mercor
Fire Protection UK

PRODUCT BROCHURE

mcr WIP LD

Multi-blade smoke control damper
for multi-zone fire ventilation systems

mercor-fp.co.uk

1 APPLICATION

The mcr WIP LD smoke control dampers are intended for installation in manually or automatically operated fire ventilation systems. The devices are used in fire ventilation systems or in mixed fire and comfort ventilation systems (smoke evacuation or air supply systems). The dampers prevent fire, smoke and fire gases from spreading to the adjacent compartments. During normal system operation, the damper blades are closed. The smoke control dampers blades in the fire compartment are opened, whereas in other areas the blades are closed.

2 DESIGN

BIM CAD

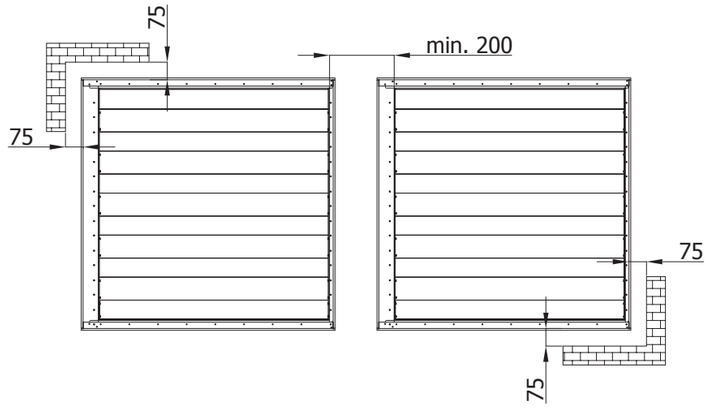
downloadable models on the website under the designer zone tab

Large active area, quick installation

Certified installation with a system grille in set, as per EN 12101-8

mcr WIP LD /V, mcr WIP LD /V-M smoke control dampers consist of a casing with a rectangular cross-section, multiple moving damper blades – louvers rotating around their own axes – and a remotely activated trigger and control mechanism, which is installed inside the damper clearance. The damper casing is made of galvanized steel sheets or stainless steel sheets. The damper is also provided with a connection flange on one side. The other end is the so-called "bare-end". The damper casing total length is 350 mm. Damper louvers are made of galvanized steel sheets or stainless steel. The damper blades revolve on their own axes, which consist of steel pins. A ventilation gasket is provided on the blades to ensure that the damper is "cold" sealed.

» Distance between systems and partitions



3 DIMENSIONS

» nominal width B: from 300 mm to 1100 mm
» nominal height H from 600 mm to 2300 mm
» maximum single damper cross-section surface up to 2.53 m^2

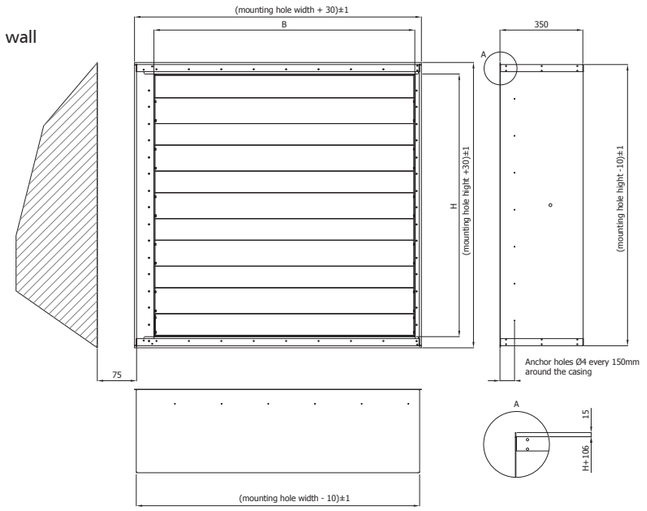
Apart from the standard dimensions, smoke control dampers may be manufactured with intermediate dimensions (at 1 mm increments within the given ranges). The exception are dampers whose height value falls within the 36-54 ranges, e.g. 136-154, 236-254...

4 VERSIONS

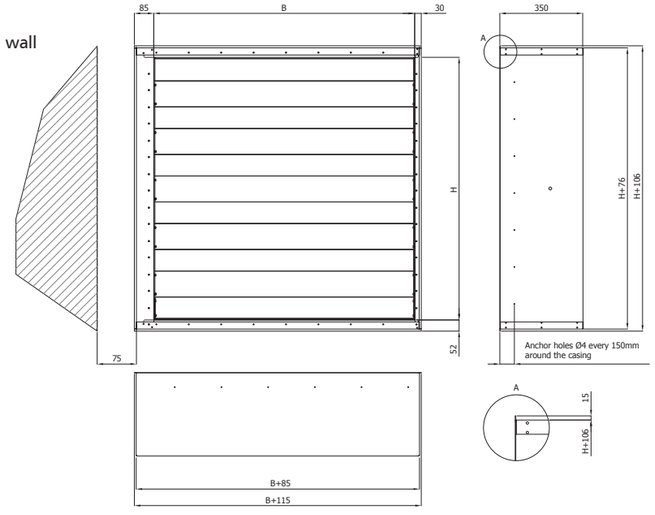
4.1 Damper closing and opening with an actuator

During normal operation, the smoke control dampers are opened or closed. In case of fire, the smoke control dampers louvers are opened in the fire compartment area and closed in the other areas - the smoke control dampers is released remotely by feeding the supply voltage to the trigger control mechanism. mcr WIP LD /V, mcr WIP LD /V-M smoke control dampers are equipped with a trigger control mechanism in the form of a BEE, BEN, BE axial actuator without a return spring (24 V AC/DC or 230 V AC). The BE, BEE, BEN series actuators are equipped with limit switches used to monitor the damper blade position. Furthermore, a mechanical position indicator is placed on the actuator. Smoke control dampers with BEE, BEN, BE actuators can be opened/closed by supplying voltage to the actuator terminals. Dampers with those actuators may be opened/closed manually using a key.

» set in a masonry wall with the flange facing the wall



» set in a masonry wall with the flange facing the wall



5 INSTALLATION

» mcr WIP LD /V, mcr WIP LD /V-M rectangular dampers are rated EI120(v_{ew} i→o)S 1000C_{10000}AAmulti if installed in yielding wall/shaft partitions made from gypsum board panels with the thickness of at least 125 mm.

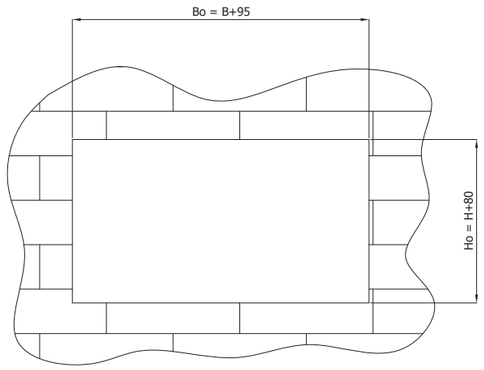
» mcr WIP LD /V, mcr WIP LD /V-M rectangular dampers are rated EI120(v_{ew} i→o)S 1000C_{10000}AAmulti if installed in wall/shaft partitions made of concrete, bricks, hollow bricks, masonry or prefabricated slabs with a min. thickness of 125 mm.

» mcr WIP LD /V, mcr WIP LD /V-M rectangular dampers are rated E600(v_{ew} i→o)S 1000C_{10000}AAmulti if installed in wall/shaft partitions made of concrete, bricks, hollow bricks, masonry or prefabricated slabs with a min. thickness of 125 mm.

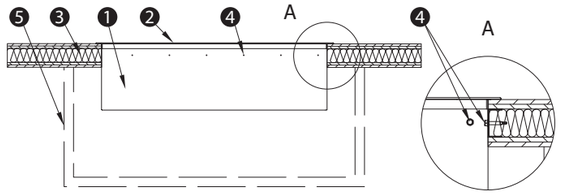
5.1 Preparation of installation openings

The minimum dimensions of the installation opening that permits correct installation of the mcr WIP LD /V, mcr WIP LD /V-M damper is:

Preferred
Bo = (B+95) mm
Ho = (H+80) mm

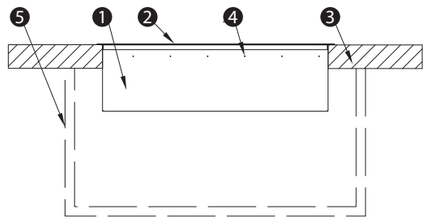


5.2 Installation in shaft walls



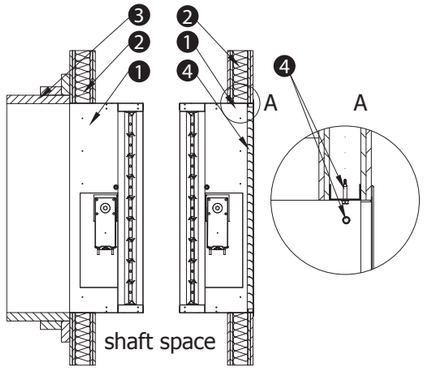
1. mcr WIP LD BxH smoke damper
2. MWS system grille (optional)
3. GK shaft wall
4. Installation anchors
5. Vertical fire ventilation shaft

5.3 Installation in light shaft walls



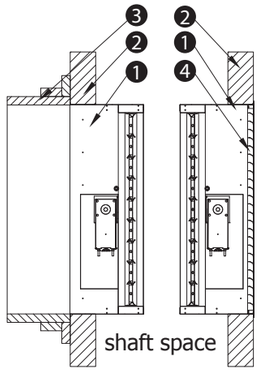
1. mcr WIP LD BxH smoke damper
2. MWS system grille (optional)
3. GB shaft wall
4. Installation anchors
5. Vertical fire ventilation shaft

5.4 Installation in concrete walls or masonry shafts



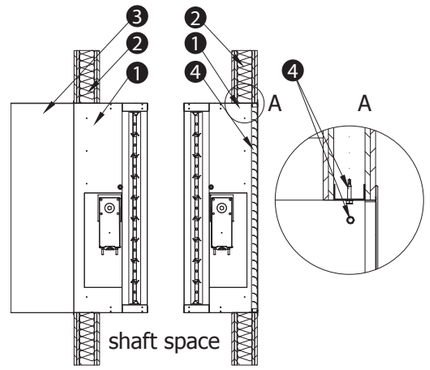
1. mcr WIP LD BxH smoke damper
2. Plasterboard wall
3. Multi-compartment smoke extract duct – e.g. made of fire-proof boards
4. MWS system grille (optional)

5.5 Sample installation in light walls and with multi-compartment ducts or grilles



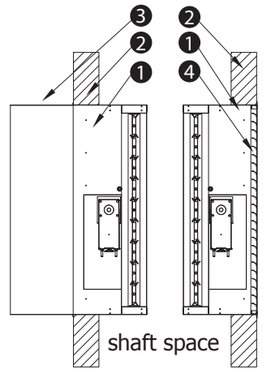
1. mcr WIP LD BxH smoke damper
2. Solid wall
3. Multi-compartment smoke extract duct – e.g. made of fire-proof boards
4. MWS system grille (optional)

5.6 Sample installation in concrete or masonry walls and with multi-compartment ducts or grilles



1. mcr WIP LD BxH smoke damper
2. Plasterboard wall
3. Single-compartment smoke extract duct – e.g. made of metal sheets
4. MWS system grille (optional)

5.7 Sample installation in light walls and with single-compartment ducts or grilles



1. mcr WIP LD BxH smoke damper
2. Solid wall
3. Multi-compartment smoke extract duct – e.g. made of fire-proof boards
4. MWS system grille (optional)

* Smoke extraction ducts should be made in accordance with the ducts manufacturer's guidelines. The ducts must have an adequate fire resistance rating in accordance with the fire resistance rating provided for the entire solution. Seal all connections between the damper, wall and the ducts with the appropriate grout/glue/gaskets, ensuring that the fire resistance rating is maintained. A masking grille may terminate the system.

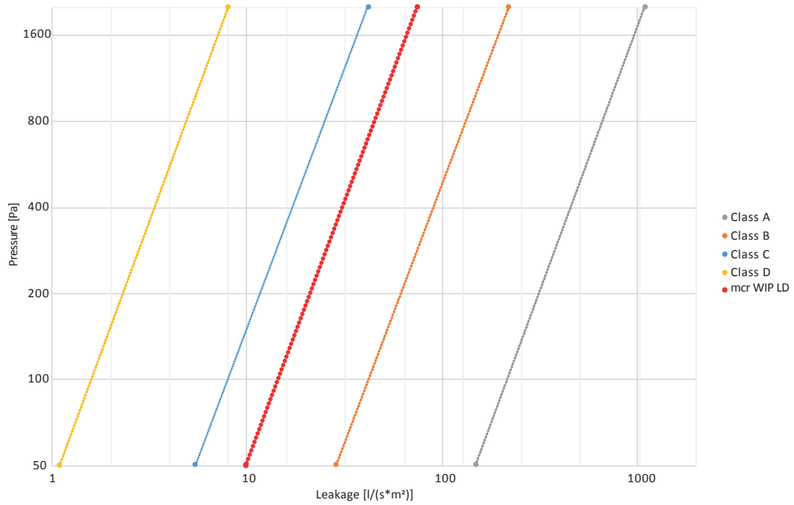
6 DAMPER ACTIVE SURFACE QUICK SELECTION TABLE [m²] (FREE AREA – APERTURE SIZES IN MM AND AREA IN MSQ)

Active surface a [m²]	Width Bo [mm]																	
Height Ho [mm]	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1195
600	0,08	0,10	0,12	0,14	0,16	0,18	0,20	0,22	0,24	0,26	0,28	0,30	0,32	0,34	0,36	0,38	0,40	0,44
700	0,09	0,12	0,14	0,17	0,19	0,22	0,24	0,26	0,29	0,31	0,34	0,36	0,39	0,41	0,43	0,46	0,48	0,53
800	0,11	0,14	0,17	0,20	0,22	0,25	0,28	0,31	0,34	0,37	0,40	0,42	0,45	0,48	0,51	0,54	0,57	0,62
900	0,13	0,16	0,19	0,22	0,26	0,29	0,32	0,36	0,39	0,42	0,45	0,49	0,52	0,55	0,58	0,62	0,65	0,71
1000	0,14	0,18	0,22	0,25	0,29	0,33	0,36	0,40	0,44	0,47	0,51	0,55	0,58	0,62	0,66	0,69	0,73	0,80
1100	0,16	0,20	0,24	0,28	0,32	0,36	0,41	0,45	0,49	0,53	0,57	0,61	0,65	0,69	0,73	0,77	0,81	0,89
1200	0,18	0,22	0,27	0,31	0,36	0,40	0,45	0,49	0,54	0,58	0,63	0,67	0,72	0,76	0,81	0,85	0,90	0,98
1300	0,19	0,24	0,29	0,34	0,39	0,44	0,49	0,54	0,59	0,64	0,68	0,73	0,78	0,83	0,88	0,93	0,98	1,07
1400	0,21	0,26	0,32	0,37	0,42	0,48	0,53	0,58	0,64	0,69	0,74	0,80	0,85	0,90	0,96	1,01	1,06	1,16
1500	0,23	0,28	0,34	0,40	0,46	0,51	0,57	0,63	0,69	0,74	0,80	0,86	0,92	0,97	1,03	1,09	1,15	1,25
1600	0,24	0,30	0,37	0,43	0,49	0,55	0,61	0,67	0,74	0,80	0,86	0,92	0,98	1,04	1,11	1,17	1,23	1,35
1700	0,26	0,32	0,39	0,46	0,52	0,59	0,65	0,72	0,78	0,85	0,92	0,98	1,05	1,11	1,18	1,25	1,31	1,44
1800	0,27	0,34	0,41	0,48	0,55	0,62	0,69	0,76	0,83	0,90	0,97	1,04	1,11	1,18	1,25	1,32	1,39	1,53
1900	0,29	0,37	0,44	0,51	0,59	0,66	0,74	0,81	0,88	0,96	1,03	1,11	1,18	1,25	1,33	1,40	1,48	1,62
2000	0,31	0,39	0,46	0,54	0,62	0,70	0,78	0,86	0,93	1,01	1,09	1,17	1,25	1,32	1,40	1,48	1,56	1,71
2100	0,32	0,41	0,49	0,57	0,65	0,74	0,82	0,90	0,98	1,07	1,15	1,23	1,31	1,40	1,48	1,56	1,64	1,80
2200	0,34	0,43	0,51	0,60	0,69	0,77	0,86	0,95	1,03	1,12	1,21	1,29	1,38	1,47	1,55	1,64	1,73	1,89
2300	0,36	0,45	0,54	0,63	0,72	0,81	0,90	0,99	1,08	1,17	1,26	1,35	1,45	1,54	1,63	1,72	1,81	1,98
2385	0,38	0,47	0,56	0,66	0,75	0,85	0,94	1,04	1,13	1,23	1,32	1,42	1,51	1,61	1,70	1,80	1,89	2,07

7 ESTIMATED WEIGHT OF THE MCR WIP LD DAMPERS [kg]

	Width B [mm]								
Height H [mm]	300	400	500	600	700	800	900	1000	1100
600	20	21	23	26	30	35	37	39	41
700	21	23	25	28	32	35	38	40	42
800	22	24	29	35	37	41	43	49	55
900	25	28	33	35	39	43	49	52	55
1000	32	33	36	42	43	47	53	60	67
1100	35	36	37	38	39	41	42	44	46
1200	38	39	40	41	42	44	45	47	49
1300	41	42	43	44	46	47	49	51	52
1400	44	45	46	48	49	51	53	55	57
1500	47	48	50	51	53	55	57	59	61
1600	50	51	53	55	57	59	61	64	66
1700	53	55	56	58	59	61	63	65	67
1800	56	58	59	61	63	65	67	69	71
1900	59	61	63	65	67	69	71	73	75
2000	62	64	66	68	70	72	75	77	79
2100	65	67	69	71	74	76	78	81	84
2200	68	70	72	75	77	80	82	85	88
2300	71	73	76	78	81	83	86	89	92

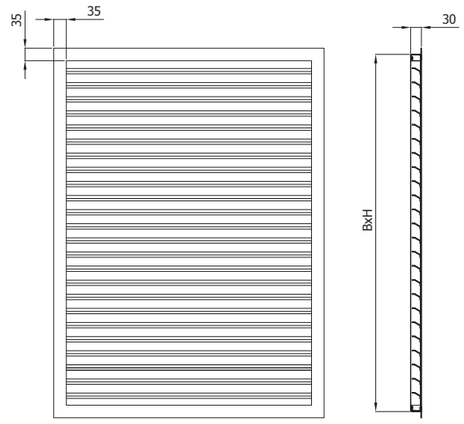
8 SEALED DAMPER BLADE TIGHTNESS ACCORDING TO EN1751



9 ACCESSORIES

9.1 mcr MWS system masking element

MWS system masking elements are designed to fulfill either supply or exhaust function. They enable the transfer of air through construction partitions. They come with fixed steel louvers with a 40 mm span, obscuring damper visibility. Bolts embedded in the damper are used to attach the masking element body. After installation, an outer frame is mounted on the masking element body so that the holes and bolts cannot be seen from the outside. Such a solution allows for installing the product even in the most visually-demanding applications. The masking elements are painted in RAL 9010 as a standard (available in any colour from the RAL range on request).



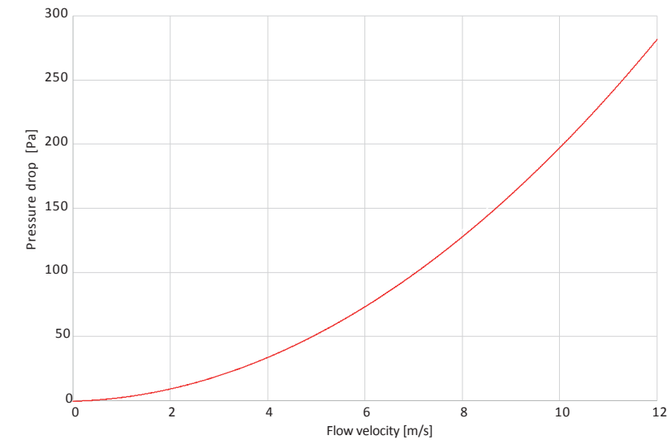
Marking:

mcr MWS / B x H / X

- Additional parameters
- Width x height
- Damper type

X – material
[no symbol] – RAL9010
RALXXXX – selected color code from the RAL palette

» Pressure drop on masking grilles



10 MARKING

mcr WIP LD / B x H / 1 / 2 / 3

- Additional parameters
- Material
- Control
- Width x height
- Damper type

1 – control

» **trigger control mechanism**
BE24 – actuator without a return spring, U = 24 V AC/DC
BE24-ST (with the BKE230-24 option) – actuator without a return spring, for the SBS Control system
BE230 – actuator without a return spring, U = 230 V AC/DC
BEE24 – actuator without a return spring, U = 24 V AC/DC
BEN24 – actuator without a return spring, U = 24 V AC/DC
BEE24-ST (with the BKE230-24 option) – actuator without a return spring, for the SBS Control system
BEN24-ST (with the BKE230-24 option) – actuator without a return spring, for the SBS Control system
BEE230 – actuator without a return spring, U = 230 V AC/DC
BEN230 – actuator without a return spring, U = 230 V AC/DC

2 – material

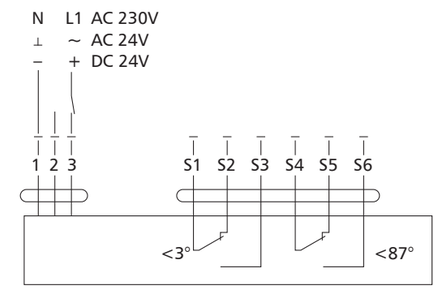
[no symbol] – galvanized steel, Zn 275 m² coating
KN – stainless steel
KK – 1.4404 acid-proof steel

3 – additional parameters

» **Damper axis of rotation**
[no symbol] – horizontal axis of rotation
[no symbol] – left damper
[no symbol] – not painted
RAL9005 – damper blades and internal casing from the side of the actuator are painted black

Note: separate additional parameters entered with the "/" sign
example marking: mcr WIP LD /V 400 x 400 BLE24
Door-type smoke control damper with a 24 V actuator with limit switches.

11 CONTROL



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