

## Features and Components

**Use:** For bonding insulation board products to approved roofing substrates, and insulation to insulation.

**Type:** Two-part, cold application insulation adhesive.

**Substrates:** Compatible with the following insulations, cover boards, and substrates: polyisocyanurate; HD wood fiber; perlite; Invinsa® Roof Board; gypsum; concrete<sup>1</sup> (*Lightweight structural, poured-in-place structural, precast, and insulating*); treated plywood; cementitious wood fiber plank; base sheets; gypsum; and some existing smooth-surfaced asphalt (*per inspection*).

1. Drying time of 28 days required.

**Color:** Amber

**Features:** No primers or catalysts are required for application. No ballasting of boards required. May be used in single ply and bituminous systems.

Component

**AD**  
Adhesive

Type

**I**  
Insulation

**B**  
Cover Board

Multi-Ply  
Single Ply

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

| Multi-Ply                                          | BUR |    | APP |    | SBS |    |    |    |
|----------------------------------------------------|-----|----|-----|----|-----|----|----|----|
|                                                    | HA  | CA | CA  | HW | HA  | CA | HW | SA |
| Used to adhere Insulation in all Multi-Ply systems |     |    |     |    |     |    |    |    |

| Single Ply                                          | TPO |    | PVC |    | EPDM |    |    |
|-----------------------------------------------------|-----|----|-----|----|------|----|----|
|                                                     | MA  | FA | MA  | FA | MA   | FA | BA |
| Used to adhere Insulation in all Single Ply systems |     |    |     |    |      |    |    |

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

## Energy and the Environment

|             |                                                |
|-------------|------------------------------------------------|
| Maximum VOC | 11 g/l as applied after mixing (EPA method 24) |
|-------------|------------------------------------------------|

## Physical Properties

| Property |                                 | ASTM Test Method | JM Two-Part UIA                   |
|----------|---------------------------------|------------------|-----------------------------------|
| Weight   | Weight (liquid components)      | Part 1           | —                                 |
|          |                                 | Part 2           | —                                 |
|          | Viscosity (liquid components)   | Part 1           | 300 cps                           |
|          |                                 | Part 2           | 280 cps                           |
| Strength | Density - Free Rise             | D-1622           | 3.2 lb/cf (0.05 g/cm)             |
|          | Compressive Strength - Parallel | D-1621           | 38 psi (0.26 MPa) @ 6% deflection |
|          | Tensile Strength                | D-1623           | 35 psi (0.26 MPa)                 |
|          | Water Absorption                | D-2843           | 5.1%                              |
|          | Closed Cell Content             | D-2856           | 90% (min)                         |

## Codes and Approvals



## Installation/Application



Cart



Bead

- **Cartridges**, Two grades available, applied at temperatures between:  
Winter grade: 0°F to 65°F (-18°C to 18.3°C)  
Regular grade: 40°F (4°C) and above
- **Boxes**, One grade available, applied at temperatures of:  
Regular grade: 40°F (4°C) and above
- Adhesive must be 72°F (22°C) before using in a pace cart.
- Please refer to detailed installation instructions on next page.

## Packaging and Coverage

| Container Type            | Case                                               | Box                                                  |
|---------------------------|----------------------------------------------------|------------------------------------------------------|
| Items per Case/Box        | 4 - cartridges/case with 6 mixing tips             | 2 - boxes (parts)/box 5 gal (18.9 l) each            |
| Shipping Weight (approx.) | 19 lb (8.6 kg)                                     | Part 1 = 52 lb (23.6 kg)<br>Part 2 = 43 lb (19.5 kg) |
| Cases/Boxes per Pallet    | 40                                                 | 32                                                   |
| Coverage Rate*            | 400 ft² to 600 ft² (37.16 m² to 55.74 m²) per case | 1000 ft² to 2000 ft² (92.9 m² to 185.8 m²) per set   |

\* Coverage, open and dry time rates can vary dramatically depending on the particular substrate and environmental conditions. Coverage rates stated herein are approximate only. If FM Global® or UL® approval is required, consult specific RoofNav<sup>SM</sup> or the UL Certifications Directory for specific application rates.

## Storage

|                    |                                                                         |
|--------------------|-------------------------------------------------------------------------|
| Shelf Life         | 18 months from manufacture date                                         |
| Storage Conditions | Clean, dry, well-ventilated indoor environment in an unopened container |
| Temperature Range  | 45°F to 95°F (7°C to 35°C) - Protect from freezing                      |

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



# JM TWO-PART URETHANE INSULATION ADHESIVE

## Installation/Application Instructions

JM Two-Part UIA is dispensed in a semi-liquid bead that rises  $\frac{3}{4}$ " to 1" (19 mm to 25 mm) above the substrate. Beads are typically 12" (305 mm) on center. Within two minutes, the insulation board is placed into the adhesive and walked into place. The adhesive cures completely in approximately 4 to 8 minutes after application, depending on temperature and weather conditions. Note: Board stock must be placed into the adhesive while it is still wet (before it reaches its tack-free state).

Ensure all insulation boards are 4' x 4' (1.22 m x 1.22 m) or smaller. Ensure all surfaces are dry and free of any debris, dirt, oil and grease before using JM Two-Part UIA.

## Typical Application Rates

| Insulation to:       | sqs/gal<br>pace cart | sqs/box of<br>4 cartridges |
|----------------------|----------------------|----------------------------|
| Concrete             | 1.7 to 2             | 6                          |
| Insulation           | 1.7 to 2             | 6                          |
| Smooth BUR           | 1.5 to 1.7           | 5                          |
| Mod Bit              | 1.5 to 1.7           | 5                          |
| Gypsum               | 1 to 1.2             | 4                          |
| Lightweight Concrete | 1 to 1.7             | 4                          |
| Wood                 | 1.7 to 2             | 6                          |
| Tectum               | 1 to 1.2             | 4                          |
| Steel                | 1 to 1.2             | 4                          |

## Clean-Up and Disposal

### Disposal

Neutralize and dispose of spilled material, unused contents and empty containers in accordance with local, state and federal regulations.

### Environmental Hazard

PMDI in Part 1 component may cause pollution. Do not discharge into lakes, streams, ponds or public waters. For guidance, contact your regional office of the U.S. Environmental Protection Agency.

## Precautions

**First Aid** – In case of contact with eyes, immediately flush eyes with running water for at least 15 minutes. Call a physician immediately. In case of contact with skin, wash affected area with soap and water. Remove all contaminated clothing and shoes. Wash clothing before reuse and discard contaminated shoes. If swallowed, drink large amounts of water to dilute. If vomiting occurs, drink more water and call a physician immediately.

**Environmental Hazard** – PMDI in Part 1 component may cause pollution. Do not discharge into lakes, streams, ponds or public waters. For guidance, contact your regional office of the U.S. Environmental Protection Agency.

**Disposal** – Neutralize and dispose of spilled material, unused contents and empty containers in accordance with local, state and federal regulations.

**Safety** – Wear proper clothing and safety equipment.

## JM Roofing System Urethane Adhesive, Part 1

Version 1.2

Revision Date 05/29/2015

Print Date 05/29/2015

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : JM Roofing System Urethane Adhesive, Part 1

Manufacturer or supplier's details

Company : Johns Manville  
Address : P.O. Box 5108  
Denver, CO USA 80127  
Telephone : 303-978-2000 8:00AM-5:00PM M-F  
Emergency telephone : 1-800-424-9300 (Chemtrec, in English)  
number

Prepared by : productsafety@jm.com

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Acute toxicity (Inhalation) : Category 4  
Skin irritation : Category 2  
Eye irritation : Category 2A  
Respiratory sensitisation : Category 1  
Skin sensitisation : Category 1  
Specific target organ toxicity : Category 3  
- single exposure

#### GHS Label element

Hazard pictograms :



Signal word : Danger

Hazard statements : H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.

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P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

P281 Use personal protective equipment as required.

P285 In case of inadequate ventilation wear respiratory protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****Hazardous components**

| Chemical Name                       | CAS-No.   | Concentration (%) |
|-------------------------------------|-----------|-------------------|
| Diphenylmethanediisocyanate         | 9016-87-9 | >= 70 - < 90      |
| 4,4'-methylenediphenyl diisocyanate | 101-68-8  | >= 30 - < 50      |

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : Call a physician or poison control centre immediately.  
If unconscious place in recovery position and seek medical advice.
- In case of skin contact : If skin irritation persists, call a physician.  
If on skin, rinse well with water.  
If on clothes, remove clothes.

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- |                        |                                                                                                                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In case of eye contact | : Remove contact lenses.<br>Immediately flush eye(s) with plenty of water.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist.                                    |
| If swallowed           | : Induce vomiting immediately and call a physician.<br>Keep respiratory tract clear.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.<br>Take victim immediately to hospital. |

**SECTION 5. FIREFIGHTING MEASURES**

- |                                               |                                                                          |
|-----------------------------------------------|--------------------------------------------------------------------------|
| Unsuitable extinguishing media                | : High volume water jet                                                  |
| Hazardous combustion products                 | : No hazardous combustion products are known                             |
| Specific extinguishing methods                | : Standard procedure for chemical fires.                                 |
| Further information                           | : Standard procedure for chemical fires.                                 |
| Special protective equipment for firefighters | : Wear self-contained breathing apparatus for firefighting if necessary. |

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- |                                                                     |                                                                                                                                                                                           |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment.<br>Ensure adequate ventilation.                                                                                                                      |
| Environmental precautions                                           | : Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up               | : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal.                             |

**SECTION 7. HANDLING AND STORAGE**

- |                         |                                                                                                                                                                                                                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on safe handling | : Avoid formation of aerosol.<br>Do not breathe vapours/dust.<br>Avoid exposure - obtain special instructions before use.<br>Avoid contact with skin and eyes.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area. |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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Provide sufficient air exchange and/or exhaust in work rooms.  
Dispose of rinse water in accordance with local and national regulations.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

| Components                          | CAS-No.  | Value type<br>(Form of exposure) | Control parameters /<br>Permissible concentration | Basis     |
|-------------------------------------|----------|----------------------------------|---------------------------------------------------|-----------|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | TWA                              | 0.005 ppm                                         | ACGIH     |
|                                     |          | TWA                              | 0.005 ppm<br>0.05 mg/m3                           | NIOSH REL |
|                                     |          | C                                | 0.02 ppm<br>0.2 mg/m3                             | NIOSH REL |
|                                     |          | C                                | 0.02 ppm<br>0.2 mg/m3                             | OSHA      |

#### Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection  
Remarks : Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection : Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.  
When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.  
Written instructions for handling must be available at the work place.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|                                        |                     |
|----------------------------------------|---------------------|
| Appearance                             | : liquid            |
| Colour                                 | : dark amber        |
| Odour                                  | : characteristic    |
| Odour Threshold                        | : No data available |
| pH                                     | : No data available |
| Melting point/freezing point           | : No data available |
| Boiling point/boiling range            | : 200 °C            |
| Flash point                            | : 220 °C            |
| Evaporation rate                       | : No data available |
| Flammability (solid, gas)              | : No data available |
| Upper explosion limit                  | : No data available |
| Lower explosion limit                  | : 4 %(V)            |
| Vapour pressure                        | : No data available |
| Relative vapour density                | : No data available |
| Relative density                       | : No data available |
| Density                                | : 1.22 g/cm3        |
| Solubility(ies)                        |                     |
| Water solubility                       | : insoluble         |
| Solubility in other solvents           | : No data available |
| Partition coefficient: n-octanol/water | : No data available |
| Auto-ignition temperature              | : No data available |
| Thermal decomposition                  | : No data available |
| Viscosity                              |                     |
| Viscosity, dynamic                     | : 200 mPa.s         |
| Viscosity, kinematic                   | : No data available |

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**SECTION 10. STABILITY AND REACTIVITY**

|                                    |                                                       |
|------------------------------------|-------------------------------------------------------|
| Reactivity                         | : No decomposition if stored and applied as directed. |
| Chemical stability                 | : No decomposition if stored and applied as directed. |
| Possibility of hazardous reactions | : No decomposition if stored and applied as directed. |
| Conditions to avoid                | : No data available                                   |

**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity****Product:**

Acute inhalation toxicity : Acute toxicity estimate : 11 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Calculation method

**Skin corrosion/irritation****Product:**

Remarks: May cause skin irritation and/or dermatitis.

**Serious eye damage/eye irritation****Product:**

Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitisation****Product:**

Remarks: May cause sensitisation of susceptible persons by skin contact or by inhalation of aerosol or dust.

**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**ACGIH** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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**Further information****Product:**

Remarks: No data available

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity**

No data available

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**Product:**

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Disposal of residual product : Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

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**SECTION 14. TRANSPORT INFORMATION****International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

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**SECTION 15. REGULATORY INFORMATION****TSCA list** : Not relevant

Not relevant

**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

| Components                          | CAS-No.  | Component RQ (lbs) | Calculated product RQ (lbs) |
|-------------------------------------|----------|--------------------|-----------------------------|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | 5000               | *                           |

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

|                                     |           |      |
|-------------------------------------|-----------|------|
| Diphenylmethanediisocyanate         | 9016-87-9 | 70 % |
| 4,4'-methylenediphenyl diisocyanate | 101-68-8  | 35 % |

**Clean Air Act**

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

|                                     |          |      |
|-------------------------------------|----------|------|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | 35 % |
|-------------------------------------|----------|------|

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I

Intermediate or Final VOC's (40 CFR 60.489):

|                                     |          |      |
|-------------------------------------|----------|------|
| 4,4'-methylenediphenyl diisocyanate | 101-68-8 | 35 % |
|-------------------------------------|----------|------|

**California Prop 65**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**The components of this product are reported in the following inventories:****TSCA** : On TSCA Inventory**DSL** : All components of this product are on the Canadian DSL.**SECTION 16. OTHER INFORMATION**

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**Further information**

Revision Date : 05/29/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**JM Roofing System Urethane Adhesive, Part 2.**

Version 1.2

Revision Date 07/13/2015

Print Date 07/13/2015

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Trade name : JM Roofing System Urethane Adhesive, Part 2.

Manufacturer or supplier's details

Company : Johns Manville  
Address : P.O. Box 5108  
Denver, CO USA 80127  
Telephone : 303-978-2000 8:00AM-5:00PM M-F  
Emergency telephone : 1-800-424-9300 (Chemtrec, in English)  
number

Prepared by : productsafety@jm.com

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Acute toxicity (Oral) : Category 4

Acute toxicity (Dermal) : Category 4

**GHS Label element**

Hazard pictograms :



Signal word : Warning

Hazard statements : H302 + H312 Harmful if swallowed or in contact with skin

Precautionary statements : **Prevention:**  
P280 Wear protective gloves/ protective clothing.  
P270 Do not eat, drink or smoke when using this product.  
P264 Wash hands thoroughly after handling.  
**Response:**  
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.  
P330 Rinse mouth.  
P362 Take off contaminated clothing and wash before reuse.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**JM Roofing System Urethane Adhesive, Part 2.**

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****Hazardous components**

| Chemical Name | CAS-No.      | Concentration (%) |
|---------------|--------------|-------------------|
| Polyol blend  | Not Assigned | >= 90 - <= 100    |

**SECTION 4. FIRST AID MEASURES**

|                         |                                                                                                                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice          | : Do not leave the victim unattended.                                                                                                                                                         |
| If inhaled              | : If unconscious place in recovery position and seek medical advice.<br>If symptoms persist, call a physician.                                                                                |
| In case of skin contact | : If skin irritation persists, call a physician.<br>If on skin, rinse well with water.<br>If on clothes, remove clothes.                                                                      |
| In case of eye contact  | : Remove contact lenses.<br>Immediately flush eye(s) with plenty of water.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed            | : Keep respiratory tract clear.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.                                                           |

**SECTION 5. FIREFIGHTING MEASURES**

|                                               |                                                                                                                   |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media                | : High volume water jet                                                                                           |
| Hazardous combustion products                 | : Hazardous decomposition products due to incomplete combustion<br><br>No hazardous combustion products are known |
| Specific extinguishing methods                | : Standard procedure for chemical fires.                                                                          |
| Further information                           | : Standard procedure for chemical fires.                                                                          |
| Special protective equipment for firefighters | : Wear self-contained breathing apparatus for firefighting if necessary.                                          |

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**JM Roofing System Urethane Adhesive, Part 2.**

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- |                                                                     |   |                                                                                                                                                |
|---------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.                                                                                                             |
| Environmental precautions                                           | : | Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up               | : | Wipe up with absorbent material (e.g. cloth, fleece).<br>Keep in suitable, closed containers for disposal.                                     |

**SECTION 7. HANDLING AND STORAGE**

- |                             |   |                                                                                                                                                                                                                                        |
|-----------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on safe handling     | : | Avoid contact with skin and eyes.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Dispose of rinse water in accordance with local and national regulations. |
| Conditions for safe storage | : | Keep container tightly closed in a dry and well-ventilated place.<br>Electrical installations / working materials must comply with the technological safety standards.                                                                 |

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

**Personal protective equipment****Hand protection**

- |         |   |                                                                                                                                                                                   |
|---------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks | : | Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). |
|---------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- |                |   |                                |
|----------------|---|--------------------------------|
| Eye protection | : | Tightly fitting safety goggles |
|----------------|---|--------------------------------|

- |                          |   |                                                                                                                                       |
|--------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|
| Skin and body protection | : | impervious clothing<br>Choose body protection according to the amount and concentration of the dangerous substance at the work place. |
|--------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|

- |                  |   |                                                                                                                                                                                                                                                                        |
|------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hygiene measures | : | Handle in accordance with good industrial hygiene and safety practice.<br>When using do not eat or drink.<br>When using do not smoke.<br>Wash hands before breaks and at the end of workday.<br>Written instructions for handling must be available at the work place. |
|------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**JM Roofing System Urethane Adhesive, Part 2.**

Version 1.2

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|                                         |                       |
|-----------------------------------------|-----------------------|
| Appearance                              | : liquid              |
| Colour                                  | : colourless          |
| Odour                                   | : slight              |
| Odour Threshold                         | : No data available   |
| pH                                      | : No data available   |
| Melting point/freezing point            | : No data available   |
| Initial boiling point and boiling range | : No data available   |
| Flash point                             | : No data available   |
| Evaporation rate                        | : No data available   |
| Flammability (solid, gas)               | : No data available   |
| Upper explosion limit                   | : No data available   |
| Lower explosion limit                   | : No data available   |
| Vapour pressure                         | : No data available   |
| Relative vapour density                 | : No data available   |
| Relative density                        | : No data available   |
| Density                                 | : 1 g/cm <sup>3</sup> |
| Solubility(ies)                         |                       |
| Water solubility                        | : insoluble           |
| Solubility in other solvents            | : No data available   |
| Partition coefficient: n-octanol/water  | : No data available   |
| Auto-ignition temperature               | : No data available   |
| Thermal decomposition                   | : No data available   |
| Viscosity, dynamic                      | : No data available   |
| Viscosity, kinematic                    | : No data available   |

**SECTION 10. STABILITY AND REACTIVITY**

|            |                                                       |
|------------|-------------------------------------------------------|
| Reactivity | : No decomposition if stored and applied as directed. |
|------------|-------------------------------------------------------|

**JM Roofing System Urethane Adhesive, Part 2.**

Version 1.2

Revision Date 07/13/2015

Print Date 07/13/2015

|                                    |                                                                            |
|------------------------------------|----------------------------------------------------------------------------|
| Chemical stability                 | : No decomposition if stored and applied as directed.                      |
| Possibility of hazardous reactions | : No decomposition if stored and applied as directed.                      |
| Conditions to avoid                | : No data available                                                        |
| Hazardous decomposition products   | : Carbon monoxide<br>Carbon dioxide (CO <sub>2</sub> )<br>Tin oxide fumes. |

**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity****Product:**

|                       |                                                                         |
|-----------------------|-------------------------------------------------------------------------|
| Acute oral toxicity   | : Acute toxicity estimate : > 5,000 mg/kg<br>Method: Calculation method |
| Acute dermal toxicity | : Acute toxicity estimate : 2,105 mg/kg<br>Method: Calculation method   |

**Acute toxicity****Components:****Polyol blend:**

|                           |                                              |
|---------------------------|----------------------------------------------|
| Acute oral toxicity       | : LD50 (Rat): 5,000 mg/kg                    |
| Acute inhalation toxicity | : LC50 (Rat): 200 mg/l<br>Exposure time: 1 h |
| Acute dermal toxicity     | : LD50 (Rabbit): 2,000 mg/kg                 |

**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**ACGIH**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Further information****Product:**

Remarks: No data available

**JM Roofing System Urethane Adhesive, Part 2.**

Version 1.2

Revision Date 07/13/2015

Print Date 07/13/2015

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity**

No data available

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**Product:**

Regulation

40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information

: No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Disposal of residual product

: Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging

: Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.**SECTION 14. TRANSPORT INFORMATION****International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

**SECTION 15. REGULATORY INFORMATION**

TSCA list

: Not relevant

**JM Roofing System Urethane Adhesive, Part 2.**

Version 1.2

Revision Date 07/13/2015

Print Date 07/13/2015

Not relevant

**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**Clean Air Act**

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

**California Prop 65** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.**The components of this product are reported in the following inventories:**

TSCA : Listed on TSCA

DSL : All components of this product are on the Canadian DSL.

---

**SECTION 16. OTHER INFORMATION****Further information**

Revision Date : 07/13/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

## SUBMITTAL IDENTIFICATION SHEET

### To be completed by Contractor/CM

|                               |                                   |
|-------------------------------|-----------------------------------|
| WEBSTER UNIVERSITY ISB        |                                   |
| PROJECT NAME                  |                                   |
| 8274 BIG BEND BLVD            |                                   |
| ADDRESS                       |                                   |
| NUMBER                        |                                   |
| WEBSTER UNIVERSITY            |                                   |
| OWNER                         |                                   |
| CANNON DESIGN                 |                                   |
| ARCHITECT / ENGINEER          |                                   |
| DEVIN D GATES                 |                                   |
| SUBMITTED BY                  |                                   |
| 075323-001                    |                                   |
| CONTRACTOR / CM SUBMITTAL NO. | CANNON DESIGN SUBMITTAL NO.       |
|                               | 075323                            |
| DRAWING / DETAIL REFERENCE    | SPECIFICATION SECTION / PARAGRAPH |
|                               |                                   |
| MANUFACTURER / SUPPLIER       | ITEM / PRODUCT ID                 |
|                               |                                   |
| REQUIRED DATE                 | PRIORITY                          |
|                               | CRITICAL                          |

### ITEM BEING SUBMITTED (check only one)

- |                                             |                                                      |                                            |
|---------------------------------------------|------------------------------------------------------|--------------------------------------------|
| <input type="radio"/> Shop Drawings         | <input type="radio"/> Certification / Qualifications | <input type="radio"/> Coordination Drawing |
| <input type="radio"/> Samples (____ copies) | <input type="radio"/> Record Documents               | <input type="radio"/> Calculations         |
| <input type="radio"/> LEED Submittal        | <input type="radio"/> Product Data                   | <input type="radio"/> Schedules            |
| <input type="radio"/> Other _____           | <input type="radio"/> O&M Manuals                    |                                            |

### ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action ☐ Information Only ☐ Record

### REMARKS OR DEVIATIONS

Email correspondence with KWA provided clarifications for requested information and warranty letter attached.

### CONTRACTOR / CM CERTIFICATION (SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION  
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:  
Devin D. Gates

|               |          |
|---------------|----------|
| DEVIN D GATES | 10/11/16 |
| REVIEWED BY   | DATE     |

### To be completed by Reviewer

|                                |
|--------------------------------|
| 07 5323-001 REV002             |
| CANNON DESIGN SUBMITTAL NUMBER |
| 10/11/16                       |
| RECEIVED DATE                  |

- ☐ A. No Exceptions Taken  
No further review of submittal is required.
- ☒ B. Make Corrections Noted  
Incorporate corrections in work; resubmission is not required.
- ☐ C. Revise and Resubmit  
Revise as noted, and resubmit for review.
- ☐ D. Rejected  
Submittal is not in compliance with Contract Documents; provide new submittal.
- ☐ E. For Record / Information Only  
Submittal was reviewed for Record / Information purposes only.
- ☐ F. Not Required for Review  
Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be af  
This review is null and void if submittal deviates from contra  
and does not indicate or note deviations.

### A/E COMMENTS

☐ See attached sheet(s) for additional comments

|                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final warranty must meet specification section 1.10. 2. requirements: wind speed coverage of that indicated on structural drawings (90 mph minimum), hail coverage for up to 2 inch diameter, and accidental puncture coverage of 16 man hours per year of warranty. |
| see comments below                                                                                                                                                                                                                                                   |

|                |          |
|----------------|----------|
| Kathy Williams | 10/11/16 |
| REVIEWED BY    | DATE     |

## Gates, Devin

---

**From:** Scott Klingsick <scott@kwastl.com>  
**Sent:** Friday, October 07, 2016 7:00 AM  
**To:** Gates, Devin  
**Cc:** kpatel@cannondesign.com  
**Subject:** RE: Clarifications on returned EPDM shop drawings

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Yes this will be acceptable. We need the rest of the information revised and it to be resubmitted so we can approve submittal 075323-001. Thanks

### Scott Klingsick, LEED Green Associate

Project Manager  
9721 Litzsinger Rd.  
St. Louis, MO 63124  
(p) 314.962.2560 (f) 314.962.4057  
[scott@kwastl.com](mailto:scott@kwastl.com)



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---

**From:** Gates, Devin [mailto:ddgates@paric.com]  
**Sent:** Thursday, October 06, 2016 4:59 PM  
**To:** Scott Klingsick  
**Cc:** kpatel@cannondesign.com  
**Subject:** RE: Clarifications on returned EPDM shop drawings

Kelvin/Scott,

Were you able to take a look at this and does this resolve the impact resistance needs? I can resubmit formally as needed but with the back and forth I wanted to ensure we are all on the same page.

Thanks,

**DEVIN GATES**  
SENIOR PROJECT ENGINEER

**Cell:** 314-348-8828  
**Main:** 636-561-9500

- - - - -  
77 Westport Plaza, Suite 250  
St. Louis, MO 63146



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---

**From:** Aaron Hammerstone [<mailto:aaron.hammerstone@kirberg.com>]  
**Sent:** Tuesday, October 04, 2016 7:10 AM  
**To:** Gates, Devin; [scott@kwastl.com](mailto:scott@kwastl.com)  
**Cc:** [kpatel@cannondesign.com](mailto:kpatel@cannondesign.com)  
**Subject:** FW: Clarifications on returned EPDM shop drawings

All,

Please see the two attachments, as well as the information in the below email in regards to the ASTM testing on JM EPDM membrane.

Thanks

---

**Aaron Hammerstone | Project Manager**

314.333.4710 Direct | [aaron.hammerstone@kirberg.com](mailto:aaron.hammerstone@kirberg.com)

314.792.3777 Mobile

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---

**From:** Mark Tucker [<mailto:Mark@D7Reps.com>]  
**Sent:** Monday, October 03, 2016 4:12 PM  
**To:** Aaron Hammerstone

**Cc:** James Nunns; [zac.stallings@jm.com](mailto:zac.stallings@jm.com); Jim Schriefer  
**Subject:** RE: Clarifications on returned EPDM shop drawings

Aaron,

This JM EPDM 90NR data sheet shows we meet ASTM 4637 for EPDM. It's the same testing All EPDM is to meet, requiring minimum test results for numerous categories. There are three major manufacturers of EPDM: Johns Manville, Firestone, and Carlisle. NOTE: of the three, the latter two, have private label products, targeting a different market segment of contractors. The 3 major manufacturers are also, the only three members of the EPDM Roofing Association (ERA): <http://www.epdmroofs.org/about-era/members> . The goal of this organization is collectively establish current and accurate data documenting of EPDM.  
<http://www.epdmroofs.org/about-era/who-we-are> .

Inside of **ASTM D 4637**, are individual tests for certain criteria. As a whole, make up ASTM D 4637.  
Of which include the following:

**ASTM D 5635 – Dynamic Puncture Resistance, 5J, Type 1 – Passes**

**ASTM D 5602 Static Puncture Resistance, 44.1 lbf, Type 1 – Passes**

There are only two hail tests for the Single Ply Membranes (according to Jim D. Koontz- Crenshaw and Koontz).  
Of which, the one most recognized, is FM's test, for approved Roof Nav assemblies per FM 4470.  
For this project, we supplied the following two FM Nav #'s:

#### Assembly Properties

|              |                                     |                |        |
|--------------|-------------------------------------|----------------|--------|
| Assembly #:  | <b>392147-0-0</b>                   | Slope:         | 1.0000 |
| Roof System: | Single-Ply System                   | Wind Uplift*:  | 90     |
| Application: | New Roof                            | Internal Fire: | 1      |
| Cover        |                                     | Exterior Fire: | A      |
| Securement:  | Adhered                             |                |        |
| Deck Type:   | Steel                               | Hail:          | SH     |
|              | For Use With Non-Combustible Walls: |                | No     |

AND

|              |                                     |                |        |
|--------------|-------------------------------------|----------------|--------|
| Assembly #:  | <b>374588-0-0</b>                   | Slope:         | 1.0000 |
| Roof System: | Single-Ply System                   | Wind Uplift*:  | 270    |
| Application: | New Roof                            | Internal Fire: | NC     |
| Cover        |                                     | Exterior Fire: | A      |
| Securement:  | Adhered                             |                |        |
| Deck Type:   | Structural Concrete                 | Hail:          | SH     |
|              | For Use With Non-Combustible Walls: |                | No     |

The roofing specification for this project, states in Part 1, paragraph 1.5, line 3, That the manufacturer must meet "Tested and listed by FM for class specified in "Performance Requirements" Article in Part 2 of this Section". In Part 2, **we met** Part 2, paragraph 2.2, A1. As noted, A2 criteria is for Modified Roofing. As such, A2 should be eliminated from requirements of the submittal, as **Part 2, 2.2, D.2** requires a Hail Resistance: SH. Of which, is met with both of the approved JOHNS MANVILLE Roof Nav Assembly numbers provided.

As for UL 2818, again is not a test used in the Single Ply industry. It is used primarily in the residential steep slope roofing market (shingles, tile, slate, metal roofs). The test requirement for this, is to test roof slopes at 6" in 12" or greater. This test was realized in 1996, by Major Property Insurers, the Institute of

Business and Home Safety (IBHS), and with United Laboratory. They developed ASMT 2218, to set a national standard, for roof impact resistance, for the residential steep slope market.

- 
- A scope/ description, for the use of ASTM 2218, from the UL ASTM 2218 web page: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=20884> click on "scope".
- 1 Scope

1.1 This test method provides impact resistance data for the evaluation of prepared roof covering materials. For purposes of this Standard prepared roof covering materials are considered to be small units, sheets or panels designed for installation with multiple layers of such materials installed in **overlapping rows normally on inclines exceeding 25 percent**.

We did a quick research of other manufacturers web sites, and on hand manufacturers data. Not one in the Single Ply manufacturing business, list or utilize the UL 2218 test. In fact, all manufacturers use the same testing, as it relates to the ASTM (see above for Static and Dynamic Puncturing) for that membrane. In this project instance, is EPDM (ASTM D 4637).

It appears to us, that there seems to be a mix of an EPDM specification, and a Modified/ Residential specification.

If this information does not satisfy the needs of the BID Documents, please let me know.

Mark

---

**From:** Aaron Hammerstone [<mailto:aaron.hammerstone@kirberg.com>]  
**Sent:** Friday, September 30, 2016 2:25 PM  
**To:** Mark Tucker <[Mark@D7Reps.com](mailto:Mark@D7Reps.com)>  
**Subject:** Fwd: Clarifications on returned EPDM shop drawings

Thanks,

Aaron Hammerstone

Project Manager  
Kirberg Company  
(314)792-3777

Begin forwarded message:

**From:** Scott Klingsick <[scott@kwastl.com](mailto:scott@kwastl.com)>  
**Date:** September 30, 2016 at 2:24:29 PM CDT  
**To:** Aaron Hammerstone <[aaron.hammerstone@kirberg.com](mailto:aaron.hammerstone@kirberg.com)>, "Gates, Devin" <[ddgates@paric.com](mailto:ddgates@paric.com)>  
**Cc:** "Szachnieski, Jason" <[JRSzachnieski@paric.com](mailto:JRSzachnieski@paric.com)>, Kathy Williams <[kathy@kwastl.com](mailto:kathy@kwastl.com)>  
**Subject:** RE: Clarifications on returned EPDM shop drawings

Aaron,

Sorry for the confusion. The wrong ASTM number listed in the specification. It should have been ASTM D 4637-08 "Specification for EPDM Sheet Used in Single-ply Roof Membrane" and/or UL 2218 Standard for Impact Resistance of Prepared Roof Covering Materials. We need testing and product data to show compliance with the requirements impact resistance for the hail requirements on this project.

**Scott Klingsick, LEED Green Associate**

Project Manager  
9721 Litzsinger Rd.  
St. Louis, MO 63124  
(p) 314.962.2560 (f) 314.962.4057  
[scott@kwastl.com](mailto:scott@kwastl.com)



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---

**From:** Aaron Hammerstone [<mailto:aaron.hammerstone@kirberg.com>]

**Sent:** Friday, September 30, 2016 12:13 PM

**To:** Gates, Devin; Scott Klingsick

**Cc:** Szachnieski, Jason

**Subject:** Re: Clarifications on returned EPDM shop drawings

ASTM D 3746 is for bituminous roofing. ASTM D 4272 is for plastic films.

This is an EPDM roof system. I think I'm missing something here.

Thanks,

Aaron Hammerstone

Project Manager  
Kirberg Company  
(314)792-3777

On Sep 30, 2016, at 11:26 AM, Gates, Devin <[ddgates@paric.com](mailto:ddgates@paric.com)> wrote:

Aaron,

See convo below regarding the shop drawing markups.

DEVIN GATES  
SENIOR PROJECT ENGINEER

**Direct:** [636-561-9592](tel:636-561-9592)

**Main:** [636-561-9500](tel:636-561-9500)

Cell: [314-348-8828](tel:314-348-8828)

-----

[77 Westport Plaza, Suite 250](#)  
[St. Louis, MO 63146](#)

Sent from my iPhone

Begin forwarded message:

**From:** "Patel, Kelvin" <[kpatel@CANNONDESIGN.COM](mailto:kpatel@CANNONDESIGN.COM)>  
**Date:** September 30, 2016 at 11:21:32 AM CDT  
**To:** "Gates, Devin" <[ddgates@paric.com](mailto:ddgates@paric.com)>, "Szachnieski, Jason" <[JRSzachnieski@paric.com](mailto:JRSzachnieski@paric.com)>  
**Cc:** "Grossman, Lynn" <[lgrossman@CANNONDESIGN.COM](mailto:lgrossman@CANNONDESIGN.COM)>  
**Subject:** FW: Clarifications on returned EPDM shop drawings

Devin,

See clarification from KWA below.

Thanks,

**Kelvin Patel, CDT, LEED AP BD+C**  
Associate



T 314.425.8756

---

**From:** Scott Klingsick [<mailto:scott@kwastl.com>]  
**Sent:** Friday, September 30, 2016 11:13 AM  
**To:** Patel, Kelvin <[kpatel@CANNONDESIGN.COM](mailto:kpatel@CANNONDESIGN.COM)>; Kathy Williams <[kathy@kwastl.com](mailto:kathy@kwastl.com)>  
**Cc:** Grossman, Lynn <[lgrossman@CANNONDESIGN.COM](mailto:lgrossman@CANNONDESIGN.COM)>  
**Subject:** RE: Clarifications on returned EPDM shop drawings

Kelvin,

It is fine to show the building taller than 60' information.  
We do need submittal for the 2.2 A.2. Impact  
Resistance: Test reports and product data showing  
compliance with ASTM D 3746 or ASTM D 4272. Thanks

**Scott Klingsick, LEED Green Associate**  
Project Manager  
9721 Litzsinger Rd.  
St. Louis, MO 63124  
(p) 314.962.2560 (f) 314.962.4057  
[scott@kwastl.com](mailto:scott@kwastl.com)



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---

**From:** Patel, Kelvin [<mailto:kpatel@CANNONDESIGN.COM>]  
**Sent:** Thursday, September 29, 2016 1:14 PM  
**To:** Scott Klingsick; Kathy Williams  
**Cc:** Grossman, Lynn  
**Subject:** FW: Clarifications on returned EPDM shop drawings

Kathy / Scott,

Please review Paric's questions and provide comments.

Thanks,

**Kelvin Patel, CDT, LEED AP BD+C**

Associate



T 314.425.8756

---

**From:** Gates, Devin [<mailto:ddgates@paric.com>]  
**Sent:** Thursday, September 29, 2016 1:04 PM  
**To:** Patel, Kelvin <[kpatel@CANNONDESIGN.COM](mailto:kpatel@CANNONDESIGN.COM)>  
**Cc:** Szachnieski, Jason <[JRSzachnieski@paric.com](mailto:JRSzachnieski@paric.com)>  
**Subject:** Clarifications on returned EPDM shop drawings

Kelvin,

I have a couple of clarifications on two items from the attached rejected submittal.

1. On page 3 the perimeter and corner dimensions are crossed out for buildings taller than 60' however this building is higher than 60' in locations, is this note correct?
2. Can you please be more specific on what is being requested in the note "submit information for A2"? Johns Mansville did not feel like any of this section applies to the EPDM roof.

Thank you,

**DEVIN GATES**  
SENIOR PROJECT ENGINEER

**Cell:** 314-348-8828  
**Main:** 636-561-9500

-----

77 Westport Plaza, Suite 250  
St. Louis, MO 63146

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<image005.png>

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