



# Silencing Grille

air handling intelligence



open in  
PartShelf24

# AC

in libraries of

**Fluid Desk**  
Building Engineering Solutions

### FEATURES:

- Large effective area
- Easy installation
- Superior esthetic appearance
- Vision-proof when installed in a low or high side wall location



## FUNCTION

Silencing grills are designed for facade (outdoor) terminations of ventilation and air-conditioning systems in buildings.

## APPLICATION

AC grills are used as intake vents and exhaust vents. They provide protection against the weather conditions and acoustic insulation at the same time. They may be installed as single (AC-S) or double (AC-D) for the increased effect of noise insulation. Their application eliminates the need to fit the installation with additional duct-mounted noise attenuators.

## DESCRIPTION

AC grills are made of galvanised steel. There is available option of coating the surface with paint in any other RAL colour. Upper surfaces of blades are made of smooth sheet steel to ensure protection against the weather conditions. Lower surfaces are made of perforated sheet metal and serve as sound absorbing shields. The insides of blades are filled with material having high noise attenuation characteristics (mineral wool of 50 kg/m<sup>3</sup> density), and are covered with coating ensuring high resistance to erosion.



## ACCESSORIES

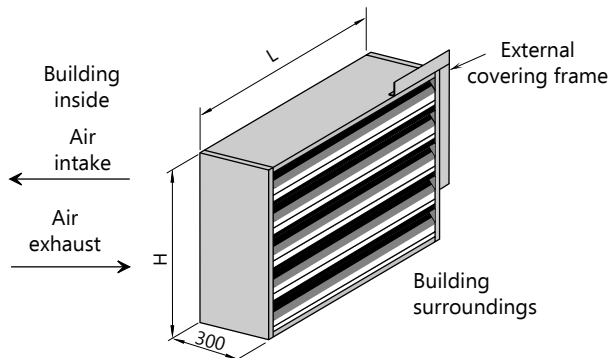
- Anti-insect mesh (10 mm x 10 mm)
- External covering frame
- Angle bars used for installation

## INSTALLATION

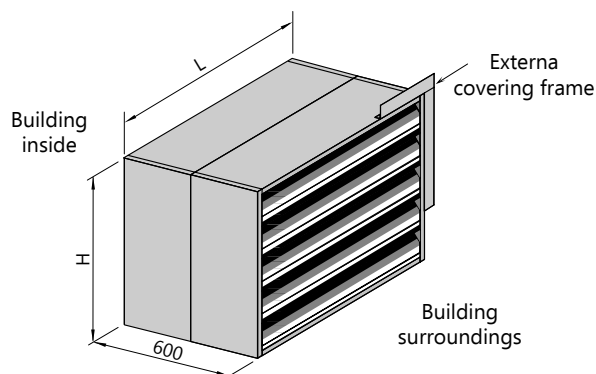
AC silencing grills may be installed in facades, where they are terminations of ventilation ducts. Angle bars may be used for installation of the grills. Dimensions larger than standard may be achieved by joining single grills into multiple arrangements.

## SELECTION

### AC-S SINGLE SILENCING GRILLE



### AC-S SINGLE SILENCING GRILLE



### NOISE INSULATION [dB]

Air exhaust (exhaust vent) - source of noise is inside the building  
Air intake (intake vent) - source of noise is outside the building

Frequency [Hz]	Single grille air intake	Single grille air exhaust	Double grille air intake/exhaust
100	6	6	8
125	5	6	6
160	7	7	9
200	7	7	8
250	8	8	11
315	8	8	11
400	10	11	15
500	12	12	19
630	14	14	23
800	17	17	23
1000	20	20	26
1250	19	20	21
1600	19	19	21
2000	19	19	24
2500	18	17	25
3150	15	14	23
4000	14	13	21
5000	13	10	24

### EFFECTIVE AREA S [m<sup>2</sup>]

H [mm]	Number of blades	L [mm]																	
		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	1970
450	2	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,19
600	3	0,05	0,07	0,09	0,11	0,13	0,15	0,17	0,19	0,21	0,23	0,25	0,27	0,29	0,31	0,33	0,35	0,37	0,39
750	4	0,08	0,11	0,14	0,17	0,20	0,23	0,26	0,29	0,32	0,35	0,38	0,41	0,44	0,47	0,50	0,53	0,56	0,58
900	5	0,10	0,14	0,18	0,22	0,26	0,30	0,34	0,38	0,42	0,46	0,50	0,54	0,58	0,62	0,66	0,70	0,74	0,77
1050	6	0,13	0,18	0,23	0,28	0,33	0,38	0,43	0,48	0,53	0,58	0,63	0,68	0,73	0,78	0,83	0,88	0,93	0,97
1200	7	0,16	0,22	0,28	0,34	0,40	0,46	0,52	0,58	0,64	0,70	0,76	0,82	0,88	0,94	1,00	1,06	1,12	1,16
1350	8	0,18	0,25	0,32	0,39	0,46	0,53	0,60	0,67	0,74	0,81	0,88	0,95	1,02	1,09	1,16	1,23	1,30	1,35
1500	9	0,21	0,29	0,37	0,45	0,53	0,61	0,69	0,77	0,85	0,93	1,01	1,09	1,17	1,25	1,33	1,41	1,49	1,54
1650	10	0,23	0,32	0,41	0,50	0,59	0,68	0,77	0,86	0,95	1,04	1,13	1,22	1,31	1,40	1,49	1,58	1,67	1,74
1800	11	0,26	0,36	0,46	0,56	0,66	0,76	0,86	0,96	1,06	1,16	1,26	1,36	1,46	1,56	1,66	1,76	1,86	1,93
1950	12	0,29	0,40	0,51	0,62	0,73	0,84	0,95	1,06	1,17	1,28	1,39	1,50	1,61	1,72	1,83	1,94	2,05	2,12

For L > 1970 mm or H > 1950 mm it is necessary to group grills into multiple arrangements.

Other L dimensions are to be each time consulted with our office.

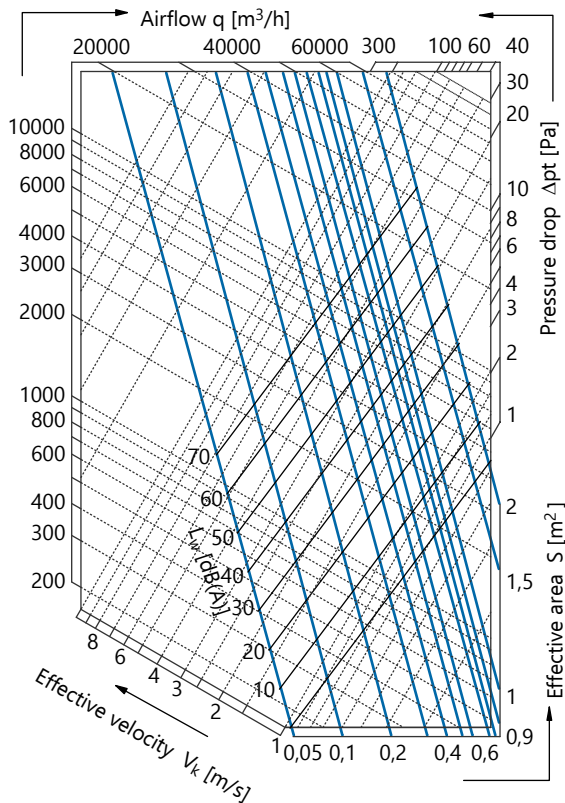
Weight of a grille: 50 kg per sq.m. (area given in square meters = L in meters x H in meters).

The above parameters have been determined on the basis of standards: **EN 140-3, EN ISO 717-1, ISO 5135, EN 23741, ISO 5219, EN 12238, NF X 10-232.**

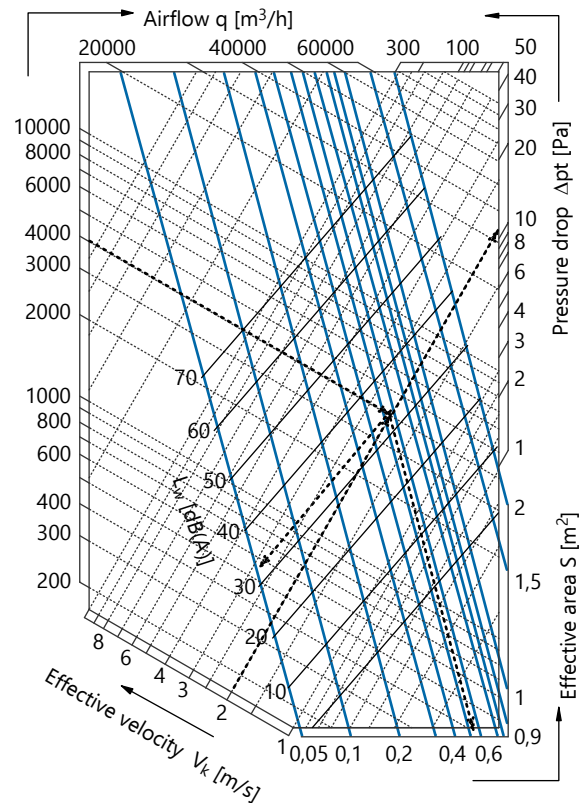


## SELECTION

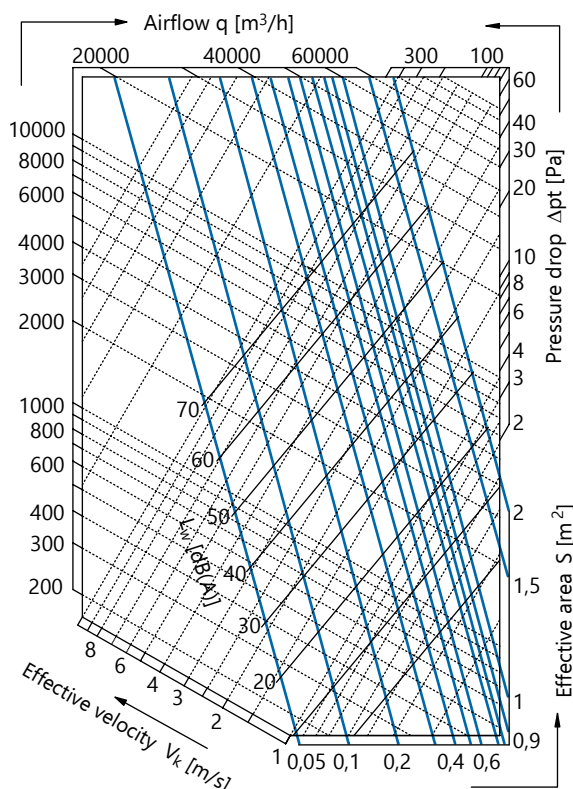
### AC-S SINGLE GRILLE INTAKE VENT



### AC-S SINGLE GRILLE EXHAUST VENT



### AC-D DOUBLE GRILLE, INTAKE VENT / EXHAUST VENT



## SELECTION METHOD

- 1) Select grille type (single AC-S or double AC-D) accounting for the required noise insulation level
- 2) Determine the active area for the specified amount of airflow while maintaining a recommended effective velocity equal to 1,5 ÷ 2,5 m/s
- 3) Select a grille whose active area corresponds to the area determined in item 2 above and whose dimensions are closest to the required ones
- 4) Using the graphs, determine the noise level and pressure drop and verify their compliance with intended requirements

## EXAMPLE OF SELECTION

AC-S single grille, air exhaust

Airflow q	4000 [m³/h]
Effective velocity $V_k$	2 [m/s]
Effective area S	0,56 [m²]
L	1900 [mm]
H	750 [mm]
Sound power level $L_w$	33 [dB(A)]
Pressure drop $\Delta p_t$	11 [Pa]

## QUICK SELECTION CARD

### AC-S SINGLE GRILLE INTAKE VENT

		1 [m/s]		1,5 [m/s]		2 [m/s]		2,5 [m/s]		3 [m/s]		4 [m/s]	
		2 [Pa]		5 [Pa]		9 [Pa]		14 [Pa]		20 [Pa]		35 [Pa]	
		q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]
Effective area S [m²]	0,05	180	1	270	16	360	26	450	34	540	40	720	51
	0,1	360	4	540	19	720	29	900	37	1080	43	1440	54
	0,2	720	7	1080	22	1440	32	1800	40	2160	46	2880	57
	0,3	1080	9	1620	24	2160	34	2700	42	3240	48	4320	58
	0,4	1440	10	2160	25	2880	35	3600	43	4320	49	5760	60
	0,5	1800	11	2700	26	3600	36	4500	44	5400	50	7200	61
	0,6	2160	12	3240	27	4320	37	5400	45	6480	51	8640	61
	0,7	2520	13	3780	27	5040	37	6300	45	7560	52	10080	62
	0,8	2880	13	4320	28	5760	38	7200	46	8640	53	11520	63
	0,9	3240	14	4860	28	6480	39	8100	47	9720	53	12960	63
	1,0	3600	14	5400	29	7200	39	9000	47	10800	53	14400	64
	1,5	5400	16	8100	31	10800	41	13500	49	16200	55	21600	65
	2,0	7200	17	10800	32	14400	42	18000	50	21600	56	28800	67

### AC-S SINGLE GRILLE EXHAUST VENT

		1 [m/s]		1,5 [m/s]		2 [m/s]		2,5 [m/s]		3 [m/s]		4 [m/s]	
		3 [Pa]		6 [Pa]		11 [Pa]		17 [Pa]		24 [Pa]		43 [Pa]	
		q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]
Effective area S [m²]	0,05	180	4	270	15	360	22	450	28	540	33	720	41
	0,1	360	7	540	18	720	25	900	31	1080	36	1440	44
	0,2	720	10	1080	21	1440	28	1800	34	2160	39	2880	47
	0,3	1080	12	1620	23	2160	30	2700	36	3240	41	4320	48
	0,4	1440	13	2160	24	2880	31	3600	37	4320	42	5760	50
	0,5	1800	14	2700	25	3600	32	4500	38	5400	43	7200	51
	0,6	2160	15	3240	26	4320	33	5400	39	6480	44	8640	51
	0,7	2520	16	3780	26	5040	34	6300	40	7560	44	10080	52
	0,8	2880	16	4320	27	5760	34	7200	40	8640	45	11520	53
	0,9	3240	17	4860	27	6480	35	8100	41	9720	46	12960	53
	1,0	3600	17	5400	28	7200	35	9000	41	10800	46	14400	54
	1,5	5400	19	8100	29	10800	37	13500	43	16200	48	21600	55
	2,0	7200	20	10800	31	14400	38	18000	44	21600	49	28800	57

### AC-D DOUBLE GRILLE, INTAKE VENT / EXHAUST VENT

		1 [m/s]		1,5 [m/s]		2 [m/s]		2,5 [m/s]		3 [m/s]		4 [m/s]	
		4 [Pa]		9 [Pa]		16 [Pa]		25 [Pa]		36 [Pa]		64 [Pa]	
		q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]	q [m³/h]	L <sub>w</sub> [dB(A)]
Effective area S [m²]	0,05	180	9	270	20	360	27	450	33	540	38	720	46
	0,1	360	12	540	23	720	30	900	36	1080	41	1440	49
	0,2	720	15	1080	26	1440	33	1800	39	2160	44	2880	52
	0,3	1080	17	1620	28	2160	35	2700	41	3240	46	4320	53
	0,4	1440	18	2160	29	2880	36	3600	42	4320	47	5760	55
	0,5	1800	19	2700	30	3600	37	4500	43	5400	48	7200	56
	0,6	2160	20	3240	31	4320	38	5400	44	6480	49	8640	56
	0,7	2520	21	3780	31	5040	39	6300	45	7560	49	10080	57
	0,8	2880	21	4320	32	5760	40	7200	45	8640	50	11520	58
	0,9	3240	22	4860	33	6480	40	8100	46	9720	51	12960	58
	1,0	3600	22	5400	33	7200	40	9000	46	10800	51	14400	59
	1,5	5400	24	8100	35	10800	42	13500	48	16200	53	21600	60
	2,0	7200	25	10800	36	14400	43	18000	49	21600	54	28800	62

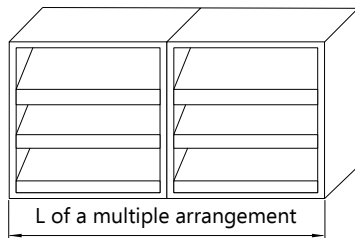


## DIMENSIONS AND INSTALLATION METHOD

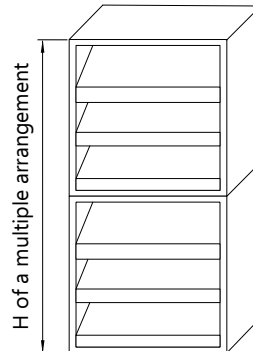
### ASSEMBLY IN MULTIPLE ARRANGEMENTS

Grills are delivered separately for installation on site

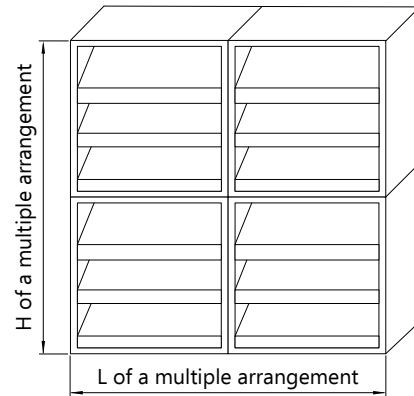
Horizontally joined grills



Vertically joined grills\*



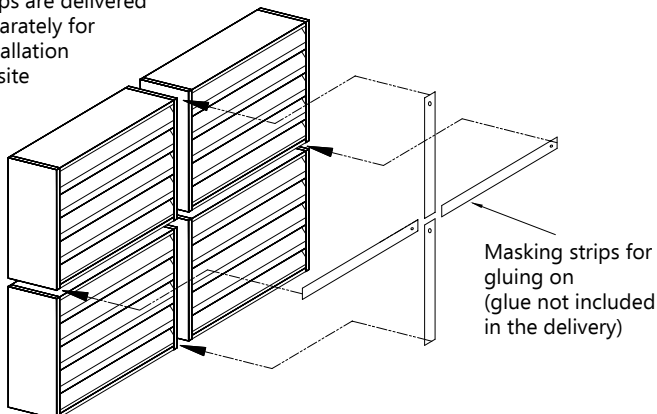
Grills in multiple arrangements\*



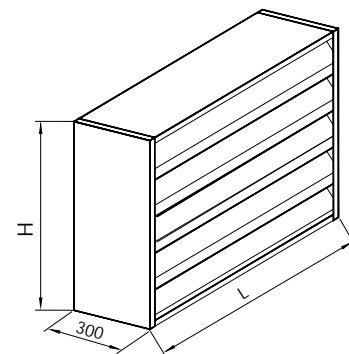
\* vertical multiple arrangements of more than three grills should be each time consulted with our office

### MASKING STRIPS

Strips are delivered separately for installation on site



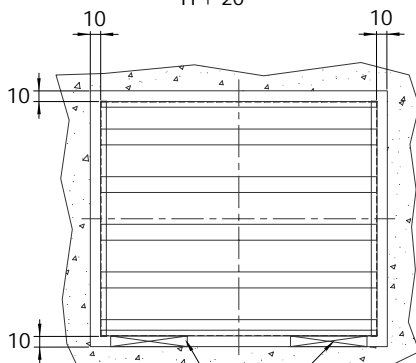
### DIMENSIONS



L [mm]	from 300 to 1970
H [mm]	from 450 to 1950, with 150 mm step

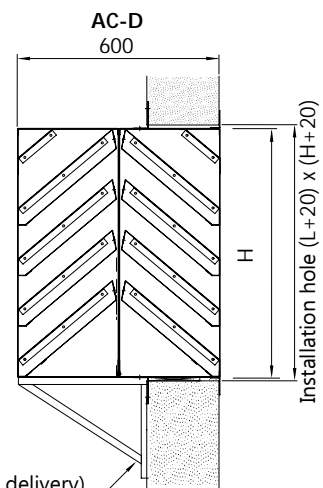
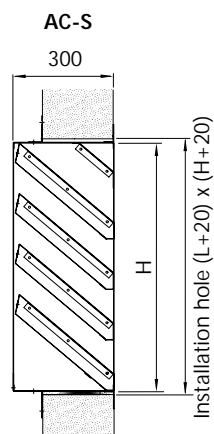
### INSTALLATION HOLE

Otwór montażowy: L + 20  
H + 20



Installation wedges  
(not included in the delivery)

### INSTALLATION

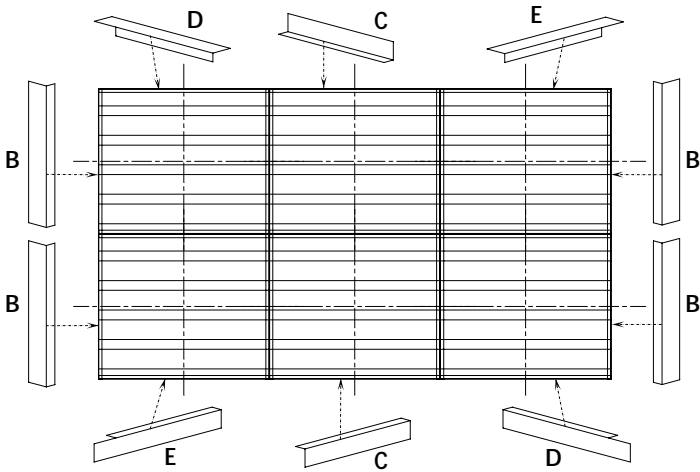
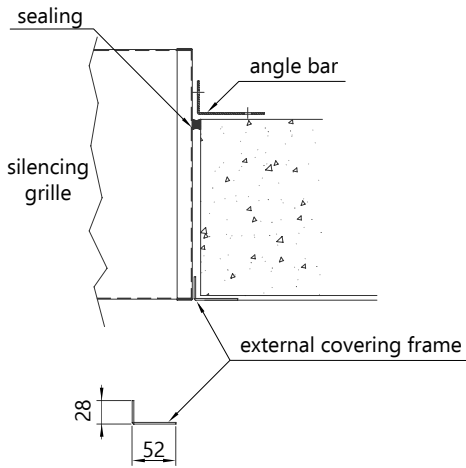
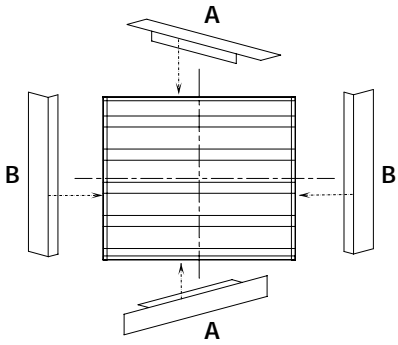


Support  
(not included in the delivery)

**ACCESSORIES**

**MASKING FRAME**

External covering frame is supplied unassembled without mounting holes, its particular elements are marked according to the enclosed instruction for assembly

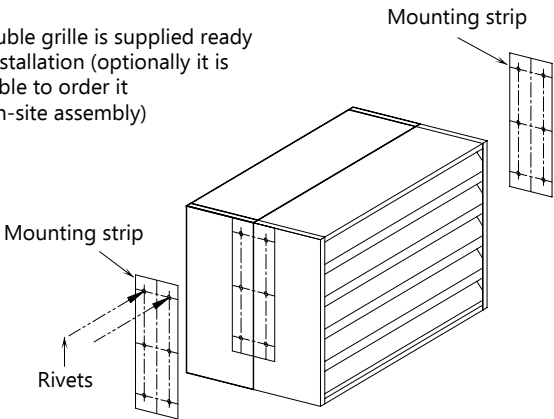


Marking of external frame elements according to their place of installation.

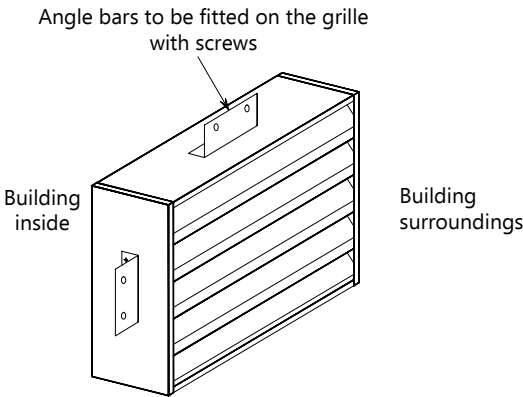
- A: Upper and lower elements of frame used for vertically clustered or single grilles
- B: Side element
- C: Intermediate element for clustered grilles
- D: Upper left and lower right corner element for clustered grilles
- E: Upper right and lower left corner element for clustered grilles

**AC-D DOUBLE GRILLE**

A double grille is supplied ready for installation (optionally it is possible to order it for on-site assembly)



**ANGLE BARS FOR INSTALLATION**



**ORDER KEY**

AC - S or D + CC + anti-insect mesh (10 mm x 10 mm) / 1000 x 1200 / grille RAL code  
silencing grille      double      external covering frame      dimensions L x H      finishing option