

CLAIMS

1. Composite yarn comprising a continuous multifilament core yarn incorporated in a matrix, characterized in that the matrix comprises at least one
5 polymer material and at least one reinforcing filler, the reinforcing filler being formed from functionalized particles, said particles having a median size (d_{v50}) of less than 40 μm .
2. Composite yarn according to Claim 1, such that the particles have a hardness (Mohs) of less than or equal to the hardness of the constituent
10 material of the filaments of the core yarn.
3. Composite yarn according to one of Claims 1 or 2, such that the particles have a median size (d_{v50}) comprised between 5 μm and 40 μm .
4. Composite yarn according to one of Claims 1 to 3, such that the particles have a size (d_{v90}) of less than 90 μm , preferably in the range from 30 μm
15 to 90 μm .
5. Composite yarn according to one of Claims 1 to 4, such that the particles have a size (d_{v10}) of less than 15 μm , preferably in the range from 1 μm to 15 μm .
6. Composite yarn according to one of claims 1 to 5, such that the
20 functionalized particles of the reinforcing filler are dispersed throughout the composite yarn matrix, the matrix being in contact with the core yarn filaments.
7. Composite yarn according to one of claims 1 to 6, such that some of the reinforcing filler is present in the inter-filament interstices of the core yarn.
8. Composite yarn according to one of Claims 1 to 7, such that the
25 reinforcing filler is chosen from the group formed by functionalized fillers, preferably from the group formed by functionalized glass beads, functionalized calcium carbonate and functionalized talc.
9. Composite yarn according to one of Claims 1 to 8, such that the reinforcing filler is functionalized with at least one compound chosen from
30 silanized agents, epoxies, and polyisocyanates, preferably silanized agents.
10. Composite yarn according to one of Claims 1 to 9, such that the matrix further comprises at least one fire-retardant filler.

11. Composite yarn according to one of Claims 1 to 10, such that the constituent material of the core yarn is chosen from silionne, basalt, aramids, polyesters, polyamides, carbon and polyvinyl alcohol.
12. Composite yarn according to one of Claims 1 to 11, such that the
5 constituent material of the core yarn is silionne and the core yarn is a standard textile glass yarn.
13. Composite yarn according to one of Claims 1 to 11, such that the constituent material of the core yarn is silionne and the core yarn is a specific textile glass yarn.
- 10 14. Composite yarn according to one of Claims 1 to 13, further comprising at least one sheath layer enveloping said matrix, the layer comprising at least one polymer material and at least one reinforcing filler.
15. Composite yarn according to Claim 14, such that the reinforcing
15 filler of said layer is of the same chemical nature as the reinforcing filler of said matrix.
16. Composite yarn according to either of Claims 14 and 15, such that said layer further comprises at least one fire-retardant filler.
17. Process for manufacturing a composite yarn according to one of
20 Claims 1 to 16, said process comprising at least one step of depositing, by coating or extrusion, a matrix comprising a polymer material and a reinforcing filler, onto a core yarn.
18. Process for manufacturing according to claim 17, such that the reinforcing filler is dispersed throughout the polymer before depositing.
19. Process for manufacturing according to one of claims 17 or 18,
25 such that some of the filler is present in the inter-filament interstices of the core yarn.
20. Process according to one of Claims 17 to 19, such that the depositing step is performed by coating with a plastisol on the filaments of the core yarn, the plastisol preferably being based on polyvinyl chloride (PVC) or
30 based on acrylic resin.
21. Process according to one of Claims 17 to 20, further comprising at least one step of coating, on the composite yarn manufactured at the

depositing step by coating or extrusion, of at least one layer of polymer material in which is dispersed at least one reinforcing filler, onto the composite yarn obtained in the depositing step.

22. Process according to Claim 21, such that the coating step is
5 performed by coating with a plastisol or by extrusion of a compound.

23. Process according to either of Claims 21 and 22, such that the layer of polymer material further comprises at least one fire-retardant filler.

24. Textile surface comprising at least one composite yarn according to one of Claims 1 to 16 or manufactured according to one of Claims 17 to 23.

10 25. Textile surface according to Claim 24, characterized in that it is made by weaving.