landing zone for receiving liquid thereon and a liquid removal zone. The top side also has a microstructure-bearing surface with a plurality of channels thereon that facilitate directional flow control of the liquid across the top side from the liquid landing zone to the liquid removal zone. The laminate liquid disposal assembly includes means for attaching the bottom side of the liquid control layer to the substrate layer, and means for removing the liquid from the liquid removal zone on the top side of the liquid control layer.

[0013] A porous cap layer may be disposed over the landing zone on the top side of the liquid control layer. Further, the channels on the microstructure-bearing surface have channel ends, and the removing means preferably withdraws the liquid from the channels adjacent one of the channel ends thereof. In another embodiment, the removing means withdraws the liquid from the channels adjacent both channel ends thereof. The removing means may include an absorbent material disposed in communication with the liquid removal zone. The removing means may also include a fluid collection manifold in communication with the channels in the liquid removal zone, and the removing means may further include a vacuum generator in fluid communication with the fluid collection manifold. In one embodiment, the removing means includes a liquid drip collector. In a preferred embodiment, the liquid control layer is a polymeric film, which may include a characteristic altering additive or surface coating. That additive may be selected from the group consisting of flame retardants, hydrophobics, hydrophylics, antimicrobial agents, inorganics, metallic particles, glass fibers, fillers, clays and nanoparticles.

[0014] In another embodiment, the invention is a laminate floor assembly which includes a liquid control layer and a floor substrate layer. The liquid control layer has a top side and a bottom side, with the top side having a microstructure-bearing surface with a plurality of channels thereon that facilitate directional flow control of a liquid disposed thereon. The laminate floor assembly includes means for attaching the bottom side of the liquid control layer to the floor substrate layer. A cap layer is also provided, with the cap layer having a top side and a bottom side. The bottom side of the cap layer is placed over the top side of the liquid control layer to define a relatively enclosed channel structure therebetween. The laminate floor assembly includes means for moving liquid along the channel structure defined between the top side of the liquid control layer and the bottom side of the cap layer. Preferably, the cap layer comprises a floor covering, and the floor covering may be selected from the group consisting of carpet, tile, linoleum, wood, concrete, metal or fatigue matting. In one embodiment, the cap layer is porous, and may take the form of a nonwoven material. Preferably, the bottom side of the cap layer is affixed to the top side of the liquid control layer by a pressure sensitive adhesive.

[0015] In a preferred embodiment, the moving means creates a pressure gradient along the channel structure. Preferably, the top side of the liquid control layer has at least one cross-channel formed therein to facilitate liquid flow between the channels. A liquid removal aperture is then provided through the liquid control layer in communication with the cross-channel and the moving means. In another preferred embodiment, a plurality of cross-channels are formed in the top side of the liquid control layer to facilitate liquid flow between the channels, and the liquid control layer has a plurality of liquid removal apertures therethrough with each liquid removal aperture being in communication with one of the cross-channels and the moving means. In a preferred embodiment, the channels are defined by generally parallel ridges including a first set of ridges having a first height and a second set of ridges having a second, taller height. An upper portion of each ridge of the second set of ridges may have a lower melting temperature than a lower portion thereof. Preferably, each channel has channels ends and the moving means withdraws the liquid from the channels adjacent one (or both) of the channel ends. In a preferred embodiment, the liquid control layer is a polymeric film, which may include a characteristic altering additive or surface coating. The additive may be selected from the group consisting of flame retardants, hydrophobics, hydrophylics, antimicrobial agents, inorganics, metallic particles, glass fibers, fillers, clays and nanoparticles. The channels have a pattern geometry selected from the group consisting of linear, curve linear, radial, parallel, nonparallel, random, or intersecting.

[0016] One embodiment of the present invention is a method of defining an alternative liquid flow path on a polymeric microstructured liquid transport surface of the type having a plurality of channels which are formed to divert a liquid thereon in a first desired directional path and which are formed to control the displacing and evaporating of the liquid disposed on the surface. The method includes forming at least one cross-channel on the polymeric microstructured liquid transport surface to join at least two adjacent channels of the plurality of channels for liquid flow therebetween.

[0017] Preferably, the forming step in the inventive method comprises applying heat and/or pressure to the polymeric microstructured fluid transport surface to define the cross-channel thereon. In a preferred embodiment, the channels on a polymeric microstructured liquid transport surface are defined by generally parallel ridges including a first set of ridges having the first height and a second set of ridges having a second, taller height. Preferably, an upper portion of each ridge of the second set has a lower melting temperature than a lower portion thereof, and the forming step includes applying heat to the polymeric microstructured surface along a linear cross-channel segment thereof, to a temperature high enough to melt the upper portions of the ridges of the second set but not high enough to melt the lower portions thereof. Alternatively, the channels are defined by generally parallel ridges with liquid flow valleys therebetween, and the forming step includes cutting away portions of the ridges between adjacent channels. In a preferred embodiment, the polymeric microstructured liquid transport surface defines a top side of a layer having top and bottom opposite sides, and the method of defining an alternative liquid flow path further includes forming a liquid removal aperture through the layer, from top to bottom sides thereof, which is in communication with the cross-channel. The method then can further include urging liquid across the polymeric microstructured liquid transport surface toward the liquid removal aperture, and may yet further include coupling the liquid removal aperture to a liquid collection receptacle. In a preferred embodiment, the inventive method also includes adhering a cap layer (which could be porous) onto the polymeric microstructured liquid transport surface.