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2.01.1 General

A. Before job commencement, frequent communication is encouraged between all parties to ensure that the roof design is compliant with building code requirements, suitable to the building owner's needs, understood by the contractor, and eligible for the manufacturer's limited warranty coverage.

B. Where appropriate, either for contractual obligations or other requirements, arrangements must also be made beforehand for independent third-party inspection of all roof installation work.

2.02.1 Safety

A. Working on a roof is potentially dangerous, and workers must be properly trained and equipped to prevent injury to themselves, building occupants, or other trades. Local labour departments typically dictate job site and employee safety precautions, equipment, and training required; however, the following partial reminder list may be helpful to raise awareness of the many hazards associated with roofing work:

- Working at heights (fall-arrest prevention, guardrails);
- Hot materials (e.g., asphalt kettles, open flames);
- Propane;
- Electrical risks (overhead wires, live conduits under the roof deck);
- Risks and hazards from other trades;
- Power tools (saws, drills, nail guns, etc.);
- Ladders and scaffolds;
- Material safety (materials such as solvent-based adhesives);
- Roof openings/skylights and roof height changes;
- Housekeeping issues;
- First Aid/CPR training; and
- Falling objects (hazard to workers at ground level).

B. The OSHA guidelines in the U.S. cover a variety of aspects of roof safety. A link to their web page pdf can be found on their website: www.osha.gov.

C. Various Canadian provincial safety associations have also published comprehensive roof safety literature. WorkSafeBC offers a good overview of roof safety procedures in their downloadable pdf booklet available on their website: www.worksafebc.com.

D. Fire Stop Membrane: A self-adhesive fire stop membrane composed of a glass reinforcement and SBS modified bitumen. Fire stop membrane is a safety precaution and must be installed prior to the installation of any torch-applied vapour barriers at substrate cracks and voids, angle changes at curbs, parapets, penetrations or any locations subject to back drafts or entrance of flame from the torch, protecting combustible materials in the system.

2.03.1 Applicability

A. IKO-modified bitumen and Built-Up Roofing (BUR) systems are applicable for many commercial and industrial roofing applications at a variety of roof slopes.

B. IKO-modified bitumen and BUR systems are not applicable where any one of the following conditions exists:

1. Roofs where the structural conditions or structural supports of the roof deck are insufficient to support the load of the completed roof in addition to other anticipated loads as recognized by the architect, engineer, roofing professional, or building owner; and/or
2. Non-roofing applications such as below grade waterproofing, plaza decks, pond liners, parking garages, and the like. Contact the IKO Technical Services department for further information on these applications.

C. IKO-modified bitumen and BUR systems are not applicable, without additional design considerations from the IKO Technical Services department, where any one of the following conditions exists:

1. Roofs exposed to discharge that is known to be detrimental to the roof membrane or components;
2. Buildings with large wall openings that were left open during a wind event. Large wall openings are defined as openings that occupy a surface area greater than ten percent of the total surface area of the wall;
3. Roofs subject to regular manual or mechanical traffic;
4. Roofs that are subject to positive air pressure from below the roof deck. These include, and are not limited to, buildings with positive air pressure, roof decks that permit air infiltration, aircraft hangars, canopies, overhangs, and buildings with a large number of bay doors; and/or
5. Cold storage building areas when the freezer or cooler insulation is used as a base to receive the roof.

D. Contact the local building code official, before bidding, about roofs that are subject to building code requirements. If there are questions after contacting the local building code official, contact the IKO Technical Services department to determine which system will meet the building code requirements or other authorities of jurisdiction.

E. IKO-modified bitumen and BUR system specifications are published for the sole purpose of defining the minimum requirements necessary to issue the IKO Limited Warranty. IKO suggests that an architect, engineer, or other design professional be consulted to address conditions beyond the scope of these installation guidelines and to insure appropriate design and application.

2.04.1 Re-cover Considerations

A. Moisture trapped within an existing roof may have a significant effect on the new system depending upon the components selected. A moisture survey should be conducted on an existing roof that has remained in place to determine the moisture content of the existing roof system. All components of the existing roof, which would be detrimental to the new system due to moisture content, must be removed and replaced before the new system's installation.

B. An infrared scan is highly recommended to detect wet insulation in the existing roof system.

C. The structural integrity of the existing roof system and/or roof deck should be confirmed, along with an assessment of its capability to support the anticipated new roof load. An under deck internal visual review by a qualified professional may assist in finding the deteriorating deck conditions that affect the structural integrity. This internal review may also detect recently replaced deck sections and determine if the structural support is adequate for these sections. The repair or replacement of defective decking should be specified as required.

D. When re-covering over an existing insulated single-ply roofing system (i.e., EPDM, PVC, TPO, etc.) with additional insulation and roofing system, cut the existing membrane every ten feet (10') (3 m) perpendicular to the flutes in a metal deck, the seams in a precast concrete deck, the control joints in the poured concrete deck, and to slope on a wood deck where potential for condensation within the completed roof assembly exists (contact the IKO Technical Services department for further guidance).

E. Occasionally, existing building features do not permit specified flashing heights to be achieved. Contact the IKO Technical Services department for review of the proposed detail when existing doors, windows, or equipment supports do not permit termination of the new system above the anticipated high-water level eight inches (8") (200 mm) minimum.

F. If the existing wood nailers are to be re-used, then the condition of the nailers, as well as the nailer attachment, shall be confirmed as suitable for attachment of the new roofing materials. Independent pull-tests may be required.

G. If the existing roof is coal tar pitch, then confirm the compatibility between the new system and the existing coal tar.

H. The new system must be capable of being fully adhered or suitably affixed/bonded to the existing roof system and/or deck.

I. Any limited warranty which may be applied for and properly issued for the new roofing system will not cover the defects or issues in the existing roofing materials/system.

2.05.1 Manufacturer's Qualifications - Quality Assurance

A. Upon request from the building owner, IKO shall supply proof of applicable requested certifications.

B. An IKO IAAP Registered Contractor must install IKO-modified bitumen and BUR systems for any registered IKO Limited Warranty.

C. For any IKO Limited Warranty, IKO reserves the right to inspect to ensure compliance with IKO specifications.

D. As every roof is different, the IKO Technical Services department is available for consultation concerning required departures from current specifications due to unique existing circumstances.

E. Any departure from current installation guidelines, without first obtaining written permission from IKO, will void any registered IKO Limited Warranty.

F. IKO may provide a Limited Warranty upon satisfactory completion and inspection of the roofing system, where applicable, and compliance with all IKO Limited Warranty requirements.

2.06.1 Contractor Qualifications

A. For IKO extended limited warranties, the roofing contractor must be an IKO IAAP Registered Contractor from before the beginning of the bidding process through the end of the installation.

B. Upon request by the building owner, the roofing contractor should present proof of the IKO registration.

C. The roofing contractor should retain a full-time supervisor or foreman experienced with the specified roof system on site during the majority of working hours.

D. The roofing contractor should maintain a workforce skilled in the application of IKO-modified bitumen and/or BUR who must have IKO IAAP Registered Contractors certification for specific Limited Warranty coverage. The crew should be properly instructed in all applicable safety procedures.

E. The roofing contractor should maintain all of the equipment and tools necessary to complete the work.

2.07.1 Pre-Installation Meeting

A. The pre-installation meeting should convene within five working days before the commencement of work on the roof.

B. All parties responsible for work in this section are required to attend.

C. All installation procedures shall be reviewed and, where necessary, coordination with related work from other trades shall be determined.

D. All outstanding issues shall be noted in writing, the responsible parties designated, and a proposed timetable for completion prepared.

E. No roofing work shall begin until a “Notice To Proceed” is issued following the pre-installation meeting. The “Notice To Proceed” shall include information concerning acceptable staging areas, suitable parking and access points, location of refuse containers, sanitary requirements, working hour restrictions, noise restrictions, and complaint resolution protocol between the roofing contractor and the building owner/general contractor.

2.08.1 Job Site and Weather Considerations

A. All components of the new IKO roofing system shall be protected from harmful discharges such as petroleum by-products, vegetable oil, animal fat, and other by-products which may come into direct contact with the components.

B. IKO does not perform nor review dew point analyses. Therefore, IKO is not responsible for damage due to condensation.

C. Except the initial installation, all IKO roofing system components shall be protected from direct contact with excessive heat sources that may cause damage while in service.

D. Roof applications below 5°C (40°F) require special measures to ensure the proper application and performance of the roofing system.

E. Application procedures must be discontinued when water, in any form, is present on the deck. If water, dew, frost, or snow is present at the time of application, then poor adhesion or blistering may result. Any moisture that could cause poor adhesion, voids in mopping, or entrapment within the system must be removed from the substrate before work can continue.

F. IKO hot asphalt applied roofing systems cannot be applied unless appropriate asphalt temperatures can be maintained. Asphalt and roof membrane application shall be discontinued during cold weather unless asphalt temperatures at the point of application can be maintained at 219°C (425°F) or the asphalt EVT, whichever is greater.

G. Since bitumens tend to chill quickly on a cold deck, components of the roofing system must be installed quickly, close to the mop, be well embedded, and glass base/ply sheets should be completely broomed. Do not mop the asphalt more than three feet (3') (1 m) in front of the roll. Roof insulation boards should be a maximum of 4' x 4' (1220 mm x 1220 mm).

H. It may be necessary to unroll and cut the membrane into shorter lengths to allow it to flatten and warm up before application. Storage in a heated area immediately before application is recommended. Install membrane immediately after removal from storage to avoid cooling to ambient temperature.

I. If low ambient temperatures inhibit the proper application of the roofing system, and work practices cannot be adequately adjusted to compensate, then roofing should be suspended until conditions improve.

J. Wrinkles in the field of a well-bonded roof membrane assembly during cold weather application are not necessarily due to defective materials.

K. Exercise caution during heat fusing applications. Do not overheat heat-fused membranes to compensate for cold temperatures or windy conditions. Generally, the mechanic's speed of application will require adjustment to compensate for slower heat fusing of the membrane in these situations.

2.09.1 Delivery, Handling, and Storage

A. All materials shall be delivered and stored in accordance with the manufacturer's recommendations.

B. When outdoor storage of insulation is unavoidable, the insulation shall be stacked on pallets that are a minimum of four inches (4") (100 mm) above ground level and covered with a waterproof tarp. The insulation manufacturer's packaging is not considered waterproof and shall be slit, as recommended by the manufacturer, to reduce condensation inside the packaging.

C. When stocking the roof, consider the effect of loads on the structure and decking due to the placement of materials. Avoid stockpiling of materials on the roof without first obtaining permission from the building owner/general contractor.

D. Store all roofing materials in a dry, well-ventilated area. Remove materials only as needed for daily work.

E. During winter, store roll goods in above-freezing temperatures to minimize product damage. Store pails of adhesives, primers, and mastics in accordance with the manufacturer's recommendations.

F. Roll materials must be stored on end with selvage edge up. Do not double stack roll goods, skids of asphalt, or Protectoboard. In extremely hot weather, avoid storing asphalt, Protectoboard, or composite base sheet panels in direct sunlight to avoid the product sticking together.

G. All materials damaged during storage or transport shall be removed from the job site and replaced.

2.10.1 Roof Drainage

A. It is a requirement of IKO and the National Building Code that all roof surfaces have positive drainage. IKO recommends a minimum slope of one-quarter inch (1/4") per horizontal foot (12") or 2%.

B. Inadequate drainage is defined as any area of the roof where excessive accumulation of water that remains on a roof forty-eight (48) to seventy-two (72) hours under conditions conducive to drying. Ponding can also result from other water sources including improperly plumbed HVAC units and condensation from steam lines.

C. Damage caused by inadequate drainage or ponding water in accordance with the above definition will not be covered by an IKO registered Limited Warranty. The building owner should consider provisions for additional work to ensure proper drainage.

2.11.1 Code Requirements

A. Roof applications must comply fully with local building code requirements.

B. Roof system component attachment patterns may vary based on applicable wind uplift performance criteria.

End of Section