CLAIMS

1. A support and drainage material comprising an element comprising:

a section having a first end and a second end, and a first major surface, and a plurality of parallel tapered flow channels extending from the first end to the second end, each of the plurality of tapered flow channels comprising tapered side walls arranged in parallel and projecting upwardly from, and perpendicular to, the first major surface, each of the plurality of tapered flow channels having a deeper end and a shallower end, and being deeper at the first end of the section than at the second end of the section, wherein the plurality of tapered flow channels are each connected at the first end with a cross member, and connected at the second end with a cross member.

2. The support and drainage material of claim 1, wherein the tapered flow channels each have a continuous taper.

3. The support and drainage material of claim 1, wherein the tapered flow channels each have at least two steps.

4. The support and drainage material of any one of claims 1-3, wherein the first end of the section further comprises an upwardly curving end wall.

5. A filter arrangement comprising:

a pleated porous filter having a plurality of pleats and having an upstream surface and a downstream surface; and

the support and drainage material of any one of claims 1-4, arranged to contact the upstream surface of the pleated porous filter, or to contact the downstream surface of the pleated porous filter.

6. A filter system comprising

a pleated porous filter having a plurality of pleats and having an upstream surface and a downstream surface; and

a support and drainage material system comprising

a first support and drainage material and a second separate support and drainage material;

(a) the first support and drainage material comprising

(i) a section having a first end and a second end, and a first major surface, and a plurality of parallel tapered flow channels extending from the first end to the second end, each of the plurality of tapered flow channels comprising tapered side walls arranged in parallel and projecting upwardly from, and perpendicular to, the first major surface, each of the plurality of tapered flow channels having a deeper end and a shallower end, and being deeper at the first end of the section than at the second end of the section, wherein the plurality of tapered flow channels are each connected at the first end with cross members, and connected at the second end with cross members; and

(b) the separate second support and drainage material comprising

(ii) a section having a first end and a second end, and a first major surface, and a plurality of parallel tapered flow channels extending from the first end to the second end, each of the plurality of tapered flow channels comprising tapered side walls arranged in parallel and projecting upwardly from, and perpendicular to, the first major surface, each of the plurality of tapered flow channels having a deeper end and a shallower end, and being deeper at the first end of the section than at the second end of the section, wherein the plurality of tapered flow channels are each connected at the first end with a cross member, and connected at the second end with a cross member;

wherein the pleated porous filter is arranged between the first support and drainage material and the separate second support and drainage material, and the first support and drainage material and the separate second support and drainage material are rotated 180 degrees with respect to each other.

7. The filter system of claim 6, wherein the pleated porous filter comprises a laid-over-pleat filter.

8. The filter system of claim 6 or 7, further comprising an inner core and an outer cage, wherein the laid-over-pleat filter is arranged between the inner core and the outer cage.

9. A method of filtering fluid, the method comprising passing a fluid through the filter system of any one of claims 6-8, including passing fluid through the first support and drainage material, the upstream surface of the pleated porous filter, the downstream surface of the pleated porous filter, and the second support and drainage material.