



# UNIVERSAL PROTECTIVE COATINGS

TECHNICAL BULLETIN  
NO. 1052

## DESIGN REQUIREMENTS FOR CONCRETE AND PLYWOOD FOR TRAFFIC TOPPING

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Technical bulletin 1052 sets forth the recommendations of the substrate design requirements for the elastomeric waterproof traffic toppings by Universal Protective Coatings. (UPC)

### GENERAL REQUIRMENTS

Decks (substrate) shall be sloped to drain away from occupied spaces. Slope a minimum of 1/4" per running foot as per code. UPC deck systems cannot be used to provide such a slope. Surface shall not create ponding areas by deviating more than 1/8" from required elevation at any point under a 10' straight edge.

Metal or ABS drains shall be set flush with substrate surface at the lowest level in any 10' span and securely mounted and primed.

Back-up material for covering and flashing shall be firm, rigid, and continuous.

Pre-fills and patching materials shall be approved by the manufacturer of the decking system.

Existing membranes or vapor barriers shall be vented prior to elastomeric deck system application to avoid moisture entrapment and blistering.

Protect surfaces from moisture prior to installation of deck system.

### FLASHING AND JOINT DESIGN

The entry of water behind or under an elastomeric traffic topping shall be prevented by properly designed and installed flashing and moving joint systems. A partial list of construction materials interfaces includes wall lines, posts, railings, parapets, thresholds, pipe drains. Joint and flashing systems shall be designed and installed to channel and direct water out of wall structures and onto the membrane surface or into a functioning drainage system. Prior to application please roughen up metal flashing with 60 or 80 grit sandpaper and prime.

### CONCRETE DECK DESIGN REQUIREMENTS

The concrete slab shall be of sufficient thickness and of such a mix as to provide a stable base, free of structural cracks. The concrete shall be water cured using a curing procedure approved by the Architect/Engineer. No curing agents, surface hardeners or form release agents shall be used. The concrete shall be finished without hard troweling and shall have a light broom texture.

Concrete surfaces shall be free of voids, projections, fins, honeycombs and loose aggregate. The concrete slab, if poured on-grade\*, shall be designed so that no moisture is trapped below the slab and no moisture can be drawn upward into the slab. \*On grade applications are prone to blistering and not warranted by UPC.

Metal decking used as a concrete form shall be "ventilating type" to relieve pressure beneath the concrete fill.

Concrete slabs used as ceilings shall not be painted or sealed on the underside until slab is dry and accepted by the waterproofing contractor.

Expansion joints shall be designed and installed so as to allow normal expansion and contraction of the concrete. Concrete shall have a minimum strength of 2500 psi for pedestrian and vehicular decks. Concrete shall test “dry” when moisture content is measured with a Delmhorst Model BD-7 Moisture Detector, or equivalent method, by drilling 1/2” into surface and touching conductive metal inserted into concrete. Alternate “Rubber Mat” test (24”X24” dimension) shall show no surface moisture after 24 hrs.

Insulative concrete fills are not suitable substrates for UPC elastomeric decking systems. Please consult a UPC Technical Representative before specifying.

**PLYWOOD DECK DESIGN**

Plywood shall be new exterior APA rated AC (best) or BC grade plugged and sanded, installed smooth side up. Do not use pressure or salt treated plywood, wood curbs, or nailers. Plywood shall be tongue and groove or be fully blocked at all edges and panel joints. Under maximum loading there shall be no deflection at joints. Deflection shall not exceed 1/16” at mid-span.

Stagger and space panels 1/8” at edges and 1/16” at ends. On larger deck spans and where wet and humid conditions prevail, these spacings should be increased.

Specify the use of construction adhesive and galvanized deck screws for best practice. Annular or spiral thread (screw shank) galvanized nails: 6d for 5/8 in. and 3/4in. plywood and 8d for 7/8in., 1in., 1-1/8 in. and 1-1/4 in plywood are acceptable. Space fasteners 6in. o.c. along panel edges and 10in. o.c. along intermediate supports.

Protection of the deck during construction, and preparation of joints between panels shall be in accordance with the recommendations of the coating manufacturer.

The following minimum span-thickness recommendations may be used except where local building codes require greater thickness. Plywood shall be continuous across two or more spans, with face grain across supports.

Span (inches)	Plywood Species Identification	
	Groups 1 & 2	Groups 3 & 4
	Thickness	

16	5/8"*	3/4"
20	3/4"	7/8"
24	7/8"	1"
32	1-1/8"	1-1/4"
*verify code acceptance		

**Urethane Shelf Life  
6 Months Unopened**

**FOR YOUR SAFETY  
RESPIRATOR, GOGGLES AND GLOVES  
REQUIRED**