

UDC



# 中华人民共和国国家标准

P

GB 13554 × × × ×

GB 13554-92

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## High efficiency particulate air filter

( )

2008—× × —× ×

2008—× × —× ×

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	.....	1
1	.....	3
2	.....	3
3	.....	3
3.1	.....	3
3.2	.....	4
4	.....	5
4.1	.....	5
4.2	.....	5
4.3	.....	5
4.4	.....	5
5	.....	7
5.1	.....	7
5.2	.....	8
5.3	.....	9
5.4	.....	10
5.5	.....	10
6	.....	11
6.1	.....	11
6.2	.....	11
6.3	.....	11
6.4	.....	12
6.5	.....	12
6.6	.....	12
6.7	.....	12
6.8	.....	12
6.9	.....	12
7	.....	12
7.1	.....	12
7.2	.....	12
8	.....	13
8.1	.....	13

8 2	.....	14
8 3	.....	14
8 4	.....	14
A	.....	15
B	.....	19
C	.....	21





1

2

GB 191—2000

GB 912—89

GB 3280-92

GB 6165-

GB 8624—1997

GB/T 451. 3—2002

GB/T 453—2002

GB/T 3198—2003

GB/T 3880-1997

GB/T 4857. 10—2005

10 :

GB/T 5849—2006

GB/T 9846 2-2004 2

GB/T 9846 3-2004 3

GB/T 10335. 1—2005

GB/T 12218

3

3.1

3.1.1 high efficiency particulate air filter

GB 6165

99.9%

3.1.2 Ultra low penetration air filter

GB 6165

99.999%

3.1.3 particle diameter

$\mu\text{m}$

3.1.4 median diameter

50

3.1.5 counting diameter

3.1.6 most penetrating particle size

3.1.7 efficiency

3.1.8 penetration

$E = 1 - P$

$E = 1 - P$

3.1.9 resistance

Pa

3.1.10 dust loading

1 2 2

3.1.11 separator-style filter

3.1.12 pleated-style filter

3.1.13 rated air volume flowrate

$m^3/h$

3.1.14 monodisperse aerosol

$\sigma_g < 1.15$

$1.15 \leq \sigma_g \leq 1.5$

3.1.15 polydisperse aerosol

$\sigma_g > 1.5$

3.2

CNC

DEHS

Sebacic acid-bis(2-ethyl)-ester

di-ethyl-hexyl-sebacate

DOP

Phthalic acid-bis(2-ethyl)-ester

di-octyl-phthalate

MPPS

OPC

PSL

4

4.1

4.2

4.2.1

GB 6165

A B C

1

1

	%	20% %	Pa
A	99.9		190
B	99.99	* 99.99	220
C	99.999	99.999	250

\*

B

20%

4.2.2

GB 6165

D E F

2

2

	%	Pa	
D	99.999	250	
E	99.9999	250	
F	99.99999	250	

4.3

GB 8624

3

3

1	A	A	A <sub>1</sub>
2	A	B <sub>2</sub>	B <sub>2</sub>
3	B <sub>3</sub>	B <sub>3</sub>	B <sub>3</sub>

4.4

a.

1

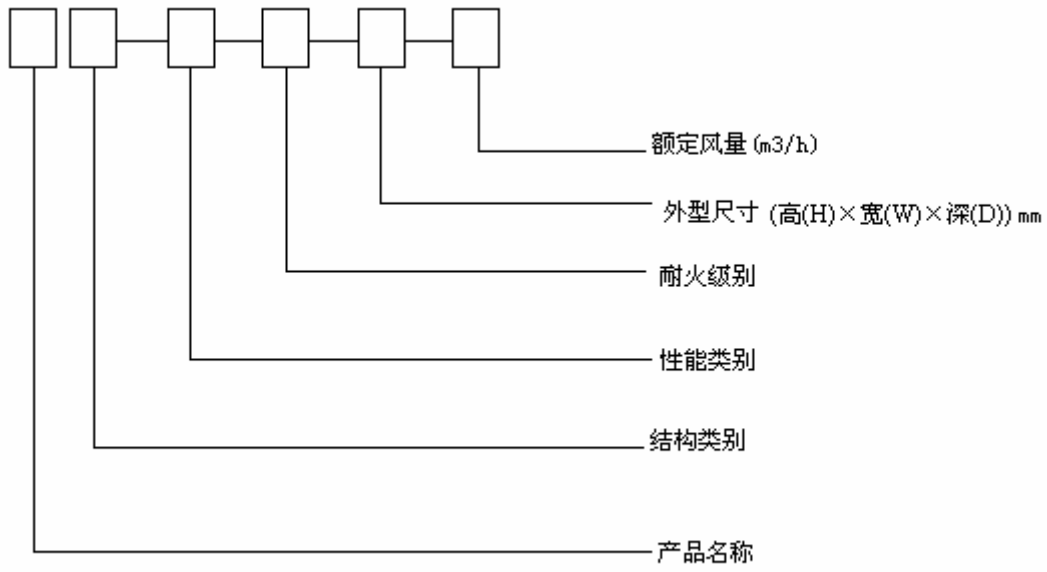
b.

: (H) × (W) × (D) mm



c.

4



1

4

1			G C
2		4.1	Y
		4.1	W
3		4.2	A B C D E F
4		4.3	1 2 3

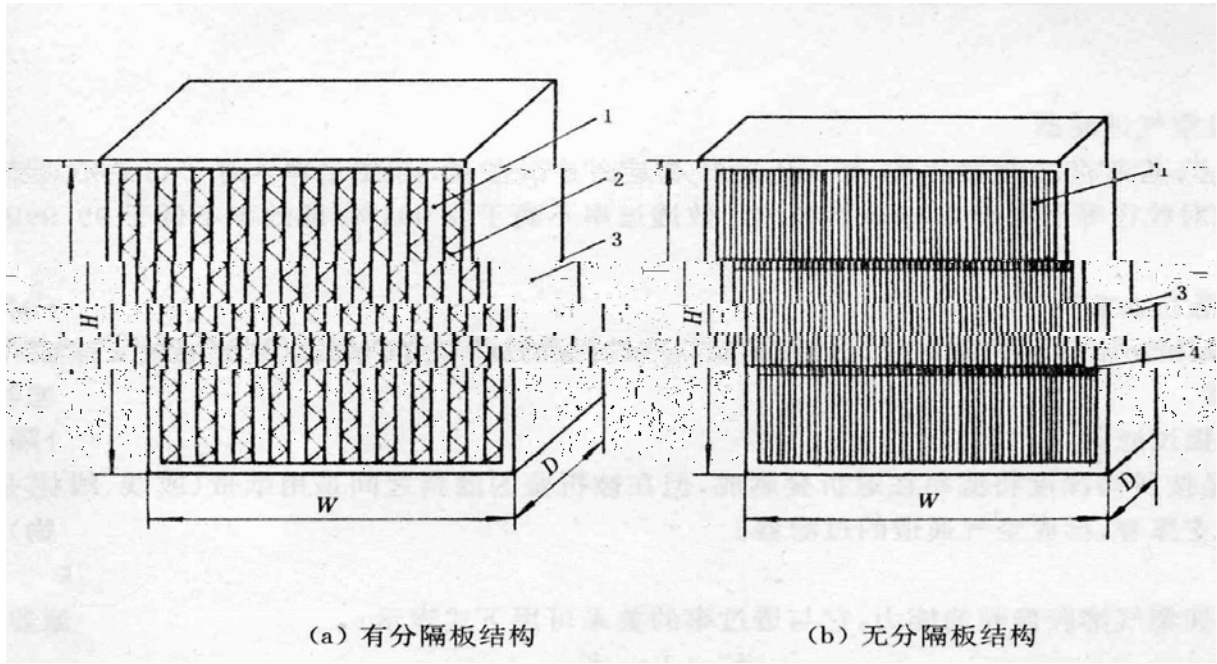
GY-A-3-484× 484× 220-1000 A 99.9%

3 484× 484× 220 1000m<sup>3</sup>/h

CW-D-2-610× 1220× 80-2400 D, 99.999%

2 610× 1220× 80 2400m<sup>3</sup>/h

C



1— 2— 3— 4—

2

5

5.1

5.1.1

5.1.2

a.

b.

c.

5mm

5.1.3

a.

500mm

0 - 3.2mm

500mm

0 - 1.6mm

b.

+1.6mm 0

c.

700mm

4.5mm

700mm

2.3mm

d.

$\pm 3^\circ$

e.

1.6mm

1.6mm

f.

6mm

## 5.2

### 5.2.1

### 5.2.2

a.

GB 6165

b.

GB/T 453

0.3kN/m

0.2kN/m

0.7kN/m

0.5kN/m

c.

GB/T 451.3

0.40mm

d.

### 5.2.3

a.

1.0mm 2mm

GB/T 912

b.

1.5mm 2mm

GB 3880

c.

15mm 20mm

GB/T 5849

GB/T 9846

d.

1.0mm 2mm

GB 3280

f.

### 5.2.4

a.

GB/T 3198

b.

120g/m<sup>2</sup>

c

50°

d.

5.2.5

10

5.2.6

a.

b.

30-50mm

W

130 24

60%

5.2.7

5.3

5.3.1

a.

3 5mm

5 8mm

6mm

9mm

6mm

b.

3 5mm

0.5mm

300mm

1mm

2mm

3mm

5.3.2

5.3.2.1

5.3.2.2

15mm 20mm

600mm

15mm

600mm

20mm

5.3.3

a.

15mm

5 8mm

15mm

b.

c.  
5.3.5

5.3.4

a. A B C D E F

b. 13mm

c.

d. 13cm<sup>2</sup> 1%

5.4

5.4.1

C D E F A B

5

5

	%	/	%
A	99.9	3	0.5 μ m
B	99.99		1
C	99.999		0.1
D	99.9999	3	3 × 10 <sup>4</sup>
E	99.99999		0.1 μ m
F	99.999999		0.01
			3 × 10 <sup>6</sup>
			0.001
			0.0001

100% 20%

5.4.2

1 2

5.4.3

1 2

5.4.4

1 2 2

5.4.5

6.7

3.2mm

5.5

ISO 8

ISO 7

6

6.1

6.2

6.2.1

0.1mm

6.2.2

3

0.02mm 0.5mm

6.2.3

0.5'

6.3

6.3.1

6.3.2

A

DEHS DCP

3 /

0.5µm

0.1µm

" "

0.5µm

3 × 10<sup>4</sup> /

0.1µm

3 × 10<sup>6</sup> /

2.83L/min

8cm/s

1cm 5cm  
2.83L/min

2cm/s

6.3.3

0.3μm 1.0μm

1.5g/m<sup>3</sup>

1.3m/s

6.3.4

B

0.7μm

10μg/L 90μg/L

6.3.5

a.

b.

1%

13cm<sup>2</sup>

6.4

C D E F

2

30min

1μm

70

6.4.1

GB6165

6.4.2

GB 6165

CNC

(OPC)

6.5

GB 6165

6.6

GB 12218

6.7

102mm×152mm

6.4mm

152mm

2.7kg

15.7N±0.9N

6.8

10

60min

6.9

GB/T 4857.10

7

7.1

7.1.1

7 1 6

7

1		5.1.2 6.1
2		5.1.3 6.2
3	A B	5.4.1 6.3
4		5.4.2 6.4
5		5.4.3 6.5
6		8.1 8.2
7		5.4.5 6.7
8		5.4.2 6.8
9		5.4.2 6.9

7.1.2

7.1.2.1

a.

b.

c.

d.

e.

f.

7.1.2.2

7 1 9

7.1.2.3

5%

5

7.2

7.2.1

7 1 6

7.2.2

7 1 9

8

8.1

( )



- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.

m<sup>3</sup>/h

Pa

**8 2**

8 2 1 :

8 2 2 :

- a
- b

GB 191

" " " " "

**8 3**

- a

(

).

- b.

- c.

**8 4**

- a.

- b.

- c.

.(

,)

- d.

A

A 1

CNC

OPC

A 2

A 2 1

B1

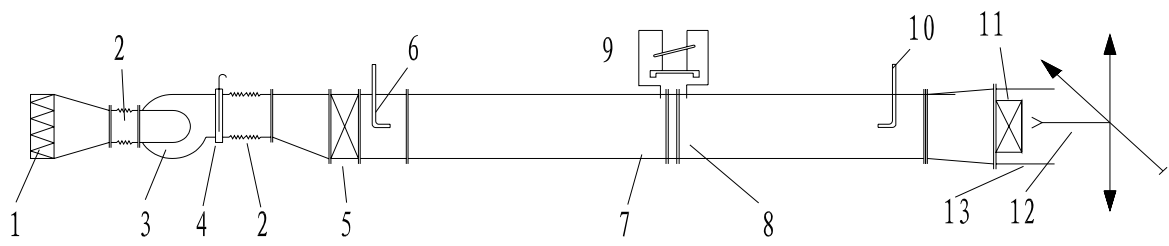
A 2 2

A 2 2 1

ISO7

A 2 2 2

$\pm 3\%$



- 1—
- 2—
- 3—
- 4—
- 5—
- 6—
- 7—
- 8—
- 9—
- 10—
- 11—
- 12—
- 13—

A1

A 2 2 3

5%

A 2 2 3

9

10%

A 2 2 4

A 2 2 5

a

b

A 2 2 6

A 3

A 3 1

DOP DEHS PSL

10%

MPPS

MPPS

50%

MPPS

A 3 2

10 /

$1 \times 10^7 / \text{cm}^3$

0.5  $\mu\text{m}$

3x

$10^4 /$

0.1  $\mu\text{m}$

$3 \times 10^5$

/

A 3 3

MPPS

A 4

A 4 1

8 10 $\text{cm}^2$

15 1

25%

10 50mm

A 4 2

A 4 3

A 4 4

8cm/s

10%

1mm

A 5

A 6

1

2

3

4

5

6

7

8

**B**

B 1

Q 01%

Q 01%

B 2

B 2 1

C1)

138kPa

Laski n

DOP DEHS

Q 7µm

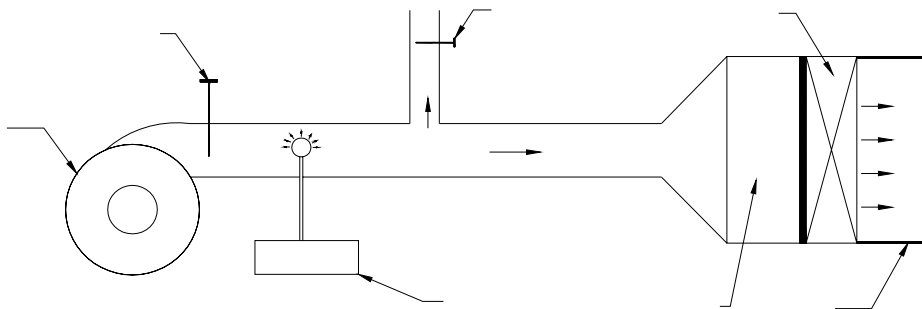
1.8

Q 4µm

B 2 2

B 2 3

" "



B1

B 3

B 3 1

Q 45± Q 05m/s

B 3 2

B 3 3

10 20ng/m<sup>3</sup>

0.01%

B.3.4

$1.0 \times 10^4$

B.3.5

2.83 l/min  $\pm$  10%

0.45 m/s

B.3.6

10-50 mm

B.3.7

5 cm/s

1.55 cm/s

B.3.8

B.3.9

0.01%

C

C 1

C1

C 2

C2

C1

		(m <sup>3</sup> /h)			(m <sup>3</sup> /h)
1	484× 484× 220	1000	13	484× 484× 150	750
2	484× 726× 220	1500	14	484× 726× 150	1000
3	484× 968× 220	2000	15	484× 968× 150	1300
4	630× 630× 220	1500	16	630× 630× 150	1000
5	630× 945× 220	2250	17	630× 945× 150	1500
6	630× 1260× 220	3000	18	630× 1260× 150	2000
7	610× 610× 292	1500	19	610× 610× 150	1000
8	610× 915× 292	2250	20	610× 915× 150	1500
9	610× 1220× 292	3000	21	610× 1220× 150	2000
10	320× 320× 292	500	22	610× 610× 220	1200
11	320× 320× 220	400	23	592× 592× 292	1500
12	320× 320× 150	300	24	630× 630× 292	2000

C2

		(m <sup>3</sup> /h)			(m <sup>3</sup> /h)
1	305× 305× 69	250	10		
2	305× 305× 80	300	11	570× 1170× 69	1500
3	305× 305× 90	350	12	570× 1170× 80	1700
4	610× 610× 69	1000	13	570× 1170× 90	2000
5	610× 610× 80	1500	14	610× 1220× 69	2000
6	610× 610× 90	1800	15	610× 1220× 80	3000
7	610× 915× 69	1500	16	610× 1220× 90	3600
8	610× 915× 80	2250	17		
9	610× 915× 90	2700	18		

484× 484× 220

220Pa B

484× 484× 90

1000m<sup>3</sup>/h

350Pa

600m<sup>3</sup>/h