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07-12-2017

MS 3 LLC

RE: Poly Urethane Foam (PUF) Roofing

Mr. Barder,

It is our opinion at PBK Facility Consultants, that Poly Urethane Foam (PUF) roof systems are not the best suitable roof system to install in your area. PUF roof systems are very dependent on proper installation procedures and highly susceptible to contamination from weather and other environmental conditions. It's not to say that it cannot be done correctly, but the applicator must be very conscious of the temperature, humidity, and dew point of the roof conditions and be able to adjust their mix and dwell time to accommodate changing conditions throughout the day. As an example if the contractor starts out the day with cool temperatures and low humidity and a weather system moves into the area, temperatures rise as the day progress and the humidity rises, this adversely effects the application and curing of the PUF roof system.

Another concern we have of utilizing this type of roof system, in your area, is the susceptible damage that can occur to the system from impact damage of hail and flying debris from tornados and other wind events. If this PUF roof system is to be applied over an existing roof system, extreme care must be taken to ensure that no latent moisture is present in the existing roof. Any moisture that is trapped in the existing roof or may be transferred from inside the building from normal occupied activity or production through the existing roof system, will be trapped between the old roof system and new PUF roof system. The PUF roof system will develop severe blistering and delamination between the existing roof and new roof. This type of problem will only get worse over time as the existing roof collects the water vapor and it is absorbed into the surrounding existing insulation and spread throughout the surrounding area. Most other roof systems allow for a venting of existing latent moisture and normal moisture drive from the interior conditions of the building.

If you have any questions regarding our opinions and observations of applying PUF roof system on existing buildings please let me know.

Sincerely,

Harold Stephens, Vice President **PBK Facilities Consultants** 14001 Dallas Parkway,

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