systems and variations thereof are discussed in detail herein and further illustrated in the included examples. While a specific combination of components may be disclosed as a preferred embodiment, it is contemplated that the disclosed features of various embodiments may be combined to achieve the objectives of the claimed invention.

[0117] An optional absorbent may be used in articles of the present invention, e.g., to serve as a reservoir to collect liquid moved off or away from the spill or leak sites. The articles of this invention have the advantage of allowing a wide variety of product designs. Preferred designs can incorporate increased surface area of the absorbent material, thereby allowing for management of higher liquid volumes.

[0118] Suitable absorbent materials include fibrous textile type materials, including woven, non-woven, knit, and stitch bonded materials or absorbent foams. Alternatively, the absorbent can comprise an absorbent polymer such as a hydrocolloid or hydrophilic polymer such as a supersorber. The hydrocolloid (e.g., starch, modified cellulose, gelatin or other protein, polysaccharide, etc) or supersorber (e.g., modified starch, acrylates, starch/acrylate copolymers, acylamides and other vinyl polymers, etc.) may be immobilized in a matrix such as a hydrophobic matrix of conventional hydrocolloid dressings or may alternatively be part of a hydrophilic gel matrix (e.g., a UV or E-beam cured acrylate). The absorbent may also comprise both a fibrous textile and an absorbent polymer. The absorbent pad may optionally contain an antimicrobial agent.

[0119] Referring again to **FIG. 2***a* for illustrative purposes, the layer **22** includes the structured surface **24** and the underlying body layer **26**. The layer **22** may include one or more additional layers of material (such as layers **26***a* or **26***b*) on its side opposite the structured surface **24**, or such additional layers or other materials may be embedded within the body layer **26**. The body layer **26** (and possible additional layers or materials therein) constitute backings for the structured surface **24**. Suitable backings for use in fluid control articles of the present invention include conventional backings known in the art including non-woven and woven fibrous webs, knits, films, foams and other familiar backing materials. Preferred backings include thin (e.g., less than about 1.25 mm and preferably less than about 0.05 mm) and elastomeric backings. These types of backings help ensure conformability and high adhesion of the inventive fluid transport layer to and over substrate surface irregularities. Preferred backing materials include polyurethanes (e.g., ESTANE), polyether polyesters (e.g., HYTREL), polyether amides (e.g., PEBAX) as well as polyolefins (e.g., ENGAGE, low density polyethylene). Another useful backing would also incorporate a flame retardant material. A multilayer approach could be used to provide a microreplicated film by coextrusion of multiple layers, one or more being flame retardant (such as disclosed in Kollaja et al., PCT International Publication No. WO 99/28128) and maintaining surface hydrophilicity.

[0120] Suitable adhesives for use in fluid transport articles of the present invention include any adhesive that provides acceptable adhesion to a variety or polar and non-polar substrates. Preferred adhesives are pressure sensitive and in certain embodiments preferably repel absorption of aqueous materials and do not contribute to corrosion. Suitable pressure sensitive adhesives include those based on acrylates, polyurethanes, KRATON and other block copolymers, silicones, rubber based adhesives (including natural rubber, polyisoprene, polyisobutylene, butyl rubber etc.) as well as combinations of these adhesives. The adhesive component may contain tackifiers, plasticizers, rheology modifiers as well as active components such as an antimicrobial agent. It is anticipated that removable liners may be used to protect the adhesive surface prior to use.

[0121] The preferred pressure sensitive adhesives which can be used in the adhesive composites of the present invention are the normal adhesives which are applied to various substrates, such as the acrylate copolymers described in U.S. Pat. No. RE 24,906, and particularly a 97:3 iso-octyl acrylate:acrylamide copolymer. Also preferred is an 65:35 2-ethylhexyl acrylate:isobornyl acrylate copolymer, and useful adhesives for this purpose are described in U.S. Pat. Nos. 5,804,610 and 5,932,298. Another useful adhesive could be a flame retardant adhesive. The inclusion of antimicrobial agents in the adhesive is also contemplated, as described in U.S. Pat. Nos. 4,310,509 and 4,323,557.

[0122] The structured surface may also be incorporated into an adhesive layer. In this case the adhesive must either be supported by a microreplicated liner having the mirror image of the fluid wick pattern or the adhesive must have sufficient yield stress and/or creep resistance to prevent flow and loss of the pattern during storage. Increase in yield stress is most conveniently accomplished by slightly crosslinking the adhesive (e.g., using covalent and/or ionic crosslinks or by providing sufficient hydrogen bonding). It is also understood that the adhesive layer may be discontinuous via the same methods, to allow for easy, bubble free application. Liners which are suitable for use in the adhesive composites of the present invention can be made of kraft papers, polyethylene, polypropylene, polyester or composites of any of these materials.

[0123] The liners are preferably coated with release agents such as fluorochemicals or silicones. For example, U.S. Pat. No. 4,472,480 describes low surface energy perfluorochemical liners. The preferred liners are papers, polyolefin films, or polyester films coated with silicone release materials. Examples of commercially available silicone coated release papers are POLYSLIK™ silicone release papers available from James River Co., H. P. Smith Division (Bedford Park, Ill.) and silicone release papers supplied by Daubert Chemical Co. (Dixon, Ill.). The most preferred liner is 1-60BKG-157 paper liner available from Daubert, which is a super calendared Kraft paper with a water-based silicone release surface.

[0124] Various modifications and alterations of this invention will become apparent to those skilled in the art without departing from the scope and spirit of this invention. All patents, patent applications and publications cited herein are incorporated by reference. Fluid transport devices of the present invention are applicable in numerous industrial and commercial applications. Structured surfaces having no cap layer (exposed to ambient conditions) are particularly suitable in evaporative and condensation collection applications, as well as gross fluid acquisition and removal applications. The fluid transport device with a cap layer has been found to be particularly suitable for use in flooring applications for acquisition and control of spilled liquids, thereby preventing corrosion to the underlying structure. Further