Claims

1. A line guide device (1) for lines (10), such as for example cables, hoses or the like, in a clean room application, comprising
an elongate, flexible envelope (11) which is displaceable to-and-fro between a first connection point (7) and a second connection point (5) movable relative thereto, in particular forming a deflection arc (4) between two runs (2, 3),
the envelope (11) having at least one undoable and reclosable connection region (14A, 14B), for insertion or removal of the line (10) when the connection region is open; and the envelope, when closed, surrounding in dust-tight manner an inner space (15) for accommodating one or more lines, **characterized in that**
within the envelope (11) a functional material (101; 201; 301; 401) is provided to reduce a number of free particles in the inner space (15), wherein the functional material retains operationally released particles in the inner space and/or counteracts the operational release of particles in the inner space.

2. The line guide device as claimed in claim 1, characterized in that a functional insert, a functional inlay (100A, 100B; 200; 400A-400C), a functional layer or a functional filling (300) which comprises the functional material or consists thereof is provided in the inner space (15).

3. The line guide device as claimed in claim 1, characterized in that a coating of the functional material is provided at least in places on an inner wall (11A) of the envelope (11).

4. The line guide device as claimed in claim 2, characterized in that a fibrous structure, in particular a nonwoven (201), with particle-attracting action and/or adhesive action, in particular with electrostatic action is provided as the functional inlay.

5. The line guide device as claimed in claim 2, characterized in that a gel (301), a closed-cell foam and/or a pressure-sensitive adhesive is introduced into the envelope at least in places as the functional material, in particular as a high-viscosity functional filling or functional layer.

6. The line guide device as claimed in claim 5, characterized in that the gel (301) or the foam or the pressure-sensitive adhesive has an adhesive action or permanent tackiness.

7. The line guide device as claimed in claim 5, characterized in that a functional layer with particle-reducing functional material is applied merely in places.

8. The line guide device as claimed in claim 2, characterized in that a sliding film (400A, 400B, 400C) of a friction coefficient-reducing tribopolymer (401) is provided as the functional inlay.

9. The line guide device as claimed in one of the preceding claims, characterized in that at least one elongate tape-like functional insert (200; 400A-400C) or at least one elongate tape-like functional inlay is arranged in the inner space (15).

10. The line guide device as claimed in one of the preceding claims, characterized in that the functional

material (101) forms at least one functional surface which faces the inner space and/or lines to be guided.

11. The line guide device as claimed in one of the preceding claims, characterized in that the functional material (101–401) is embodied so as to be detachable from an inside of the envelope and/or from lines to be guided.

12. The line guide device as claimed in one of the preceding claims, characterized in that the connection region has two closure strips (14A, 14B) continuous in a lengthwise direction with meshing profiles.

13. The line guide device as claimed in claim 12, characterized in that the envelope (11) is undoably assembled in portions of in each case of two opposing shell parts (12A, 12B) of plastics material, in particular of two shell parts with different corrugated profiles, which delimit a continuous inner space (15).

14. The line guide device as claimed in claim 7, characterized in that functional layer with particle-reducing functional material is applied on the inner wall (11A) of the envelope.