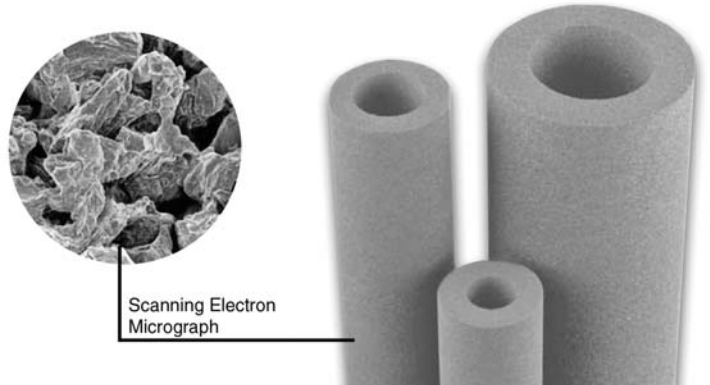


## Pall® Carbo Filter Elements

### Description

Pall Carbo filter elements are manufactured from high quality carbon material. The various grades of Carbo elements available are manufactured from different grain size fractions with the carbon grains being integrally linked by carbon bridges. Carbo filter elements exhibit a high chemical resistance, due to their binder-free carbon structure.

Carbo elements are utilised across a wide field of applications. The fine porous types with a smooth surface are particularly suitable for fine filtration utilising back-wash cleaning technology. The coarser types exhibit a slightly rougher surface, and these are ideal for use in pre-coat filtration applications employing cellulose as the filter aid has an affinity for the rough Carbo filter element surface.



Scanning Electron  
Micrograph

### Applications

- Particle filtration of liquids
  - Polish filtration of aggressive liquids
  - Catalytic recovery from reaction solutions
  - Caustic soda
  - Particle separation from condensate
- Particle filtration of gases
  - Particle separation from water vapour
  - Particle separation from aggressive exhaust gases
- Support body for precoat filtration
  - Polish filtration of cell brine in chlor-alkali-electrolysis according to the membrane or diaphragm process

### General Information

- Ceramic elements are to be handled with care.
- Elements can be easily glued using commercial glues which Pall can supply.
- Careful consideration should be paid to operating temperature and chemical resistance.
- The filter elements are usually installed in the filter housing using a metal tie-rod system, flat gaskets and a temperature compensation plate.

### Chemical Resistance<sup>1</sup>

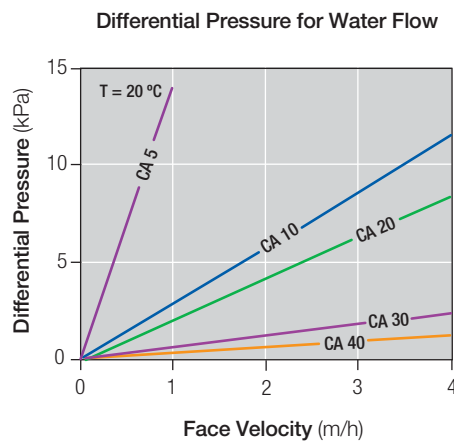
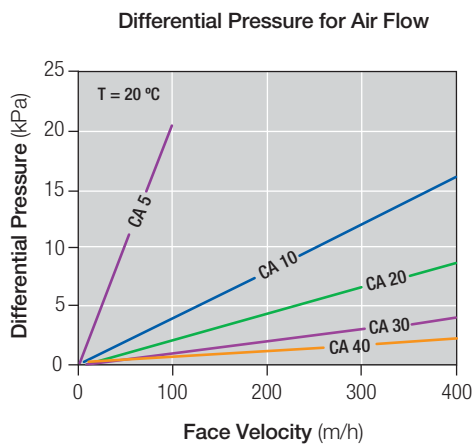
Carbo filter elements are resistant against hot and cold acids and alkaline solutions in the range from pH 0 to pH 14. They have limited resistance against strongly oxidizing liquids. Water vapour can be filtered using Carbo elements and back-washing of the filter media is possible. Carbo filter elements show excellent resistance against salt solutions.

<sup>1</sup> As end use conditions can vary, it is the users responsibility to verify compatibility with their specific use conditions.

## Technical Information

| Carbo (CA)                            | 5                                  | 10                                  | 20                                  | 30                                  | 40                                   |
|---------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|
| Filtration of Liquids                 | < 1 µm                             | 1.5 µm                              | 10 µm                               | 15 µm                               | 40 µm                                |
| Filtration of Gases                   | < 1 µm                             | < 1 µm                              | 2 µm                                | 4µm                                 | 8 µm                                 |
| Porosity                              | 33 %                               | 35 %                                | 35 %                                | 35 %                                | 35 %                                 |
| Material Density                      | 1.35 g/cm <sup>3</sup>             | 1.30 g/cm <sup>3</sup>              | 1.30 g/cm <sup>3</sup>              | 1.25 g/cm <sup>3</sup>              | 1.20 g/cm <sup>3</sup>               |
| Specific Permeability                 | 4 10 <sup>-13</sup> m <sup>2</sup> | 20 10 <sup>-13</sup> m <sup>2</sup> | 35 10 <sup>-13</sup> m <sup>2</sup> | 65 10 <sup>-13</sup> m <sup>2</sup> | 230 10 <sup>-13</sup> m <sup>2</sup> |
| Bending Strength (O-Ring Compression) | >12 MPa                            | > 10 MPa                            | > 8 MPa                             | > 7 MPa                             | 7 MPa                                |
| Maximum Temperature Resistance        |                                    |                                     |                                     |                                     |                                      |
| Oxidizing Atmosphere                  | 200 °C                             | 200 °C                              | 200 °C                              | 200 °C                              | 200 °C                               |
| Reducing Atmosphere                   | 1000 °C                            | 1000 °C                             | 1000 °C                             | 1000 °C                             | 1000 °C                              |
| Expansion Co-efficient (25 - 200 °C)  | 3.5 10 <sup>-6</sup> /K            | 3.5 10 <sup>-6</sup> /K             | 3.5 10 <sup>-6</sup> /K             | 3.5 10 <sup>-6</sup> /K             | 3.5 10 <sup>-6</sup> /K              |
| Thermal Conductivity (200 °C)         | 2 W/m K                            | 2 W/m K                             | 2 W/m K                             | 2 W/m K                             | 2 W/m K                              |
| Dimensions (Do / Di)                  | 70 / 40 mm                         | 70 / 40 mm                          | 70 / 40 mm                          | 70 / 40 mm                          | 120 / 70 mm                          |

## Flow vs Differential Pressure



## Standard Dimensions

| Part Number | Carbo (CA) | Type  | Do / Di (mm) | Length* (mm) | Area (m <sup>2</sup> ) | Weight (kg) |
|-------------|------------|-------|--------------|--------------|------------------------|-------------|
| 88018300    | Cylinder   | CA 5  | 70 / 40      | 500          | 0.11                   | 1.8         |
| 88010600    |            | CA 10 | 70 / 40      | 500          | 0.11                   | 1.7         |
| 88151300    |            | CA 10 | 70 / 40      | 1000         | 0.22                   | 3.4         |
| 88012500    |            | CA 20 | 70 / 40      | 500          | 0.11                   | 1.7         |
| 88012700    |            | CA 20 | 70 / 40      | 1000         | 0.22                   | 3.4         |
| 88015200    |            | CA 30 | 70 / 40      | 500          | 0.11                   | 1.6         |
| 88015400    |            | CA 30 | 70 / 40      | 1000         | 0.22                   | 3.2         |
| 88016800    |            | CA 40 | 120 / 70     | 500          | 0.19                   | 4.5         |

Please contact Pall for enquiries relating to dimensions not specified above.



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