



RECOMMENDED APPLICATION OF THE EPOXYFLEX SYSTEM OVER BUILT-UP-ROOFING

PREPARATION

- 1 Components beneath the exposed water proofing system (complete BUR laminate assembly) such as decks, insulation, structural supports, etc. may become integrally compromised as a result of leaks or otherwise failed roofing materials, age, use or other causes. Examine and determine structural integrity and viability of all roofing related materials and supports. If faulty, remove troubled area with all subsequent/related components or any given event causing deterioration to the subject BUR roofing. By way of example but not by way of limitation, areas and materials affected by organic/inorganic substance decay, oils, greases, fats, plant decomposition, pH extremes, etc. are to be removed. Repair each and every detrimentally affected area.
 - 2.1 Remove any/all detrimentally affected materials. Such areas or materials may include the roof's water proofing/reflecting system, the decking substructure and/or structural components; and/or affected areas under decomposing materials.
 - 2.2 Cut out, or otherwise slice all blisters and un-adhered roofing materials so as to make a completely attached/adhered BUR system as per original manufacture's specifications with a resulting waterproof repair.
 - 2.2.1 Mechanically fasten the remaining perimeter of all cut out areas (blisters, bubbles, whole detrimentally affected areas, etc.). Place the mechanical fasteners in a pattern separated by no less than four inches (4") from each fastener and no less than two inches (2") from the cut edge.
 - 2.2.1.1 Waterproof the exposed mechanical fastener(s) with an appropriate bitumen product (a mineral spirit-based asphalt, pitch, tar, a solvent based waterproofing product, etc.) urethane caulk (no silicone), or by whatever means the professional roofer determines to be most appropriate in accordance with highest industry standards and trade practices.

- 2.2.2 Affix a waterproofing adhesive to the entirety of the surfaces to be reattached (between the un-adhered roofing material and the adhered deck surface). Press the previous un-adhered material onto the exposed deck; making sure there are no more un-adhered materials.
 - 2.2.2.1 Mechanically fasten each side of the slice. Place the mechanical fasteners in a pattern separated by no less than four inches (4") from each fastener and no less than two inches (2") from the sliced edge.
 - 2.2.2.2 Waterproof all mechanical fasteners as well as the entirety of the repaired area in accordance with highest industry standards and trade practices.
- 2.3 In areas of reoccurring gasses, moisture, vapors, etc. below the coating surface appropriately place (below, in the middle of, or on top of the waterproofing system, the professional roofer having to make the decision per incident) sufficient one-way vents to allow venting.
- 2.4 Remove all toxic and/or life affecting, agitating, or threatening materials in harmony with all appropriate laws, building codes, safety criteria, and in accordance with highest industry standards and trade practices.
- 2.5 Areas of recurring problems and continual concern are to be addressed according to the exposed water proofing/reflecting system manufacturer's specifications, in accordance with highest industry standards and trade practices, and the discretion of the contracting roofing professional. Seams, dissimilar material junctions, adjoining dissimilar plains, drip edges, roof terminations, condition of water proofing/reflecting system, number of water proofing systems applied over the original deck, and areas of ponding water are a few areas of concern.
- 2.6 Replace removed areas/materials with like components, or other materials complementary to the surrounding area's materials in accordance with the original manufacturer's specifications and/or in accordance with highest industry standards and trade practices.
 - 2.6.1 (Optional) Cover repaired areas with an appropriate ADG product such as *NeoFlex* or *HypoFlex*, or a bitumen product (a diluted mineral spirit-based asphalt, etc.).
- 2.7 Patched surfaces shall be in a contiguous plain with the remaining roof-line for maximum

water run off, structural integrity, and aesthetics.

2.8 Repaired areas shall be:

2.8.1 completely dry from below the repair through to the exposed surface of the repair; and,

2.8.2 structurally sound (A structurally sound repair, by way of example includes: structural supports, decking, roofing substructures, underlayments, insulation, quality repair materials complimentary to the remaining waterproofing system, dissimilar plains to the roofing deck, protrusions to the roof and all existing waterproofing systems); and,

2.8.3 propitious waterproofing that is mechanically fastened, glued, welded, chemically attached, or otherwise fully adhered to the structural decking and surrounding waterproofing system as is consistent with highest industry standards and trade practices; and,

2.8.4 impervious to leaks or the passage of any water.

3. Areas affected by a foreign material to original water proofing or any given event not causing deterioration to the subject BUR roofing, by way of example but not by way of limitation, nontoxic materials, non-oil/grease related liquids/chemicals emitted from equipment on to the roof, visual discoloring or staining, should be:

3.1 completely dry and topically treated with an appropriate ADG product such as *NeoFlex* or *HypoFlex*, or a bitumen product (a diluted mineral spirit-based asphalt, modified asphalt emulsion, etc.); and,

3.2 structurally sound (A structurally sound roof includes structural supports, decking, roofing substructures, underlayments, insulation, primary and re-roofing materials, dissimilar plains to the roofing deck, protrusions to the roof and all existing waterproofing systems); and,

3.3 propitious waterproofing that is mechanically fastened, glued, welded, chemically attached, or otherwise fully adhered to the structural decking as is in accordance with highest industry standards and trade practices; and,

3.4 impervious to leaks or the passage of any water.

- 4.1 The surface to receive *EpoxyFlex* shall be an uncompromised contiguous plain.
- 4.2 Fill all alligations, cracks, fissures, breaches, voids, holes, stress points or other surface imperfections with an appropriate non-silicon product. On filled breaches greater than one eighth inch (1/8") wide, cover the affected area with an appropriate three coarse system (usually, apply liberally a black plastic roof cement (mastic), embed a wide weave fiberglass fabric, top with a second coat of mastic, and finally spread, with a nine (9) inch paint roller, an asphalt emulsion over all patched areas to smooth surface and edges of repair. The fabric shall extend a minimum of 2 inches on either side of the imperfection. The mastic shall extend a minimum of one inch beyond each side of the fabric.
- 4.3 Seal around all protrusions (details, air-conditioning units, pipes, etc.) with an appropriate product (mastic, urethane or other non-silicon waterproof caulk).
- 5 Finished surfaces shall be void of alligating, cracks, crevices, fissures, pinholes, adhered gravel that may cause excessive tenting of fabric and/or finished membrane, and all else as would constitute an un-smooth, or water permeable, condition.
6. Prepare the surface which is to receive *EpoxyFlex*.
 - 6.1 A properly prepared clean surface is foremost in *EpoxyFlex*'s application. Dirt, dust, gravel, oils, oxidized materials, rock, rust, soap, materials affected by decaying matter, or any substance or circumstance that may impair adhesion to the sound preliminary waterproofing system cannot remain exposed to any roofing surface. Exposed surfaces consisting of gravel, loose rock, or other non-smooth roofing physiognomy requires:
 - 6.1.1 scraping. Spud, plane, or otherwise smooth the roofing deck's exposed surface. The coating surface must be as monodimensional (smooth) as possible.
 - 6.1.1.1 Vacuuming with a commercial vacuum is optional.
 - 6.1.1.2 After spudding, planing, or otherwise making smooth the roofing deck's exposed surface make sure the exposed waterproofing system is a propitious waterproof entity.
 - 6.1.2 power broom and/or wash.
 - 6.1.3 A penetrating coating such as ADG's *NeoFlex* or *HypoFlex* or a mineral spirit based asphalt coating may be advisable to secure as viable and intact a surface as possible. For any questions, please contact an independent ADG rep. or the ADG

factory; and/or,

6.2.1 Flood the exposed surface, until smooth with:

6.2.1.1 A hot tar, asphalt, sbs rubber, or other bituminous product; or,

6.2.1.2 A clay based asphalt, fibered/non-bibered emulsion. Seal asphalt emulsion surface with an asphalt primer.

7. Before coating, the roof shall be water tight/proof. (*EpoxyFlex* is a protective roof coating, not a waterproofing roof membrane. Although *EpoxyFlex* is warrantable under ponding water, its job description is to give certain protection to the primary waterproofing roof system. The following is always recommended)

7.1 In accordance with highest industry standards, it is recommended for all areas supporting ponding water for more than thirty (30) consecutive days to:

7.1.1 be built up to provide a contiguous plane for proper drainage; or,

7.1.2 have drains installed to alleviate ponding and problems related to excessive dead weight; and/or,

7.1.3 have structural integrity inspected.

7.2 Valleys and other high flow areas shall receive special attention. Consider: applying a base coat of a solvent based asphalt coating, *NeoFlex*, *HypoFlex* or other similar product to prepare a proper surface to adhere to. Also; consider using an *EpoxyFlex* two (2) ply system. (See ADG authorized Rep or factory for specific applications and warranty requirements.)

7.3 Seal all loose materials with an appropriate product, by way of example a modified asphalt emulsion, asphalt cut-back, *NeoFlex*, or *HypoFlex*, or other applicable waterproofing application.

7.4 Remove all caps from parapet walls. Detach exposed objects and flashings which are removable without disturbing structural continuity. Remove NOTHING that threatens a seal, instigates water penetration or deteriorates waterproofing / decking integrity. Replace and seal all appropriate detached objects.

8. The surface to receive *EpoxyFlex* shall be

- 8.1 clean - (clear of dirt, gravel, oils, oxidized materials, rock, rust, soap, materials affected by decaying inorganic or organic matter, plant material, or otherwise, or any substance or circumstance that may impair adhesion); AN INSUFFICIENTLY CLEANED DECK IS THE SINGLE GREATEST DETERRENT TO A SUCCESSFULLY APPLIED COATING.
- 8.2 All wet areas, surface and/or subsurface, shall be completely dry before any coating application.

APPLICATION

1. Primary concerns for coating applications are:
 - 1.1 temperatures. Do not apply coating when ambient air temperature or roofing material / coating surface are below 55 deg. F.; and,
 - 1.2 moisture. Do not apply when measurable precipitation or freezing is possible within 24 hours. Dew, fog, and humidity inhibits dry times (see temperature/humidity schedule); and,
 - 1.3 adhered dry film thickness. Minimum film thickness (complete *EpoxyFlex System*) will be twenty-four mils (.024) without fabric and thirty-two mils (.032) with fabric; and,
 - 1.4 the condition, dehydrated state, and topography of the exposed surface and polyester fabric determines the amount of coating used. Loose aggregate, a pitted surface, general material condition, etc. are quantitative coating determinates; and,
 - 1.5 Install all materials in strict adherence with all appropriate safety data requirements, appropriate governing codes, manufacturers' instructions and in accordance with the highest trade practice standards.
2. (Optional) Apply a filler coating (*NeoFlex*, *HypoFlex*, a mineral spirit based asphalt product, modified asphalt emulsion, etc.) to the exposed deck surface prior to applying *EpoxyFlex* when the surface is considerably absorbent, rough, or when more than four (4) gallons of *EpoxyFlex* per one hundred (100) square feet ("square") are anticipated to be used to secure a minimum thirty two-mil (.032) dried thickness.
 - 2.1 Apply sufficient filler coating to the exposed surface of the propitious waterproofing (normally one to five [1 - 5] gallons per square) to seal and reduce undue absorbency of

EpoxyFlex over the entire surface to receive the *EpoxyFlex* System.

- 2.1.1 Vigorously brush desired filler coating into surface, integrating any loose aggregate, dust or otherwise light/insignificant material foreign to the propitious waterproofing in a uniform coat.
3. Details: Apply the *EpoxyFlex System* to all details (protrusions, dissimilar planes, walls, equipment, drip edges, terminations, etc.) prior to applying the *EpoxyFlex System* to the exposed roof deck's open field.
 - 3.1 Pipes and other round/oblong protrusions: For best results use a heavy nap hand mitten to apply and smooth the *EpoxyFlex System* around protrusions.
 - 3.1.1 Apply *EpoxyFlex* to the deck a minimum of eight inches (8") from the protrusion and up the protrusion a minimum of eight inches (8") at a rate of at least two (2) gallons per roofing square, or approximately twenty-two mils (.022) plus; and,
 - 3.1.2 Prepare a piece of *WeaveFlex* fabric to use around protrusions. Cut a piece of *WeaveFlex* fabric sufficiently long to rap around the protrusion and a minimum of twelve inches wide. Make finger cuts approximately six inches (6") deep into the fabric, a minimum of one inch (1") apart, along the entire length of the subject piece.
 - 3.1.3 Rap the specially prepared *WeaveFlex* fabric around the protrusion with a minimum of six (6) inches up (vertically) the protrusion and six inches on the deck (horizontally). The solid piece of *WeaveFlex* fabric shall rap around the protrusion and the finger cuts shall be firmly and smoothly set evenly on the deck.
 - 3.1.4 Apply approximately two (2) gallons of *EpoxyFlex* to the set in place *WeaveFlex*. Make sure the *WeaveFlex* is fully saturated, firm against the protrusion and deck, and smooth.
 - 3.1.5 Prepare a piece of *WeaveFlex* fabric to use around the protrusion and to cover the fabric fingers. Cut a piece of *WeaveFlex* fabric sufficiently long and wide enough to extend beyond the fabric fingers a minimum of six inches (6"). Cut a hole in the center of the *WeaveFlex* fabric to fit snugly around the base of the protrusion.
 - 3.1.6 Apply approximately one (1) gallon of *EpoxyFlex* to the set in place *WeaveFlex*. Make sure the *WeaveFlex* is fully saturated, firm against the base of the protrusion and deck, extends a minimum of six inches (6") beyond the end of the *WeaveFlex*

fabric fingers, and smooth. The finished *EpoxyFlex System* on the deck around the protrusion, through both finger and cover fabric will have a minimum wet depth of sixty-seven mils (.067).

- 3.1.7 DRIP EDGE: Apply the *EpoxyFlex System* in a contiguous membrane from the face of the drip edge to a minimum of six inches (6") over the roof deck from the edge.
- 3.1.8 Apply *EpoxyFlex* at a rate of at least two (2) gallons per roofing square to the face of the drip edge, starting at the bottom crease of the angled kick-out, and on to the deck a minimum of eight inches (8") from the edge.
- 3.1.9 Apply *WeaveFlex* to the face of the drip edge, starting at the bottom crease of the angled kick-out, and on to the deck a minimum of six inches (6") from the edge. (Make special cognisance of gravel stop drip edge, and be sure the *WeaveFlex* closely follows the design and contours of the gravel stop)
- 3.1.10 Apply *EpoxyFlex* at a rate of at least one (1) gallon per roofing square to the face of the drip edge, starting at the bottom crease of the angled kick-out, and on to the deck sufficient to ensure saturation of *WeaveFlex* fabric, complete system is firm against drip edge face and surface of deck and smooth. Finish the face of the drip edge with a paint brush, leaving an aesthetically smooth finish.

NOTE: Pipes and other similar protrusions require a minimum of five (5) gallons per roofing square. Dissimilar planes, walls, drip edges and other such non-horizontal deck applications assimilate an additional one (1) to two (2) gallons per roofing square over the required three gallons. The additional coating consumption is generally caused by ease/difficulty of application and not a requirement.

- 4. Apply the *EpoxyFlex System* over the entire roof.
- 4.1 ADG recommends all coatings be applied with squeegees and/or stiff bristled roofing brooms, heavy duty paint rollers, paint brushes and airless spray equipment.
 - 4.1.1 Recommended airless spray equipment:
 - 4.1.1.1 The airless sprayer should be capable of at least three (3) gallons per minute at three thousand (3000) psi. and able to handle one hundred twenty (120) K.U. viscosity material.

4.1.1.2 The airless hose from the pump should be a minimum five eighths inch (e") ID and the hose into the gun (twenty-five feet (25') in length) should be one half inch (1/2") ID for a combined length of up to one hundred fifty feet (150'). Check with airless pump manufacturer for hose size longer than one hundred fifty feet (150').

4.1.1.3 Use a reverse-a-tip in a range size from twenty-eight (.028) to fifty (.050) thousands of an inch. Check the airless spay equipment manufacturer for capacity and capability. Exact size requirements depend on many varying factors such as pump capacity, length of hose, temperature, vertical lift from pump to application, crew experience, etc.

4.1.2 Rollers used should be of the highest quality and heavy duty; and,

4.1.2.1 Rollers used should be an eighteen (18) inch wide unit with a support on each side of the roller, and a standard heavy duty nine inch (9") roller with only one side supported; and

4.1.3 All roller's nap should be minimum length of one and one half inch (1 1/2").

5. Apply the *EpoxyFlex System*.

For best results, both structurally and cosmetically, the *EpoxyFlex System* should be applied in two separate applications. The first application is the full *EpoxyFlex System*. The second application is a color or top coat that should be applied twenty-four (24) to forty-eight (48) hours after the first application is dry to the touch. The *EpoxyFlex System* can be applied in one (1) application and still meet warranty specifications.

5.1 Apply enough coating, compensating for absorption, irregularities in the exposed plane, etc., to cover the surface and fill the *WeaveFlex* (approximately two (2) gallons per roofing square over a non-absorbent smooth surface).

5.2 Apply coating in sections approximately fifteen (15) to twenty (20) feet long and four (4) inches wider than the *WeaveFlex*. The applied coating pattern shall be two (2) inches on each side of the *WeaveFlex*.

5.3 Vigorously roll coating onto exposed surface, integrating any foreign material (dust, very small aggregate, etc.) in a uniform coat. Roll the coating in two (2) directions, ninety (90) degrees to each other.

5.4 Immediately, while the first coat is wet, roll out the *WeaveFlex* into the wet coating. Pull

the *WeaveFlex* tight and reset the *WeaveFlex* into the wet coating.

5.5 Vigorously squeegee, broom and/or roll the coating into the *WeaveFlex*.

5.5.1 First, seal the far or overlapping edge.

5.5.2 Second, in a sweeping arch motion, smooth the exposed surface along the sealed edge (see 5.5.1) moving to a forty five degree (45E) angle from the sealed edge.

5.5.3 Third, if necessary to secure a smooth surface free of air pockets, bubbles, folds, wrinkles, excess coating, and to assure full *WeaveFlex* penetration, apply heavy pressure at a ninety (90) degree angle to the previous step (see 5.5.2) starting at the sealed edge.

Imperative, apply heavy pressure to eliminate all air pockets, bubbles, folds, wrinkles, excess coating, and to assure full *WeaveFlex* penetration. Incomplete saturation of the *WeaveFlex* with *EpoxyFlex* will leave pin holes in the cured coating membrane system and is otherwise an unacceptable condition. *WeaveFlex* cannot fully be saturated from the top or exposed surface alone.

5.6 Immediately apply a second coat on top of the *WeaveFlex*. Apply the second coat at a minimum rate of one (1) gallon per roofing square. Apply enough coating to fill the *WeaveFlex* and make a dried system of at least thirty-two mils. (.032) thick (thirty-eight (.038) to forty-one (.041) mils. wet, depending on exposed deck surface).

5.7 Vigorously back roll the second application to assure a monolithic coverage of *WeaveFlex*, and texture and surface regularity.

5.8 On the second and ensuing courses:

5.8.1 Follow all previous application instructions;

5.8.2 Overlap the *WeaveFlex* of the ensuing courses at least two (2) inches; and

5.8.3 Continue process until a monolithic coating covers the entire project.

5.9 (Optional) A color or top coat should be applied twenty-four (24) to forty-eight (48) hours after the first application is dry to the touch. Apply the additional coat at a minimum rate of one (1) gallon per roofing square to facilitate a total minimum dried film of forty (.040) plus (+) mils.

6. Twenty-four (24) to forty-eight (48) hours after the final coat has dried to the touch, replace all parapet caps, flashings, and removed materials. Seal the edges and nail heads of all flashing and coverings. It is desirable and aesthetically pleasing to coat all coverings, ductings, flashings and protrusions.
7. Unacceptable conditions to applications are:
 - 7.1 Un-adhered bridges;
 - 7.2 Unsaturated or exposed *WeaveFlex*;
 - 7.3 Puddles or blobs of coating; and,
 - 7.4 Too thick, or too thin coating layers (excessive or deficient quantities of *EpoxyFlex* at any one application).
8. Items to remember and implement:
 - 8.1 Apply all walls first. The *EpoxyFlex System* shall extend a minimum of six (6) inches up all dissimilar planes, protrusions, and walls. Vertical surfaces may use up to fifty (50) percent more coating than horizontal planes.
 - 8.2 Use *WeaveFlex* or other IPP approved fabric designed for roof coating systems. Ask your local distributor or IPP for specific applications.
 - 8.3 The use of squeegees and/or roofing brooms with paint rollers is most often preferable to using rollers alone. Roofing brooms leave an uneven and non-uniform surface. Finish the top coat with a roller at all times.
 - 8.4 Roof vents should be applied over areas of high humidity, trapped moisture, or heat. Roof vents should be liberally used in areas where blistering occurs or may occur.