



*Global engineering –  
Trusted solutions*

## ***Blast system for PCB-restoration***

+ ***Highly proved safety***

+ ***Low maintenance full-system***

+ ***Easy handling***

***Engineered  
by Clemco***

### ***Anti PCB-System –***

**Efficient construction for safe restoration**

PCB is one of the most poisonous organic compounds. With the sophisticated and economically attractive Anti-PCB-System, Clemco is setting new standards in pollutant cleanup. An intelligent filter concept and maximum performance guarantee durable success in the restoration.



## **Anti-PCB-System**

### **From experience –**

Maximum protection for human beings and environment

**«We are combining proven Clemco technology with innovative solutions to eliminate highly toxic environmental problems and associated health risks. The complex filter system guarantees a very high quality of exhaust air»**

The progressive concept of the Anti-PCB-System is based on more than 50 years of engineering experience in the sector of surface preparation. The safe handling of toxic substances and highly concentrated dust emissions are one of our daily businesses at Clemco. Based on this experience, our specialists designed, in cooperation with competence partners of the construction industry, a reliable and safe full-system for the elimination of polychlorinated biphenyl (PCB). This process was accompanied by governmental labour- and environmental authorities in Denmark, which were intensively interested in the PCB-elimination at an early stage. Therefore Clemco always worked with latest protection and environmental standards and this meets highest possible demands for humans and nature. The system uses several innovative technologies for a safe and environmentally friendly pollutant cleanup.

### **Comprehensive Full-System –**

productive, dust reduced, safe

With the Anti-PCB-System Clemco offers a comprehensive solution for continuous and controlled PCB-decontamination to every certified restoration company: From the loaded surface to the reduction of PCB-dust emissions and the safe disposal. The extensive and closed all-in system combines a high-performance blast unit with a highly efficient recovery system and an innovative dust extraction concept.

### **Environmentally friendly and efficient**

The blast process will be done with steel grit. It has a high abrasiveness and can be easily separated from toxic contamination. This is only possible by using a sealed loop system with a multilevel filter system that guarantees a trouble-free recycling of the blast media. Less hazardous waste will be produced and the media consumption gets down to a minimum. This leads to a significant saving of costs and protects your environment.

### **Compelling dust reduced**

All components of the Clemco system are only working in a closed cycle to ensure the total dust sealed connection of the single units. A continuously monitored compound filter system, filters the absorbing air very efficient and guarantees the fulfillment of environmental standards.



## Anti-PCB-System

### Intelligent modular concept

For easy transport, the Anti-PCB-System modules are integrated in fully galvanized 20' container frames, which can be easily stacked on each other to become the complete system. For an easy access to single components of the Anti-PCB-System, it has several connection channels, so called manholes, which are hermetically sealed all-around. This avoids the leakage of PCB in connected or disconnected condition. Another advantage of this system is that the whole system is protected against extreme weather conditions. This is very important, because due to the size of the system it might be necessary in most cases to place the Anti-PCB-System outside in front of the redevelopment object. The installed capacity was designed for a large activity radius of 150m and up to four blasters that are able to work at one time on a contaminated building.

### Effective noise protection

The walls and doors of the recycling module and the suction unit are covered with 80mm sandwich panels, this brings a noise reduction of approx.30 dB(A). The exhaust air is lead through a thick activated carbon layer (approx. 4.400 kg activated carbon), which is located in a separated filter unit for the PCB-adsorption. The well isolated module, which is in front of the air exhaust, helps that the noise level of the unit is below 80 dB(A).

### Monitored compound filter system

The construction of the Anti-PCB-Unit is designed for absolute safety. Several filter systems in the well known Clemco quality are connected in series, so that the required critical value (PCB-concentration <math><300\text{ng}/\text{m}^3</math>) is undercut. The suction unit is working with three effective filter systems: The first filtering of the air flow is handled by various cartridge filters (BIA class M). Every channel uses eight filter cartridges with a surface of 104m<sup>2</sup> and the filter cleaning is automated by pressurized air pulses. In a second step, a convolute filter with filter class H7 is cleaning the air stream. Immediately before the activated carbon filter a HEPA-filter (class H13) additionally filters the exhaust air to ensure the EU7 standard. After that, the highly efficient activated carbon filter module

covers and removes the PCB dust in a very effective way. The powerful filter system guarantees a very good air quality. The blast media-recycling unit with its multistage system also ensures consequently reduced emissions and increased environment protection. The dust separator of the recycling unit is equipped with a filter cartridge chamber that contains two cartridges with a total filter surface of 20m<sup>2</sup>. A rotating screen separator is collecting every contamination, which is bigger than 8mm and rejects it. In the next step, a magnetic separator separates every ferrous from contaminated material. Blast media comes back into the blast cycle and impurities into the waste container.

### Safe monitoring and disposal

The Anti-PCB-System is monitoring every filter unit and collecting tank with sensible pressure gauges and level sensors, which trigger alarm and shut down the system, as soon as a silo is full or a filter has to be changed. The connection system allows an easy access to the filter units at any time. A construction with endless plastic bags guarantees that used filter units do not release PCB material. The extraction of the cartridges will be done directly in the plastic bag. For highest safety standards, the machine-, filter- and waste chambers are strictly separated from each. This makes it easier for experts to do service- and maintenance work, bearing in mind the necessary industrial safety measures.

### Approval for highly toxic hazardous substances

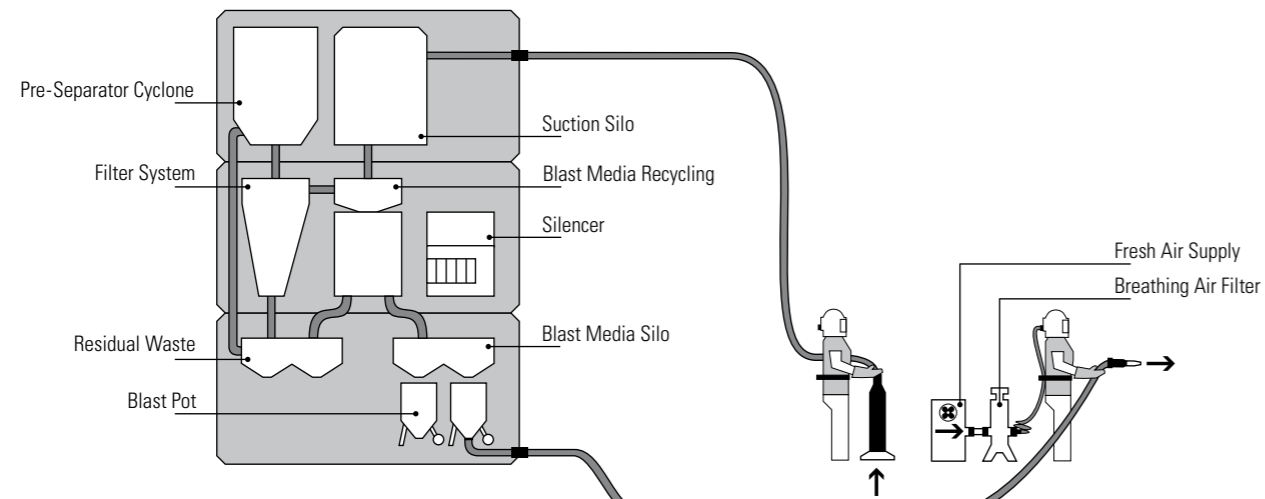
Besides PCB containing dust, the dust separator is also suitable for contaminated dust from lead paint and asbestos.





## Anti-PCB-System

### + All In-Components



### Technical Data

Container General Data	
Module	20"
Container Size (LxWxH)	6,00 m x 2,40 m x 2.60 m
Interior Trim	80mm sandwich panels with rockwool core
Noise Reduction	approx. 30 dB(A)
Dust Collector	
Dust Separator	2x MB10.000D / 2x MBX-104 PCB
Air Volume	Adjustable from 7.000 m <sup>3</sup> /h bis 15.000 m <sup>3</sup> /h per side
Total Volume	14.000 to 30.000 m <sup>3</sup> /h
Filter Level 1	Filter cartridges with automated and pneumatic cleaning system
Dust Discharge	Takes place via a screw conveyor into a separate waste container
Filter Surface	104 m <sup>2</sup> - 8 cartridges per line
Filter Material	Polyester Typ BIA, Class M
Filter Level 2	Envelope-Filter Class H7
Filter Level 3	Suspended Matter Filter Class H13
Radial Fan: Air Volume nominal	10.000 m <sup>3</sup> /h, adjustable between 7.000 and 15.000 m <sup>3</sup> /h
Control Panel	Touch-Screen controls and monitors complete operation

Electric Engine	18,5 kW
Weight	6.000 kg
Activated Carbon Filter	
Filter	approx. 4.400 kg Activated Carbon (800mm activated carbon layer), Type L-Car-XH-40
Air Flow nominal	20.000 m <sup>3</sup> /h (bis max. 30.000 m <sup>3</sup> /h)
Inlet Temperature	60°C
Inlet Concentration	PCB 5 - 10.000 ng/m <sup>3</sup>
Outlet Concentration	PCB <300 ng/m <sup>3</sup>
Weight incl. Activated Carbon	approx. 7.000 kg
Recovery Unit	
Module 1	Blast unit, blast media storage silo, dust and waste container
Weight	4.000 kg
Module 2	Cyclone filter unit for the vacuum system, media cleaning with magnetic separator, motor/pump unit
Weight	6.000 kg
Module 3	Vacuumsilo (3m <sup>3</sup> ), cyclone separator
Weight	2.800 kg



*since*  
**1949**

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