Ballast (rock, pavers, earth)

Filter fabric

Extruded polystyrene insulation

Sloped concrete topping; slope minimum 2% to drains

Concrete structural deck

Drainage gap, i.e., drainage mat or grooved insulation

Fully-adhered roof membrane
Plaza Decks
1½” (40 mm) concrete slab surfacing

1/2” (15 mm) sand layer

4” (100 mm) hydrophobic ash layer

Asphalt and felt waterproof membrane

Sloped cast-in-place concrete
Protective layer; concrete slabs undercoated

4” to 5” (100 to 130 mm) insulation layer; fly ash mixed with parafininated oil

1½” to 2” (40 to 50 mm) gravel and porous mortar

Asphalt and felt membrane

Slope bed if deck not sloped

Reinforced concrete structural deck
Open paving

Removable for drain cleaning

Closed paving with surface drainage

From Baker, M.; Roofs, 1980
Courtesy National Research Council of Canada
Plaza Decks
Gravity
Drainage Space
Capillary Break
Protection
Isolation
Plaza Decks
Gravity
Drainage Space
Capillary Break
Protection
Isolation
…oh and you better get it right…..
Plaza Decks Are Really Protected Membrane Roofs
Plaza Decks Are Really Protected Membrane Roofs
Not Easily Serviceable
Plaza Decks Are Really Protected
Membrane Roofs
Not Easily Serviceable
Should Be Isolated And Protected From All
Other Building and Waterproofing
Components
Plaza Deck Systems
Hot Fluid Applied Membranes
Cold Fluid Applied Membranes
Osmosis
Vapor diffusion

Pore condensation dissolves minerals creating solute
Paver Water Beds!
Really Heavy Pink Stuff

Liquid Waterproofing over Concrete Deck