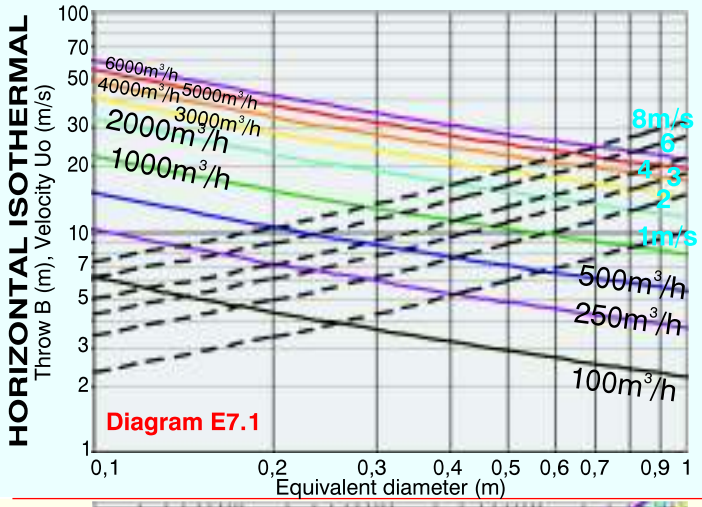
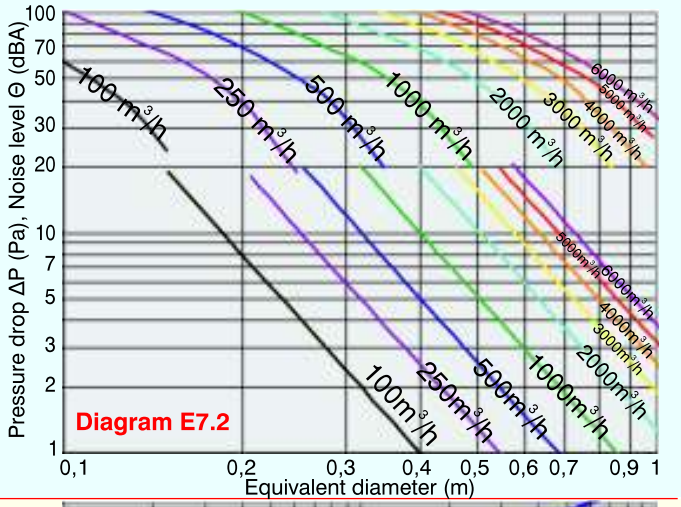
HORIZONTAL ISOTHERMAL





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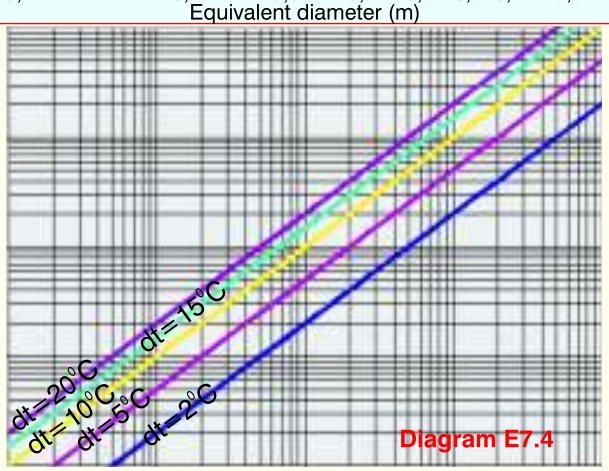
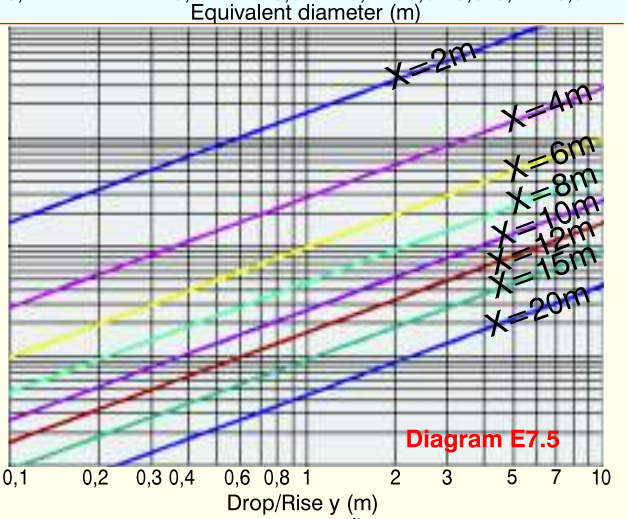
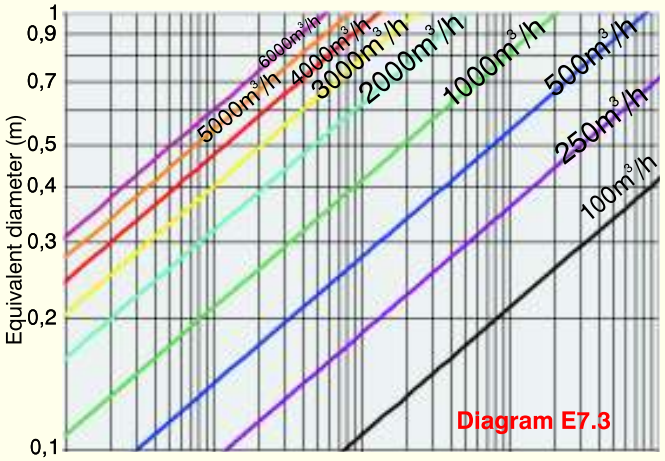
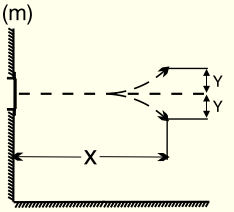
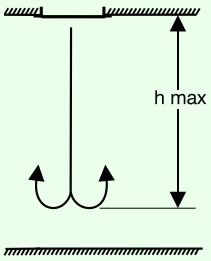


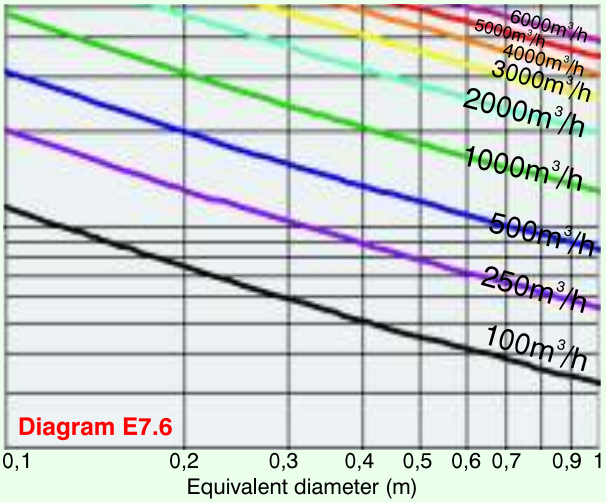


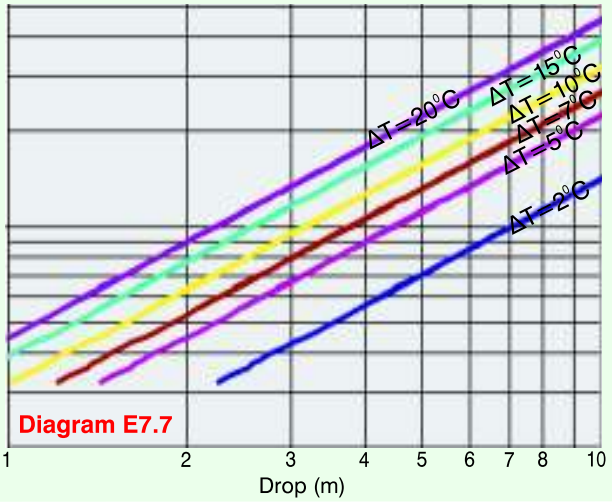


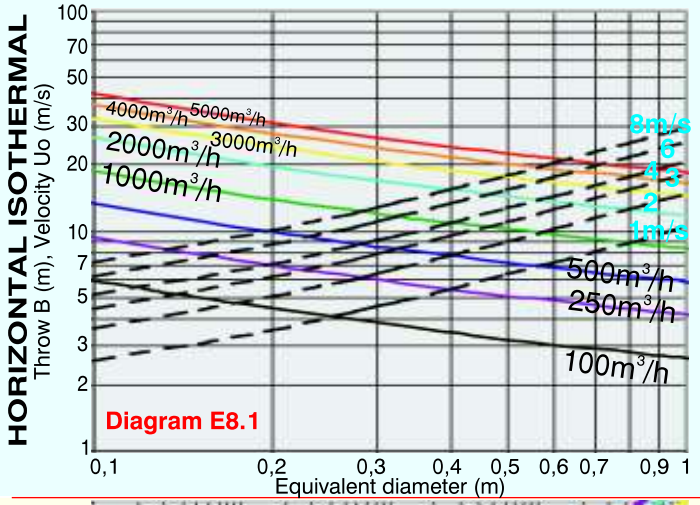


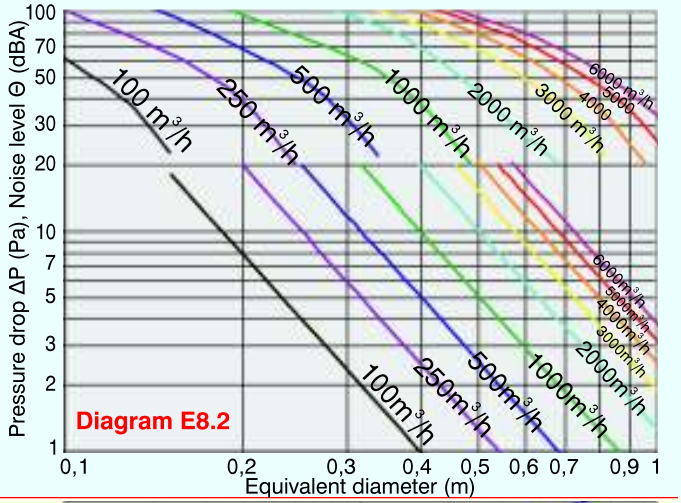


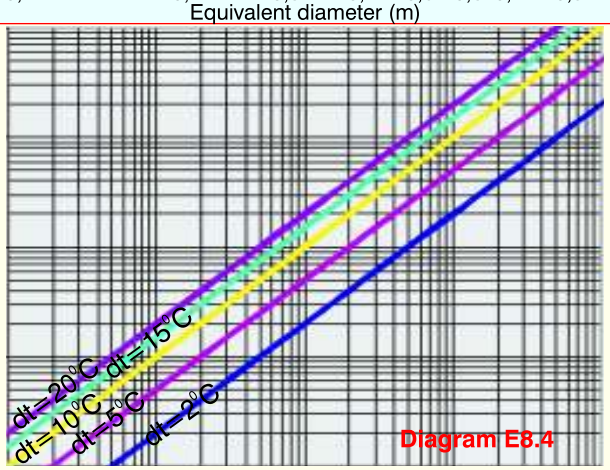
VERTICAL ANISOTHERMAL

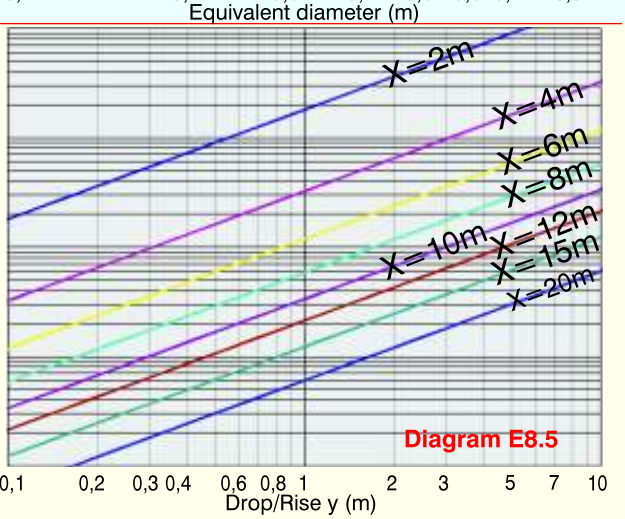


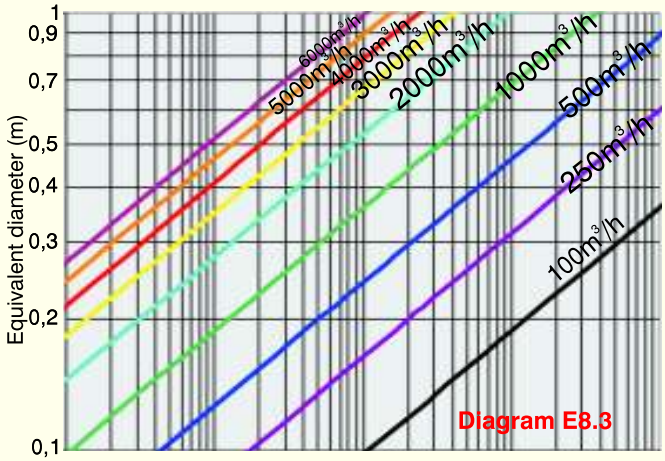


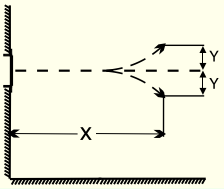

HORIZONTAL ISOTHERMAL
Throw B (m), Velocity Uo (m/s)
Equivalent diameter (m)
4000m³/h
5000m³/h
3000m³/h
2000m³/h
1000m³/h
500m³/h
250m³/h
100m³/h
8m/s
6
4
3
2
1m/s
Diagram E8.1

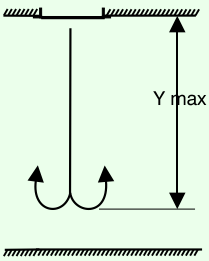

Pressure drop ΔP (Pa), Noise level Θ (dBA)
Equivalent diameter (m)
100 m³/h
250 m³/h
500 m³/h
1000 m³/h
2000 m³/h
3000 m³/h
4000
5000
6000 m³/h
Diagram E8.2

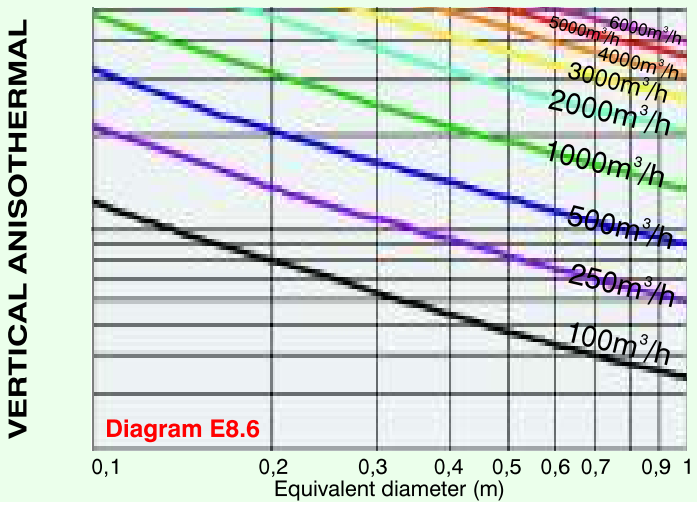

HORIZONTAL ANISOTHERMAL
dt=20°C
dt=15°C
dt=10°C
dt=5°C
dt=2°C
Diagram E8.4

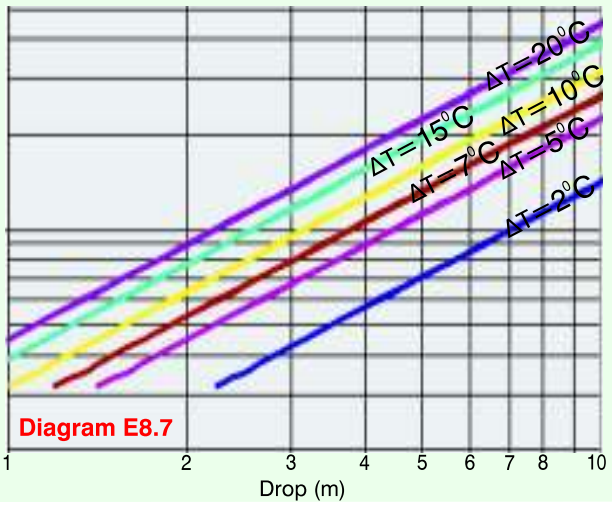

X=2m
X=4m
X=6m
X=8m
X=10m
X=12m
X=15m
X=20m
Drop/Rise y (m)
Diagram E8.5


Equivalent diameter (m)
6000m³/h
5000m³/h
4000m³/h
3000m³/h
2000m³/h
1000m³/h
500m³/h
250m³/h
100m³/h
Diagram E8.3

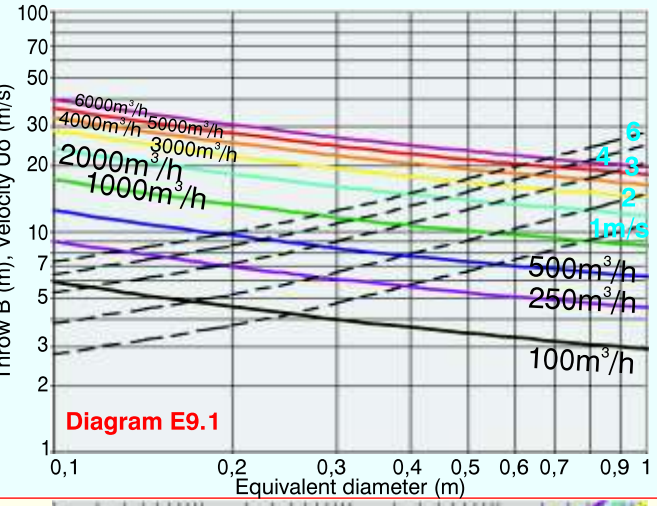

Y
Y
X

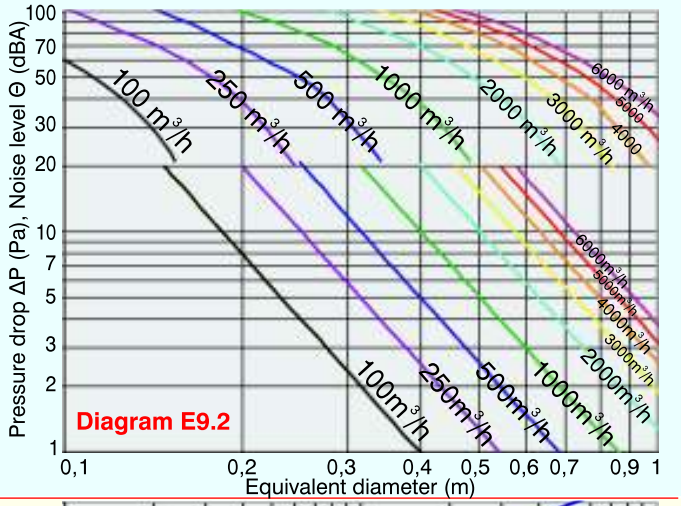

Y max


VERTICAL ANISOTHERMAL
Equivalent diameter (m)
6000m³/h
5000m³/h
4000m³/h
3000m³/h
2000m³/h
1000m³/h
500m³/h
250m³/h
100m³/h
Diagram E8.6

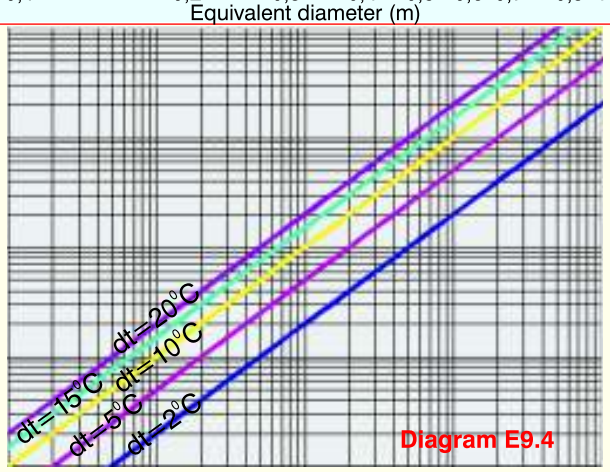

ΔT=20°C
ΔT=15°C
ΔT=10°C
ΔT=7°C
ΔT=5°C
ΔT=2°C
Drop (m)
Diagram E8.7

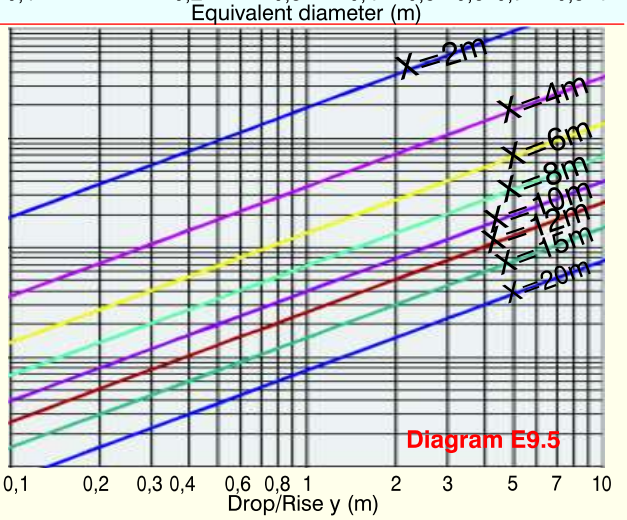
HORIZONTAL ISOTHERMAL

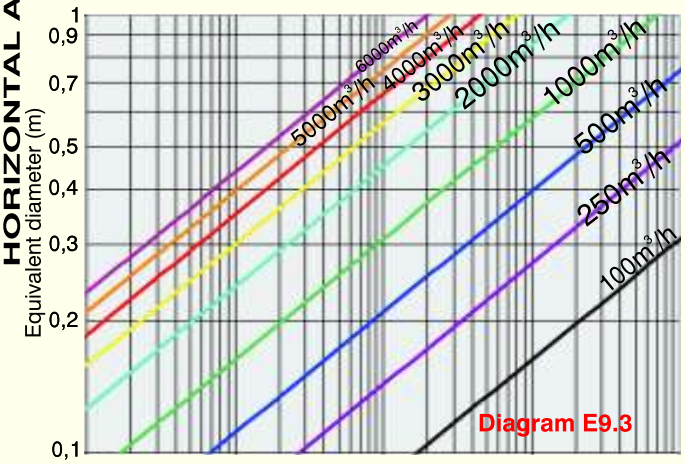


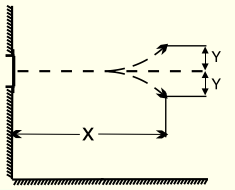


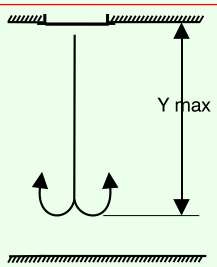
HORIZONTAL ANISOTHERMAL



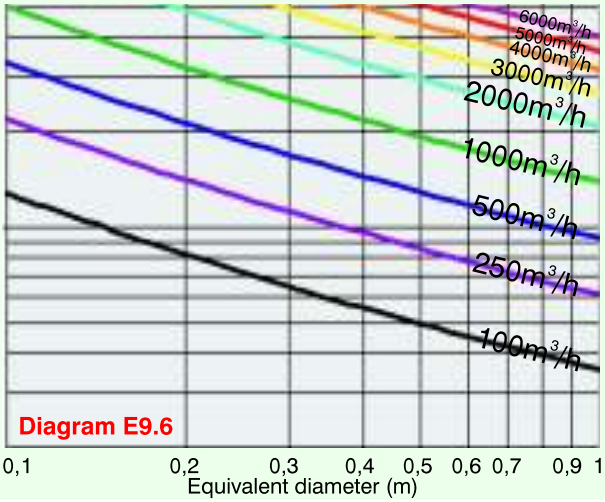


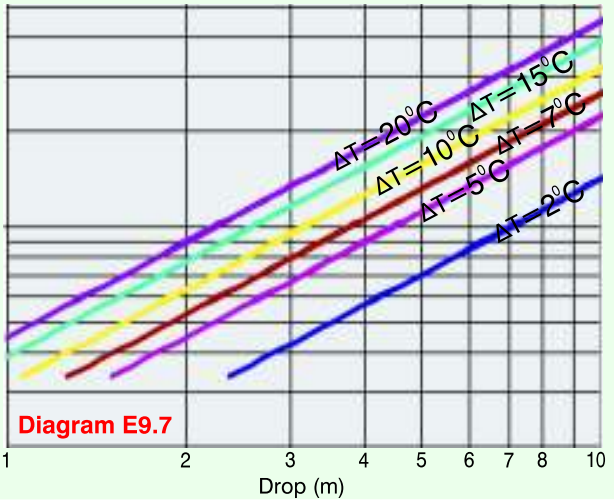






VERTICAL ANISOTHERMAL





In case that linear grilles other than the E12 type are to be used in ventilation applications, then their operational characteristics values ought to be corrected. Conversions are presented in the following table. From the values calculated using the selection diagrams on pages E5 through E9, that correspond to E12 grilles, the characteristics of E17, E15 or BT types of linear grilles may be calculated using the following table:
The conversions for E15 correspond to an E12 grille with inclined blades by $15^{0.}$ To estimate the values for an E17 grille with inclined blades, the values from the diagrams should first be corrected by the factors for E17 and then for E15 as well.

Conversion factors for :	E17	E15	BT
Pressure Drop ΔP [Pa]	x 0,775	x 1,9	x 1,375
Noise level Θ [dBA]	- 5	+ 1	+ 2,4
Velocity at the grille Uo [m/s]	x 0,83	x 1,05	x 1,1
Throw B or Ymax [m]	x 0,875	x 0,846	x 0,897
Drop/Rise Y(at x) [m]	x 1	Y_{12} – 0,9xX	x 1

Table E10 : Conversion factors for E17, E15 and BT type grilles

Working example

What are the operational characteristics of linear grilles of types E17, E15 and BT, when the derived values from the selection diagrams gave the following characteristics (corresponding to a E12 grille):

Velocity at the grille U_o = 3 m/s
Horizontal throw B = 11 m (at 0,5 m/s final velocity)
Pressure Drop ΔP = 9 Pa
Noise level Θ = 25 dBA
Rise Y = 2m at distance x= 5m from the grille for ΔT = 10° C.

Using the conversion factors of table E10, and for each of the grille types one gets:

E17 Grille

Velocity at the grille Uo = 3 * 0,83 ≃ 2,5 m/s
Horizontal throw B = 11 * 0,875 = 9,6 m (at 0,5 m/s final velocity)
Pressure Drop ΔP = 9 * 0,775 ≃ 7 Pa
Noise level Θ = 25 - 5 = 20 dBA
Rise Y = 2 * 1 = 2 m at distance x= 5m from the grille for ΔT = 10° C.

E15 Grille

Velocity at the grille Uo≃ 3 * 1,05≃ 3,15 m/s
Horizontal throw B = 11 * 0,846 = 9,3 m (at 0,5 m/s final velocity)
Pressure Drop ΔP = 9 * 1,9 = 17 Pa
Noise level Θ = 25 + 1 26 dBA
Rise Y = 2 * - 0,9 * 5 = - 2,5 m (drop of 2,5m) at distance x= 5m from the grille for ΔT = 10° C.

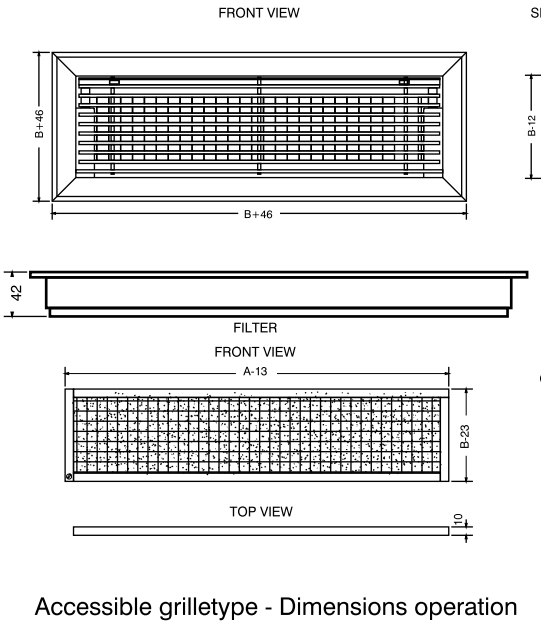
BT Grille

Velocity at the grille Uo = 3 * 1,1 = 3,3 m/s
Horizontal throw B = 11 * 0,897 = 9,9 m (at 0,5 m/s final velocity)
Pressure Drop ΔP = 9 * 1,375 = 12,4 Pa
Noise level Θ = 25 + 2,4 = 27,4 dBA
Rise Y = 2 * 1 = 2 m at distance x= 5m from the grille for ΔT = 10° C.

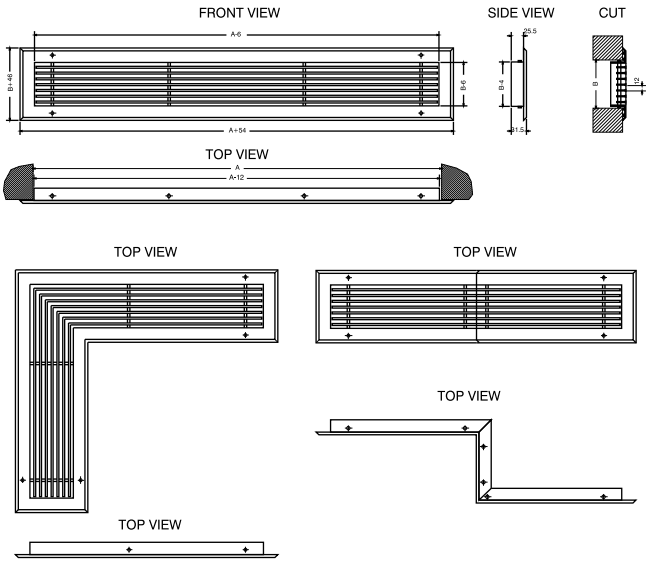
Due to continuous development of its products, AEROGRAMMI reserves the right of modifications without prior notice.

LINEAR GRILLES -SERIES E & BT- Special types

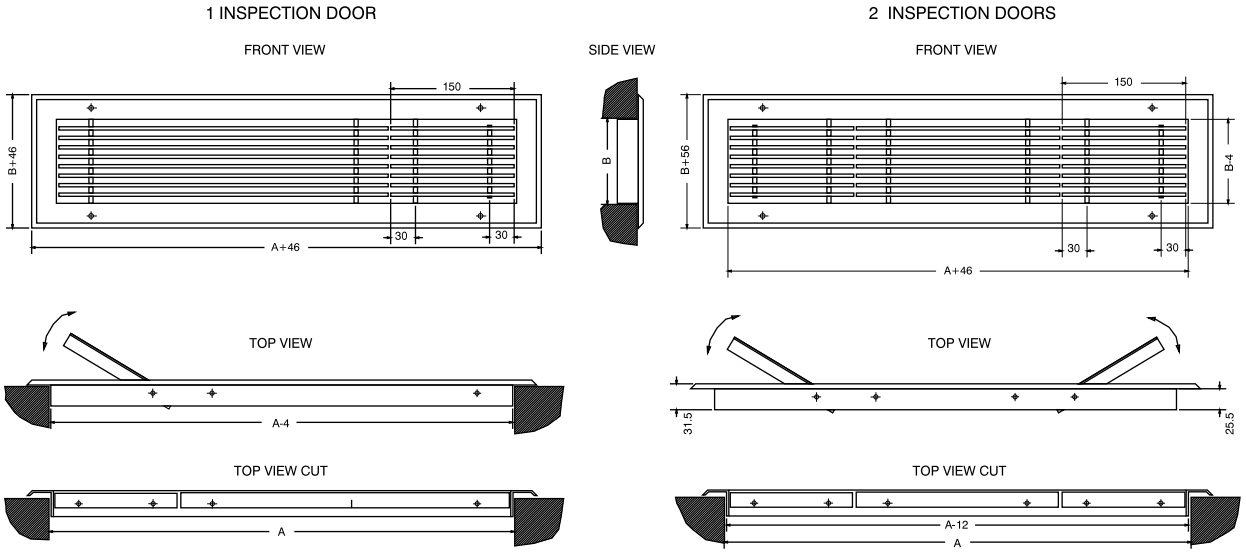
Special air grilles can be constructed :
- Accessible: We can check the condition of the filter as well as the air duct through a little window
- Corner: For special, esthetic and functional installations
- Construction with control doors: An aluminum profile with anodic depth of 12 μm is used in their construction. That leads to a long-lasting operation life. Alternatively, electrostatic painting is feasible in a variety of colors.



Accessible grilletype - Dimensions operation



Corner type grilles.



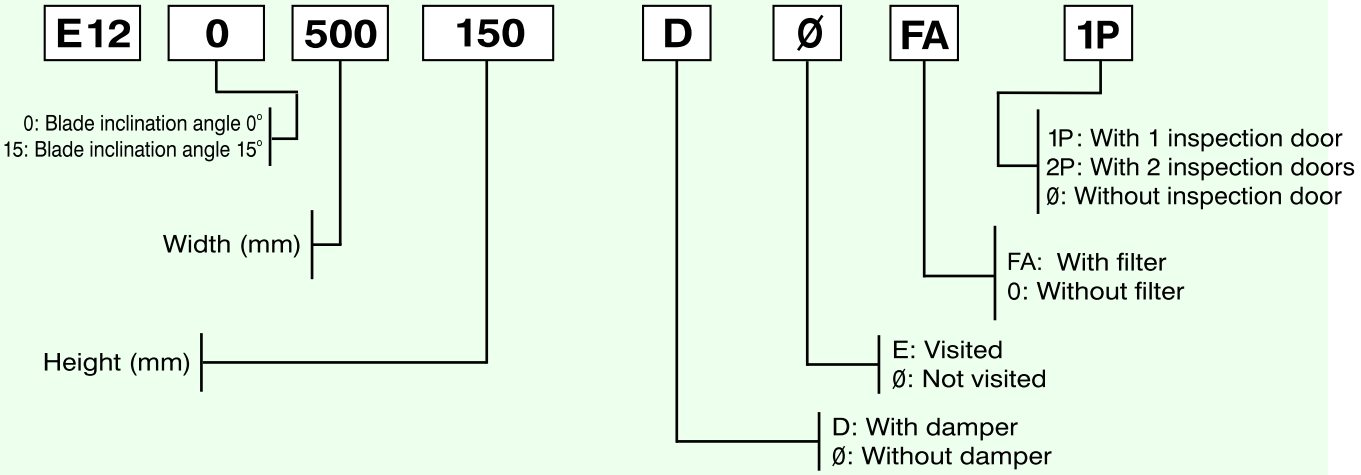
Grilles equipped with inspection door dimensions.

Due to continuous development of its products, AEROGRAMMI reserves the right of modifications without prior notice.

LINEAR GRILLES -SERIES E & BT-
Order guidelines/technical description

ORDER GUIDELINES

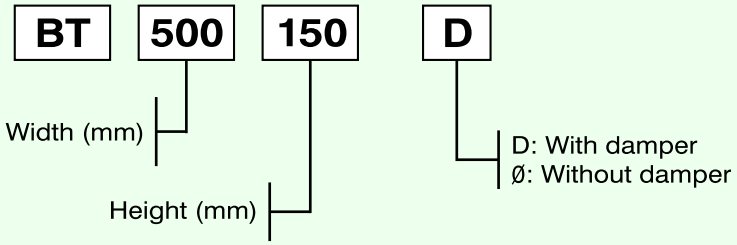
A series of numbers and letters is used to order E a series grilles. The characteristics of the air grille are defined according to the following code:



Order example

Air grille type E12, dimensions 500X150 mm, equipped with damper, air filter and one inspection door, not visited : **E12 0^0 500X500 D FAP O**

For BT series of grilles the characteristics may be defined by the following code:



Technical description

Manufactured by anodized aluminum profile wall or ceiling mounted grilles. Able to be mounted on the floor for cooling applications (BT series). With fixed horizontal series of blades, may be equipped with an adjustable vertical series, adequate for jet span manipulation. Could be optionally accompanied with flow regulating dampers and air filters. They may be equipped with an inspection door. May be manufactured in special types, i.e. with one or two inspection doors, with easily removable filters, for corners, etc. Their operational characteristics should be :

SUPPLY AIR
Air supply : ..... [m^3/h]
Pressure drop (total) : ..... [Pa]
Air throw : ..... [m]
Temperature difference : ..... [°C]
Noise level : ..... [dBA]
RETURN AIR
Air supply : ..... [m^3/h]
Pressure drop (total) : ..... [Pa]
Noise level : ..... [dBA]

AEROGRAMMI
ΣΧΕΔΙΑΣΜΟΣ - ΚΑΤΑΣΚΕΥΗ ΣΤΟΜΙΩΝ & ΕΙΔΙΚΩΝ ΕΞΑΡΤΗΜΑΤΩΝ ΚΛΙΜΑΤΙΣΜΟΥ
ISO 9001-2000

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