 7)**
C-AM-85	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)* or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-120 (Lim. 7)**
C-AM-86	OPTIONAL *Vapor Barrier*	Min. 2-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1ft^2	Min. 1.5-inch ENRGY 3	*OSFA*, *RSUA* or *2-Part UIA* applied 4-inch o.c.	*JM TPO*	*TPO WBMA* (rate 0.6-0.8 gal/100-ft^2 for one-sided and two-sided application), *MBA*, or *LVOC MA*	**-120 (Lim. 7)**
C-AM-87	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 4-inch o.c.	*JM TPO*	*TPO WBMA, MBA*, *LVOC MA,* or *ASBA*	**-120 (Lim. 7)**
C-AM-88	OPTIONAL *Vapor Barrier*	Min. 2-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR or *E3 C1*	*AP Fasteners & Plates* secured 1 fastener per 1ft^2	Min. 1.5-inch ENRGY 3	*OSFA*, *RSUA* or *2-Part UIA* applied 4-inch o.c.	*JM TPO*	*ASBA* or *MBA*	**-127.5 (Lim. 7)**
C-AM-89	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DEXcell FA*	*AP Fasteners & Plates* secured 1 fastener per 1ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-135 (Lim. 7)**
C-AM-90	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO* or *JM TPO FB*	*TPO WBMA* (Two-sided application only for *JM TPO*)	**-150 (Lim. 7)**
C-AM-91	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO SA*	Self-adhered	**-150 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Mechanically Fastened Assemblies over *Concrete Deck* (New or Existing)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-M-1	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 12-inch o.c. with JM All Purpose Fasteners and JM High Load Plus Plates; Fastener rows max. 114-inch o.c.	**-30 (Lim. 7; Non-HVHZ)**
C-M-2	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**-30 (Lim. 7; Non-HVHZ)**
C-M-3	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**
C-M-4	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 66-inch .c.	**(-45 Lim. 7)**
C-M-5	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 12-inch o.c. with JM All Purpose Fasteners and JM High Load Plus Plates; Fastener rows max. 90-inch o.c.	**-45 (Lim. 7)**
C-M-6	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-45 (Lim. 7)**
C-M-7	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-45 (Lim. 7)**
C-M-8	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-52.5 (Lim. 7)**
C-M-9	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-60 (Lim. 7)**
C-M-10	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-60 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Mechanically Fastened Assemblies over *Concrete Deck* (New or Existing)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-M-11	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**(-60 Lim. 7)**
C-M-12	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-75 (Lim. 7)**
C-M-13	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 54-inch o.c.	**-97.5 (Lim. 7)**
C-M-14	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 66-inch o.c.	**(-105 Lim. 7)**

Induction Welded Assemblies over *Concrete Deck* (New, Existing, or *Recover*)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-W-1	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM All Purpose Fasteners and JM TPO RhinoPlates at a rate of *8 per 4-ft x 8-ft board Pattern #1 (1 fastener per 4.0-ft^2)*	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7)**
C-W-2	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	JM TPO RhinoPlates fastened 12-inch o.c. with JM All Purpose Fasteners; Fastener rows max. 72-inch o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7)**
C-W-3	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#14* or *ISOWELD-#15* at a rate of 1 fastener per 4.0-ft^2	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**
C-W-4	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#14* or *ISOWELD-#15* spaced 24” o.c. in rows 24” o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**
C-W-5	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#14* or *ISOWELD-#15* spaced 12” o.c. in rows 60” o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Induction Welded Assemblies over *Concrete Deck* (New, Existing, or *Recover*)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-W-6	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#14* or *ISOWELD-#15* spaced in a *2-ft x 3-ft staggered grid*	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**
C-W-7	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM All Purpose Fasteners and JM TPO RhinoPlates at a rate of *6 per 4-ft x 8-ft board Pattern #2* (1 fastener per 5.33-ft^2); Board installed with 6-inch stagger from preceding course	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-52.5 (Lim. 7)**
C-W-8	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#14* or *ISOWELD-#15* spaced in a *2-ft x 2-ft staggered grid*	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-60 (Lim. 7)**
C-W-9	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM All Purpose Fasteners and JM TPO RhinoPlates at a rate of *8 per 4-ft x 8-ft board Pattern #2* (1 fastener per 4.0-ft^2); Board installed with 6-inch stagger from preceding course	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-67.5 (Lim. 7)**
C-W-10	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM All Purpose Fasteners and JM TPO RhinoPlates at a rate of 12 per 4-ft x 8-ft board (1 fastener per 2.67-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-75 (Lim. 7)**
C-W-11	*INSULATION*	*Preliminarily Secured or secured with top layer*	OPTIONAL Cover Board	Attached with *ISOWELD-#14* or *ISOWELD-#15* at a rate of 1 fastener per 3.2-ft^2	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-75 (Lim. 7)**
C-W-12	*INSULATION*	*Preliminarily Secured or secured with top layer*	OPTIONAL Cover Board	Attached with *ISOWELD-#14* or *ISOWELD-#15* spaced in a *1.5-ft x 2-ft staggered grid*	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-82.5 (Lim. 7)**
C-W-13	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM All Purpose Fasteners and JM TPO RhinoPlates in a 24-inch by 16-inch grid pattern	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-90 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Induction Welded Assemblies over *Concrete Deck* (New, Existing, or *Recover*)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
C-W-14	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM All Purpose Fasteners and JM TPO RhinoPlates at a rate of 15 per 4-ft x 8-ft board (1 fastener per 2.13-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-90 (Lim. 7)**
C-W-15	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM All Purpose Fasteners and JM TPO RhinoPlates at a rate of 12 per 4-ft x 8-ft board (1 fastener per 2.67-ft^2); Board installed with 6-inch stagger from preceding course	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-90 (Lim. 7)**
C-W-16	*INSULATION*	*Preliminarily Secured or secured with top layer*	OPTIONAL Cover Board	Attached with *ISOWELD-#14* or *ISOWELD-#15* spaced 18" o.c. in rows 18" o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-97.5 (Lim. 7)**
C-W-17	*INSULATION*	*Preliminarily Secured or secured with top layer*	OPTIONAL Cover Board	Attached with *ISOWELD-#14* or *ISOWELD-#15* spaced 6" o.c. in rows 60" o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-97.5 (Lim. 7)**

Adhered Assemblies over Cementitious Wood Fiber Deck (New or Existing)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
CW-A-1	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* or *RSUA* applied 12-inch o.c.	JM Invinsa or Protector R HD	*OSFA*, *2-Part UIA,* or *RSUA* applied 12-inch o.c.	*JM TPO FB*	*RSUA* applied 12-inch o.c., *TPO WBMA*	**-122.5 (Lim. 9)**
CW-A-2	Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	OPTIONAL *SECUROCK*	*RSUA, OSFA,* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA*, or *MBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-135 (Lim. 9)**
CW-A-3	Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	OPTIONAL *SECUROCK*	*RSUA, OSFA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-135 (Lim. 9)**
CW-A-4	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*SECUROCK*	*RSUA, OSFA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: LVOC MA*, *ASBA*, *1168*, or *MBA* *JM TPO FB: RSUA* applied 12-inch o.c.	**-140 (Lim. 9)**
CW-A-5	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*SECUROCK*	*RSUA, OSFA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-140 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Assemblies over Cementitious Wood Fiber Deck (New or Existing)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
CW-A-6	*SECUROCK*	*RSUA, OSFA,* or *2-Part UIA* applied 12-inch o.c.	-	-	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA LVOC MA*, *ASBA, 1168*, or *MBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-157.5 (Lim. 9)**
CW-A-7	*SECUROCK*	*RSUA, OSFA,* or *2-Part UIA* applied 12-inch o.c.	-	-	*JM TPO SA*	Self-adhered	**-157.5 (Lim. 9)**
CW-A-8	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*OSFA* applied 12-inch o.c.	-	-	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC*, *ASBA*, or *MBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-157.5 (Lim. 9)**
CW-A-9	JM Invinsa	*RSUA* applied 12-inch o.c.	-	-	*JM TPO FB*	*TPO WBMA*	**-160 (Lim. 9)**
CW-A-10	Min. 475 psi Celcore MF with HS Rheology Admixture installed	Poured-in-place	-	-	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-167.5 (Lim. 9)**
CW-A-11	Min. 475 psi Celcore MF with HS Rheology Admixture installed	Poured-in-place	-	-	*JM TPO FB*	*RSUA* applied 4-inch o.c.	**-197.5 (Lim. 9)**

Assemblies with All Layers Adhered over Gypsum Deck (New or Existing)							
System No.	Base Sheet or Insulation	Base Sheet or Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
G-A-1	Min. 1.5-inch *E3* (no FR) or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c.	-	-	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA*, or *MBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-75 (Lim. 9)**
G-A-2	Min. 1.5-inch *E3* (no FR)	*2-Part UIA* applied 12-inch o.c.	JM Invinsa	*2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate or *ASBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-75 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with All Layers Adhered over Gypsum Deck (New or Existing)							
System No.	Base Sheet or Insulation	Base Sheet or Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
G-A-3	Min. 1.5-inch *E3* (no FR)	*2-Part UIA* applied 12-inch o.c.	ProtectoR HD	*2-Part UIA* applied 12-inch o.c.	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate or *ASBA*	**-75 (Lim. 9)**
G-A-4	Min. 1.5-inch *E3* (no FR)	*2-Part UIA* applied 12-inch o.c.	JM Invinsa or ProtectoR HD	*2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-75 (Lim. 9)**
G-A-5	Min. 1.5-inch *E3* (no FR)	*2-Part UIA* applied 12-inch o.c.	*SECUROCK*	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA*, *1168*, or *MBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-75 (Lim. 9)**
G-A-6	Min. 1.5-inch *E3* (no FR)	*2-Part UIA* applied 12-inch o.c.	*SECUROCK*	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-75 (Lim. 9)**
G-A-7	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*OSFA* applied 12-inch o.c.	-	-	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA*, or *MBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-77.5 (Lim. 9)**
G-A-8	Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	JM Invinsa	*OSFA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-77.5 (Lim. 9)**
G-A-9	Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	ProtectoR HD	*OSFA* applied 12-inch o.c.	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate or *ASBA*	**-77.5 (Lim. 9)**
G-A-10	Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	JM Invinsa or ProtectoR HD	*OSFA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-77.5 (Lim. 9)**
G-A-11	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*SECUROCK*	*RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA, ASBA, 1168*, or *MBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-77.5 (Lim. 9)**
G-A-12	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*SECUROCK*	*RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-77.5 (Lim. 9)**
G-A-13	-	-	-	-	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-85 (Lim. 9)**
G-A-14	Min. 1.5-inch *E3* (no FR) or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c.	-	-	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-90 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with All Layers Adhered over Gypsum Deck (New or Existing)							
System No.	Base Sheet or Insulation	Base Sheet or Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
G-A-15	JM Invinsa	*OSFA* applied 12-inch o.c.	-	-	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2 or *ASBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-92.5 (Lim. 9)**
G-A-16	Min. 1.5-inch *E3* or ProtectoR Foam	*OSFA* applied 12-inch o.c.	-	-	*JM TPO FB*	*TPO WBMA* or *2-Part UIA-C(S)*	**-150 (Lim. 9; Non-HVZH)**
G-A-17	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*OSFA* applied 12-inch o.c.	-	-	*JM TPO*	*MBA* applied at 0.55 gal/100ft^2	**-150 (Lim. 9; Non-HVZH)**
G-A-18	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*ProtectoR*	*OSFA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *MBA* or *ASBA* *JM TPO FB: 2-Part UIA-C(S)*	**-150 (Lim. 9; Non-HVZH)**
G-A-19	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*ProtectoR*	*OSFA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-150 (Lim. 9; Non-HVZH)**
G-A-20	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*DensDeck Prime*	*OSFA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *MBA*, *ASBA,* or *1168* *JM TPO FB: 2-Part UIA-C(S)*	**-150 (Lim. 9; Non-HVZH)**
G-A-21	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*DensDeck Prime*	*OSFA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-150 (Lim. 9; Non-HVZH)**
G-A-22	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*DensDeck Prime*	*OSFA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312, Type IV Asphalt	**-150 (Lim. 9; Non-HVZH)**
G-A-23	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*SECUROCK*	*OSFA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-150 (Lim. 9; Non-HVZH)**
G-A-24	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*SECUROCK*	*OSFA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA*, *1168*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-150 (Lim. 9; Non-HVZH)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with All Layers Adhered over Gypsum Deck (New or Existing)							
System No.	Base Sheet or Insulation	Base Sheet or Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
G-A-25	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*SECUROCK*	*OSFA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312, Type IV Asphalt	**-150 (Lim. 9; Non-HVZH)**
G-A-26	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*INVINSA*	*OSFA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2 *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-150 (Lim. 9; Non-HVZH)**
G-A-27	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*DEXcell CB*	*OSFA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO*: *TPO MA (LowVOC)*, *LVOC MA*, *TPO WBMA*, *MBA* or *ASBA* *JM TPO FB: TPO WBMA*	**-150 (Lim. 9; Non-HVZH)**
G-A-28	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*DEXcell FA*	*OSFA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO MA (LowVOC)*, *LVOC MA*, *TPO WBMA*, *MBA*, *ASBA*, or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-150 (Lim. 9; Non-HVZH)**
G-A-29	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*DEXcell FA*	*OSFA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-150 (Lim. 9; Non-HVZH)**
G-A-30	OPTIONAL Min. 1.5-inch ENRGY 3	*OSFA* applied 12-inch o.c.	*DEXcell FA*	*OSFA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312, Type IV Asphalt	**-150 (Lim. 9; Non-HVZH)**
G-A-31	-	-	-	-	*JM TPO FB*	*RSUA* applied 6-inch o.c.	**-155 (Lim. 9)**
G-A-32	Min. 1.5-inch *E3* or ProtectoR Foam	*RSUA* applied 12-inch o.c.	-	-	*JM TPO FB*	*TPO WBMA* or *2-Part UIA-C(S)*	**-187.5 (Lim. 9; Non-HVHZ)**
G-A-33	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*ProtectoR*	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *MBA* or *ASBA* *JM TPO FB: 2-Part UIA-C(S)*	**-187.5 (Lim. 9; Non-HVHZ)**
G-A-34	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*ProtectoR*	*RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-187.5 (Lim. 9; Non-HVHZ)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with All Layers Adhered over Gypsum Deck (New or Existing)							
System No.	Base Sheet or Insulation	Base Sheet or Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
G-A-35	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*DensDeck Prime*	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *MBA*, *ASBA,* or *1168* *JM TPO FB: 2-Part UIA-C(S)*	**-210 (Lim. 9; Non-HVHZ)**
G-A-36	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*DensDeck Prime*	*RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-210 (Lim. 9; Non-HVHZ)**
G-A-37	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*DensDeck Prime*	*RSUA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312, Type IV Asphalt	**-210 (Lim. 9; Non-HVHZ)**
G-A-38	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*SECUROCK*	*RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-210 (Lim. 9; Non-HVHZ)**
G-A-39	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*SECUROCK*	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA* (Two-sided application only), *LVOC MA*, *ASBA*, *1168*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-210 (Lim. 9; Non-HVHZ)**
G-A-40	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*SECUROCK*	*RSUA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312, Type IV Asphalt	**-210 (Lim. 9; Non-HVHZ)**
G-A-41	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*INVINSA*	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2 *JM TPO FB: TPO WBMA*	**-210 (Lim. 9; Non-HVHZ)**
G-A-42	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*DEXcell CB*	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO*: *TPO MA (LowVOC)*, *LVOC MA*, *TPO WBMA* (Two-sided application only) or *MBA* *JM TPO FB: TPO WBMA*	**-210 (Lim. 9; Non-HVHZ)**
G-A-43	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*DEXcell FA*	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO MA (LowVOC)*, *LVOC MA*, *TPO WBMA* (Two-sided application only), *MBA*, *ASBA,* or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-210 (Lim. 9; Non-HVHZ)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with All Layers Adhered over Gypsum Deck (New or Existing)							
System No.	Base Sheet or Insulation	Base Sheet or Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
G-A-44	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*DEXcell FA*	*RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-210 (Lim. 9; Non-HVHZ)**
G-A-45	OPTIONAL Min. 1.5-inch ENRGY 3	*RSUA* applied 12-inch o.c.	*DEXcell FA*	*RSUA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312, Type IV Asphalt	**-210 (Lim. 9; Non-HVHZ)**
G-A-46	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*RSUA* applied 12-inch o.c.	-	-	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.55 gal/100ft^2 *JM TPO FB: 2-Part UIA-C(S)*	**-210 (Lim. 9; Non-HVZH)**

Assemblies with Adhered Membranes over Insulated Gypsum Deck (New or Existing)							
System No.	Base Insulation	Base Insulation Attachment	Top Insulation or Base Sheet	Top Insulation or Base Sheet Attachment	Membrane	Membrane Attachment	*MDP* (psf)
G-AM-1	-	-	PermaPly 28	Min, 1.8-inch JM UltraLok Fastener secured 7-inch o.c. at the lap and 7-inch o.c. in two (2) equally spaced and staggered rows in the field	*JM TPO HFB*	ASTM D 312, Type IV hot asphalt	**-52.5 (Lim. 7)**

Adhered Lightweight Concrete Assemblies over *Concrete Deck* (New or Existing)						
System No.	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LC-A-1	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2, *TPO WBMA* (two-sided application only), *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-77.5 (Lim. 9)**
LC-A-2	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-77.5 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Lightweight Concrete Assemblies over *Concrete Deck* (New or Existing)						
System No.	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LC-A-3	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 CGF Top Layer: *SECUROCK*	Base and Top layer secured with *RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA ASBA*, *1168*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-77.5 (Lim. 9)**
LC-A-4	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 CGF Top Layer: *SECUROCK*	Base and Top layer secured with *RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-77.5 (Lim. 9)**
LC-A-5	Min. 300 psi *LWIC*	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2, *TPO WBMA, LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-80 (Lim. 9)**
LC-A-6	Min. 300 psi *LWIC*	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-80 (Lim. 9)**
LC-A-7	Min. 300 psi *LWIC*	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA, ASBA, 1168*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-80 (Lim. 9)**
LC-A-8	Min. 300 psi *LWIC*	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-80 (Lim. 9)**
LC-A-9	Min. 383.5 psi Celcore MF with HS Rheology Admixture installed over OPTIONAL JM Vapor Barrier SA, DynaBase HW, or DynaWeld 180 S over ASTM D 41 primed concrete	-	-	*JM TPO FB*	*RSUA* applied 6-inch o.c.	**-112.5 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Lightweight Concrete Assemblies over *Concrete Deck* (New or Existing)						
System No.	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LC-A-10	Min. 700psi cellular lightweight concrete (*MCRF* = 152lbf with JM Lightweight Concrete (LWC) CR Base Fasteners)	-	-	*JM TPO FB*	*2-Part UIA-C(S)* or *WBMA*	**-180 (Lim. 9)**
LC-A-11	Min. 310 psi Elastizell with Zell-Crete Fibers	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2, *TPO WBMA* , *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-130 (Lim. 9)**
LC-A-12	Min. 310 psi Elastizell with Zell-Crete Fibers	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c	*JM TPO SA*	Self-adhered	**-130 (Lim. 9)**
LC-A-13	Min. 310 psi Elastizell with Zell-Crete Fibers	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA, 1168,* or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-130 (Lim. 9)**
LC-A-14	Min. 310 psi Elastizell with Zell-Crete Fibers	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-130 (Lim. 9)**
LC-A-15	Min. 375 psi Concrecel	-	-	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-147.5 (Lim. 9)**
LC-A-16	Min. 475 psi Celcore MF with HS Rheology Admixture installed over OPTIONAL DynaBase HW	-	-	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-167.5 (Lim. 9)**
LC-A-17	Min. 375 psi Concrecel	-	-	*JM TPO FB*	*RSUA* applied 6-inch o.c.	**-172.5 (Lim. 9)**
LC-A-18	Min. 300 psi Celcore MF with HS Rheology Admixture installed over torch adhered DynaWeld 180 S	-	-	*JM TPO FB*	*TPO WBMA*	**-202.5 (Lim. 9)**
LC-A-19	Min. 360 psi Celcore MF with HS Rheology Admixture installed over torch adhered DynaWeld 180 S	-	-	*JM TPO FB*	*RSUA* applied 8-inch o.c.	**-202.5 (Lim. 9)**
LC-A-20	Min. 300 psi Celcore MF with HS Rheology Admixture installed over torch adhered DynaWeld 180 S	-	-	*JM TPO*	*ASBA, LVOC MA,* or *MBA*	**-202.5 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Lightweight Concrete Assemblies over *Concrete Deck* (New or Existing)						
System No.	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LC-A-21	Min. 360 psi Celcore MF with HS Rheology Admixture	-	-	*JM TPO*	*ASBA* or *LVOC MA*	**-222.5 (Lim. 9)**
LC-A-22	Min. 375 psi Concrecel	-	-	*JM TPO*	*LVOC MA* or *MBA*	**-257.5 (Lim. 9)**
LC-A-23	Min. 475 psi Celcore MF with HS Rheology Admixture installed over OPTIONAL DynaBase HW	-	-	*JM TPO FB*	*RSUA* applied 4-inch o.c.	**-257.5 (Lim. 9)**
LC-A-24	Min. 213.5 Elastizell with Zell-Crete Fibers (no EPS Board)	-	-	*JM TPO FB*	*RSUA* applied 6-inch o.c.	**-290 (Lim. 9)**
LC-A-25	Min. 300 psi Celcore MF with HS Rheology Admixture installed over torch adhered DynaWeld Cap 180 FR treated with Celcore S-1	-	-	*JM TPO*	*ASBA, LVOC MA,* or *MBA*	**-305 (Lim. 9)**
LC-A-26	Min. 300 psi Celcore MF with HS Rheology Admixture installed over torch adhered DynaWeld Cap 180 FR treated with Celcore S-1	-	-	*JM TPO FB*	*TPO WBMA*	**-305 (Lim. 9)**
LC-A-27	Min. 360 psi Celcore MF with HS Rheology Admixture installed over torch adhered DynaWeld Cap 180 FR treated with Celcore S-1	-	-	*JM TPO FB*	*RSUA* applied 8-inch o.c.	**-305 (Lim. 9)**
LC-A-28	Min. 360 psi Celcore MF with HS Rheology Admixture	-	-	*JM TPO*	*MBA*	**-337.5 (Lim. 9)**
LC-A-29	Min. 360 psi Celcore MF with HS Rheology Admixture	-	-	*JM TPO FB*	*RSUA* applied 8-inch o.c.	**-502.5 (Lim. 9)**

Lightweight Concrete Assemblies with Adhered Membranes over *Concrete Deck* (New or Existing)						
System No.	LWIC	Base Sheet	Base Sheet Attachement	Membrane	Membrane Attachment	*MDP* (psf)
LC-AM-1	Min. 200 psi Elastizell with Zell-Crete Fibers	PermaPly 28	Min. 1.7-inch LWC CR Base Sheet Fasteners secured 9-inch o.c. at the lap and 9-inch o.c. in two (2) equally spaced staggered rows in the field	*JM TPO HFB*	Fully adhered in ASTM D 312 hot asphalt	**-45 (Lim. 7)**

Mechanically Fastened Lightweight Concrete Assemblies over *Concrete Deck* (New, Existing, or *Recover*)						
System No.	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LC-M-1	Min. 200 psi Elastizell with Zell-Crete Fibers	-	-	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-67.5 (Lim. 7)**

Induction Welded Lightweight Concrete Assemblies over *Concrete Deck* (New or Existing) (New, Existing, or *Recover*)						
System No.	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LC-W-1	Min. 200 psi Elastizell with Zell-Crete Fibers	-	-	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates and JM All Purpose Fasteners secured 6-inch o.c. in rows spaced 96-inch o.c.	**-60 (Lim. 7)**

Adhered Lightweight Concrete Assemblies over *Steel Deck* (New or Existing)							
System No.	*Deck Detail*	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LS-A-1	*G33*	Min. 475 psi Celcore MF with HS Rheology	-	-	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-45 (Lim. 9)**
LS-A-2	*G33, P, L6, S18*	Min. 700psi cellular lightweight concrete (*MCRF* = 121lbf with JM Lightweight Concrete (LWC) CR Base Fasteners)	-	-	*JM TPO FB*	*2-Part UIA-C(S)*	**-52.5 (Lim. 9)**
LS-A-3	*G33*	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2, *TPO WBMA*, *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-77.5 (Lim. 9)**
LS-A-4	*G33*	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-77.5 (Lim. 9)**
LS-A-5	*G33*	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 CGF Top Layer: *SECUROCK*	Base and Top layer secured with *RSUA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA*, *1168*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-77.5 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Lightweight Concrete Assemblies over *Steel Deck* (New or Existing)							
System No.	*Deck Detail*	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LS-A-6	*G33*	Min 340 psi Celcore MF with HS Rheology Admixture over deck treated with Celcore S-1	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 CGF Top Layer: *SECUROCK*	Base and Top layer secured with *RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-77.5 (Lim. 9)**
LS-A-7	*G33*	Min. 300 psi *LWIC*	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: MBA* applied at 0.83 gal/100ft^2, *TPO WBMA*, *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-80 (Lim. 9)**
LS-A-8	*G33*	Min. 300 psi *LWIC*	Min. 1.5-inch ENRGY 3 or ProtectoR Foam	*2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-80 (Lim. 9)**
LS-A-9	*G33*	Min. 300 psi *LWIC*	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* applied 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA, 1168*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-80 (Lim. 9)**
LS-A-10	*G33*	Min. 300 psi *LWIC*	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-80 (Lim. 9)**
LS-A-11	*G80, P, L5, S15*	Min. 250 psi Elastizell with Zell-Crete Fibers	-	-	*JM TPO FB*	*RSUA* applied 6-inch o.c.	**-97.5 (Lim. 9)**
LS-A-12	*G80, P, L5, S15*	Min. 250 psi Elastizell with Zell-Crete Fibers	-	-	*JM TPO*	*LVOC MA*	**-97.5 (Lim. 9)**
LS-A-13	*G33*	Min. 310 psi Elastizell with Zell-Crete Fibers	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* ribbons spaced 12-inch o.c.	*JM TPO or JM TPO FB*	*JM TPO: TPO WBMA*, *LVOC MA*, *ASBA, 1168*, or *MBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-130 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered Lightweight Concrete Assemblies over *Steel Deck* (New or Existing)							
System No.	*Deck Detail*	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LS-A-14	*G33*	Min. 310 psi Elastizell with Zell-Crete Fibers	Base Layer: Min. 1.5-inch ENRGY 3 or ENRGY 3 AGF Top Layer: *SECUROCK*	*2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-130 (Lim. 9)**
LS-A-15	*G33*	Min. 200 psi Elastizell with Zell-Crete Fibers	-	-	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2	**-180 (Lim. 9; HVHZ only)**
LS-A-16	*G33*	Min. 700psi cellular lightweight concrete (*MCRF* = 152lbf with JM Lightweight Concrete (LWC) CR Base Fasteners)	-	-	*JM TPO FB*	*2-Part UIA-C(S)*	**-180 (Lim. 9; HVHZ only)**
LS-A-17	*G33*	Min. 150 psi *LWIC*	-	-	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2	**-265 (Lim. 9; HVHZ only)**

Lightweight Concrete Assemblies with Adhered Membranes over *Steel Deck* (New or Existing)							
System No.	*Deck Detail*	LWIC	Base Sheet	Base Sheet Attachement	Membrane	Membrane Attachment	*MDP* (psf)
LS-AM-1	*G33, P, L6, S18*	Min. 200 psi Elastizell with Zell-Crete Fibers	PermaPly 28	Min. 1.7-inch LWC CR Base Sheet Fasteners secured 9-inch o.c. at the lap and 9-inch o.c. in two (2) equally spaced staggered rows in the field	*JM TPO FB*	ASTM D 312 hot asphalt	**-45 (Lim. 7)**

Mechanically Fastened Lightweight Concrete Assemblies over *Steel Deck* (New, Existing, or *Recover*)							
System No.	*Deck Detail*	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LS-M-1	*G33, P, L6, S18*	Min. 200 psi Elastizell with Zell-Crete Fibers	-	-	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fastener & Plates*; Fastener rows max. 90-inch o.c.	**-67.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Induction Welded Lightweight Concrete Assemblies over *Steel Deck* (New or Existing) (New, Existing, or *Recover*)							
System No.	*Deck Detail*	LWIC	Insulation/Cover Board	Insulation/Cover Board Attachment	Membrane	Membrane Attachment	*MDP* (psf)
LS-W-1	*G33, P, L6, S18*	Min. 200 psi Elastizell with Zell-Crete Fibers	-	-	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates and High Load Fasteners secured 6-inch o.c. in rows spaced 96-inch o.c.	**-60 (Lim. 7)**

Adhered *Recover* Assemblies						
System No.	Existing Roof	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
R-A-1	BUR or Mod-Bit Roofing with mineral surfacing	-	-	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-45 (Lim. 9)**
R-A-2	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	SeparatoR CGF or SeparatoR FR adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO SA*	Self adhered	**-90 (Lim. 9)**
R-A-3	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	SeparatoR CGF or SeparatoR FR adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*LVOC* MA or 1168	**-105 (Lim. 9)**
R-A-4	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*TPO WBMA* or *2-Part UIA-C(S)*	**-105 (Lim. 9)**
R-A-5	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*MBA, LVOC MA, ASBA,1168,* or *TPO WBMA*	**-105 (Lim. 9)**
R-A-6	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO SA*	Self adhered	**-105 (Lim. 9)**
R-A-7	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*DEXcell FA* adhered in *RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA* or *ASBA*	**-105 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered *Recover* Assemblies						
System No.	Existing Roof	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
R-A-8	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*DEXcell FA* adhered in *RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-105 (Lim. 9)**
R-A-9	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*DEXcell FA* adhered in *RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-105 (Lim. 9)**
R-A-10	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*WBA, LVOC MA, TPO WBMA, ASBA,* or *1168*	**-105 (Lim. 9)**
R-A-11	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO SA*	Self adhered	**-105 (Lim. 9)**
R-A-12	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-105 (Lim. 9)**
R-A-13	BUR or Granular Mod-Bit Roofing over *Steel Deck,* cementitious panel, or treated wood	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-105 (Lim. 9)**
R-A-14	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	SeparatoR CGF or SeparatoR FR adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*RSUA* applied 4-inch o.c.	**-112.5 (Lim. 9)**
R-A-15	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	SeparatoR CGF or SeparatoR FR adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO SA*	Self adhered	**-120 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered *Recover* Assemblies						
System No.	Existing Roof	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
R-A-16	BUR or Granular Mod-Bit Roofing over over *Concrete Deck, Steel Deck,* cementitious panel, or treated wood	-	Min. 1-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*JM TPO*	*MBA, LVOC MA, ASBA,1168,* or *TPO WBMA*	**-157.5 (Lim. 9)**
R-A-17	BUR or Granular Mod-Bit Roofing over *Concrete Deck, Steel Deck,* cementitious panel, or treated wood	-	Min. 1-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*JM TPO SA*	Self adhered	**-157.5 (Lim. 9)**
R-A-18	BUR or Granular Mod-Bit Roofing over over *Concrete Deck, Steel Deck,* cementitious panel, or treated wood	-	Min. 1-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)* or *RSUA* applied 12-inch o.c.	**-157.5 (Lim. 9)**
R-A-19	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*DEXcell FA* adhered in *RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA*	**-180 (Lim. 9)**
R-A-20	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*WBA, LVOC MA, TPO WBMA*, *ASBA,* or *1168*	**-180 (Lim. 9)**
R-A-21	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO SA*	Self adhered	**-180 (Lim. 9)**
R-A-22	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-180 (Lim. 9)**
R-A-23	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*SECUROCK* or *DensDeck Prime* adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-180 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered *Recover* Assemblies						
System No.	Existing Roof	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
R-A-24	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	SeparatoR CGF or SeparatoR FR adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*TPO WBMA*	**-187.5 (Lim. 9)**
R-A-25	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA*	**-187.5 (Lim. 9)**
R-A-26	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*TPO WBMA*	**-187.5 (Lim. 9)**
R-A-27	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	SeparatoR CGF or SeparatoR FR adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA*	**-195 (Lim. 9)**
R-A-28	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-210 (Lim. 9)**
R-A-29	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*LVOC MA*	**-210 (Lim. 9)**
R-A-30	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-210 (Lim. 9)**
R-A-31	BUR over *Concrete Deck*	Min. 1.5-inch *E3* (no FR) adhered in 2-*Part UIA* applied 12-inch o.c.	-	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-217.5 (Lim. 9)**
R-A-32	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	SeparatoR CGF or SeparatoR FR adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	*LVOC MA* or *1168*	**-217.5 (Lim. 9)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Adhered *Recover* Assemblies						
System No.	Existing Roof	Base Insulation	Top Insulation or Base Ply	Membrane	Membrane Attachment	*MDP* (psf)
R-A-33	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*DEXcell FA* adhered in *RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO*	*ASBA*	**-217.5 (Lim. 9)**
R-A-34	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*DEXcell FA* adhered in *RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-217.5 (Lim. 9)**
R-A-35	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	*DEXcell FA* adhered in *RSUA* or *OSFA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-217.5 (Lim. 9)**
R-A-36	BUR or Granular Mod-Bit Roofing over *Concrete Deck*	OPTIONAL Min. 0.5-inch ENRGY 3 adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSF* applied 12-inch o.c.	ProtectoR HD adhered in *RSUA, 2-Part UIA, 2-Part UIA-C(B),* or *OSFA* applied 12-inch o.c.	*JM TPO*	ASBA or MBA	**-225 (Lim. 9)**

Mechanically Fastened *Recover* Assemblies								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
R-M-1	*Steel Deck (G33)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 12-inch o.c. with High Load Fasteners and JM High Load Plus Plates for *Steel Deck* or JM All Purpose Fasteners and JM High Load Plus Plates for *Concrete Deck*; Fastener rows max. 114-inch o.c.	**-30 (Lim. 7; Non-HVHZ)**
R-M-2	*Steel Deck (G80)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fastener & Plates*; Fastener rows max. 90-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**
R-M-3	*Wood Deck (T19/32)*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 4-inch o.c. with *APB Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Mechanically Fastened *Recover* Assemblies								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
R-M-4	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 12-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 60-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**
R-M-5	Existing metal roof having Min. 14 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 12-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 60-inch o.c.	**-45 (Lim. 7)**
R-M-6	*Steel Deck (G80, F2W, L6, S24)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 12-inch o.c. with High Load Fasteners and JM High Load Plus Plates for *Steel Deck* or JM All Purpose Fasteners and JM High Load Plus Plates for *Concrete Deck*; Fastener rows max. 90-inch o.c.	**-45 (Lim. 7)**
R-M-7	*Steel Deck (G80, F1, L6, S18)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 12-inch o.c. with *Extra HL Fasteners & Plates;* Fastener rows max. 114-inch o.c.	**-45 (Lim. 7)**
R-M-8	*Steel Deck (G80, F1, L6, S18)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates;* Fastener rows max. 114-inch o.c.	**-45 (Lim. 7)**
R-M-9	*Steel Deck (G80, F1, L6, S18)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *Extra HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-52.5 (Lim. 7)**
R-M-10	*Wood Deck (T19/32, L24, N6)*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 54-inch o.c.	**-60 (Lim. 7)**
R-M-11	*Steel Deck (G80, F1, L6, S18)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates;* Fastener rows max. 90-inch o.c.	**-60 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Mechanically Fastened *Recover* Assemblies								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
R-M-12	*Steel Deck (G33, L6, P)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-60 (Lim. 7)**
R-M-13	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 114-inch o.c.	**-60 (Lim. 7)**
R-M-14	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 120-inch o.c.	**-60 (Lim. 7)**
R-M-15	*Steel Deck (G33, L6, P)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-75 (Lim. 7)**
R-M-16	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 90-inch o.c.	**-75 (Lim. 7)**
R-M-17	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 60-inch o.c.	**-82.5 (Lim. 7)**
R-M-18	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 54-inch o.c.	**-97.5 (Lim. 7)**
R-M-19	*Steel Deck (G33, L6, P)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board* (Insulation is OPTIONAL with *JM TPO FB*)	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 54-inch o.c.	**-97.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Mechanically Fastened *Recover* Assemblies								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
R-M-20	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with JM Purlin Fasteners and High Load Plates to structural supports; Fastener rows max. 66-inch o.c.	**-105 (Lim. 7)**

Induction Welded *Recover* Assemblies								
System No.	Existing Roof	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
R-W-1	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	JM Purlin Fasteners and JM TPO RhinoPlates secured to structural supports 18-inch o.c.; Fastener rows max. 60-inch o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7)**
R-W-2	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	JM Purlin Fasteners and JM TPO RhinoPlates secured to structural supports 6-inch o.c.; Fastener rows max. 120-inch o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7)**
R-W-3	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#12* or *ISOWELD-#15* spaced 12" o.c. in rows 60" o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**
R-W-4	*Steel Deck (G33, L6, P)* or *Concrete Deck*	OPTIONAL Min. 1.5-inch *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of *8 per 4-ft x 8-ft board Pattern #1* (1 fastener per 4.0-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7)**
R-W-5	*Wood Deck (T15/32, L24, N6)*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	Min. 2.25-inch JM All Purpose Fastener and JM TPO RhinoPlates secured max. 24-inch o.c. through sheathing into wood structural supports in rows max. 24" o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-52.5 (Lim. 7)**
R-W-6	*Wood Deck (T15/32, L24, N6)*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	Min. 2.25-inch JM All Purpose Fastener and JM TPO RhinoPlates secured max. 9-inch o.c. through sheathing into wood structural supports in rows max. 48" o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-60 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Induction Welded *Recover* Assemblies								
System No.	Existing Roof	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
R-W-7	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	JM Purlin Fasteners and JM TPO RhinoPlates secured to structural supports 12-inch o.c.; Fastener rows max. 60-inch o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-67.5 (Lim. 7)**
R-W-8	*Steel Deck (G33, L6, P)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of 12 per 4-ft x 8-ft board (1 fastener per 2.67-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-75 (Lim. 7)**
R-W-9	*Steel Deck (G33, F2W, L6)* or *Concrete Deck*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of 15 per 4-ft x 8-ft board (1 fastener per 2.13-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-90 (Lim. 7)**
R-W-10	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured or secured with top layer*	Min. 1-inch *E3* or *Cover Board*	Attached with ISOWELD-#12 or ISOWELD-#15 spaced 6" o.c. in rows 60" o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-97.5 (Lim. 7)**
R-W-11	*Wood Deck (T15/32, L24, N6)*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	Min. 2.25-inch JM All Purpose Fastener and JM TPO RhinoPlates secured max. 6-inch o.c. through sheathing into wood structural supports in rows max. 48" o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-112.5 (Lim. 7)**
R-W-12	Existing metal roof having Min. 16 ga. steel purlins at max. 5ft o.c.	Min. 1.5-inch *E3* or *EPS* placed between ribs	*Preliminarily Secured* or secured with top layer	Min. 1-inch *E3* or *Cover Board*	JM Purlin Fasteners and JM TPO RhinoPlates secured to structural supports 6-inch o.c.; Fastener rows max. 60-inch o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-120 (Lim. 7)**

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-1	*G33, P, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 2.67ft^2	*JM TPO SA*	Self-adhered	**-30 (Lim. 7 Non-HVHZ)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-2	*G33, P, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 2.67ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*; *MBA* applied at 0.83 gal/100ft^2; *LVOC MA* or *ASBA* *JM TPO FB: RSUA* applied 12-inch o.c., *2-Part UIA-C(S)* or *TPO WBMA*	**-30 (Lim. 7 Non-HVHZ)**
S-AM-3	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 2-inch Fesco Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 5.3ft^2	*JM TPO*	*MBA*, or *LVOC MA*	**-37.5 (Lim. 7; Non-HVHZ)**
S-AM-4	*G33*	*ProtectoR* attached with *UltraFast Fasteners & Plates (Square)* at *8 per 4-ft x 8-ft board Pattern #2*; JM Vapor SA or JM Vapor Barrier SAR with JM SA Primer or JM SA Primer Low VOC	ENRGY 3, ENRGY 3 AGF, ENRGY 3 CGF, ENRGY 3 C1, or ENRGY 3 C1 CGF	*OSFA, RSUA,* or *2-Part UIA* applied 12-inch o.c.	*ProtectoR*, *Retro-Fit*, *RetroPlus*, SeparatorR CGF, SeparatoR FR, *INVINSA*, *DensDeck, DensDeck Prime, DEXcell FA,* or *SECUROCK*	*OSFA, RSUA,* or *2-Part UIA* applied 12-inch o.c.	*JM TPO, JM TPO FB, JM TPO SA, or JM TPO HFB*	*JM TPO: TPO WBMA, MBA LVOC MA,* or *ASBA* *JM TPO FB: RSUA* applied 12-inch o.c., *2-Part UIA-C(S)* or *TPO WBMA* *JM TPO:* self-adhered *JM TPO HFB:* ASTM D 312 Type IV Asphalt	**-37.5 (Lim. 7; Non-HVHZ)**
S-AM-5	*G33, P, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 2.67ft^2	ProtectoR HD	*RSUA* or *2-Part UIA* applied 12-inch o.c	*JM TPO SA*	Self-adhered	**-45 (Lim. 7)**
S-AM-6	*G33, P, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 2.67ft^2	ProtectoR HD	*RSUA* or *2-Part UIA* applied 12-inch o.c	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*; *MBA* applied at 0.83 gal/100ft^2; *LVOC MA* or *ASBA* *JM TPO FB: RSUA* applied 12-inch o.c., *2-Part UIA-C(S)* or *TPO WBMA*	**-45 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-7	*G33*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	*ProtectoR*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 4ft^2	*JM TPO SA*	Self-adhered	**-45 (Lim. 9)**
S-AM-8	*G33*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	*ProtectoR*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 4ft^2	JM TPO (Min. 60 mil) or *JM TPO FB*	*JM TPO: TPO WBMA*; *MBA* applied at 0.83 gal/100ft^2; *LVOC MA* or *ASBA* *JM TPO FB: RSUA* applied 12-inch o.c., *2-Part UIA-C(S)* or *TPO WBMA*	**-45 (Lim. 9)**
S-AM-9	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 2-inch Invinsa Foam	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 5.3ft^2	*JM TPO*	*MBA*, *TPO WBMA*, *LVOC MA*, or *ASBA*	**-45 (Lim. 7; Non-HVHZ)**
S-AM-10	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 2-inch Invinsa Foam	*UltraFast Fasteners & Plates (Square)* secured 1 fastener pr 5.3ft^2	*JM TPO SA*	Self-adhered	**-45 (Lim. 7; Non-HVHZ)**
S-AM-11	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.375-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2 or *ASBA* *JM TPO FB: TPO WBMA*	**-45 (Lim. 7; Non-HVHZ)**
S-AM-12	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.375-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO SA*	Self-adhered	**-45 (Lim. 7; Non-HVHZ)**
S-AM-13	*G33*	OPTIONAL JM Vapor Barrier SA or SAR	-	-	Min. 1.5-inch ENRGY 3, ENRGY 3 CGF, or ProtectoR Foam	*RSUA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-45 (Lim. 7; Non-HVHZ)**
S-AM-14	*G33*	OPTIONAL JM Vapor Barrier SA or SAR	-	-	Min. 1.5-inch ENRGY 3, ENRGY 3 CGF, or ProtectoR Foam	*RSUA* applied 12-inch o.c.	*JM TPO*	*MBA*, *LVOC* MA, TPO *WBMA* or *ASBA*	**-45 (Lim. 7; Non-HVHZ)**
S-AM-15	*G33*	OPTIONAL JM Vapor Barrier SA or SAR	-	-	Min. 1.5-inch ENRGY 3, ENRGY 3 CGF, or ProtectoR Foam	*RSUA* applied 12-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-45 (Lim. 7; Non-HVHZ)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-16	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 4.0ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA* , or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-45 (Lim. 9)**
S-AM-17	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 4.0ft^2	*JM TPO SA*	Self-adhered	**-45 (Lim. 9)**
S-AM-18	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min.1.5-inch ENRGY 3 or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 2.0ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate, *TPO WBMA*, *ASBA* or *LVOC MA*	**-45 (Lim. 9)**
S-AM-19	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min.1.5-inch ENRGY 3 or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 2.0ft^2	*JM TPO SA*	Self-adhered	**-45 (Lim. 9)**
S-AM-20	*G33*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured 1 fastener per 2.0ft^2	*RetroPlus*	*RSUA* or *2-Part UIA* applied 12-inch o.c	*JM TPO*	*MBA*	**-45 (Lim. 9)**
S-AM-21	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*UltraFast Fasteners & Plates* secured 1 fastener per 4.0ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA;*Applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-45 (Lim. 7)**
S-AM-22	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 2-inch ENRGY 3	*UltraFast Fasteners & Plates* secured 1 fastener per 4.0ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-45 (Lim. 7)**
S-AM-23	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-52.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-24	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
S-AM-25	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA*, *RSUA* applied 12-inch o.c., or *2-Part UIA-C(S)*	**-52.5 (Lim. 7)**
S-AM-26	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
S-AM-27	*G33, P, L6, S20*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured at a rate of 1 fastener per 1.45ft^2	JM Invinsa	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-52.5 (Lim. 7)**
S-AM-28	*G33, P, L6, S20*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured at a rate of 1 fastener per 1.45ft^2	JM Invinsa or ProtectoR HD	*RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
S-AM-29	*G33, P, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate or *TPO WBMA* or *ASBA*	**-52.5 (Lim. 7)**
S-AM-30	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate, *TPO WBMA* or *ASBA*	**-52.5 (Lim. 7)**
S-AM-31	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.67ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-32	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO HFB*	Base Ply: Torch Adhered Membrane: ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
S-AM-33	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
S-AM-34	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
S-AM-35	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured 1 fastener per 1.33ft^2	*SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO HFB*	Base Ply: Torch Adhered Membrane: ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
S-AM-36	*G33, F2, L6, S18*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch *E3* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**
S-AM-37	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
S-AM-38	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA* applied at 0.83 gal/100ft^2, *LVOC MA* applied at 0.83 gal/100ft^2 or *ASBA* *JM TPO FB: TPO WBMA*	**-52.5 (Lim. 7)**
S-AM-39	*G33, F1, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA, LVOC MA, ASBA* or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-52.5 (Lim. 7)**
S-AM-40	*G33, F1, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-52.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-41	*G33, F1, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-52.5 (Lim. 7)**
S-AM-42	*G33, F1, L6, S30*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured at a rate of 1 fastener per 1.78ft^2	Min 1/2-inch *SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA,* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-60 (Lim. 7)**
S-AM-43	*G33, F1, L6, S30*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured at a rate of 1 fastener per 1.78ft^2	Min 1/2-inch *SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-60 (Lim. 7)**
S-AM-44	*G33, F2W, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.00ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA* , or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-60 (Lim. 7)**
S-AM-45	*G80, F1W, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.00ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA* applied at 0.83-1.10 gal/100ft^2, *LVOC MA* , or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-60 (Lim. 7)**
S-AM-46	*G33, F2W, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	*SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.00ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-60 (Lim. 7)**
S-AM-47	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch *E3* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.78ft^2	*JM TPO*	*LVOC MA* or *MBA* applied at 0.55 gal/100ft^2	**-60 (Lim. 7)**
S-AM-48	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-60 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-49	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 1.5-inch *E3* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-60 (Lim. 7)**
S-AM-50	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-60 (Lim. 7)**
S-AM-51	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA*, *LVOC MA,* or *ASBA* *JM TPO FB: 2-Part UIA-C(S)*	**-60 (Lim. 7)**
S-AM-52	*G33, F2, L6, S18*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 or ProtectoR Foam	*AP Fasteners & Plates* secured 1 fastener per 1.6ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-60 (Lim. 7)**
S-AM-53	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plate)* 1 fastener per 1.6ft^2	Min. 1.5-inch *E3* or *E3 C1*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-60 (Lim. 7)**
S-AM-54	*G33, F2W, L6, S18*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*UltraFast Fasteners & Plates* secured 1 fastener per 1ft^2	*SECUROCK* or JM Invinsa	*RSUA* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*RSUA* applied 12-inch o.c.	**-67.5 (Lim. 7)**
S-AM-55	*L6, G80, F1, S30*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured at a rate of *24 per 4-ft x 8-ft Board*	Min. 1/2-inch *SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO*	*TPO WBMA*	**-67.5 (Lim. 7)**
S-AM-56	*L6, G80, F1, S30*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured at a rate of *24 per 4-ft x 8-ft Board*	Min. 1/2-inch *SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO FB*	*TPO WBMA* or *2-Part UIA-C(S)*	**-67.5 (Lim. 7)**
S-AM-57	*L6, G80, F1, S30*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch ENRGY 3	*UltraFast Fasteners & Plates* secured at a rate of *24 per 4-ft x 8-ft Board*	Min. 1/2-inch *SECUROCK*	*OSFA*, *RSUA* or *2-Part UIA* applied 12-inch o.c.	*JM TPO SA*	Self-adhered	**-67.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-58	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate, *TPO WBMA* or *ASBA*	**-67.5 (Lim. 7)**
S-AM-59	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO SA*	Self-adhered	**-67.5 (Lim. 7)**
S-AM-60	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO*	*TPO WBMA* or *ASBA*	**-67.5 (Lim. 7)**
S-AM-61	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENERGY 3 or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 2ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.1 gal/100ft^2, *TPO WBMA* (two-sided application only) or *ASBA*	**-67.5 (Lim. 7)**
S-AM-62	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENERGY 3 or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 2ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-67.5 (Lim. 7)**
S-AM-63	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plate* secured 1 fastener per 1.6ft^2	Min. 0.5-inch ProtectoR HD, *DEXcell FA*, or *SECUROCK*	*OSFA, RSUA, 2-Part UIA-C(B)* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*RSUA* 6-inch o.c.	**-67.5 (Lim. 7)**
S-AM-64	*G33, F1, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.5-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA, LVOC MA, ASBA* or *1168* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-67.5 (Lim. 7)**
S-AM-65	*G33, F1, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.5-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-67.5 (Lim. 7)**
S-AM-66	*G33, F1, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.5-inch *DensDeck Prime*	*AP Fasteners & Plates (Square)* secured 1 fastener per 1.78ft^2	*JM TPO SA*	Self-adhered	**-67.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-67	*G33, P, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-75 (Lim. 7)**
S-AM-68	*G33, P, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 1.33ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA* applied at 0.83 gal/100ft^2, *LVOC MA* or *ASBA* *JM TPO FB: TPO WBMA* or *2-Part UIA-C(S)*	**-75 (Lim. 7)**
S-AM-69	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)*, *E3 C1,* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.6ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.1 gal/100ft^2, *TPO WBMA* (two-sided application only) or *ASBA*	**-75 (Lim. 7)**
S-AM-70	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.6ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-75 (Lim. 7)**
S-AM-71	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch Invinsa Foam	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA* or *ASBA*	**-75 (Lim. 7)**
S-AM-72	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch Invinsa Foam	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 2.0ft^2	*JM TPO SA*	Self-adhered	**-75 (Lim. 7)**
S-AM-73	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA* or *ASBA*	**-75 (Lim. 7)**
S-AM-74	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-75 (Lim. 7)**
S-AM-75	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-82.5 (Lim. 7)**
S-AM-76	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-77	*G80, F1W, L6, S24*	Min. 0.5-inch *DEXcell FA; UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2; JM Vapor Barrier SA self-adhered over SA Primer	Min. 1.5-inch *E3*	*RSUA* or *2-Part UIA* applied 6-inch o.c.	Min. 0.5-inch *DEXcell FA*	*RSUA* applied 6-inch o.c.	*JM TPO FB*	*RSUA* applied 6-inch o.c.	**-82.5 (Lim. 7)**
S-AM-78	*G33, F2, L6, S24*	Min. 0.5-inch *DEXcell FA* secured with top layer; JM Vapor Barrier SA self-adhered	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DEXcell FA*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO FB*	*RSUA* applied 4-inch o.c.	**-82.5 (Lim. 7)**
S-AM-79	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)*, *E3 C1*, or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA* or *LVOC MA* applied at 1.1 gal/100ft^2 or *TPO WBMA* (two-sided application only)	**-82.5 (Lim. 7)**
S-AM-80	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-82.5 (Lim. 7)**
S-AM-81	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DEXcell FA*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA*, or *ASBA*	**-82.5 (Lim. 7)**
S-AM-82	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA*, or *ASBA*	**-82.5 (Lim. 7)**
S-AM-83	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
S-AM-84	*G33, H1, L6, SH24*	OPTIONAL *Vapor Barrier*	Min. 1-inch *E3*	Simultaneously secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* 1 fastener per 1.33ft^2	*JM TPO*	*MBA*, *LVOC MA*, or *ASBA*	**-82.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-85	*G33, H1, L6, SH24*	OPTIONAL *Vapor Barrier*	Min. 1-inch *E3*	Simultaneously secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
S-AM-86	*G33, H1, L6, SH24*	OPTIONAL *Vapor Barrier*	Min. 1-inch *E3*	Simultaneously secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* 1 fastener per 1.33ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-82.5 (Lim. 7)**
S-AM-87	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.6ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO*	*TPO WBMA, MBA*, *LVOC MA,* or *ASBA*	**-82.5 (Lim. 7)**
S-AM-88	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plate* secured 1 fastener per 1.6ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
S-AM-89	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plate* secured 1 fastener per 1.6ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B)* or *2-Part UIA* applied 6-inch o.c.	*JM TPO FB*	*2-Part UIA-C(S)*	**-82.5 (Lim. 7)**
S-AM-90	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.6ft^2	Min. 0.5-inch *DensDeck Prime, DEXcell FA*, or *SECUROCK*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO*	*ASBA, TPO WBMA, MBA* or *LVOC MA*	**-82.5 (Lim. 7)**
S-AM-91	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.6ft^2	Min. 0.5-inch *DensDeck Prime, DEXcell FA*, or *SECUROCK*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**
S-AM-92	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.6ft^2	Min. 1.5-inch *E3* or *E3 C1*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO*	*ASBA, TPO WBMA, MBA* or *LVOC MA*	**-82.5 (Lim. 7)**
S-AM-93	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.6ft^2	Min. 1.5-inch *E3* or *E3 C1*	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 6-inch o.c.	*JM TPO SA*	Self-adhered	**-82.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-94	*G33, F1W, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1ft^2	Min. 1.5-inch ENRGY 3	*OSFA*, *RSUA, 2-Part UIA-C(B)* or *2-Part UIA* applied 4-inch o.c.	*JM TPO*	*TPO WBMA* (rate 0.6-0.8 gal/100-ft^2 for one-sided and two-sided application), *MBA*, *ASBA*, or *LVOC MA*	**-82.5 (Lim. 7)**
S-AM-95	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO*	*TPO WBMA* (rate 0.6-0.8 gal/100-ft^2 for one-sided and two-sided application), *MBA*, or *LVOC MA*	**-82.5 (Lim. 7)**
S-AM-96	*G33, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3, E3 C1,* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO*	*ASBA* or *MBA*	**-82.5 (Lim. 7)**
S-AM-97	*G80, F2, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.625-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA, LVOC MA, ASBA* or *1168* *JM TPO FB: TPO WBMA*	**-90 (Lim. 7)**
S-AM-98	*G80, F2, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.625-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-90 (Lim. 7)**
S-AM-99	*G80, F2, L6, S12*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min 0.625-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-90 (Lim. 7)**
S-AM-100	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO*	*MBA* applied at 0.83 gal/100ft^2 to both membrane and substrate or *TPO WBMA*	**-105 (Lim. 7)**
S-AM-101	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch ENRGY 3 CGF or ENRGY 3 FR	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.33ft^2	*JM TPO SA*	Self-adhered	**-105 (Lim. 7)**
S-AM-102	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DEXcell FA*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA,* or *ASBA*	**-105 (Lim. 7)**
S-AM-103	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA*, *LVOC MA* applied at 1.67 gal/100ft^2, *TPO WBMA* (two-sided application only), or *ASBA*	**-112.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-104	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DensDeck Prime*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO SA*	Self-adhered	**-112.5 (Lim. 7)**
S-AM-105	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF), E3 C1,* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO*	*TPO WBMA* (rate 0.6-0.8 gal/100-ft^2 for one-sided and two-sided application), *MBA*, or *LVOC MA*	**-112.5 (Lim. 7)**
S-AM-106	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3, E3 C1,* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO*	*ASBA* or *MBA*	**-112.5 (Lim. 7)**
S-AM-107	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF), E3 C1,* or ProtectoR Foam	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO*	*MBA* or *LVOC MA* applied at 1.1 gal/100ft^2 or *TP WBMA* (two-sided application only)	**-120 (Lim. 7)**
S-AM-108	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION*	Simultaneously secured with top layer	Min. 2-inch *E3 (no AGF)* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1.0ft^2	*JM TPO HFB*	ASTM D 312 Type IV Asphalt	**-120 (Lim. 7)**
S-AM-109	*G33, F1, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 1ft^2	*JM TPO*	*MBA* or *ASBA*	**-120 (Lim. 7)**
S-AM-110	*G80, F1W, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1ft^2	Min. 1.5-inch ENRGY 3	*OSFA*, *RSUA* or *2-Part UIA* applied 4-inch o.c.	*JM TPO*	*TPO WBMA* (rate 0.6-0.8 gal/100-ft^2 for one-sided and two-sided application), *MBA*, or *LVOC MA*	**-120 (Lim. 7)**
S-AM-111	*G80, F2, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch *E3* or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1ft^2	ProtectoR HD	*OSFA, RSUA, 2-Part UIA-C(B),* or *2-Part UIA* applied 4-inch o.c.	*JM TPO*	*TPO WBMA, MBA*, *LVOC MA,* or *ASBA*	**-120 (Lim. 7)**
S-AM-112	*G80, F1W, L6, S24*	OPTIONAL *Vapor Barrier*	Min. 2-inch ENRGY 3, ENRGY 3 CGF, ENRGY 3 FR or *E3 C1*	*UltraFast Fasteners & Plates* secured 1 fastener per 1ft^2	Min. 1.5-inch ENRGY 3	*OSFA*, *RSUA* or *2-Part UIA* applied 4-inch o.c.	*JM TPO*	*ASBA* or *MBA*	**-127.5 (Lim. 7)**
S-AM-113	*G80, F2, L6, S18*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DEXcell FA*	*AP Fasteners & Plates* secured 1 fastener per 1ft^2	*JM TPO FB*	*2-Part UIA-C(S)*	**-135 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Steel Deck* (New, Existing, or *Recover*)									
System No.	*Deck Detail*	Thermal/ Vapor Barrier	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-AM-114	*G80, F2, L6, S24*	Min. 0.5-inch *DEXcell FA* secured with top layer; JM Vapor Barrier SA self-adhered	Min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *DEXcell FA*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.0ft^2	*JM TPO FB*	*RSUA* applied 4-inch o.c.	**-142.5 (Lim. 7)**
S-AM-115	*G80, F1W, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.00ft^2	*JM TPO* or *JM TPO FB*	*TPO WBMA* (two-sided application only for *JM TPO*)	**-150 (Lim. 7)**
S-AM-116	*G80, F1W, L6, S24*	OPTIONAL *Vapor Barrier*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	Simultaneously secured with top layer	Min. 0.5-inch *SECUROCK*	*UltraFast Fasteners & Plates (Square)* secured 1 fastener per 1.00ft^2	*JM TPO SA*	Self-adhered	**-150 (Lim. 7)**

Mechanically Fastened Assemblies over *Steel Deck* (New, Existing, or *Recover*)								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-M-1	*G33, L6*	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 12-inch o.c. with High Load Fasteners and JM High Load Plus Plates; Fastener rows max. 114-inch o.c.	**-30 (Lim. 7; Non-HVHZ)**
S-M-2	*G33, F, L6, S24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**-30 (Lim. 7; Non-HVHZ)**
S-M-3	*G80, L6*	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**
S-M-4	*G33, F, L6, S24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**
S-M-5	*G33, H1, L6, SH24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Mechanically Fastened Assemblies over *Steel Deck* (New, Existing, or *Recover*)								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-M-6	*G33, P, L6, S24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *Extra HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**-30 (Lim. 7; Non-HVHZ)**
S-M-7	*G33, P, L6, S24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 12-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 66-inch o.c.	**(-45 Lim. 7)**
S-M-8	*G80, F2W, L6, S24*	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 12-inch o.c. with High Load Fasteners and JM High Load Plus Plates; Fastener rows max. 90-inch o.c.	**-45 (Lim. 7)**
S-M-9	*G80, F1, L6, S18*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 12-inch o.c. with *Extra HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-45 (Lim. 7)**
S-M-10	*G80, F1, L6, S18*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-45 (Lim. 7)**
S-M-11	*G80, F1, L6, S18*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *Extra HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-52.5 (Lim. 7)**
S-M-12	*G33, H1, L6, SH24*	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-52.5 (Lim. 7)**
S-M-13	*G80, F1, L6, S18*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-60 (Lim. 7)**
S-M-14	*G33, P, L6*	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 114-inch o.c.	**-60 (Lim. 7)**
S-M-15	*G33, H1, L6, SH24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**-60 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Mechanically Fastened Assemblies over *Steel Deck* (New, Existing, or *Recover*)								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-M-16	*G33, P, L6, S24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**-60 (Lim. 7)**
S-M-17	*G80, P, L6, S24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**-67.5 (Lim. 7)**
S-M-18	*G33, H1, L6, SH24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with *Extra HL Fasteners & Plates*; Fastener rows max. 138-inch o.c.	**-67.5 (Lim. 7)**
S-M-19	*G33, P, L6*	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 90-inch o.c.	**-75 (Lim. 7)**
S-M-20	*G33, P, L6*	OPTIONAL *INSULATION* under min. 1-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO* or *JM TPO FB*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 54-inch o.c.	**-97.5 (Lim. 7)**
S-M-21	*G33, H1, L6, SH24*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	JM TPO (Min. 60 mil)	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 66-inch o.c.	**(-105 Lim. 7)**

Induction Welded Assemblies over *Steel Deck* (New, Existing, or *Recover*)								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-W-1	*G33, P, L6*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of *8 per 4-ft x 8-ft board Pattern #1* (1 fastener per 4.0-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7)**
S-W-2	*G33, H1, L6, SH24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with JM TPO RhinoPlates fastened 12-inch o.c. with High Load Fasteners; Fastener rows max. 72-inch o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7)**
S-W-3	*G33, F1, L6, S30*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#15* at a rate of 1 fastener per 4.0-ft^2	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**

Induction Welded Assemblies over *Steel Deck* (New, Existing, or *Recover*)								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-W-4	*G80, SD1W, L6, SDL24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#15* spaced 24" o.c. in rows 24" o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**
S-W-5	*G80, SD1W, L6, SDL24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#12* or *ISOWELD-#15* spaced 12" o.c. in rows 60" o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**
S-W-6	*G80, F1, L6, S36*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#12* or *ISOWELD-#15* spaced in a *2-ft x 3-ft staggered grid*	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-45 (Lim. 7)**
S-W-7	*G33, H1, L6, SH24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of *6 per 4-ft x 8-ft board Pattern #2* (1 fastener per 5.33-ft^2); Board length perpendicular to deck flutes with 6-inch stagger from preceding course	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-52.5 (Lim. 7)**
S-W-8	*G33, P, L6, S36*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#15* spaced in a *2-ft x 2-ft staggered grid*	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-60 (Lim. 7)**
S-W-9	*G33, H1, L6, SH24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of *8 per 4-ft x 8-ft board Pattern #2* (1 fastener per 4.0-ft^2); Board length perpendicular to deck flutes with 6-inch stagger from preceding course	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-67.5 (Lim. 7)**
S-W-10	*G33, F2, L6, S18*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of *8 per 4-ft x 8-ft board Pattern #1* (1 fastener per 4.0-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-67.5 (Lim. 7)**
S-W-11	*G33, P, L6*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of 12 per 4-ft x 8-ft board (1 fastener per 2.67-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-75 (Lim. 7)**
S-W-12	*G33, F1, L6, S30*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#15* at a rate of 1 fastener per 3.2-ft^2	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-75 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Induction Welded Assemblies over *Steel Deck* (New, Existing, or *Recover*)								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
S-W-13	*G33, F2, L6, S24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates in a 24-inch by 16-inch grid pattern	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-82.5 (Lim. 7)**
S-W-14	*G33, P, L6, S36*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#15* spaced in a *1.5-ft x 2-ft staggered grid*	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-82.5 (Lim. 7)**
S-W-15	*G80, F2, L6, S24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates in a 24-inch by 16-inch grid pattern	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-90 (Lim. 7)**
S-W-16	*G33, F2W, L6*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of 15 per 4-ft x 8-ft board (1 fastener per 2.13-ft^2)	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-90 (Lim. 7)**
S-W-17	*G33, H1, L6, S24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with High Load Fasteners and JM TPO RhinoPlates at a rate of 12 per 4-ft x 8-ft board (1 fastener per 2.67-ft^2); Board length perpendicular to deck flutes with 6-inch stagger from preceding course	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-90 (Lim. 7)**
S-W-18	*G33, F1, L5, S30*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#15* spaced 6” o.c. in rows 60” o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-90 (Lim. 7)**
S-W-19	*G80, SD1W, L6, SDL24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#15* spaced 18” o.c. in rows 18” o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-97.5 (Lim. 7)**
S-W-20	*G80, SD1W, L6, SDL24*	*INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	Attached with *ISOWELD-#12* or *ISOWELD-#15* spaced 6” o.c. in rows 60” o.c.	JM TPO (Min. 60 mil)	Induction welded to Isoweld plates	**-97.5 (Lim. 7)**

APPENDIX D – APPROVED ASSEMBLIES FOR JM TPO SINGLE-PLY MEMBRANES

Assemblies with Adhered Membranes over Insulated *Wood Deck* (New, Existing, or *Recover*)								
System No.	*Deck Detail*	Base Insulation	Base Insulation Attachment	Top Insulation or Coverboard	Top Insulation or Coverboard Attachment	Membrane	Membrane Attachment	*MDP* (psf)
W-AM-1	*T7/16O, L24, N6*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 2-ft^2	*JM TPO SA*	Self-adhered	**-37.5 (Lim. 7; Non-HVHZ)**
W-AM-2	*T7/16O, L24, N6*	OPTIONAL *INSULATION* under min. 1.5-inch *E3*	*Preliminarily Secured* or secured with top layer	ProtectoR HD	*UltraFast Fasteners & Plates (Square)* at a rate of 1 fastener per 2-ft^2	JM TPO (Min. 60 mil) or *JM TPO FB*	*JM TPO: TPO WBMA*, *MBA* applied at 0.83 gal/100ft^2, *LVOC MA* or *ASBA* *JM TPO FB: RSUA* applied 12-inch o.c. or *2-Part UIA-C(S)*	**-37.5 (Lim. 7; Non-HVHZ)**
W-AM-3	*T7/16O, L24*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	*ProtectoR*	JM All Purpose Fasteners and JM TPO Rhino Plates secured at a rate of 1 per 2.13ft^2	*JM TPO* or *JM TPO FB*	*JM TPO: MBA, TPO WBMA, LVOC MA*, or *ASBA* *JM TPO FB: 2-Part UIA-C(S)*	**-37.5 (Lim. 7; Non-HVHZ)**
W-AM-4	*T7/16O, L24*	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	*ProtectoR*	JM All Purpose Fasteners and JM TPO Rhino Plates secured at a rate of 1 per 2.13ft^2	*JM TPO SA*	Self-adhered	**-37.5 (Lim. 7; Non-HVHZ)**

Mechanically Fastened Assemblies over *Wood Deck* (New or Existing)									
System No.	*Deck Detail*	Thermal Barrier	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
W-M-1	*T19/32P, L24*	As required	Min. 0.25-inch *INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 4-inch o.c. with JM APB Plates and High Load Fasteners; Fastener rows max. 114-inch o.c.	**-37.5 (Lim. 7; Non-HVHZ)**
W-M-2	*T19/32P, L24, N6*	As required	Min. 0.25-inch *INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	*Preliminarily Secured*	*JM TPO*	Attached in-lap 6-inch o.c. with *HL Fasteners & Plates*; Fastener rows max. 54-inch o.c.	**-60 (Lim. 7)**

Induction Welded Assemblies over *Wood Deck* (New or Existing)									
System No.	*Deck Detail*	Thermal Barrier	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
W-W-1	*T7/16O* or *T15/32P, L24*	As required	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	Min. 0.5-inch *E3* or *Cover Board*	JM All Purpose Fasteners (min. 1-inch embedment into wood supports) and JM TPO Rhino Plates secured max. 12-inch o.c. through sheathing into wood structural supports in row max. 8-ft o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-37.5 (Lim. 7; Non-HVHZ)**
W-W-2	*T7/16O* or *T15/32P, L24*	As required	OPTIONAL *INSULATION*	Loose laid	*ProtectoR*	JM All Purpose Fasteners (min. 1-inch embedment into wood supports) and JM TPO Rhino Plates secured max. 48-inch o.c. through sheathing into wood structural supports in rows max. 24” o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-37.5 (Lim. 7; Non-HVHZ)**
W-W-3	*T7/16O* or *T15/32P, L24*	As required	Min. 1-inch *E3* or *E3 C1*	Loose laid	OPTIONAL *Cover Board*	JM All Purpose Fasteners (min. 1.5-inch embedment into wood supports) and JM TPO Rhino Plates secured max. 48-inch o.c. through sheathing into wood structural supports in rows max. 24” o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7; Non-HVHZ)**
W-W-4	*T7/16O* or *T15/32P, L24*	As required	OPTIONAL *INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	JM All Purpose Fasteners (min. 1.75-inch embedment into wood supports) and JM TPO Rhino Plates secured max. 18-inch o.c. through sheathing into wood structural supports in row max. 4-ft o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-45 (Lim. 7; Non-HVHZ)**
W-W-5	*T15/32P, L24, N6*	As required	Min. 0.25-inch *INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	JM All Purpose Fasteners (min. 1.5-inch embedment into wood supports) and JM TPO Rhino Plates secured max. 24-inch o.c. through sheathing into wood structural supports in rows max. 24” o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-52.5 (Lim. 7)**

Induction Welded Assemblies over *Wood Deck* (New or Existing)									
System No.	*Deck Detail*	Thermal Barrier	Base Insulation	Base Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane	Membrane Attachment	*MDP* (psf)
W-W-6	*T15/32P, L24, N6*	As required	Min. 0.25-inch *INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	JM All Purpose Fasteners (min. 1.5-inch embedment into wood supports) and JM TPO Rhino Plates secured max. 9-inch o.c. through sheathing into wood structural supports in rows max. 48" o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-60 (Lim. 7)**
W-W-7	*T15/32P, L24, N6*	As required	Min. 0.25-inch *INSULATION*	*Preliminarily Secured* or secured with top layer	OPTIONAL *Cover Board*	JM All Purpose Fasteners (min. 1.5-inch embedment into wood supports) and JM TPO Rhino Plates secured max. 6-inch o.c. through sheathing into wood structural supports in rows max. 48" o.c.	JM TPO (Min. 60 mil)	Induction welded to JM TPO RhinoPlates	**-112.5 (Lim. 7)**

END OF REPORT