CLAIMS

1. A ventilation device (1) for insertion into at least one bag wall (101) of a bag (100), comprising at least one dust protection layer (2) and at least one fluid-tight outer layer (3), wherein at least one ventilation opening (4) is introduced into the outer layer (3),

characterized in

that at least one fluid-tight spacer device (5) is arranged between the dust protection layer (2) and the outer layer (3), wherein at least one free cross-section of flow (9) is made available between the dust protection layer (2) and the spacer device (5) and at least one free cross-section of flow (10) is made available between the outer layer (3) and the spacer device (5), and wherein the spacer device (5) comprises at least one through-opening (6).

2. The ventilation device (1) according to claim 1, wherein the at least one through-opening (6) is configured to allow air entering the free cross-section of flow (10) through to be discharged to the outside through the ventilation opening (4), wherein the air is from the bag (100) entering the free cross-section of flow (9) through the dust protection layer (2).

3. The ventilation device (1) according to claim 1 or 2, wherein the spacer device comprises at least one spacer element (7, 8), wherein the free cross-section of flow (9) between the dust protection layer (2) and the spacer device (5) and/or the free cross-section of flow (10) between the outer layer (3) and the spacer device (5) is made available by the at least one spacer element (7, 8).

4. The ventilation device (1) according to claim 3, wherein the through-opening (6) is integrated in the at least one spacer element (7, 8).

5. The ventilation device (1) according to claim 3 or 4, wherein the through-opening (6) is provided in at least one spacer element (7) in the direction of the outer layer (3).

6. The ventilation device (1) according to any one of claims 3 to 5, wherein at least two spacer elements (7, 8) are provided in the spacer device (5), which essentially have an opposite orientation.

7. The ventilation device (1) according to any one of claim 3 to 6, wherein the spacer element (7, 8) is introduced into the spacer device (5) by at least one impression (14).

8. The ventilation device (1) according to any one of claims 3 to 7, wherein the spacer elements (7, 8) are introduced into the spacer device (5) with opposite orientation by impressions (14) from different sides.

9. The ventilation device (1) according to any one of claims 3 to 8, wherein the dust protection layer (2) and the spacer device (5) and/or the outer layer (3) and the spacer device (5) are connected to each other at points and/or circumferentially.

10. The ventilation device (1) according to claim 9, wherein the connection between the dust protection layer (2) and the spacer device (5) and/or the outer layer (3) and the spacer device (5) extends in the region of the spacer element (7, 8).

11. The ventilation device (1) according to any one of claims 1 to 10, wherein the spacer device (5) consists at least in sections of at least one plastic (11), in particular of polyethylene (12) and/or polypropylene.

12. The ventilation device (1) according to any one of claims 1 to 11, wherein the spacer device (5) is made available by at least one polyethylene sheet (13) and/or at least one polypropylene sheet.

13. The ventilation device (1) according to any one of claims 1 to 12, wherein the outer layer (3) is made available at least in sections by a plastic film (18), in particular by at least one polyethylene film (19).

14. The ventilation device (1) according to any one of claims 1 to 13, wherein the outer layer (3) is made available by at least one bag wall (101) of the bag (100).

15. The ventilation device (1) according to any one of claims 1 to 14, wherein the through-opening (6) and the ventilation opening (4) are provided at different heights in a state installed in a bag wall (101), wherein the ventilation opening (4) is arranged lower than the through-opening (6).

16. The ventilation device (1) according to any one of claims 1 to 15, wherein the through-opening (6) is made available by at least one hole (20) in the spacer device (5).

17. The ventilation device (1) according to any one of claims 1 to 16, wherein the dust protection layer (2) is made available by at least one nonwoven fabric (15).

18. The ventilation device (1) according to any one of claims 1 to 17, wherein the ventilation opening (4) is formed in a slit-like manner and/or comprises at least one slit (17).

19. A bag (100) with at least one bag wall (101), comprising at least one ventilation device (1) according to any one of claims 1 to 18 in at least one bag wall (101).

20. The bag (100) according to claim 19, wherein the ventilation device (1) is introduced into the bag wall (101) in such an orientation that the at least one ventilation opening (4) is located lower than the through-opening (6) in the spacer device (5).

21. The bag (100) according to claim 19 or 20, wherein the outer layer (3) is made available by the bag wall (101).

22. The bag (100) according to any one of claims 19 to 21, wherein the ventilation device (1) is welded and/or glued into the bag wall (101).

23. The bag according to claim 22, wherein a weld seam (23) and/or adhesive seam (24) is arranged in the region of at least one spacer element (7, 8).

24. The bag according to any one of claims 19 to 23, wherein the ventilation opening (4) is arranged at the end of the bag or in the edge region of the ventilation device (1) and is produced by interrupting the connection between the spacer device (5) and the outer layer (3) in this region.

25. A method for producing a ventilation device (1) according to any one of claims 1 to 18, characterized by the following steps in a suitable number and sequence:

- making a polyethylene film available as a base for the spacer device (5)

- making a dust protection layer (2) available

- introducing a predetermined pattern of impressions (14) into the polyethylene film from one side, in particular by means of at least one embossing roller

- introducing a predetermined pattern of impressions (14) into the polyethylene film from a different side, in particular by means of at least one embossing roller,

- introducing at least one through-opening (6) into the spacer device (5)

- optionally making an outer layer (3) available

- connecting the spacer device and/or the dust protection layer and/or the outer layer.

26. The method according to claim 25, wherein the through-opening (6) is introduced into the spacer device (5) by means of at least one embossing device.

27. A method for introducing a ventilation device (1) into at least one bag wall (101) of a bag (100), wherein at least one ventilation device (1) according to any one of claims 1 to 18 is at least partially produced or made available, is arranged on a bag wall (101), and is tightly connected thereto.