

CLAIMS

What is claimed is:

- 1 1. An absorbent core composite for a disposable absorbent article, comprising:
2 a first fabric;
3 a body side second fabric; and
4 a plurality of aggregates of superabsorbent particles (SAP) situated between said first
5 and second fabric;
6 wherein, about each of a plurality of said SAP aggregates, an arrangement of spaced
7 apart bond sites secure the second fabric to the first fabric and form a pocket in which the
8 SAP aggregate is secured between the first fabric and the second fabric;
9 wherein spaced apart bond sites about said SAP aggregates provide gaps between
10 bond sites that communicate one of said pockets with an adjacent said pocket;
11 wherein said body side second fabric is a bulky nonwoven including fibers
12 entangling at least some particles in said SAP aggregate; and
13 wherein said bulky nonwoven second fabric has a thickness between 1,000 μ m to
14 5,000 μ m, density between 0.02g/cc and 0.07 g/cc, basis weight between 20g/m² and
15 80g/m², density between 0.01g/cc and 0.08g/cc, and effective pore diameter greater than
16 300 μ m.
- 1 2. The absorbent core composite of claim 1, wherein each said SAP aggregate is
2 free of an absorbent matrix.
- 1 3. The absorbent core composite of claim 1, wherein said SAP aggregates consist
2 of superabsorbent particles.
- 1 4. The absorbent core composite of claim 1, wherein said second fabric includes
2 fibers that penetrate the SAP aggregate at a top layer of superabsorbent particles, the SAP
3 aggregate being free of an absorbent matrix.
- 1 5. The absorbent core composite of claim 1, further comprising:
2 an adhesive pattern applied on the first fabric and adhesively contacting
3 superabsorbent particles of said SAP aggregate positioned in a bottom layer of particles in
4 said SAP aggregate adjacent said first fabric, to at least partially secure the superabsorbent
5 particles of said SAP aggregate.
- 1 6. The absorbent core composite of claim 5, wherein said adhesive pattern
2 applied on said first fabric contains a plurality of intersecting loops defining open regions free
3 of adhesive.

REPLACEMENT SHEET

46

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

1 7. The absorbent core composite of claim 1, wherein said open regions free of
2 adhesive generally have a width or diameter less than a width or diameter of said pockets
3 situated on said adhesive pattern.

1 8. (Canceled)

1 9. The absorbent composite of claim 8, wherein said bulky nonwoven includes
2 fibers selected from the group consisting of: polypropylene (PP), polyethylene (PE),
3 polyethylene terephthalate (PET), polylactic acid (PLA); polyolefins, copolymers thereof,
4 and combinations thereof; and wherein said fibers are treated fibers that are hydrophilic.

1 10. The absorbent composite of claim 1, wherein said first fabric is a nonwoven
2 material, and said first and second fabrics define, at least partially, an elongated laminate
3 having a lateral width, a longitudinal width, and a central region positioned about an
4 intersection of a lateral centerline and a longitudinal centerline of said elongated laminate.

1 11. The absorbent composite of claim 10, wherein said bond sites form a plurality
2 intersecting lines defining a grid of diamond shaped pockets.

1 12. The absorbent composite of claim 10, wherein said bond sites form a plurality
2 of intersecting lines defining a grid of shaped pockets, wherein all straight lines defined by a
3 series of pockets extending from the longitudinal centerline toward side margins of the
4 laminate are oriented at an angle less than sixty degrees from the longitudinal centerline.

1 13. The absorbent composite of claim 10, wherein said plurality of pockets
2 include pockets of different swell capacities that impart unto said laminate a property of
3 exhibiting a surface topography sensitive to liquid intake.

1 14. The absorbent composite of claim 10, wherein said plurality of pockets
2 include pockets of different swell capacities, wherein pockets in the central region have a
3 lesser swell capacity than pockets outside the central region.

1 15. The absorbent composite of claim 10, wherein said plurality of pockets in the
2 central region are smaller than pockets outside the central region.

1 16. The absorbent composite of claim 1, wherein said bond sites are intermittent
2 bond points.

1 17. The absorbent composite of claim 1, wherein each said fabric is pre-applied
2 with an adhesive pattern having loops defining open regions free of adhesive; and
3 wherein said SAP aggregates are pulpless and free of an absorbent matrix.

1 18. A method of manufacturing an absorbent composite laminate for a disposable
2 absorbent article, comprising:

REPLACEMENT SHEET

47

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

3 conveying a first fabric into position to receive superabsorbent particles (SAP);
4 depositing SAP on said first fabric to provide discrete aggregates of SAP;
5 conveying a second fabric of a bulky nonwoven;
6 positioning the second fabric relative to said first fabric such that fibers of said bulky
7 nonwoven entangle particles in a top layer of particles of the SAP aggregate, thereby
8 securing, at least partly, the SAP aggregate therebetween;
9 bonding said first and second fabric at a network of bond sites to form an elongated
10 laminate having a plurality of pockets of SAP aggregate, whereby each pocket is defined by
11 bond sites positioned about a SAP aggregate and securing the second fabric to the first fabric;
12 conveying the elongated laminate, whereby said bulky nonwoven and
13 said pockets inhibit SAP particle migration from said pockets; and
14 wherein said bulky nonwoven second fabric has a thickness between 1,000 μ m to
15 5,000 μ m, density between 0.02g/cc and 0.07 g/cc, basis weight between 20g/m² and
16 80g/m², density between 0.01g/cc and 0.08 g/cc, and an effective pore diameter greater than
17 300 μ m.

1 19. The method of claim 18, wherein said SAP deposited is free of an absorbent
2 matrix such that said SAP aggregates are free of an absorbent matrix.

1 20. The method of claim 18, wherein said conveying said fabric is preceded by
2 applying an adhesive pattern on said first fabric, such that said depositing superabsorbent
3 particles on said first fabric includes delivering a plurality of SAP aggregates on said first
4 fabric with the adhesive pattern preapplied thereon.

1 21. The method of claim 20, wherein said applying adhesive includes applying
2 adhesive in a continuous open pattern having enclosed open regions free of adhesive.

1 22. The method of claim 21, wherein said open regions have an average width
2 smaller than an average width of said pockets.

1 23. The method of claim 18, further comprising applying an adhesive pattern on
2 said second fabric prior to positioning said second fabric relative to said first fabric.

1 24. The method of claim 18, wherein said bonding includes bonding said fabrics
2 using arrangements of discontinuous bond sites about said SAP aggregates to produce
3 pockets bounded by spaced apart bond sites with gaps therebetween for fluid passage.

1 25. The method of claim 24, wherein the arrangements of bond sites form a grid
2 characterized by straight bond lines directed generally laterally toward side margins of the
3 laminate at angles deviated more than fifteen degrees from a line perpendicular to a
4 longitudinal centerline of said elongated laminate.

REPLACEMENT SHEET

48

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

1 26. The method of claim 25, wherein the arrangements of bond sites form
2 diamond shaped pockets.

1 27. The method of claim 24, wherein said bonding includes providing an
2 embossing pattern corresponding to the arrangement of SAP aggregates on the first fabric, the
3 embossing pattern presenting arrangements of discontinuous bond sites that surround a SAP
4 aggregate during bonding.

1 28. The method of claim 27, wherein the pattern includes a grid free of any direct
2 straight line paths to the side margin.

1 29. The method of claim 18, wherein said bulky nonwoven second fabric has an
2 effective pore diameter greater than 300 μ m and an average size of SAP particles is about
3 300 μ m.

1 30. (Canceled)

1 31. The method of claim 30, wherein said bulky nonwoven includes fibers
2 selected from the group consisting of: polypropylene (PP), polyethylene (PE), polyethylene
3 terephthalate (PET), polylactic acid (PLA); polyolefins, copolymers thereof, and
4 combinations thereof; and wherein said fibers are treated fibers that are hydrophilic.

1 32. The method of claim 18, further comprising, independent of said depositing
2 superabsorbent particles on said first fabric, further depositing superabsorbent particles in
3 select regions of said first fabric, such that pockets of SAP aggregates formed after said
4 bonding of first and second fabrics in said select regions contain greater concentrations of
5 SAP aggregates than pockets outside of said select regions.

1 33. The method of claim 18, wherein said bond sites are spaced apart bond points
2 defining fluid gaps therebetween and between adjacent pockets.

1 34. A method of making a disposable absorbent article, said method comprising:
2 conveying a first fabric into position to receive superabsorbent particles (SAP);
3 depositing superabsorbent particles on said first fabric to provide discrete aggregates
4 of SAP free of an absorbent matrix;

5 conveying a second fabric of a bulky nonwoven;

6 positioning the second fabric relative to said first fabric such that fibers of said bulky
7 nonwoven entangle particles in a top layer of particles of said SAP aggregate, thereby
8 securing, at least partly, the SAP aggregate; and

9 bonding said first and second fabric at a network of bond sites to form an elongated
10 absorbent core laminate having a plurality of pockets of SAP aggregate, whereby each pocket

REPLACEMENT SHEET

49

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

11 is defined by bond sites positioned about a SAP aggregate and securing the second fabric to
12 the first fabric;

13 conveying the elongated laminate, whereby said bulky nonwoven and said pockets
14 inhibit SAP particle migration from said pockets;

15 situating the elongated core laminate between a topsheet and a backsheet, thereby
16 forming a core envelope of said topsheet, backsheet, and absorbent core laminate, the
17 topsheet and backsheet further providing a chassis supporting said absorbent core laminate;

18 forming leg holes in said chassis;

19 joining end regions of said chassis to form a disposable absorbent article,
20 whereby said bulky nonwoven and said pockets inhibit SAP particle migration
21 from said pockets; and

22 wherein said bulky nonwoven second fabric has a thickness between 1,000 μ m to
23 5,000 μ m, density between 0.02g/cc and 0.07 g/cc, basis weight between 20g/m² and
24 80g/m², density between 0.01g/cc and 0.08g/cc, and effective pore diameter greater than
25 300 μ m.

1 35. The method of claim 34, wherein said conveying said fabric is preceded by
2 applying an adhesive pattern on said first fabric.

1 36. The method of claim 35, wherein said applying adhesive includes applying
2 adhesive in a continuous open pattern having enclosed open regions free of adhesive, and
3 wherein said open regions have an average width smaller than an average width of said
4 pockets.

1 37. The method of claim 34, wherein said bonding includes bonding said fabrics
2 using arrangements of bond points about said SAP aggregates to produce pockets bounded by
3 spaced apart bond points with gaps therebetween for fluid passage.

1 38. The method of claim 34, wherein the arrangements of bond points form a grid
2 characterized by lines through the bond points directed generally laterally toward side
3 margins of the elongated laminate at angles less than ninety degrees from a longitudinal
4 centerline of said laminate.

1 39. A disposable absorbent article, comprising:
2 a chassis body defined by a first end margin and a second end margin longitudinally
3 spaced from the first end margin, the end margins partially defining front and back waist
4 regions that are fastenable about a waist of a user;

5 a topsheet;

6 a backsheet; and

REPLACEMENT SHEET

50

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

an absorbent composite disposed between the topsheet and backsheet, the absorbent composite including

- a first fabric;
- a second fabric bonded to said first fabric; and
- absorbent particles secured between said first and second fabric; and

wherein the first fabric is intermittently attached to the second fabric to define a plurality of pockets situated between the first fabric and the second fabric and containing an aggregate of superabsorbent particles (SAP); and

wherein discontinuous and spaced apart bond sites secure the first fabric with the second fabric;

wherein said second fabric is a bulky nonwoven material positioned on a bodyside of the absorbent composite and over the SAP aggregate such that fibers of the bulky nonwoven entangle superabsorbent particles;

wherein said SAP aggregate is free of an absorbent matrix in a middle portion extending from beneath the bulky nonwoven material; and

wherein said bulky nonwoven second fabric has a thickness between 1,000 μ m to 5,000 μ m, density between 0.02g/cc and 0.07 g/cc, basis weight between 20g/m² and 80g/m², density between 0.01g/cc and 0.08g/cc, and effective pore diameter greater than 300 μ m.

40. The disposable absorbent particle of claim 39, wherein said SAP aggregates consists of SAP.

41. The disposable absorbent article of claim 39, wherein said absorbent composite includes an adhesive pattern preapplied on the first fabric.

42. The disposable absorbent article of claim 39, wherein said first fabric is a nonwoven material, and said first and second fabrics define, at least partially, an elongated laminate having a lateral width, a longitudinal width, and central region positioned about an intersection of a lateral centerline and a longitudinal centerline and wherein said plurality of pockets include pockets situated in said central region having concentrations of superabsorbent particles greater than pockets proximate longitudinal end regions adjacent a longitudinal extent of said laminate.

43. The disposable absorbent article of claim 39, wherein said bond sites form a plurality intersecting lines defining a grid of diamond shaped pockets.

44. The disposable absorbent article of claim 39, wherein said bond sites form a plurality of intersecting lines defining a grid of shaped pockets, wherein all straight lines

REPLACEMENT SHEET

51

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

3 through bond sites in a series of pockets extending from the longitudinal centerline toward
4 side margins of the laminate are oriented at an angle less than sixty degrees from the
5 longitudinal centerline.

1 45. The disposable absorbent article of claim 39, wherein said absorbent
2 composite includes concave portions along each side margin such that said absorbent
3 composite has an hourglass shape.

1 46. An absorbent composite comprising:
2 a bulky nonwoven substrate;
3 a top fabric bonded with said bulky nonwoven substrate; and
4 a layer of superabsorbent particles (SAP) secured therebetween, including hot melt
5 adhesive particles interspersed with said SAP to mutually secure said SAP with and within
6 said bulky nonwoven substrate and said top fabric.

1 47. The absorbent composite of claim 46, wherein said bulky nonwoven has a
2 thickness between 1,000 μ m to 5,000 μ m, density between 0.02g/cc and 0.08 g/cc, basis
3 weight between 20g/m² and 80g/m², density between 0.01/cc and 0.08 g/cc, and an effective
4 pore diameter greater than 300 μ m.

1 48. The absorbent composite of claim 46, wherein said top fabric is a tissue layer.

1 49. The absorbent composite of claim 46, wherein said SAP is disposed along a
2 plane between said bulky nonwoven substrate and said top fabric.

1 50. The absorbent composite of claim 46, wherein bonding between said bulky
2 nonwoven substrate and said top fabric define a bonding pattern of geometric enclosures
3 surrounding SAP.

1 51. A method of manufacturing an absorbent composite, said method comprising:
2 conveying a first substrate of a nonwoven material;
3 delivering a mixture of superabsorbent particles (SAP) with hot melt adhesive
4 particles onto the conveyed first substrate;

5 as the first substrate with said mixture is conveyed, applying heat to the first substrate,
6 thereby activating the hot melt adhesive particles and bonding the SAP with the hot melt
7 particles and the first substrate;

8 applying a second substrate atop the first substrate and SAP layer bonded
9 therewith; and

10 wherein the first substrate is a bulky nonwoven material having a thickness between
11 1,000 μ m to 5,000 μ m, density between 0.2g/cc and 0.07 g/cc, basis weight between 30g/m²

REPLACEMENT SHEET

52

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

12 and 80g/m², density between 0.02g/cc and 0.07 g/cc, and an effective pore diameter greater
13 than 300µm.

1 52. The method of claim 51, further comprising:

2 bonding the first substrate with the second substrate to produce an absorbent
3 composite laminate.

1 53. The method of claim 52, wherein said bonding includes using heat embossing
2 to create a bonding pattern on the absorbent composite laminate.

1 54. (Canceled)

1 55. (Canceled)

1 56. The method of claim 51, wherein said hot melt particles and said SAP are
2 mixed at a ratio between 1 to 10% hot melt adhesive by weight.

1 57. A disposable absorbent article, comprising:

2 a chassis body defined by a first end margin and a second end margin longitudinally
3 spaced from the first end margin, the end margins partially defining front and back waist
4 regions that are fastenable about a waist of a user;

5 a topsheet;

6 a backsheet; and

7 an absorbent composite disposed between the topsheet and backsheet providing a core
8 of the article, the absorbent composite including

9 a first fabric;

10 a second fabric bonded to said first fabric; and

11 absorbent particles adhered between said first and second fabric; and

12 wherein the first fabric is intermittently attached to the second fabric to define a
13 plurality of pockets, the pockets being containers situated between the first fabric and the
14 second fabric and containing an aggregate of absorbent particles; and

15 wherein the absorbent composite includes regions of containers of absorbent particles
16 aggregates including a primary region having containers of a first size and a secondary region
17 having a plurality of containers of a second size different from the first size;

18 wherein the topsheet and backsheet define longitudinal and lateral
19 margins of the chassis body; and

20 wherein each of the containers is formed by the first fabric bonding to the second
21 fabric such that the containers are disposed on the same first fabric and embossing bonding
22 lines form channels between the containers; and

REPLACEMENT SHEET

53

AMENDED SHEET - IPEA/US

ATTY DOCKET: DSGI-1006WO

23 wherein the primary region corresponds to a crotch region of the article, said crotch
24 region being located centrally intermediate the longitudinal margins of the chassis body, and
25 wherein the absorbent particles are superabsorbent particles and wherein said pockets are
26 arranged such that said channels change more than one direction before side margins of the
27 core.

1 58. (Canceled)

1 59. The disposable absorbent garment of claim 58, wherein containers of the
2 primary region have perimeters that are greater than perimeters of containers in the secondary
3 region.

1 60. The disposable absorbent garment of claim 59, wherein the containers of the
2 secondary region surround the primary region.

1 61. The disposable absorbent garment of claim 60, wherein the absorbent
2 composite further includes end regions having containers of a size different from the size of
3 containers in the secondary region; and wherein the secondary region is intermediate the
4 primary region and an end region.

1 62. The disposable absorbent garment of claim 61, wherein each of the end
2 regions have containers with perimeters that are substantially smaller than the perimeters of
3 containers in the secondary region.

1 63. The disposable absorbent garment of claim 61, wherein containers of the end
2 regions have perimeters that are larger than the perimeters of containers in the secondary
3 region.

1 64. The disposable absorbent region of claim 61, wherein the primary region
2 further includes a second class of containers, the second class of containers having perimeters
3 that are substantially smaller than a first class of containers, and wherein the containers of the
4 second class are positioned to fill voids between adjacent containers of the first class.

1 65. The disposable absorbent garment of claim 64, wherein the containers at the
2 first size have a larger concentration of superabsorbent particles than the containers of the
3 second size.

REPLACEMENT SHEET

54

AMENDED SHEET - IPEA/US

CLAIMS

1. An absorbent core composite for a disposable absorbent article, comprising:
a first fabric;
a body side second fabric; and
a plurality of aggregates of superabsorbent particles (SAP) situated between said first and second fabric;

wherein, about each of a plurality of said SAP aggregates, an arrangement of spaced apart bond sites secure the second fabric to the first fabric and form a pocket in which the SAP aggregate is secured between the first fabric and the second fabric and, wherein spaced apart bond sites about said SAP aggregate provides gaps between bond sites that communicate said pocket with an adjacent said pocket; and

wherein said body side second fabric is a bulky nonwoven including fibers entangling at least some particles in said SAP aggregate.

2. The absorbent core composite of claim 1, wherein each said SAP aggregate is free of an absorbent matrix.

3. The absorbent core composite of claim 1, wherein said SAP aggregates consist of superabsorbent particles.

4. The absorbent core composite of claim 1, wherein said second fabric includes fibers that penetrate the SAP aggregate at a top layer of superabsorbent particles, the SAP aggregate being free of an absorbent matrix.

5. The absorbent core composite of claim 1, further comprising:
an adhesive pattern applied on the first fabric and adhesively contacting superabsorbent particles of said SAP aggregate positioned in a bottom layer of particles in said SAP aggregate adjacent said first fabric, to at least partially secure the superabsorbent particles of said SAP aggregate.

6. The absorbent core composite of claim 5, wherein said adhesive pattern applied on said first fabric contains a plurality of intersecting loops defining open regions free of adhesive.

7. The absorbent core composite of claim 6, wherein said open regions free of adhesive generally have a width or diameter less than a width or diameter of said pockets situated on said adhesive pattern.

8. The absorbent core composite of claim 1, wherein said bulky nonwoven second fabric has a thickness between 1,000 μ m to 5,000 μ m, basis weight between 20g/m² and 80g/m², density between 0.01g/cc and 0.08g/cc, and effective pore diameter greater than 300 μ m.

9. The absorbent composite of claim 8, wherein said bulky nonwoven includes fibers selected from the group consisting of: polypropylene (PP), polyethylene (PE), polyethylene terephthalate (PET), polylactic acid (PLA); polyolefins, copolymers thereof, and combinations thereof; and wherein said fibers are treated fibers that are hydrophilic.

10. The absorbent composite of claim 1, wherein said first fabric is a nonwoven material, and said first and second fabrics define, at least partially, an elongated laminate having a lateral width, a longitudinal width, and a central region positioned about an intersection of a lateral centerline and a longitudinal centerline of said elongated laminate.

11. The absorbent composite of claim 10, wherein said bond sites form a plurality intersecting lines defining a grid of diamond shaped pockets.

12. The absorbent composite of claim 10, wherein said bond sites form a plurality of intersecting lines defining a grid of shaped pockets, wherein all straight lines defined by a series of pockets extending from the longitudinal centerline toward side margins of the laminate are oriented at an angle less than sixty degrees from the longitudinal centerline.

13. The absorbent composite of claim 10, wherein said plurality of pockets include pockets of different swell capacities that impart unto said laminate a property of exhibiting a surface topography sensitive to liquid intake.

14. The absorbent composite of claim 10, wherein said plurality of pockets include pockets of different swell capacities, wherein pockets in the central region have a lesser swell capacity than pockets outside the central region.

15. The absorbent composite of claim 10, wherein said plurality of pockets in the central region are smaller than pockets outside the central region.

16. The absorbent composite of claim 1, wherein said bond sites are intermittent bond points.

17. The absorbent composite of claim 1, wherein each said fabric is pre-applied with an adhesive pattern having loops defining open regions free of adhesive; and

wherein said SAP aggregates are pulpless and free of an absorbent matrix.

18. A method of manufacturing an absorbent composite laminate for a disposable absorbent article, comprising:

conveying a first fabric into position to receive superabsorbent particles (SAP);

depositing SAP on said first fabric to provide discrete aggregates of SAP;

conveying a second fabric of a bulky nonwoven;

positioning the second fabric relative to said first fabric such that fibers of said bulky nonwoven entangle particles in a top layer of particles of the SAP aggregate, thereby securing, at least partly, the SAP aggregate therebetween;

bonding said first and second fabric at a network of bond sites to form an elongated laminate having a plurality of pockets of SAP aggregate, whereby each pocket is defined by bond sites positioned about a SAP aggregate and securing the second fabric to the first fabric; and

conveying the elongated laminate, whereby said bulky nonwoven and said pockets inhibit SAP particle migration from said pockets.

19. The method of claim 18, wherein said SAP deposited is free of an absorbent matrix such that said SAP aggregates are free of an absorbent matrix.

20. The method of claim 18, wherein said conveying said fabric is preceded by applying an adhesive pattern on said first fabric, such that said depositing superabsorbent particles on said first fabric includes delivering a plurality of SAP aggregates on said first fabric with the adhesive pattern preapplied thereon.

21. The method of claim 20, wherein said applying adhesive includes applying adhesive in a continuous open pattern having enclosed open regions free of adhesive.

22. The method of claim 21, wherein said open regions have an average width smaller than an average width of said pockets.

23. The method of claim 18, further comprising applying an adhesive pattern on said second fabric prior to positioning said second fabric relative to said first fabric.

24. The method of claim 18, wherein said bonding includes bonding said fabrics using arrangements of discontinuous bond sites about said SAP aggregates to produce pockets bounded by spaced apart bond sites with gaps therebetween for fluid passage.

25. The method of claim 24, wherein the arrangements of bond sites form a grid characterized by straight bond lines directed generally laterally toward side margins of the laminate at angles deviated more than fifteen degrees from a line perpendicular to a longitudinal centerline of said elongated laminate.

26. The method of claim 25, wherein the arrangements of bond sites form diamond shaped pockets.

27. The method of claim 24, wherein said bonding includes providing an embossing pattern corresponding to the arrangement of SAP aggregates on the first fabric, the embossing pattern presenting arrangements of discontinuous bond sites that surround a SAP aggregate during bonding.

28. The method of claim 27, wherein the pattern includes a grid free of any direct straight line paths to the side margin.

29. The method of claim 18, wherein said bulky nonwoven second fabric has an effective pore diameter greater than 300 μ m and an average size of SAP particles is about 300 μ m.

30. The method of claim 18, wherein said bulky nonwoven second fabric has a thickness between 1,000 μ m to 5,000 μ m, ~~density between 0.02 g/cc and 0.07 g/cc~~, basis weight between 20g/m² and 80g/m², density between 0.01g/cc and 0.08 g/cc, and an effective pore diameter greater than 300 μ m, and wherein said bulky nonwoven includes fibers selected from the group consisting of: polypropylene (PP), polyethylene (PE), polyethylene terephthalate (PET), polylactic acid (PLA); polyolefins, copolymers thereof, and combinations thereof; and wherein said fibers are treated fibers that are hydrophilic.

31. The method of claim 18, further comprising, independent of said depositing superabsorbent particles on said first fabric, further depositing superabsorbent particles in select regions of said first fabric, such that pockets of SAP aggregates formed after said bonding of first and second fabrics in said select regions contain greater concentrations of SAP aggregates than pockets outside of said select regions.

32. The method of claim 18, wherein said bond sites are spaced apart bond points defining fluid gaps therebetween and between adjacent pockets.