

Traffic Deck Instructions:

GW-15-INSTR
March 2013
Supersedes 7/09

GW-15-UBU VEHICULAR TRAFFIC DECK INSTRUCTIONS

1. PRE-APPLICATION INSPECTION

When inspecting a project, the type of surface, the amount of fixtures and flashing requirements need to be noted and material requirements planned for:

- (A) Walk through the parking structure and make note of the type of concrete construction. Twin T construction with a topping slab will often have cracks at regular intervals in the topping slab. (See; GW-15 Details, Fig.1) These cracks are from movement and will require special attention when treating joints and cracks. Note if movement indicates neoprene sheet will be necessary for joint treatment.

Span-deck panel construction uses extruded concrete panels and is usually post tensioned. Span-deck construction can have joints at regular spaced intervals both in linear and transverse directions. Most projects will have span-deck exposed as the traffic surface; however some projects can also have a topping slab. (See: GW-15 Details, Fig. 2)

Poured-in-place concrete is the most frequently used type of concrete construction for parking garages. Control joints can be at regular intervals from 20 feet to 100 feet, or more.

Note: The type of joint treatment and the amount of treatment necessary on the project inspected.

- (B) Walk the perimeter of the deck and make notes on the flashing terminations and the materials required to install flashing. Note light and sign standards and the plate mounts. Some plates can be removed and waterproofing installed under the plate. (See: GW-15 Details, Fig. 3) The plates can then be reinstalled over the deck coating. Where the plates can not be removed, plan to install a caulk cove and then over coat the caulk and flange areas with the deck coating. (See: GW-15 Details, Fig. 4)
- (C) Check curb stops and determine if they can be removed prior to installing the deck coating under the curb stops. If the curb stops cannot be removed, plan to install a caulk cove and overcoat it with the deck coating. (See: GW-15 Details, Fig. 5, 6, & 7).
- (D) Locate drains and determine if covers or grates can be removed. Note any areas where concrete has spalled and needs repair. (See: GW-15 Details, Fig. 8 & 9)
- (E) Walk the field of the deck making notes on the quality of the concrete. Surface texture should be noted since rough surfaces such as a course broomed profile will require additional primer and coating to fill in the surface. Note spalled concrete, scaled concrete, cracks, joints, metal junctures and changes of plane such as crickets. Notes should contain info on what will be required for surface preparation and flashing.
- (F) Check ramps for joints or cracks at the change of plane and determine what type of crack treatment is required.
- (G) Check expansion joints. If they are intact and not leaking, determine that there is enough metal flange area to terminate the deck coating. If the expansion joints are defective, they can be replaced with new units reset into the concrete. As an alternative, a neoprene sheet expansion joint cover can be installed. (See: GW-15 Details, Fig 10, 11 & 11A)

- (H) Note areas of traffic paint on the deck. This paint will need to be removed before primers and coating can be applied.

2. SURFACE PREPARATION

The surface must be firm, solid concrete for the installation of a GW-15-UBU membrane. Asphalt paving can not be successfully over coated due to the poor compaction of the paving on parking structures.

- (A) Old surface deck membrane coatings must be removed before a new deck membrane can be installed. A scarifier type machine is used to strip the coating from the deck. Several companies supply machines for this purpose. Body grinders are used for details at walls, drains and in other tight areas. In many metropolitan areas, contractors specializing in coating removal can be sub-contracted for deck preparation. After the coating is scarified, a light shot blast is used to provide the clean, firm concrete surface.
- (B) If the deck does not have an old coating membrane, oil soaked areas and traffic markings must be removed. Again, shot blasting is the best preparation method. Shot blasting also removes scaling concrete, laitance, and contaminants.
- (C) Remove curb chocks (tire stops) if possible. Some chocks are set on pins and can be removed. Some are bonded with an adhesive and can not be removed. Remove light and sign standards or pedestals if the base flanges are bolted to the deck and can be unbolted. Removal of these items allow for the waterproofing deck membrane to be continuous and installed under the flange.
- (D) Surfaces and joints need to be smooth and solid before any coating application. BULL-NOSED (rounded edge) joints can be filled with a cement grout that has a polymer binder such as Gacocrete. (See: GW-15 Details, Fig. 12, 13 & 14). Repair spalled concrete at such areas as drain edges, curbs and expansion joints, again with a cement grout that has a polymer binder.
- (E) Large depressions or spalled area can be filled with a cement-polymer mixture. The filler material must be approved by the manufacturer for compressive strength suitable for auto traffic.
- (F) Power wire brush or grind rusted metal surfaces to remove loose rust.
- (G) Repair existing expansion joints if required. If repairs require a new joint cover of Gaco NF-621 neoprene sheet, complete the primer system before installing the neoprene sheet. Expansion joints with NF-621 neoprene sheet in traffic lanes need a metal cover. (See: GW-15 Details, Fig. 10)

Where expansion joints are in parking only areas, the metal covers can be deleted.
(See: GW-15 Details, Fig. 11)

3. PRIMER – SEALER

The primer sealer is the final step in deck preparation and the first step GW-15-UBU coating application. The two coats are designed to first penetrate and reinforce the concrete surface and secondly to fill small pores and voids in the concrete surface.

- (A) The first coat of the primer-sealer is GacoFlex U-5677 Sealer, a low viscosity, single component Polyurethane designed to “wet” and soak into porosity of the concrete. This sealer encapsulates minor surface dust and laitance as well as reinforcing the concrete. Application rate is 300 square feet per gallon on smoother concrete and 200 square feet per gallon on rougher and porous concrete. Allow to dry 4 hours minimum but no more than 8 hours maximum prior to applying primer coat. Do not overlap GacoFlex U-5677 Sealer that has dried and cured more than 24 hours with additional GacoFlex U-5677 Sealer. The best procedure is coat no more area with GacoFlex U-5677 Sealer than can be over coated with GacoFlex E-5320 Primer within 8 hours. This gets the best bond. If there is an unavoidable delay in coating the GacoFlex U-5677 Sealer within 24 hours, only GacoFlex E-5320 Primer can be used, keeping in mind that the bond may be a little less than if the GacoFlex E-5320 Primer had been applied within 24 hours.

- (B) The second coat of the primer-sealer is GacoFlex E-5320 Primer, two-component water based epoxy. The application rate is 200 square feet per gallon. When the traffic deck is done in sections, apply the GacoFlex E-5320 Primer slightly beyond the GacoFlex U-5677 Sealer first coat. This prevents overlapping GacoFlex U-5677 Sealer that has cured when the next section is coated. Allow the GacoFlex E-5320 Primer to cure overnight before applying additional coating.
- (C) Metal surfaces can be coated with both GacoFlex U-5677 Sealer and GacoFlex E-5320 Primer or with only GacoFlex E-5320 Primer.
- (D) Once the GacoFlex E-5320 Primer has been applied and cured, it is best to complete the coatings for GW-15-UBU GacoFlex Auto Deck in the shortest amount of time. If a delay is anticipated, the GacoFlex E-5320 Primer can be left for up to 30 days and then the coatings can be applied provided the surface is clean and dry.

Alternative Concrete Primer/Sealer: GacoFlex E-5511 Zero VOC, two component 100% solids Epoxy Concrete Primer/Sealer. Consult Gaco Western for specific recommendations.

4. JOINT, CRACK, AND EXPANSION JOINT TREATMENT

The joints, seams and cracks are treated to provide a membrane that can function and remain waterproof when structural movement occurs at the joint. Three methods joint treatment can be used depending on the amount of movement anticipated.

- (A) **SEALANT:** Single component polyurethane sealant can be applied to joints and seams where little movement is expected. Typical areas are the juncture between metal plates, drains, grates and curbs of concrete.

Some decks can have sealant in sawed out or "V grooved" joints. The Sealant must be well adhered and loose sealant replaced. Over the sealant joint, a GacoFlex 66-B Tape system is installed. (See: GW-15 Details, Fig. 14). The metal surfaces must be free of loose rust and primed. The sealant is then applied and smoothed or coved and allowed to cure a minimum of 4 hours before applying coating over the sealant. Pipe penetrations that are cast in the concrete are sealed after the pipe has been primed. (See: GW-15 Details, Fig. 15)

- (B) **TAPE:** GacoFlex 66-B polyester tape is used to span random concrete cracks, cold joints and control joints. Bullnosed joints are filled with a cementitious grout or polyurethane sealant to provide support for GacoFlex 66-B Tape. (See: GW-15 Details, Fig. 12). The GacoFlex 66-B Tape is used on random cracks and cold joints that are expected to have moderate structural movement. (See: GW-15 Details, Fig. 13). On concrete that is rough after the primer-sealer application, grinding smooth will assist in laying the GacoFlex 66-B Tape flat and in contact with the concrete. On moderately rough or undulating concrete surfaces, GacoFlex 66-S Tape can be used which is easier to fit to the concrete surface. The joints between metal set in the concrete such as drains, grates, or expansion joints are taped with GacoFlex 66-B Tape. Tape is also used to form a corner flashing between the deck and walls or curbs.
- (C) **NEOPRENE SHEET:** NF-621 Neoprene Sheet Flashing is used where structural movement at joints is expected to be 1/16 inch or greater. GacoFlex N-1207 Neoprene Adhesive Flashing is stirred to suspend any "whitish" residue at the bottom of the container. The GacoFlex N-1207 Adhesive is applied by brush or roller to both the primed concrete and the GacoFlex NF-621 Neoprene Sheet Flashing at the rate of 10 mils wet film thickness or 140 square feet per gallon.

Allow the solvent to dry until the adhesive has a tacky surface. The neoprene sheet flashing can be rolled up provided the plastic liner is in place to separate the adhesive from the neoprene. This allows for easier placement of the neoprene. The neoprene sheet is then set centered over the joint and pressed firmly in place. The neoprene sheet is then rolled down with 2 inch steel roller. Neoprene sections are over lapped 3 inches and are rolled with the 2 inch roller followed by "stitching" with a ¼ X 2 inch stitcher. On joints where movement is expected to be 1/8 inch or more, a ¾ inch masking tape is placed over the crack either before or after the adhesive is applied. This masking acts as a bond breaker and spreads the joint movement over the ¾ inch width. Neoprene sheet can be used to repair some styles of expansion joints or to construct expansion joints on new work. (See: GW-15 Details, Fig. 10 & 11). Joint openings that are ½ inch or greater in width need to have a backer rod fitted into the opening and the joint then filled with single component polyurethane caulk. (See: GW-15 Details, Fig.11).

5. BASECOAT

- (A) The basecoat of Specification GW-15-UBU is GacoFlex UB-6407 two-component Polyurethane coating. The GacoFlex UB-6407 Polyurethane is gray in color when the two components are mixed as directed in equal portions by volume. Mixing is by a power mixer and must be thorough. The polyol component (poly) is white in color and the isocyanate component (iso) is black in color. Pre-mix the poly and iso so that the color is uniform. The iso tends to have some of the black pigment settle. Mix the two components together until the color is uniform. Time how long it takes to get the color uniform, and then continue mixing for at least an equal amount of time. Do not mix more GacoFlex UB-6407 Polyurethane than can be applied in 30 minutes. Application is by 3/4 inch nap rollers at a rate of 1 ¼ gallons per 100 square feet. Backroll for uniformity of coverage. Allow to dry overnight.

6. TEXTURE COAT

- (A) Mix GacoFlex UB-6407 Polyurethane as directed above and apply to ramps and turn areas at a rate of 1 gallon per 100 square feet. Into the wet coating broadcast (sprinkle) GacoShell granule, size 8/12, at an approximate rate of 5 pounds per 100 square feet.

The granule distribution appearance should look as if about 50% of the surface is covered. Do not cover the area to saturation with granule.

- (B) Apply GacoFlex UB-6407 Polyurethane at 1 gallon per 100 square feet across the deck including the textured ramp and turn areas. Into the wet coating broadcast GacoShell granule, size 12/20, at an approximate rate of 4 pounds per 100 square feet. Do not broadcast the granule into the previously textured ramp and turn areas.
- (C) "Feather" or blend the granule distribution at the edges where the 8/12 and 12/20 join. (See: GW-15 Details, Fig. 16)

NOTE: An additional top coat may be required in order to fully encapsulate granule when GacoShell coverage rate exceeds recommendations.

7. TOPCOAT

- (A) Top coat of GacoFlex U-6402 Polyurethane is Pewter Gray which is weather durable and a slightly darker grey than GacoFlex UB-6407 Polyurethane. Stir and mix GacoFlex U-6402 Polyurethane per **5**, instructions above. Apply the topcoat at a rate of 1 ¼ gallons per 100 square feet. Allow the coating to cure for 48 hours before subjecting to auto traffic.
- (B) For colors other than Pewter Gray, apply GacoFlex U-66 series coating in the desired color at a rate of 1 ¼ gallons per 100 square feet. Allow to cure for 48 hours before subjecting to auto traffic.