Claims

1. A textile filter system of a pulse jet filtration device ~~(12)~~, the system ~~(26)~~ comprising:

a particulate textile filter bag ~~(28)~~ to restrain particles in a gas stream ~~(44)~~, the filter bag ~~(28)~~ having a radially outer, upstream surface ~~(50)~~ and a radially inner, downstream surface ~~(52)~~, and being provided with a textile carrier bag ~~(54)~~, the radially inner, downstream surface ~~(52)~~ of the filter bag ~~(28)~~ being provided as a low-friction surface, and

a textile, chemically active filter sleeve ~~(30)~~ having a filter carrier sleeve ~~(58)~~ of textile material and a catalytic component ~~(60)~~ on the filter carrier sleeve ~~(58)~~ to remove substances from the gas stream ~~(44)~~,

the filter sleeve ~~(30)~~ being insertable into the filter bag ~~(28)~~ to be arranged within the filter bag ~~(28)~~ and being removable from the filter bag ~~(28)~~.

2. The textile filter system of claim 1, wherein the textile carrier bag ~~(54)~~ is of PTFE.

3. The textile filter system of claim 2, wherein the radially inner, downstream surface ~~(52)~~ of the particulate filter bag ~~(28)~~ is defined by the PTFE textile defining the carrier bag ~~(54)~~.

4. The textile filter system of claim 1 or 2, wherein the upstream surface ~~(50)~~ of the filter bag ~~(28)~~ is defined by a microporous membrane.

5. The textile filter system of any of the preceding claims, wherein the filter bag ~~(28)~~ has an inner dimension, seen in cross-section, which is at least 2% larger than the outer dimension of the filter sleeve ~~(30)~~.

6. A method for regenerating a textile filter, the textile filter having a filter carrier of a textile material and a catalytic component on the filter carrier for removing substances from a flue gas stream ~~(44)~~, the regeneration recovering the activity of the catalytic component of the textile filter after use within a filtration device,

the method comprising the steps of

a) removing the textile filter from the filtration device,

b) washing the textile filter with tap water together with a mechanical treatment of the textile filter, and

c) drying the textile filter.

7. The method according to claim 6, wherein the washing step b) is performed according to the following steps:

b1) bringing the textile filter in contact with tap water, and

b2) applying mechanical pressure to the textile filter,

wherein steps b1) and b2) are performed successively and/or simultaneously.

8. The method according to claim 6 or 7, wherein at least one of the washing step b) and the drying step c) comprises the step of:

applying mechanical pressure to the textile filter to squeeze water out of the wet textile filter.

9. The method according to any of claims 7 to 8, wherein the washing step b) comprises the step:

b3) rinsing the textile filter with fresh tap water.

10. The method according to claim 9, wherein rinsing of the textile filter with fresh tap water is performed by spraying the textile filter with fresh tap water.

11. The method according to any of claims 6 to 10, wherein the washing step b) is performed more than once per recovery cycle of the textile filter.

12. The method according to any of claims 6 to 11, wherein the mechanical treatment comprises applying mechanical pressure to the textile filter, the mechanical pressure being applied by at least one nip roller ~~(78, 80, 86, 88)~~.

13. The method according to any of claims 6 to 12, wherein the tap water is at least one of free of additives and untreated.

14. A textile filter regeneration apparatus, each textile filter having a filter carrier of a textile material and a catalytic component on the filter carrier for removing substances from a flue gas stream ~~(44)~~, the regeneration in the regeneration apparatus recovering the activity of the textile filter after use within a filtration device, the apparatus comprising:

a tap water bath ~~(72)~~ to wet the textile filters with tap water,

a device ~~(76)~~ to mechanically treat the textile filters, and

a device ~~(74)~~ to dry the textile filters after washing.

15. The regeneration apparatus according to claim 14, further comprising a supply of fresh water to rinse the textile filters with fresh tap water.

16. The regeneration apparatus according to claim 14 or 15, wherein the device to mechanically treat the textile filters and/or the device to dry the textile filters after washing is at least one set of nip rollers ~~(78, 80, 86, 88)~~ between which the textile filters are moved.

17. The regeneration apparatus according to claim 16, wherein at least one set of nip rollers ~~(78, 80)~~ is arranged within the tap water bath.

18. The regeneration apparatus according to any of claims 14 to 16, wherein the device to mechanically treat the textile filters is arranged vertically underneath the device to dry the textile filters and wherein both devices are arranged above the tap water bath.

19. The regeneration apparatus according to any of claims 14 to 18, wherein a tap water sprayer is arranged between the device ~~(76)~~ to mechanically treat the textile filters, and the device ~~(74)~~ to dry the textile filters after washing.

20. The regeneration apparatus according to any of claims 14 to 19, further comprising a device ~~(94)~~ to control the pH value of the water bath.