CLAIMS

1. A foreign material exclusion system (100) for positioning within a casing (64) of a turbine (40) to catch any foreign material (82) during maintenance of the turbine (40), the turbine (40) comprising a plurality of turbine blades (60), the system comprising:

a flexible sleeve (110) with a semicircular shape (120) fitted on the casing circumferentially between the casing (64) and the plurality of turbine blades (60);

the flexible sleeve (110) comprising a fabric (130); and

a plurality of poles (220) attached to the flexible sleeve (110) under tension to maintain the flexible sleeve (110) fitted in place on the casing (64).

2. The foreign material exclusion system (100) of claim 1, wherein the flexible sleeve (110) comprises a base wall (140), a first sidewall (170), and a second sidewall (180).

3. The foreign material exclusion system (100) of claim 2, wherein the first sidewall (170) and the second sidewall (180) comprise a plurality of channels (190) to accommodate the plurality of poles (220).

4. The foreign material exclusion system (100) of claim 3, wherein the first sidewall (170) and the second sidewall (180) comprise an inner edge (200) and an outer edge (210) and wherein the inner edge (200) and the outer edge (210) both accommodate one of the plurality of channels (190) therein.

5. The foreign material exclusion system (100) of claim 2, wherein the base (140) wall comprises a first end (150) and a second end (160).

6. The foreign material exclusion system (100) of claim 5, wherein the first end (150) and the second end (160) comprise a plurality of magnets (240) therein.

7. The foreign material exclusion system (100) of claim 5, wherein the first end (150) and the second end (160) comprise one or more sled hooks (250) thereon.

8. The foreign material exclusion system (100) of claim 7, wherein the one or more sled hooks (250) are sized for a predetermined stage (52) of the turbine (40).

9. The foreign material exclusion system (100) of claim 5, wherein the first end (150) and the second end (160) comprise a horizontal joint frame plate (260) thereon.

10. The foreign material exclusion system (100) of claim 9, wherein the horizontal joint frame plate (260) comprises a pair of flanges (270) thereon.

11. The foreign material exclusion system (100) of claim 9, wherein the horizontal joint frame plate (260) comprises a plurality of pole apertures (280) sized to accommodate the plurality of poles (220).

12. The foreign material exclusion system (100) of claim 2, wherein the base wall (140), the first sidewall (170), and the second sidewall (180) are sewn or zippered together.

13. The foreign material exclusion system (100) of claim 1, wherein the plurality of poles (220) each comprise a rigid fiber collet (230) for tensioning.

14. The foreign material exclusion system (100) of claim 1, wherein the fabric (130) comprises natural or synthetic materials.

15. A method of inserting a foreign material exclusion system (100) into a casing (64) of a turbine (40) about a number of stages (52) thereof, each of the stages (52) comprising a plurality of turbine blades (60), the method comprising:

sliding a flexible sleeve (110) circumferentially between the casing (64) and the plurality of turbine blades of the number of stages (52);

inserting one or more poles (220) into the flexible sleeve (110) under tension;

fitting the sleeve (110) to the casing (64) with one or more sled hooks (250); and

attaching one or more horizontal joint frame plates (260) to the sleeve (110).