COMBIFAB

2537 Wharton Glen Avenue, Mississauga, Ontario, L4X 2A8
Phone: (905) 277–9925 | Fax: (905) 277–9934 | www.combifab.com

TECHNICAL DATA SHEET

CF889 RETICULATED FOAM CHARCOAL

SIF® Filter Foam for Filtration Applications

General Description

Filter Foam is a reticulared flexible polyesterurethane foam. Unlike ordinary urethane foams, it has a patented three-dimensional structure of skeletal strands which gives it unique filtering properties. It is exceptionally porous and permeable; therefore it is ideal for many filtration applications where other types of foam cannot be used.

Filtration Properties

Structure - The homogeneous and uniform structure of Filter Foam minimizes the possibility of open channels which could drastically affect filter efficiency. Each cell in the medium is completely interconnected with all surrounding cells. This allows for free passage of air and at the same time provides high surface-area contact for impingement of dust aprticles. The resilience and strength of the foam prevents strand displacement under normal conditions.

The high tensile strength and tear resistance of Filter Foam, together with its easy workability, greatly facilitate design of mounting devices. It can be sewn, stapled, glued, or grommeted. This foam can be framed as a more conventional filter medium, or it can be used simply as a filter pad with no additional fabrication. It is being successfully used both ways; however, the material is most practically and economically used as a filter pad alone where design or original equipment will accommodate this type of application.

Pore sizes - Filter Foam is produced in many pore sizes. Expressed as the average number of pores-per-linear-inch, these grades range from 5 to 100 ppi; or, expressed in resistance to airflow at 575 feet per minute (1/2 in. pad thickness), from 0.085 to 1.8 inches of water. Two or three-phase filters can be produced by combining several pore sizes. Range in pore size for each grade is controlled within specified limits.

Thickness - Filter Foam is available in thicknesses from 1/8in. through full bun height in increments of 1/16in. The availability of such fine increments in a complete range is a valuable tool in filter design.

Temperature characteristics - Filter Foam has excellent high- and low- temperature features. It can withstand intermittent temperatures as high as 250˚F. At temperatures above 525˚F, Filter Foam melts with decomposition and vaporization. At -40˚F, it shows no evidence of cracking or tearing when bent around a mandrel equal diameter to the foam thickness.

Age resistance - Observation of 5-year-old samples maintained at normal room conditions indicate no deterioration. Prolonged exposure to sunlight should be avoided. Filter Foam, in a special test, showed no loss in tensile strength after being submerged in tap water for one year at room temperature. Other polymeric grades of Filter Foam are made for use in extended environments.

Chemical resistance - Filter Foam is not adversely affected by water, soap, detergents, body acids, perspiration, oils, cleaning solvents, or greases at normal temperatures. Aliphatic hydrocarbons cause slight swelling and aromatics cause considerable swelling. Removal of the hydrocarbons allows the

COMBIFAB

2537 Wharton Glen Avenue, Mississauga, Ontario, L4X 2A8
Phone: (905) 277–9925 | Fax: (905) 277–9934 | www.combifab.com

TECHNICAL DATA SHEET

CF889 RETICULATED FOAM CHARCOAL

foam to regain its original dimensions and strength. Since Filter Foam contains no plasticizer, no difficulty can be experienced from plasticizer migration. Filter Foam is attacked by strong acids, caustics, and chlorine, and is not recommended for use in their presence unless protected by a coating.

Void volume relationship - Approximately 97 percent of the total volume of Filter Foam is air, or void space. This results in an enormous dust-holding capacity for any given filter design.

Filter Foam has been tested to hold more than three times the weight of the medium alone.

Lightweight - Filter Foam is feather light... easy to ship, support, and handle.

Ease of cleaning - In this area, Filter Foam is exceptional. Where medium can be removed from its supporting structures, it may be washed like toweling, wrung out, and dried quickly. In a framed unit, Filter Foam may be cleaned by simply reverse flushing with water. Since it is used dry in most applications, it can be easily cleaned with a vacuum. Immersion in hot water and detergent is all that is required to remove oil and entrapped particles. Filter Foam can also be cleaned by most conventional filter cleaning machines.

The "toughness" inherent in Filter Foam eliminates the need for careful treatment during handling or washing that many competitive media require. It does not mat down or form channels under constant or repetitive washing or handling.

Compactness - Due to the depth loading of the cells and the resulting efficiency, less Filter Foam is required to achieve desired performance.

Filter Foam is compeltely safe to handle. There are no metal or glass particles to harm the hands or to foul the intricate parts of air-moving equipment. It is also nonallergenic, nontoxic, and resistant to most common detergents and solvents.

Added features - In any of the porosity grades, either a flame-retardant or bacteriostatic additive designed to protect the foam from deterioration and musty odors can be incorporated into the Filter Foam. Coated or treated foams are also available allowing for improved life or efficiency.

Uses and Application Possibilities

Classroom unit ventilators - Highly efficient air filtration, ease of maintenance, and long life were the reasons that major manufacturers of classroom unit ventilators chose Filter Foam.

Oscilloscope filtration - A leading manufacturer of oscilloscopes adopted Filter Foam to replace a wire mesh type of filter because of lower cost, easier installation, and a marked improvement in cleanability.

Air filter in home-heating system - The air cleaning efficiency of Filter Foam encouraged many large furnace manufacturers to adopt washable filters for their various furnace models.

Air filters for automobile and truck engines - A combination of paper and Filter Foam provides much greater service life than con-

COMBIFAB

2537 Wharton Glen Avenue, Mississauga, Ontario, L4X 2A8
Phone: (905) 277–9925 | Fax: (905) 277–9934 | www.combifab.com

TECHNICAL DATA SHEET

CF889 RETICULATED FOAM CHARCOAL

ventional pleated paper air filters alone.

Small engine air cleaner - The largest manufacturer of small gasoline engines uses Filter Foam to replace conventional oil-bath air cleaners because it is efficient, washable, and age resistant.

Industiral plant dust remover - Filter Foam installed in a humdification system of a Canadian plastic firm removed dust resulting form plastics manufacture.

Face mask for doctors and dentists - Filter Foam "as light as another layer of skin" is now being used as face masks in medical and dental fields.

Blood Oxygenators - Several manufacturers of blood oxygenators used in open-heart surgery emply Filter Foam as a defoamer and remover of CO_2 from the blood before it is pumped back into the patient.

Ceramic and Metallized Filter Manufac*turers* - use the three-dimensional continuous open-pore structure of Filter Foam as the foundation of their hight tech filter.

Humidifier Manufacturers - Use Filter Foam because it has a large surface area and low pressure drop for very efficient moisture transfer.

Evaporative Cooler Manufacturers - Use Filter Foam as their evaporative...

Nominal Pore Size Ranges and Suggested Minimum Thicknesses

Porosity grade	Minimum	Maximum	Suggested minimum sheet thickness (in.)
80	70	90	-
60	55	65	-
45	40	50	1/8
30	25	35	3/16
20	15	25	1/4
10	8	15	1/2

SIF® - Typical Physical Properties (Thermally Reticulated)

Porosity (ppi)	Density (lb/ft^3)	Tensile Strength (psi)	Ultimate Elongation (%)	Tear Strength (il/in.)	50% Compression Set	Compression Deflection (psi)	
						25%	26%
10	1.85	25	330	5.5	8	.45	.65
20	1.80	25	330	5.5	7	.45	.70
30	1.80	25	320	5.3	8	.45	.70
45	1.80	28	330	4.7	12	.45	.65
60	1.80	30	360	4.3	12	.40	.65
80	1.80	35	460	3.9	12	.40	.65

Test procedure - ASTM D3574
Not to be used as a specification