CI/SfB (32.5) Ro8 (K2)

LORIENT
ASSA ABLOY

FIRE + SMOKE RESISTANT AIR TRANSFER GRILLES

FIRE + RESIST AIR TRANS GRILL



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We've been designing and manufacturing high performance sealing systems for over 45 years.

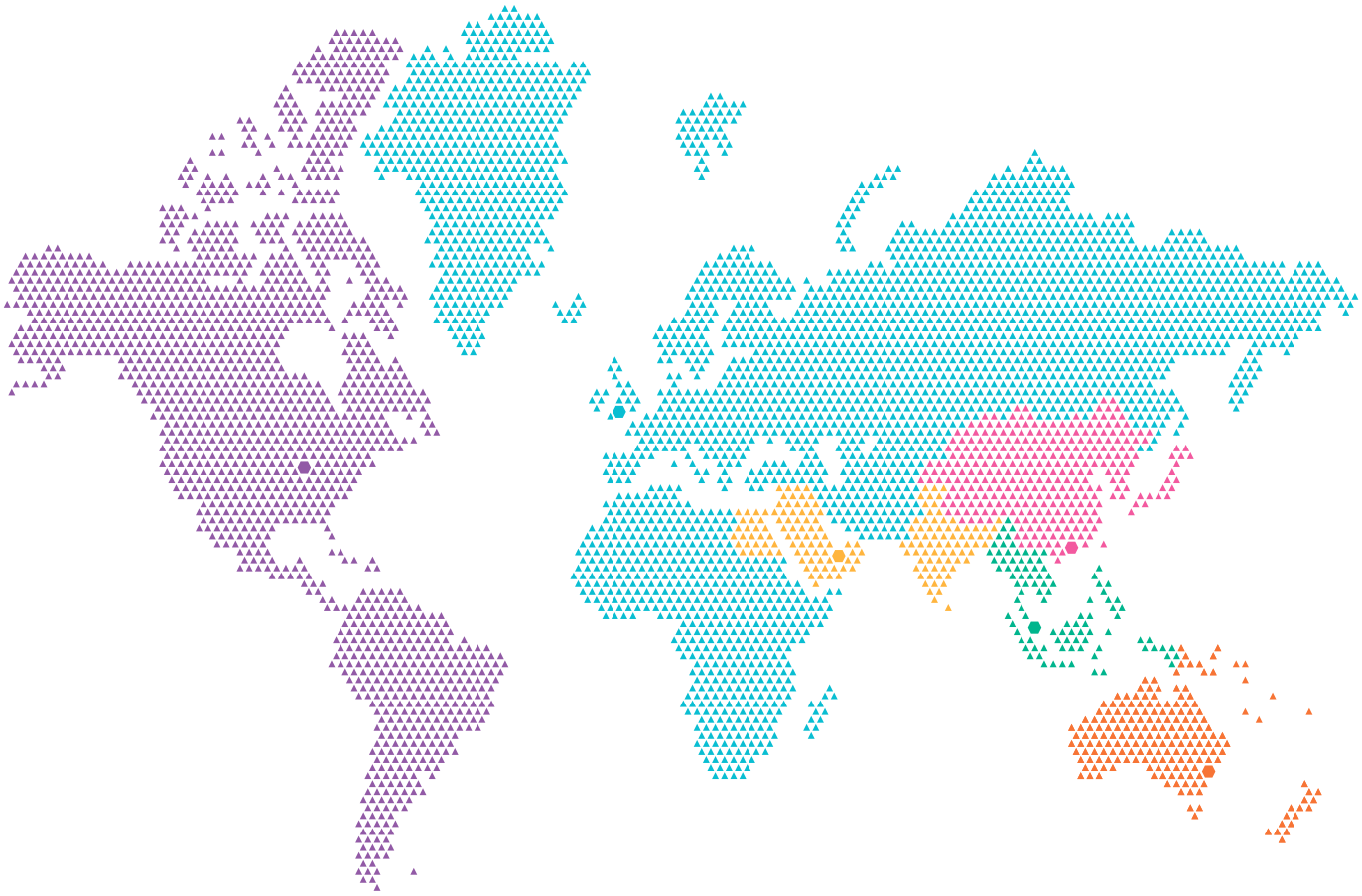
And we're passionate about the products we make. Our dedicated R&D and testing facilities rigorously put our sealing systems through their paces — enabling us to enhance product form and function. We've built a strong reputation for design innovation; and for producing the highest quality sealing systems embracing acoustic, smoke, fire and thermal containment; as well as accessibility.

Respected throughout the industry for our technical expertise, we play an active role in helping to shape standards and best practice. We believe in providing excellent levels of customer service; and are at our best working in partnership with you.

Lorient's range of intumescent air transfer grilles can be used in all applications where there is a need for free air movement through a fire barrier. Designed to be fitted in doors, walls and ducts they provide a cost effective solution in allowing free air movement and yet maintain the integrity of the door or wall in a fire situation. Under normal conditions they allow the free passage of air. In the event of a fire the slats and framing components swell to many times their original size, fusing together to form a non-combustible mass which provides a barrier to fire, hot smoke and gases.

MADE IN BRITAIN

SEALING DOORS WORLDWIDE



The UK is home to our head office, manufacturing operation and dedicated R&D testing facility. Our UK & Europe head office supports operations around the world, delivering the best solutions locally to our customers across four continents.

By keeping abreast of technical developments and changes to regulations and standards across the world, we deliver the highest levels of expertise and support.

- UNITED KINGDOM (HQ)
- HONG KONG
- AUSTRALIA
- USA
- SINGAPORE
- UAE

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FIRE + SMOKE RESISTANT AIR TRANSFER GRILLES

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ICONS EXPLAINED

The following icons are used throughout this brochure to give clear and easy recognition of a particular seal's function or possible application. Use of the icons does not necessarily indicate that test evidence exists. Please check with the Lorient Technical team.

- Fire protection
- Smoke protection
- Door application
- Wall application
- Duct application
- Floor application
- E — Integrity only
- Ceiling application
- EI — Integrity + insulation
- 60 — Fire resistance (minutes)

PRODUCT ILLUSTRATIONS

All dimensions in this brochure are in millimetres.

AIR TRANSFER GRILLES: FIRE

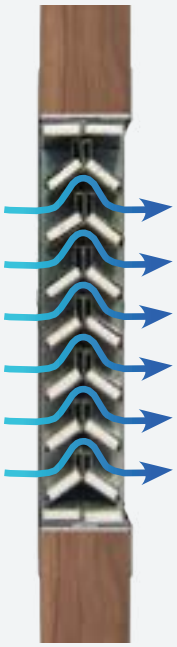
Our intumescent air transfer grilles combine air movement with fire protection. Designed to be fitted in doors, walls, ducts, floors + ceilings; they provide a cost effective solution in allowing free air movement and yet maintain the integrity of the application in a fire situation.

Operation

Available in a range of vision and non-vision styles, Lorient fire containment air transfer grilles are made up of either PVC or metal slats with an intumescent core.

A sudden increase in temperature resulting from the presence of flames or hot gases causes the slats and framing components to swell to many times their original thickness, fusing together to provide an effective barrier to the passage of fire and hot smoke. The fire containment air transfer grilles contain no moving parts which results in low maintenance.

- **Cold condition:** free air movement;
- **Hot condition:** expanded intumescent material.



LVN20 air transfer grille in normal cold condition, showing free-air movement



LVN20 air transfer grille in hot condition, showing intumescent material expanding to fill the space in the door

AIR TRANSFER GRILLES: FIRE + SMOKE

Our range of combined intumescent fire + smoke air transfer grilles can be used in all applications where cold smoke containment is required. The air transfer grilles are connected, via a control panel, to a standard fire alarm system. In the event of an alarm condition, or power failure, the smoke shutters shut, preventing the passage of cold smoke.

System features

A comprehensive range of air transfer grilles providing protection against fire and smoke at all temperatures, features include:

- Test evidence second to none;
- Fire performance ratings from 30 minutes to in excess of 180 minutes;
- Fully tested for smoke performance;
- Products for all applications – doors, walls + ducts;
- Low maintenance;
- Auto-reset;
- Low maintenance;
- Co-ordinated with other Lorient products and ironmongery.



Talkback DCM with a range of fire & smoke resistant air transfer grilles

BUILDING REGULATIONS

The Building Regulations provide guidance as to the minimum building standards to be achieved. They reference the relevant British and European Standards defining the test requirements and performance of the fire door assembly or fire doorset.

There are several aspects of the Buildings Regulations that must be considered in conjunction with each other when specifiying and installing fire resistant glazing systems. The regional variations of the Building Regulations:

ENGLAND	Approved Documents
WALES	Approved Documents
SCOTLAND	Technical Handbooks
N.IRELAND	Technical Booklets
IRELAND	Technical Booklets

	ENGLAND	WALES	SCOTLAND	N.IRELAND	IRELAND
FIRE	Approved Document B	Approved Document B	Technical Handbook 2	Technical Booklet E	Technical Guidance Document B
ACOUSTICS	Approved Document E	Approved Document E	Technical Handbook 5	Technical Booklet G	Technical Booklet G
ACCESSIBILITY	Approved Document M	Approved Document M	Technical Handbook 3	Technical Booklet R	Technical Booklet R
VENTILATION	Approved Document F	Approved Document F	Technical Handbook 3	Technical Booklet K	Technical Booklet K
THERMAL	Approved Document L	Approved Document L	Technical Handbook 6	Technical Booklet F	Technical Booklet F
SECURITY	Approved Document Q	Approved Document Q	-	-	-

STANDARDS + REGULATIONS

The requirements for fire and smoke containment with regard to `means of escape' are contained in the following standards:

FIRE + SMOKE

STANDARD	TITLE
BS 476-20:1987	Fire tests on building materials and structures. Method for determination of the fire resistance of elements of construction (general principles)
BS 476-22:1987	Methods for determination of the fire resistance of non-loadbearing elements of construction
BS 476-31.1:1983	Fire tests on building materials and structures. Methods for measuring smoke penetration through doorsets and shutter assemblies. Method of measurement under ambient temperature conditions
BS EN 1634-3:2004	Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Smoke control test for door and shutter assemblies
BS EN 1634-1: 2014+A1:2018	Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware. Fire resistance test for door and shutter assemblies and openable windows.
BS 8214:2016	Code of practice for fire door assemblies
BS 9999:2017	Code of practice for fire safety in the design, management and use of buildings
BS EN 1366-12:2014+A1:2019	Fire resistance tests for service installations. Non-mechanical fire barrier for ventilation ductwork
BS EN 1364-5:2017	Fire resistance tests for non-loadbearing elements. Air transfer grilles
BS EN 1366-10:2011+A1:2017	Fire resistance tests for service installations. Smoke control dampers
BS ISO 10294-5:2005	Fire-resistance tests. Fire dampers for air distribution systems. Intumescent fire dampers

VENTILATION WITH FIRE + SMOKE PROTECTION

Designers recognise the need for buildings to be well ventilated for the health and comfort of occupants. Frequent changes of air flush out airborne infections, and warm and cool air need to be circulated to maintain comfortable temperatures.

Ventilation through Doors, Walls, Floors & Ceilings

A study of regulatory requirements reveals that nearly all internal fire resistant doors (and, therefore, the walls in which they are located) also need to provide protection against cold smoke. Any steps taken to allow ventilation through such walls and doors must not allow the passage of cold smoke in the event of fire.

The common practice of undercutting the door in the belief that the threshold is a low risk area has now been totally discredited. It creates a major smoke hazard. Similarly, fitting a conventional grille to a wall or door will totally negate other measures taken to prevent the spread of fire, hot smoke and cold smoke.

Lorient intumescent air transfer grilles and automatic smoke control systems provide protection against fire, hot smoke and cold smoke.

Ventilation through Ducting

Experience has shown that ducting can, in the event of fire, provide a conduit for fire, hot smoke and cold smoke. An intumescent air transfer grille, fitted into the duct at the point where it penetrates a fire resistant construction, will prevent the passage of fire and hot smoke.

Lorient intumescent air transfer grilles fitted in conjunction with a Lorient automatic smoke control system will also provide protection against cold smoke. They have been shown by specific testing to be equivalent to a conventional damper, not only in fire and smoke barrier properties, but also by exhibiting insulation values.

Lorient fire resistant air transfer grilles can be:

- factory fitted in a tested fire resisting doorset;
- "retro fit" to an already installed fire door;
- fitted in fire resisting walls, partitions, floors and ceilings;
- installed in duct work (LVC40, LVH44, LVHC44 and LVH54).



LVN20S intumescent fire + smoke air transfer grille



PRODUCT RANGE

Further information on the products, including sizes, shapes and finishes, can be found on pages 24 - 40. Application details and additional performance information can be found on pages 17 - 23.

AIR TRANSFER GRILLES: FIRE (PAGES 24–34)



LVN20



LVV40



LVH44



LVN25



LVC40



LVHC44

COVER GRILLES (PAGES 48–51)



LVH50



LVH54



COVER GRILLES

AIR TRANSFER GRILLES: FIRE + SMOKE (PAGES 31–38)



LVN20S



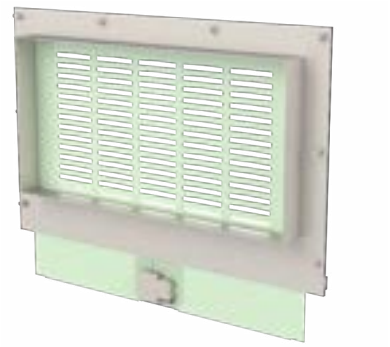
LVN25S



LVV40S

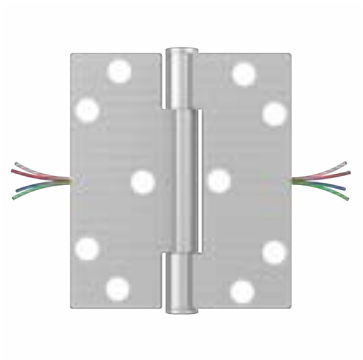


LVH44S



LVHCTD

HINGE (PAGE 34)



CONDUCTOR HINGE

TALKBACK (PAGES 41- 46)



TALKBACK DAMPER CONTROL SYSTEM

SEALANT (PAGE 50)



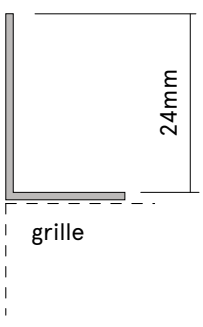
CE INTUMESCENT ACOUSTIC ACRYLIC SEALANT

SEALANT (PAGE 51)

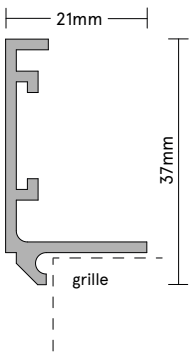


INTUMESCENT SEALANT

FLANGES



LV2516 STEEL FLANGE



LV2221 ALUMINIUM FLANGE

System			Building Element	Thickness	Protection	Product
Door 1	▲		Timber Fire Door	44mm/ 54mm	FD30/FD60	**LVV40**
Door 2	▲		Timber Fire Door	44mm	FD30	**LVN20**
Door 3	▲		Timber Fire Door	Min. 50mm	FD30	**LVN25**
Door 3	▲		Timber Fire Door	54mm	FD60	**LVN25**
Door 4	▲		Mineral Composite	45mm	FD120	**LVH44**
Door 5	▲		Timber Fire Door	Min. 44mm	FD120	**LVH44**
Door 6	▲		Steel Fire Door	Min. 44mm	FD120	**LVH44**
Door 7	▲	▲	Timber Fire Door	44mm	FD30S	**LVN20S**
Door 8	▲	▲	Timber Fire Door	54mm	FD60S	**LVN20S**
Door 9	▲	▲	Timber Fire Door	Min. 50mm	FD30S	**LVN25S**
Door 10	▲	▲	Timber Fire Door	54mm	FD60S	**LVN25S**
Door 11	▲		Timber frame	*Frame	FR120	**LVH44**
Door 12	▲		Timber frame	*Frame	FR120	**LVH44**
Door 13	▲		Timber frame	*Frame	FR120	**LVH44**
Door 14	▲		Steel frame	*Frame	FR120	**LVH44**
Door 15	▲		Steel frame	*Frame	FR120	**LVH44**
Door 16	▲		Steel frame	*Frame	FR120	**LVH44**
Wall 1	▲		Rigid wall construction	-	FR120	**LVH44**
Wall 2	▲		Rigid wall construction	-	FR120	**LVH44**
Wall 3	▲		Rigid wall construction	-	FR120	**LVH44**
Wall 4	▲		FR Flexible Wall	-	FR120	**LVH44**
Wall 5	▲		FR Flexible Wall	-	FR120	**LVH44**
Wall 6	▲		FR Flexible Wall	-	FR120	**LVH44**
Wall 7	▲		Rigid wall construction	-	FR120	**LVH44**
Wall 8	▲		Modular System for rigid wall constructions	-	FR120	**LVH44**
Wall 9	▲		Modular System for rigid wall constructions	-	FR120	**LVH44**
Wall 11	▲		Rigid wall construction	-	FR120/EI90	**LVH44**
Wall 12	▲		Rigid wall construction	-	FR60	**LVV40**
Wall 13	▲		Rigid wall construction	-	FR60	**LVC40**
Wall 14	▲		Rigid wall construction	-	E1120	**LVV40**
Wall 15	▲		FR Flexible Wall	-	EI60	**LVV40**
Wall 16	▲	▲	Rigid wall construction	-	EI60S/FR90S	**LVV40S**
Wall 17	▲	▲	FR Flexible Walls	-	EI60S	**LVV40S**
Wall 18	▲	▲	Rigid wall construction	-	FR120	**LVH44S**
Wall 19	▲	▲	FR Flexible Wall	-	FR120	**LVH44S**

*Timber or steel frame as part of associated doorset framing system.

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Test Standard	Report No.	Max Size	Certifire	Certifire Max Size
BS 476-20:1987	WF185829/A	600mm x 600mm	CF564	600mm x 600mm
BS 476-22:1987	WFRC C122567	0.36m²	CF564	0.2025m²
BS 476-22:1987	WFRC C122567	0.36m²	CF564	0.2025m²
BS 476-22:1987	WFRC C122567	0.36m²	CF564	0.2025m²
BS 476-22:1987	WFRC C397901	0.2025m²	CF564	0.2025m²
BS 476-22:1987	WFRC C397901	0.2025m²	-	-
BS 476-22:1987	WFRC C397901	0.2025m²	CF564	0.2025m²
BS 476-22:1987	-	0.16m²	CF564	0.16m²
BS 476-22:1987	APPLUS-19-19940-1428	350mm x 350mm	CF564	0.16m²
BS 476-22:1987	-	400mm x 400mm	CF564	0.16m²
BS 476-22:1987	APPLUS-19-19940-1428	350mm x 350mm	CF564	0.16m²
BS 476-22:1987	WRFC C121316 (AW4T1)	1200mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW4T2)	1200mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW4T3)	1200mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW4S1)	1200mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW4S2)	1200mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW4S3)	1200mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW1)	600mm x 600mm	CF564	0.2025m²
BS 476-22:1987	WRFC C121316 (AW2)	600mm x 600mm	CF564	0.2025m²
BS 476-22:1987	WRFC C121316 (AW3)	600mm x 600mm	CF564	0.2025m²
BS 476-22:1987	FSP 1970 / FRT 230055	600mm x 600mm	-	-
BS 476-22:1987	FSP 1970 / FRT 230055	600mm x 600mm	-	-
BS 476-22:1987	FSP 1970 / FRT 230055	600mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW7)	600mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW8)-	1800mm x 600mm	-	-
BS 476-22:1987	WRFC C121316 (AW9)	1200mm x 600mm	-	-
BS EN 1364-5:2017	19/19894-253	1000mm (w) x 500mm (h)	-	-
BS 476-22:1987	WF185829/A	600mm x 600mm	CF564	600mm x 600mm
BS 476-22:1987	WF185829/A	600mm x 600mm	CF654	600mm x 600mm
BS EN 1364-5:2017	19/19894-253	600mm x 600mm	-	-
BS EN 1364-5:2017	LBO-1333/19E	600mm x 600mm	-	-
BS 476-20:1987 BS EN 1364-5:2017	18/17274-1071	600mm (w) x 400mm (h) (640mm x 440mm overall)	CF564	0.2025m²
BS EN 1364-5:2017	LBO-1333/19E	600mm (w) x 400mm (h) (640mm x 440mm overall)	-	-
BS 476-22:1987	WRFC C121316	600mm x 600mm (640mm x 640mm overall)	-	-
BS 476-22:1987	WRFC C121316	600mm x 600mm (640mm x 640mm overall)	-	-

System			Building Element	Thickness	Protection	Product
Duct 1	▲		Circular plastic pipe	-	FR60	**LVC40**
Duct 2	▲		Circular steel duct	-	FR60	**LVC40**
Duct 3	▲		Rectangular steel duct	-	FR120	**LVH44**
Duct 4	▲		Insulated duct section	-	FR120	**LVH44**
Duct 5	▲		Rigid wall construction with angle fixings to wall (Duct to Duct)	-	FR120	**LVHC44**
Duct 6	▲		Rigid wall construction with angle clamps (Duct to Duct)	-	FR120	**LVHC44**
Door 7	▲		FR Flexible wall with angle fixings to wall	-	FR120	**LVHC44**
Duct 8	▲		FR Flexible wall with angle clamps	-	FR120	**LVHC44**
Duct 9	▲		Rigid wall construction with angle fixings (Duct to Grilles)	-	FR120	**LVHC44**
Duct 10	▲		Rigid wall construction (Duct to Duct)	-	FR120	**LVH44**
Duct 11	▲		FR Flexible wall (Duct to Duct)	-	FR120	**LVH44**
Duct 12	▲		FR Flexible wall (Duct to Grille)	-	FR120	**LVH44**
Duct 13	▲		Rigid wall construction with metal casing (Duct to Grille)	-	FR120	**LVH44**
Duct 14	▲		Rectangular steel duct	-	E240/EI30	**LVH54**
Duct 15	▲	▲	Rectangular steel duct	-	FR120*/ FR240**	**LVHCTD + LVH44*/ LVH54****
Floor 1	▲		Masonry floor with angle fixings	-	FR120	**LVHC44**
Floor 2	▲		Masonry floor with angle clamps	-	FR120	**LVHC44**
Floor 3	▲		Masonry floor with angle fixings	-	FR120	**LVH44**
Floor 4	▲		Masonry floor with Z section fixings	-	FR120	**LVH44**
Floor 5	▲		Masonry floor with Z section fixings using pre-cast slab to suit	-	FR120	**LVH44**
Floor 6	▲		Fixing on top of masonry floor with angle fixings	-	FR120	**LVH44**
Floor 7	▲		Modular system for masonry floor	-	FR120	**LVH44**
Floor 8	▲		Fixing on top of masonry floors with angle fixings (modular systems)	-	FR120	**LVH44**
Floor 9	▲		Masonry floor (duct to duct)	-	FR120	**LVH44**

Test Standard	Report No.	Max Size	Certifire	Certifire Max Size
BS 476-20:1987	WF185829/A	150mm diameter	-	-
BS 476-22:1987	WF185829/A	*600mm diameter **450mm diameter	-	-
BS 476-22:1987	WRFC C121316	600mm x 600mm	-	-
BS 476-22:1987	WRFC C121316	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (OW1) WFRC 397901	600mm diameter	-	-
BS 476-22:1987	WFRC C121316 (OW2) WFRC 397901	600mm diameter	-	-
BS 476-22:1987	WFRC C121316 (OW3) WFRC 397901	600mm diameter	-	-
BS 476-22:1987	WFRC C121316 (OW4) WFRC 397901	600mm diameter	-	-
BS 476-22:1987	WFRC C121316 (OW5) WFRC 397901	600mm diameter	-	-
BS 476-22:1987	WFRC C121316 (W-SERIES)	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (W-SERIES)	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (W-SERIES)	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (W-SERIES)	600mm x 600mm	-	-
ISO 10294-5	BRE 227730	600mm x 600mm	-	-
BS 476-22:1987* ISO 10294-5**	WRFC C121316* BRE 227730**	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (OF1)	600mm diameter	-	-
BS 476-22:1987	WFRC C121316 (OF2)	600mm diameter	-	-
BS 476-22:1987	WFRC C121316 (AF1)	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (AF2)	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (AF3)	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (AF5)	600mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (AF6)	1200mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (AF7)	2400mm x 600mm	-	-
BS 476-22:1987	WFRC C121316 (F1)	1200mm x 600mm	-	-

NOTE: Mechanical Services Engineers, Specifiers and Certifiers should always request access to manufacturers' primary fire test approvals and satisfy themselves that these relate to the products they are specifying or certifying.

Lorient **DOES NOT** endorse the use of test reports which reference Lorient intumescent air transfer grilles being used to support the certification of other manufacturers' intumescent air transfer grille products.



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APPLICATION DETAILS

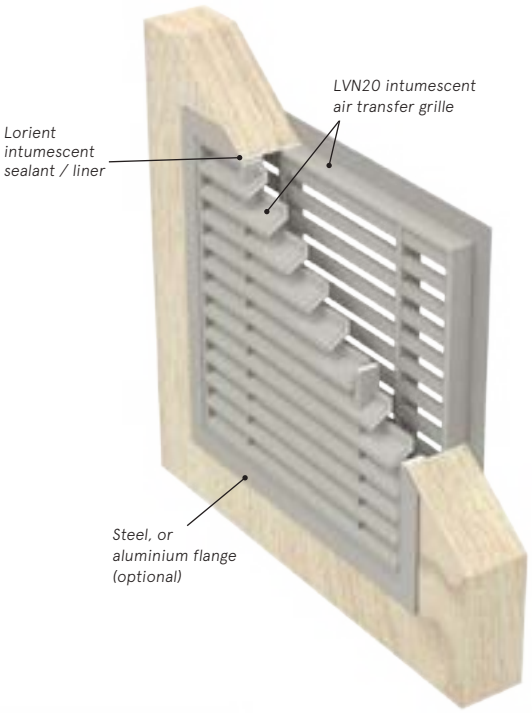
The following pages show the levels of protection provided by Lorient fire and fire + smoke resistant air transfer grilles when used in doors, compartment walls, ducts, floors and ceilings.

			Orientation	Application			
Protection			Vertical / horizontal	Doors	Walls	Floors + ceilings	Ducts
FR30	▲		Vertical	LVN20	-	-	-
FR30	▲		Vertical	LVN25	-	-	-
FR30	▲		Vertical	LVV40/LVC40	-	-	-
FR30	▲		Horizontal	-	-	-	-
FR30	▲	▲	Vertical	LVN25S	-	-	-
FR30	▲	▲	Vertical	LVN20S	-	-	-
FR60	▲		Vertical	LVN25	-	-	LVH44
FR60	▲		Vertical	LVV40/LVC40	LVV40/LVC40	-	LVV40/LVC40
FR60	▲		Horizontal	-	-	LVH44/LVHC44	LVH44/LVHC44
FR60	▲	▲	Vertical	LVN25S		-	-
FR60	▲	▲	Vertical	LVN20S	LVV40S	-	-
FR90	▲		Vertical	LVH44/LVHC44	-	-	-
FR90	▲		Horizontal	-	-	LVH44/LVHC44	LVH44/LVHC44
FR90	▲		Vertical	LVH20S	-	-	-
FR120	▲		Vertical	LVH44/LVHC44	LVH44/LVHC44	-	LVH44/LVHC44
FR120	▲		Horizontal	-	-	LVH44/LVHC44	LVH44/LVHC44
FR120	▲	▲	Vertical	-	LVH44S	-	-
FR180	▲		Vertical	-	LVH44/LVHC44	-	LVH44
FR180	▲		Horizontal	-	-	LVH44/LVHC44	-
FR180	▲	▲	Vertical	-	LVH44S	-	-
FR240	▲		Vertical	-	-	-	LVH54
FR240	▲	▲	Vertical	-	-	-	LVHCTD

LVN20 (for 44mm)

For installation in lower half of door leaf

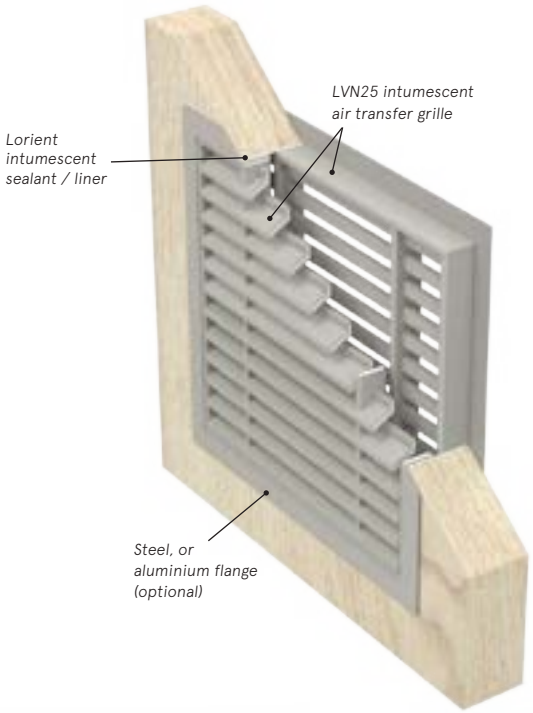
30



LVN25 (for 54mm only)

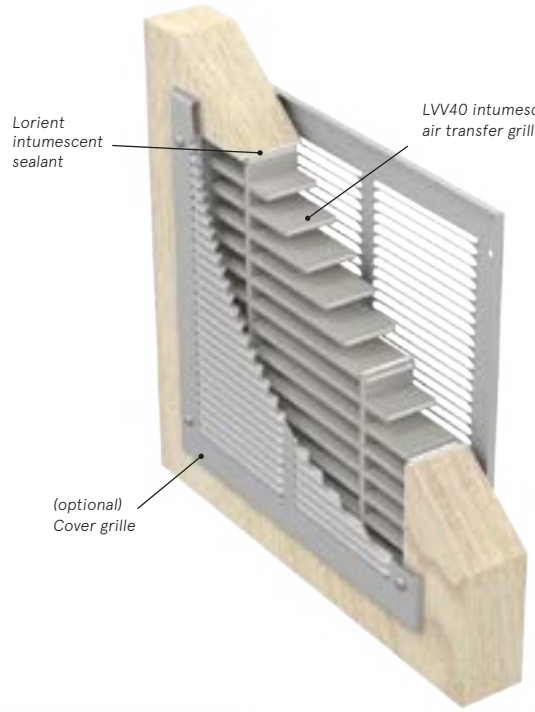
For installation in lower half of door leaf

30 60



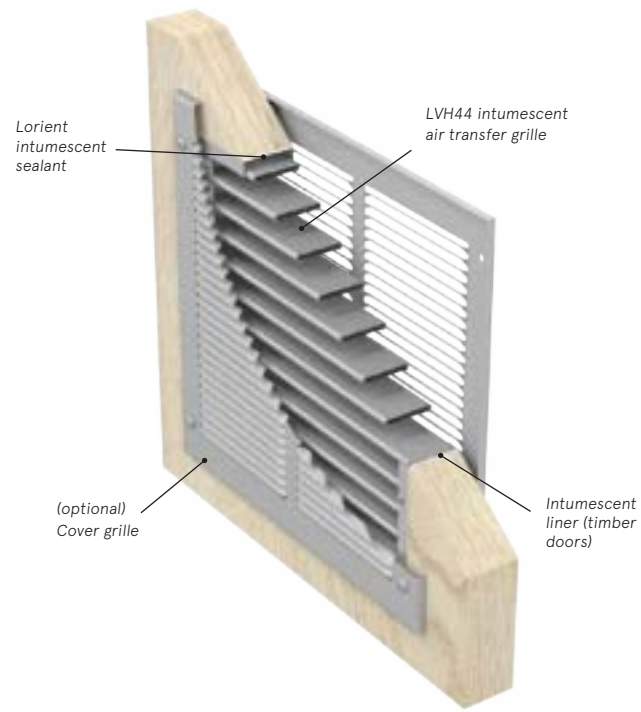
LVV40 & LVC40

30 60



LVH44 & LVHC44

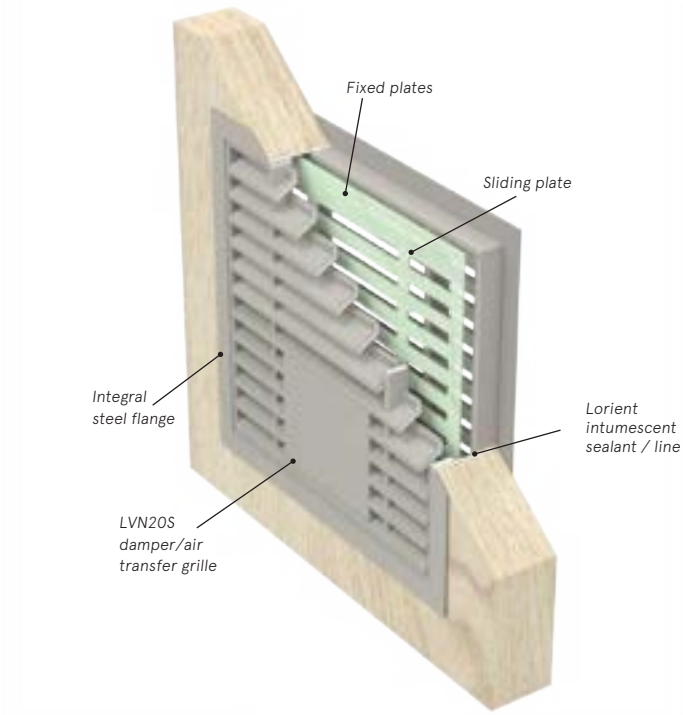
30 60



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ASSA ABLOY

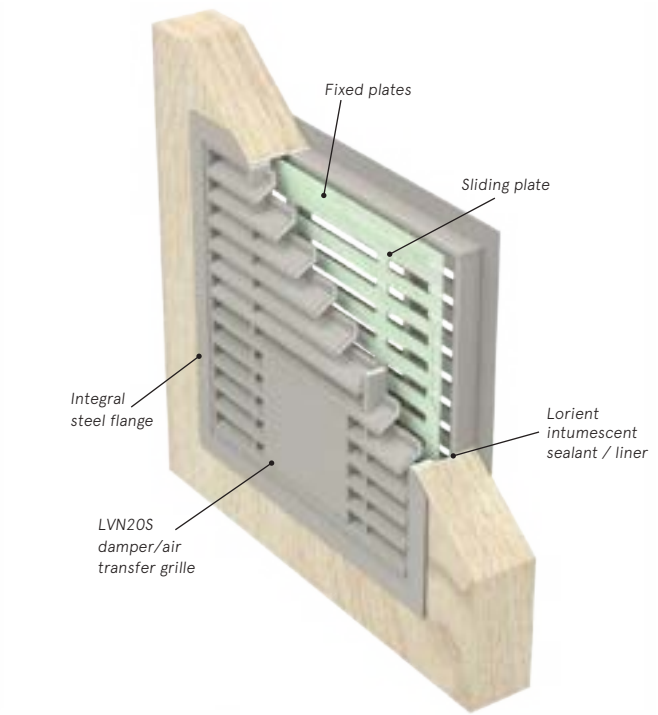
LVN20S – door thickness min. 44mm

30 60



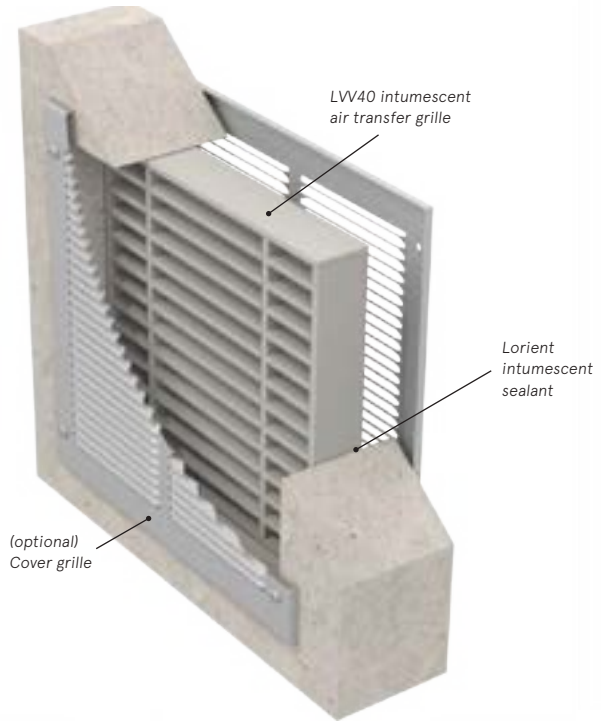
LVN25S – door thickness min. 54mm

30 60



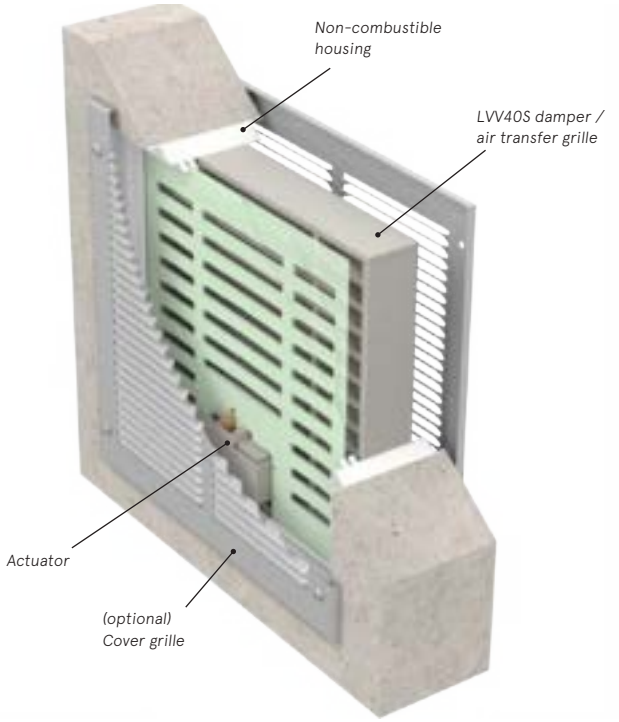
LVV40 & LVC40

60



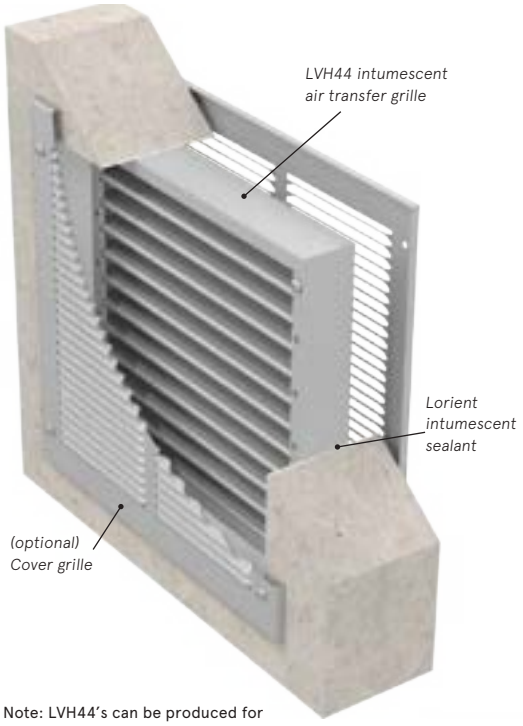
LVV40S – wall thickness min. 90mm

60



LVH44 & LVHC44

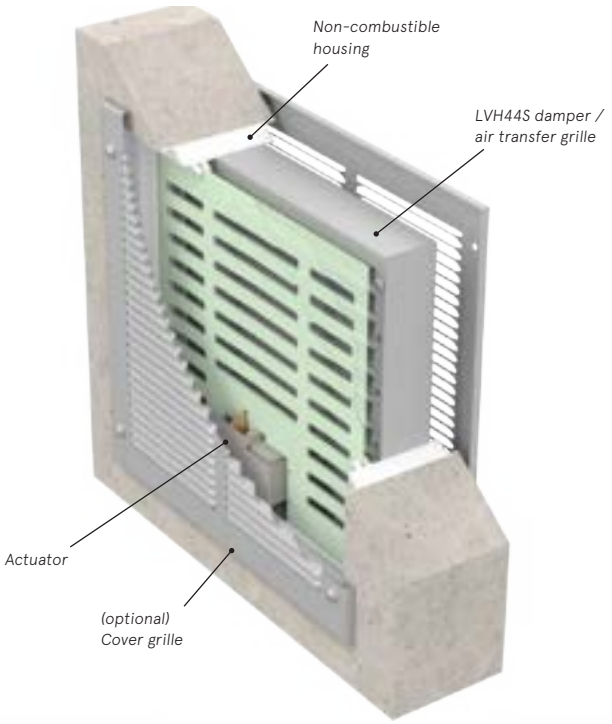
120



Note: LVH44's can be produced for apertures 1800mm x 600mm ie: 1.08m², for 120 minutes. Please refer to Lorient's Technical Department.

LVH44S – wall thickness min. 95mm

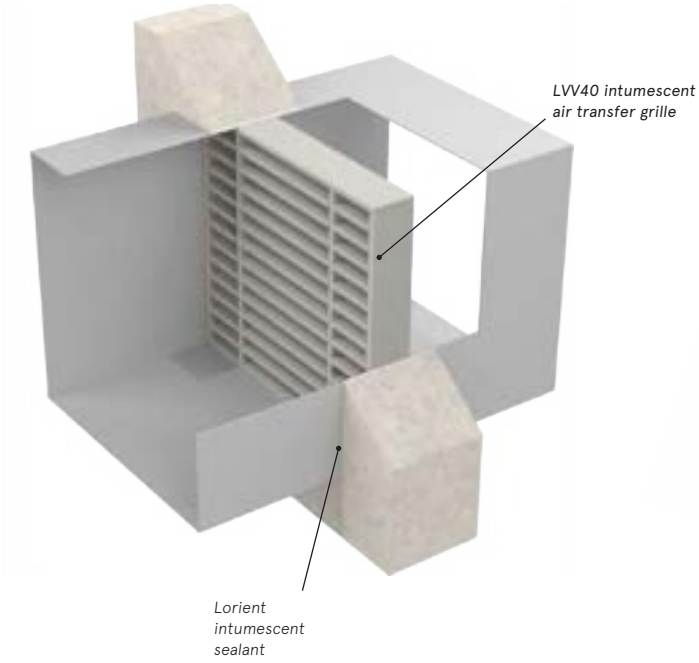
60 120



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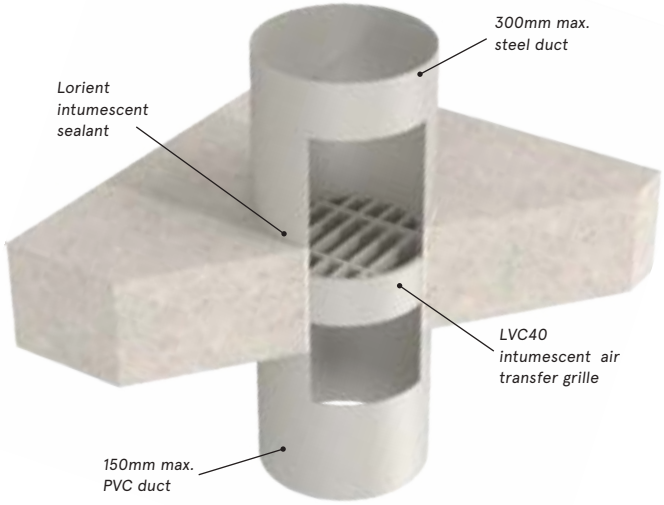
LVV40

60



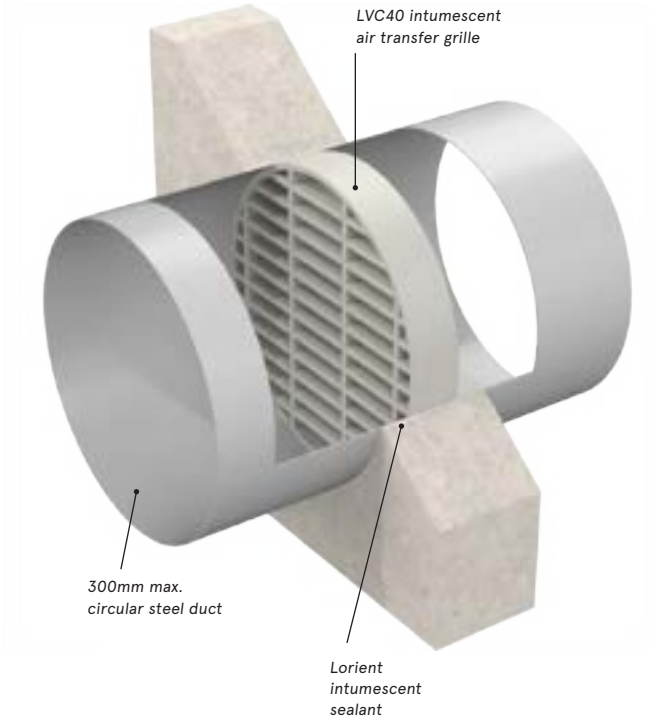
LVC40

60



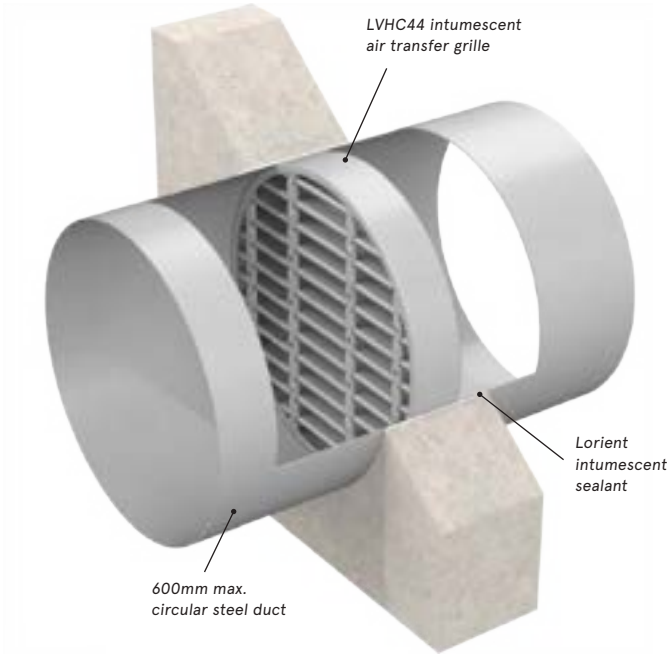
LVC40

60



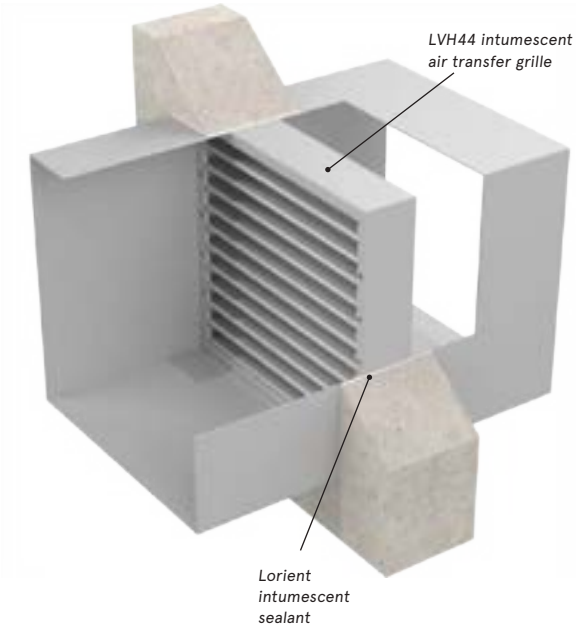
LVHC44

120



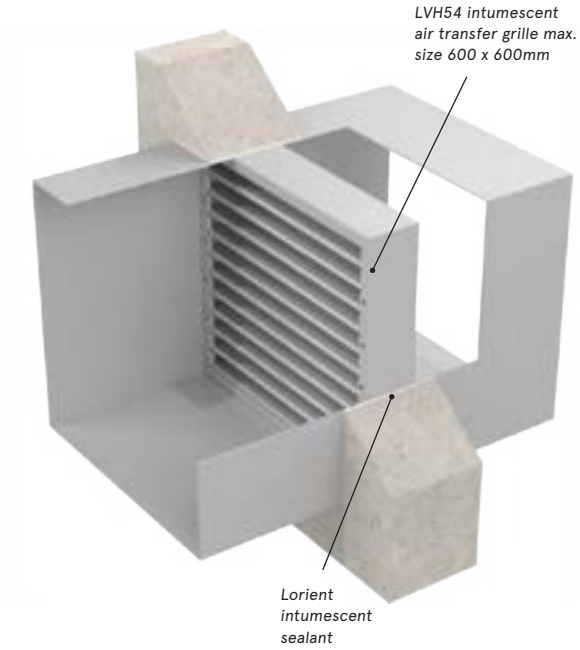
LVH44

120

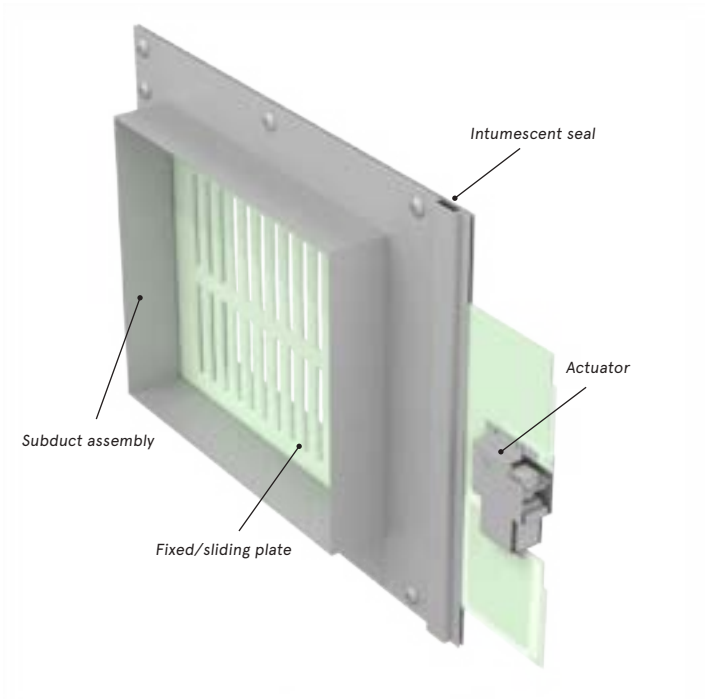


LVH54

240

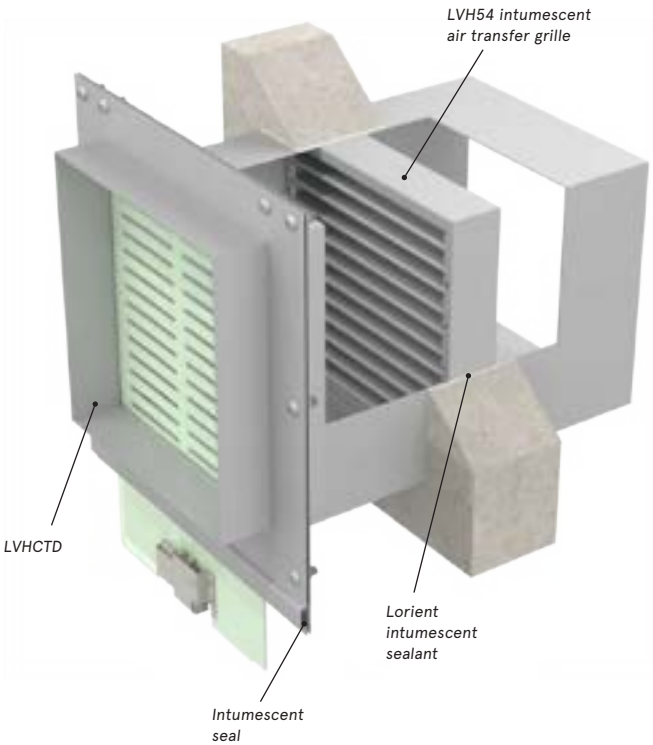


LVHCTD



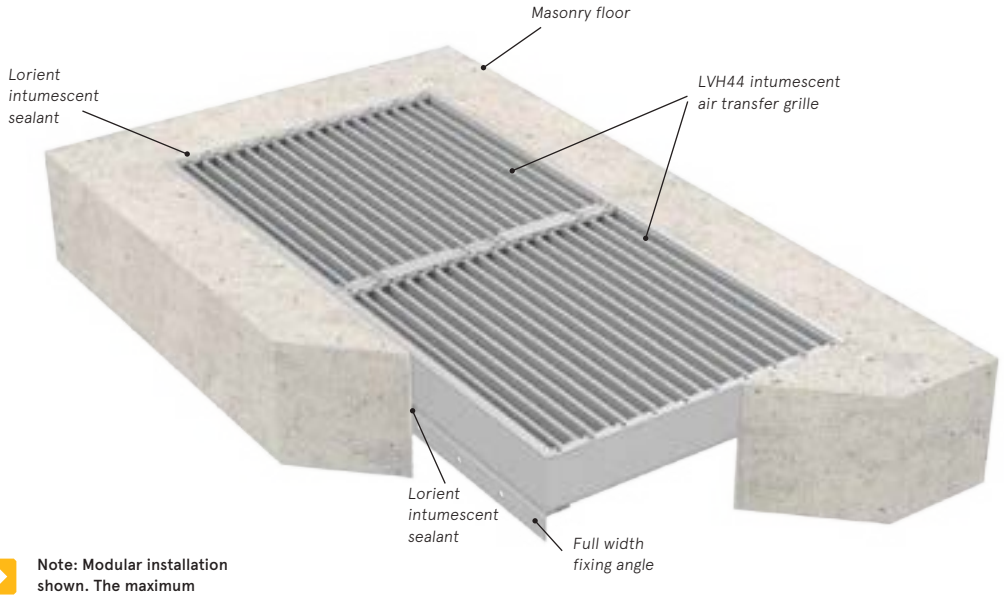
LVH54 + LVHCTD

240



LVH44 & LVHC44 – floor thickness min. 50mm

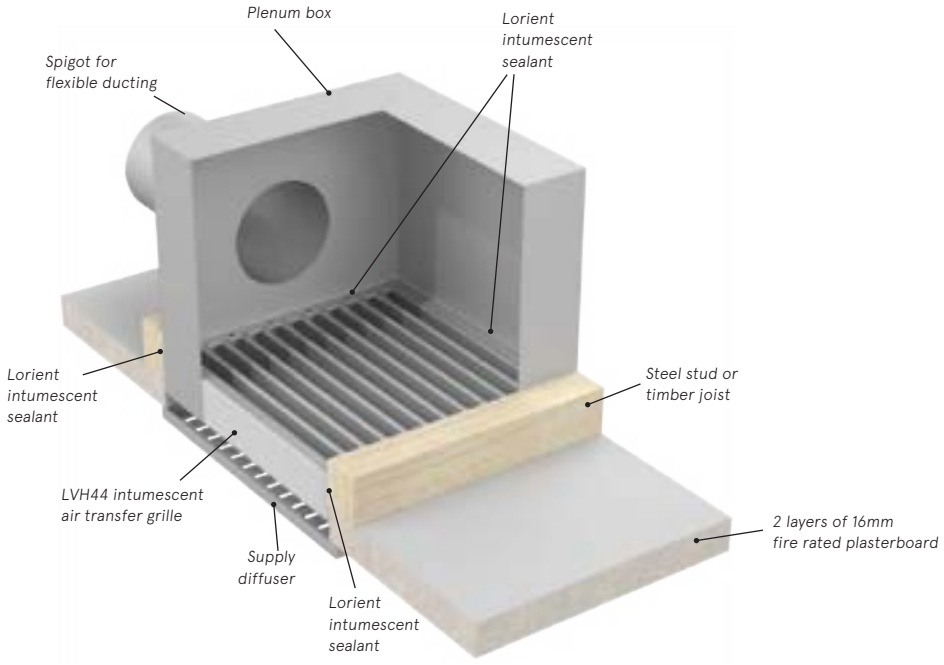
120



Note: Modular installation shown. The maximum size for this method of installation is 1200mm x 600mm. Please consult Lorient for larger sizes

LVH44 & LVHC44 – ceiling thickness min. 50mm

120



***Note:** The maximum size for this installation is 600mm x 600mm*

AIR TRANSFER GRILLES: FIRE

Our intumescent air transfer grilles combine air movement with fire protection. Designed to be fitted into doors, walls, ducts, floors + ceilings; they provide a cost effective solution in allowing free air movement and yet maintain the integrity of the floor or ceiling in a fire situation.



LVN20

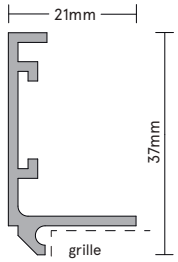
HIGH PERFORMANCE NON-VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

The LVN20 is a non-vision intumescent air transfer grille. Supplied in two pieces, it lends itself to easy installation in a standard 44mm thick fire door. When finished with a colour co-ordinated edge flange, results in an attractive but efficient air transfer feature.

30

Key benefits

- Louvred slats give privacy
- Bi-directional airflow
- No site testing necessary
- No moving parts
- Attractive facade on both sides
- Colour match available
- Easy to keep clean.



LV2221
aluminium flange



LVN20 shown with
aluminium flange

AIR TRANSFER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	198 x 198	298 x 298	398 x 398
FLANGE SIZE	201 x 201	301 x 301	401 x 401
APERTURE SIZE	205 x 205	305 x 305	405 x 405

STANDARD SIZES AVAILABLE (MM)

WIDTH	98	148	198	248	298	348	398	448	498	598
HEIGHT	98	148	198	248	298	348	398	448	498	598

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.

Performance
- Can be used to provide up to 30 minutes resistance to fire.

Size
- Width: 100mm - 600mm (in 50mm increments).
- Height: 100mm - 600mm (in 50mm increments).

Thickness
- 2 pieces x 20mm.

Free area
- Approx 30% free area.

Material
- Rigid PVC slats with an intumescent core.

Application
- Suitable for doors.
- Note: in applications where high levels of humidity or wetness are anticipated, it is recommended that an LVH44 product should be employed.

Orientation
- LVN20 is best suited in the vertical plane.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 800mm from floor level.

Finish
- Silver as standard.

Use with
- Aluminium flange as standard.
- Cover grille can be supplied when not using a flange.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a door of the same nominal dimensions. E.g. a 198mm x 198mm nominal size air transfer grille will suit a 200mm x 200mm aperture, if fitted with aluminium flange, a 205 x 205mm aperture will be required.
- Screwed and bedded in Lorient intumescent sealant.

Certification

(CF564)

LVN25

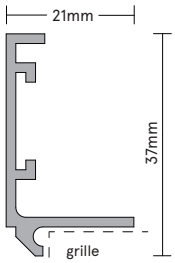
HIGH PERFORMANCE NON-VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

The LVN25 is a non-vision intumescent air transfer grille supplied in two halves, to accommodate doorsets with a minimum door thicknesses of 50mm. When finished with a colour co-ordinated edge flange, it results in an attractive but efficient air transfer feature.

60

Key benefits

- Louvred slats give privacy
- Bi-directional airflow
- No site testing necessary
- No moving parts
- Attractive facade on both sides
- Colour match available
- Easy to keep clean.



LV2221
aluminium flange



LVN25 shown with
aluminium flange

AIR TRANSFER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	198 x 198	298 x 298	398 x 398
FLANGE SIZE	201 x 201	301 x 301	401 x 401
APERTURE SIZE	205 x 205	305 x 305	405 x 405

STANDARD SIZES AVAILABLE (MM)

WIDTH	98	148	198	248	298	348	398	448	498	598
HEIGHT	98	148	198	248	298	348	398	448	498	598

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.

Performance
- Can be used to provide up to 60 minutes resistance to fire.
- FD30: minimum door thickness of 50mm.
- FD60: minimum door thickness of 54mm.

Size
- Width: 100mm - 600mm (in 50mm increments).
- Height: 100mm - 600mm (in 50mm increments).

Thickness
- 2 pieces x 25mm.

Free area
- Approx 30% free area.

Material
- Rigid PVC slats with an intumescent core.

Application
- Suitable for doors of minimum 50mm thickness.
- Note: in applications where high levels of humidity or wetness are anticipated, it is recommended that an LVH44 product should be employed.

Orientation
- LVN25 is best suited in the vertical plane.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 800mm from floor level.

Finish
- Silver as standard.

Use with
- Aluminium flange as standard.
- Cover grille can be supplied when not using a flange.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a door of the same nominal dimensions. E.g. a 198mm x 198mm nominal size air transfer grille will suit a 200mm x 200mm aperture, if fitted with aluminium flange, a 205 x 205mm aperture will be required.
- Screwed and bedded in Lorient intumescent sealant.

Certification

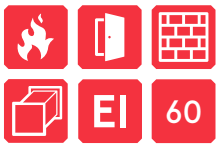
(CF564)

LORIENT
ASSA ABLOY

LVV40

HIGH PERFORMANCE VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

A high performance, standard vision intumescent air transfer grille for doors, walls and ducts. To be used where air movement/flow via fan is stopped in the event of a fire. Provides excellent airflow characteristics, which result in low sound power level and efficient operation in normal use.



Key benefits

- Fits directly into ducts, doors or wall apertures
- No moving parts
- Excellent fire integrity + insulation performance
- EI rating in conjunction with cover grilles
- Not prone to clogging
- No access panels required
- Robust construction
- No maintenance.



LVV40

STANDARD SIZES AVAILABLE (MM)

WIDTH	98	148	198	248	298	348	398	448	498	598
HEIGHT	98	148	198	248	298	348	398	448	498	598

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Fire: BS EN 1634-1:2014.
- Fire: BS EN 1364-5:2017.
- Fire: NEN 6069:2005+A1:2016.

Performance
- Can be used to provide up to 60 minutes resistance to fire.
- EI rating of 120 minutes when used in conjunction with a cover grille. Please speak to our Technical Department for details.

Size
- Width: 100mm - 600mm (in 25mm increments).
- Height: 100mm - 600mm (in 25mm increments).

Thickness
- 40mm.

Finish
- Silver as standard.

Free area
- Approx 60% free area.
- Low sound power level +.

Application
- Suitable for doors, walls and ducts.
- Note: in applications where high levels of humidity or wetness are anticipated, it is recommended that an LVH44 product should be employed.

Orientation
- Suitable for use in vertical applications.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 3000mm from floor level.
- The lower edge of the grille shall be no closer than 400mm to floor level.
- Other positional requirements available, please speak to our Technical Department for further information.

Material
- PVC slats with an intumescent core.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a duct or other aperture of the same nominal dimensions. E.g. a 198mm x 198mm nominal size air transfer grille will suit a 200mm x 200mm aperture.
- Screwed and bedded in Lorient intumescent sealant.
- Note: fitting is determined by application. Please refer to separate fitting instructions.

Use with
- Metal cover grille (optional).

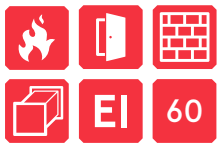
Certification

(CF564)

LVC40

HIGH PERFORMANCE CIRCULAR VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

A high performance, standard vision intumescent air transfer grille for doors, walls and ducts. Ideal for toilet extraction systems in residential premises, hotels and many other buildings. The design allows space savings, ease of installation and avoids the need for operational function checks.



Key benefits

- No need for "round to square to round" adapters
- Fits directly into ducts, doors or wall apertures
- Excellent fire integrity + insulation performance
- Not prone to clogging
- No access panels required
- No moving parts
- Robust construction
- No maintenance.



LVC40

STANDARD DIAMETER SIZES AVAILABLE (MM)

DIAMETER	148	198	248	298	348	398	448	598

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Fire: BS EN 1634-1:2014.
- Fire: BS EN 1634-5:2017.
- Fire: NEN 6069:2005+A1:2016.

Performance
- Can be used to provide up to 60 minutes resistance to fire.
- EI rating of 120 minutes when used in conjunction with a cover grille. Please speak to our Technical Department for details.

Size
- Up to 600mm diameter (nominal to suit standard PVC pipes or steel ducts)

Thickness
- 40mm.

Free area
- Low sound power level +.

Application
- Suitable for doors, walls and ducts.
- Please note: in applications where high levels of humidity or wetness are anticipated, it is recommended that an LVHC44 product should be employed.

Orientation
- LVC40 products can be installed either vertically or up to 300mm diameter horizontally.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 3000mm from floor level.
- The lower edge of the grille shall be no closer than 400mm to floor level.

Material
- PVC slats with an intumescent core.

Finish
- Silver as standard.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a duct or other aperture of the same nominal dimensions. E.g. a 198mm diameter nominal size damper will suit a 200mm diameter aperture.
- Screwed and bedded in Lorient intumescent sealant.

Use with
- Metal cover grille (optional).

Certification

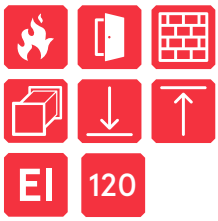
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LVH44

HIGH PERFORMANCE VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

A high performance, standard vision intumescent air transfer grille for walls, doors, floors and ventilation ducts. The LVH44 can be assembled in multi-modules to protect large apertures. Can provide up to 120 minutes fire resistance.



Key benefits

- Exhibits excellent airflow characteristics + gives silent efficient operation with normal to high air velocities
- Fits directly into ducts, doors or wall apertures
- Good free area up to 65%
- Tolerant of high humidity
- Withstands harsh environments
- Not prone to clogging
- No moving parts
- Robust construction.



LVH44

STANDARD SIZES AVAILABLE (MM)

WIDTH	98	148	198	248	298	348	398	448	498	548	598
HEIGHT	98	148	198	248	298	348	398	448	498	548	598

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Fire: BS EN 1634-1:2014.
- Fire: BS EN 1364-5:2017.
- Fire: NEN 6069:2005+A1:2016.

Performance
- Can be used to provide up to 120 minutes resistance to fire to BS 476.
- EI rating of 120 minutes when used in conjunction with a cover grille.

Size
- Width: 100mm - 600mm (in 25mm increments).
- Height: 100mm - 600mm (in 25mm increments).
- Please note: Larger apertures possible. Refer to Lorient's Technical department or view our Air Transfer Grille Installation Manual.

Thickness
- 44mm.

Free area
- Approx 65% free area.

Application
- Suitable for doors, walls and ducts.
- Suitable for external applications.

Orientation
- LVH44 dampers can be installed in any orientation.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 3000mm from floor level.
- The lower edge of the grille shall be no closer than 200mm to floor level.

Material
- Z275 galvanised steel.
- Metal slats with an intumescent core.

Finish
- Silver as standard.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a duct or other aperture of the same nominal dimensions. E.g. a 198mm x 198mm nominal size air transfer grille will suit a 200mm x 200mm aperture.
- Screwed and bedded in Lorient intumescent sealant.

Use with
- Metal cover grille (optional).

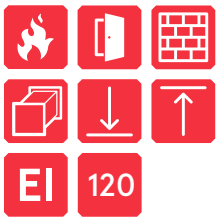
Certification

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LVHC44

HIGH PERFORMANCE CIRCULAR VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

A high performance, standard vision intumescent air transfer grille for walls, doors and ventilation ducts. Can provide 120 minutes fire resistance.



Key benefits

- Exhibits excellent airflow characteristics + gives silent efficient operation with normal to high air velocities
- Fits directly into ducts, doors or wall apertures
- Good free area up to 60%
- Tolerant of high humidity
- Withstands harsh environments
- Not prone to clogging
- No moving parts
- Robust construction
- Available in a multitude of sizes
- No maintenance.



LVHC44

STANDARD DIAMETER SIZES AVAILABLE (MM)

DIAMETER	98	148	198	248	298	348	398	448	498	548	598

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Fire: BS EN 1634-1:2014.
- Fire: BS EN 1364-5:2017.
- Fire: NEN 6069:2005+A1:2016.

Performance
- Can be used to provide up to 120 minutes resistance to fire.
- EI rating of 120 minutes when used in conjunction with a cover grille.

Size
- Up to 600mm diameter (nominal to suit standard PVC pipes or steel ducts).

Thickness
- 44mm.

Free area
- Approx 60% free area.

Application
- Suitable for doors, walls and ducts.
- Suitable for external applications.

Orientation
- LVH44 air transfer grilles can be installed in any orientation.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 3000mm from floor level.
- The lower edge of the grille shall be no closer than 200mm to floor level.

Material
- Z275 galvanised steel.
- Metal slats with an intumescent core.

Finish
- Silver as standard.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a duct or other aperture of the same nominal dimensions. E.g. a 198mm diameter nominal size air transfer grille will suit a 200mm diameter aperture.
- Screwed and bedded in Lorient intumescent sealant.

Use with
- Metal cover grille (optional).

Certification

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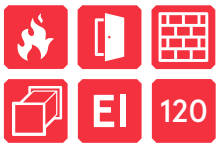
LORIENT
ASSA ABLOY

LVH50

HIGH PERFORMANCE VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

A high performance, standard vision intumescent air transfer grille for walls, doors and ventilation ducts. This all-purpose air transfer grille can be relied upon to function in extremes of climate and environment. It can suffer considerable abuse during and after installation without losing effectiveness in the control of fire and hot gases.

The LVH50 can be assembled in multi-modules in order to protect large apertures.



Key benefits

- Fits directly into ducts, walls or doors
- Tolerant of high humidity
- Good free area up to 65%
- Only 50mm thick
- Withstands harsh environments
- Not prone to clogging
- Available in a multitude of sizes
- Can be installed directly into duct
- No access panels required
- No need for regular function checks.



LVH50

STANDARD SIZES AVAILABLE (MM)

WIDTH	98	148	198	248	298	348	398	448	498	548	598
HEIGHT	98	148	198	248	298	348	398	448	498	548	598

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS EN 1364-5:2017.
- Fire: NEN 6069:2005+A1:2016.

Performance
- Can be used to provide up to 120 minutes resistance to fire to BS 476.
- EI rating of 120 minutes when used in conjunction with a cover grille.

Size
- Width: 100mm - 600mm (in 25mm increments).
- Height: 100mm - 600mm (in 25mm increments).
- Please note: Larger apertures possible. Refer to Lorient's Technical department.

Thickness
- 50mm.

Free area
- Approx 65% free area.

Application
- Suitable for doors, walls and ducts.
- Suitable for external applications.

Orientation
- LVH50 air transfer grilles can be installed in any orientation.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 3000mm from floor level.
- The lower edge of the grille shall be no closer than 200mm to floor level.

Material
- Z275 galvanised steel.
- Metal slats with an intumescent core.

Finish
- Silver as standard.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a duct or other aperture of the same nominal dimensions. e.g. a 198mm x 198mm nominal size air transfer grille will suit a 200mm x 200mm aperture.
- Screwed and bedded in Lorient intumescent sealant.

Use with
- Metal cover grille (optional).

LVH54

HIGH PERFORMANCE VISION STYLE INTUMESCENT AIR TRANSFER GRILLE

A high performance, standard vision intumescent air transfer grille for ventilation ducts. Can provide up to 240 minutes fire resistance.



Key benefits

- Forms a complete seal in 2 minutes
- Can withstand 300Pa differential across the air transfer grille
- Low leakage rates
- Tolerant of high humidity
- Withstands harsh environments
- Not prone to clogging
- No moving parts
- Robust construction
- Available in a multitude of sizes
- No maintenance.



LVH54

STANDARD SIZES AVAILABLE (MM)

WIDTH	200	250	300	350	400	450	500	550	600
HEIGHT	200	250	300	350	400	450	500	550	600

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS ISO 10294-5:2005.

Performance
- Can be used to provide up to 240 minutes resistance to fire.

Size
- Width: 100mm - 600mm (in 50mm increments).
- Height: 100mm - 600mm (in 50mm increments).

Thickness
- 54mm.

Free area
- Approx 70% free area.

Application
- Suitable for ducts.

Orientation
- Suitable for vertical applications.

Material
- Z275 galvanised steel.
- Metal slats with an intumescent core.

Finish
- Silver as standard.

Fixing
- Each air transfer grille is manufactured 2mm less than a nominal aperture size to provide clearance when installed in a duct or other aperture of the same nominal dimensions. E.g. a 198mm x 198mm nominal size air transfer grille will suit a 200mm x 200mm aperture.
- Screwed and bedded in Lorient intumescent sealant.

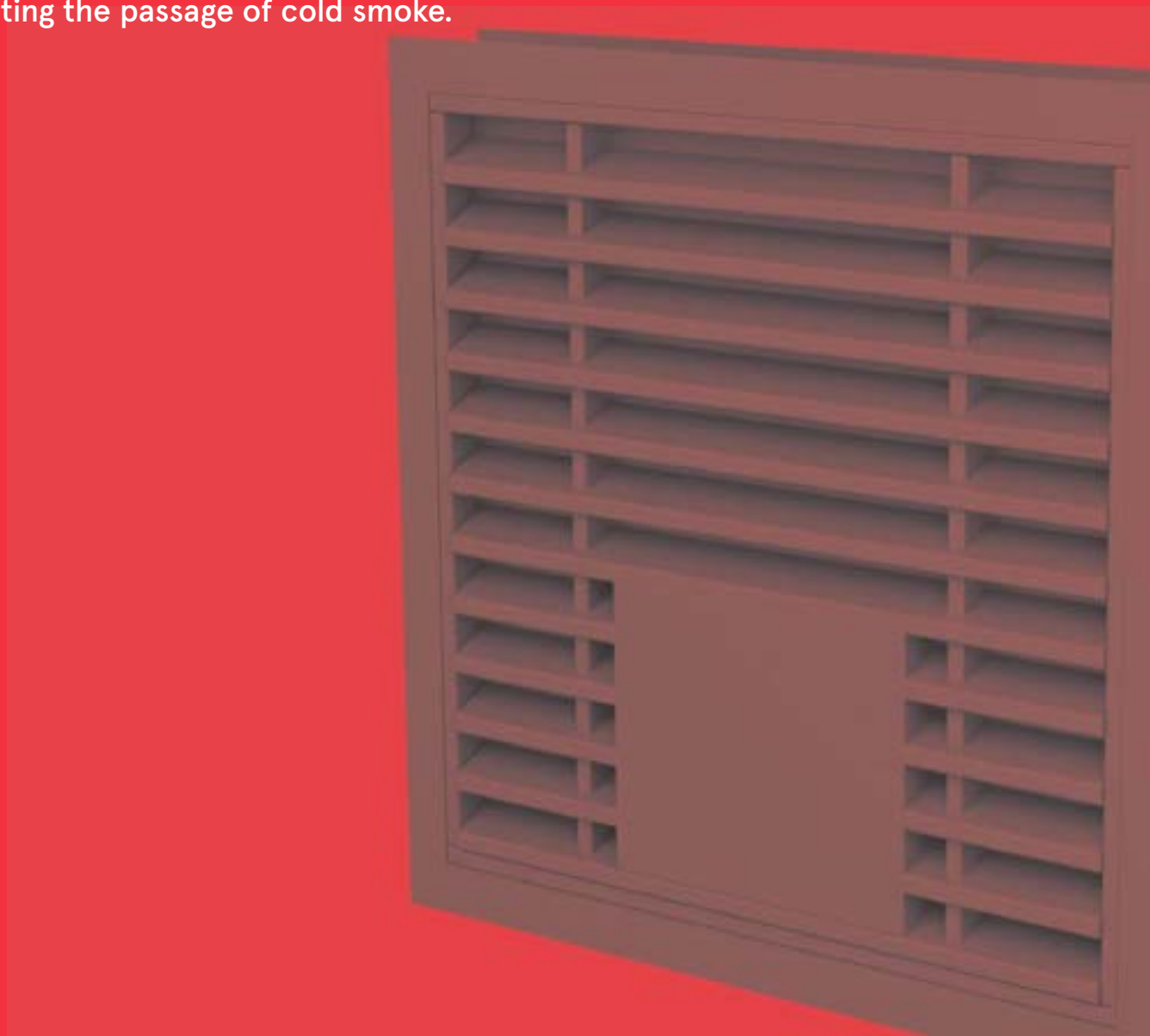
Use with
- Metal cover grille (optional).

Specification

LORIENT
ASSA ABLOY

AIR TRANSFER GRILLES: FIRE + SMOKE

Our range of combined intumescent fire + smoke air transfer grilles can be used in all applications where cold smoke containment is required. These are connected, via a control panel, to a standard fire alarm system. In the event of an alarm condition, or power failure, the smoke shutters close, preventing the passage of cold smoke.



LVN20S

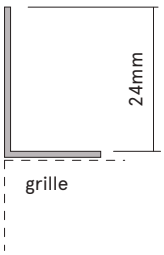
HIGH PERFORMANCE NON-VISION FIRE + SMOKE AIR TRANSFER GRILLE

The LVN20S provides a unique solution to the problem of containing both fire and smoke in emergency conditions yet offering good air transfer through doors in everyday use. Using the same intumescent louvred slat configuration as the LVN20, but incorporating an electro mechanically operated smoke shutter mechanism. Can provide up to 60 minutes fire and smoke resistance.

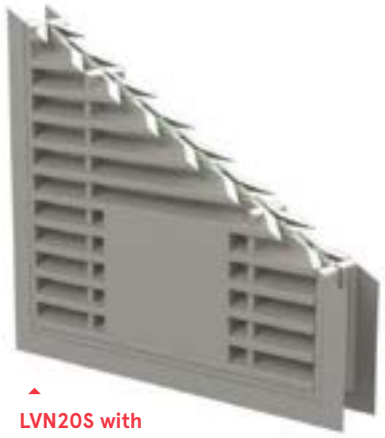
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Key benefits

- Contains cold smoke + toxic gases remote from the source of fire
- Simple installation
- Auto reset + fail-safe
- Safe low DC voltage
- Status reporting + auto-cycling via Talkback Damper Control Monitor (DCM)
- Optional audio warning facility
- Connects to fire panel +/or BMS
- BMS alarm notification via Alarm Monitoring System (AMS)
- Nominal 5mA current open/closed
- Max 200mA in operation
- Allows bi-directional airflow
- Louvred slats give privacy.



LV2516
steel flange



LVN20S with
integral steel flange

AIR TRANSFER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	198 x 198	298 x 298	398 x 398
FLANGE SIZE	201 x 201	301 x 301	401 x 401
APERTURE SIZE	209 x 209	309 x 309	409 x 409

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Smoke: BS 476-31.1:1983 (shutterplate).

Performance
- Can be used to provide up to 60 minutes resistance to fire + cold smoke.

Size
- Width: 200mm - 400mm (in 50mm increments).
- Height: 200mm - 400mm (in 50mm increments).

Thickness
- 2 pieces x 20mm.

Free area
- Approx 30% free area.

Finish
- Silver as standard.

Orientation
- LVN20S must be used in the vertical plane.

Application
- Suitable for doors.
- Note: in applications where high levels of humidity or wetness are anticipated, please speak to our Technical Department for alternatives.

Positional requirements
- Certifire: The upper edge of the grille shall be no higher than 800mm from floor level.
- Test Report Applus 19/19940-1428: The upper edge of the grille shall be no higher than 1350mm from floor level.

Material
- Rigid PVC slats with an intumescent core.
- Steel flange.
- Electro mechanically operated smoke shutter mechanism.

Fixing
- Requires an aperture 9mm over size. E.g. a 300mm x 300mm needs an aperture 309mm x 309mm to accommodate the flange and liner.
- Screwed into door with an aperture lined with Lorient intumescent liner (B24402).

Use with
- Talkback damper control system.
- Conductor hinges.
- Optional Alarm Monitoring System (AMS) and battery backup.

Certification

(CF564)

LORIENT
ASSA ABLOY

LVN25S

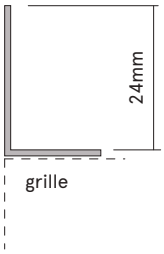
HIGH PERFORMANCE NON-VISION FIRE + SMOKE AIR TRANSFER GRILLE

The LVN25S provides a unique solution to the problem of containing both fire and smoke in emergency conditions yet offering good air transfer through doors in everyday use. Using the same intumescent louvred slat configuration as the LVN25, but incorporating an electro mechanically operated smoke shutter mechanism. Can provide up to 60 minutes fire and smoke resistance.

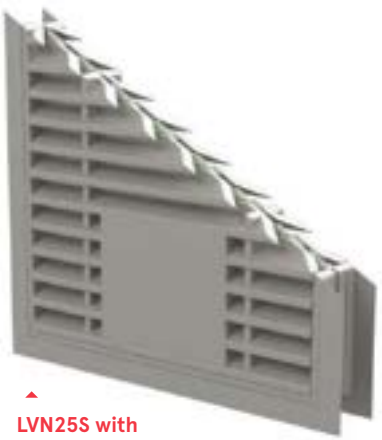


Key benefits

- Contains cold smoke + toxic gases remote from source of fire
- Simple installation
- Auto reset + fail-safe
- Safe low DC voltage
- Status reporting + auto-cycling via Talkback Damper Control Monitor (DCM)
- Optional audio warning facility
- Connects to fire panel +/or BMS
- BMS alarm notification via Alarm Monitoring System (AMS)
- Nominal 5mA current open/closed
- Max 200mA in operation
- Allows bi-directional airflow
- Louvred slats give privacy.



LV2516
steel flange



LVN25S with
integral steel flange

AIR TRANSFER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	198 x 198	298 x 298	398 x 398
FLANGE SIZE	201 x 201	301 x 301	401 x 401
APERTURE SIZE	209 x 209	309 x 309	409 x 409

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Smoke: BS 476-31.1:1983 (shutterplate).

Performance
- Can be used to provide up to 60 minutes resistance to fire + cold smoke.
- FD30: minimum door thickness of 50mm.
- FD60: minimum door thickness of 54mm.
- EI rating of 60 minutes in accordance with BS 476 (Test report: Applus 19/19940-1428).

Size
- Width: 200mm - 400mm (in 50mm increments).
- Height: 200mm - 400mm (in 50mm increments).

Thickness
- 2 pieces x 25mm.

Free area
- Approx 30% free area.

Finish
- Silver as standard.

Application
- Suitable for FD30 & FD60 doors, greater than 50mm.
- Note: in applications where high levels of humidity or wetness are anticipated, please speak to our Technical Department for alternatives.

Orientation
- LVN25S must be used in the vertical plane.

Positional requirements
- Certifire: The upper edge of the grille shall be no higher than 800mm from floor level.
- Test Report Applus 19/19940-1428: The upper edge of the grille shall be no higher than 1350mm from floor level.

Material
- Rigid PVC slats with an intumescent core.
- Steel flange.
- Electro mechanically operated smoke shutter mechanism.

Fixing
- Requires an aperture 9mm over size. e.g. a 300mm x 300mm needs an aperture 309mm x 309mm to accommodate the flange and liner.
- Screwed into door with an aperture lined with Lorient intumescent liner (B24402).

Use with
- Talkback damper control system.
- Conductor hinges.
- Optional Alarm Monitoring System (AMS) and battery backup.

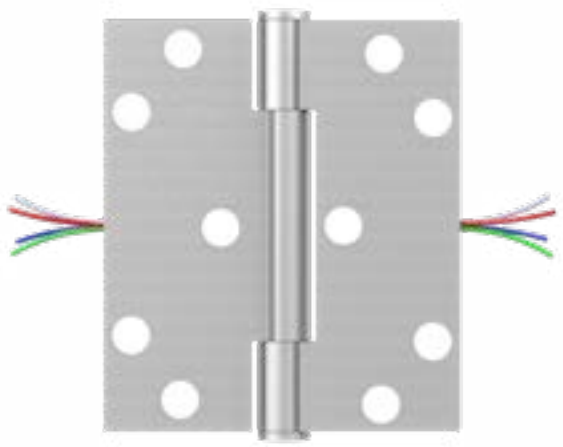
Certification

(CF564)

CONDUCTOR HINGE

Our electrical conductor hinges designed for concealed transfer of power from fire + smoke air transfer grilles into the door leaf. The hinge utilises advanced polymer bushes to provide a totally maintenance free, low friction hinge.

Capable of carrying 24v at 2 amps.



Conductor hinge



Cable way with intumescent sleeve
(supplied as part of the hinge kit)

SYSTEM SPECIFICATIONS

Test evidence
- Building hardware: BS EN 1935:2002.
- CE Certificate no.: 2812-CPR-AC0063.
- Durability: Tested to 200,000 cycles.

Size
- Height: 100mm.
- Width: 88mm.
- Thickness: 3mm.

Cable detail
- Standard length: 600mm frame side and 1000mm leaf side.
- 4-core cable supplied as standard (3-core + spare). Other options available for special order.

Hinge kit
- 2 x butt hinges & 1 x conductor hinge (square corners).
- 6 x Mono-Ammonium Phosphate hinge pads 100 x 35 x 1mm with s/a backing.
- 1 x 1m of door cable/intumescent sleeve.

Material
- Brushed stainless steel 304 as standard. 316 stainless steel available to special order.

Application
- Suitable for timber fire doors.
- Minimum door thickness 44mm.
- 30 and 60 minute timber and mineral-based assemblies.
- Maximum leaf weight: 120kg.

Use with
- Talkback damper control system.
- LVN20S / LVN25S.

Location
- Load bearing hinge may be placed at lower hinge position or mid hinge position.

Intumescent sleeve for cable way
- Internal diameter: 5mm
- Overall diameter: 9mm
- Routing diameter: 10mm
- Length: 1000mm.

Fixing
- To be fitted with 1mm MAP intumescent hinge pads.
- Supplied with manufacturers wood screws (M5 x 32mm).

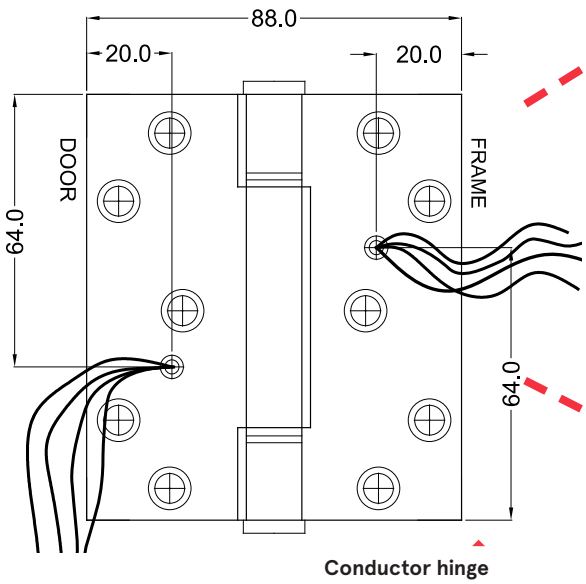
Classification



LORIENT
ASSA ABLOY

CONDUCTOR HINGE

Load bearing hinge may be placed at lower hinge position or mid hinge position for power transfer to air transfer grilles and/or powered lock sets.





LVV40S

HIGH PERFORMANCE WALL MOUNTED FIRE + SMOKE AIR TRANSFER GRILLE

This system provides a unique solution to the problem of containing both fire and smoke in emergency conditions yet allowing good air flow in everyday use. Using the same intumescent configuration as the LVV40, but incorporating an electro mechanically operated smoke shutter mechanism. Can provide up to 60 minutes fire and smoke resistance.

60

Key benefits

- Contains cold smoke + toxic gases remote from source of fire
- Simple installation
- Auto reset + fail-safe
- Safe low DC voltage
- Status reporting + auto-cycling via Talkback Damper Control Monitor (DCM)
- Optional audio warning facility
- Connects to fire panel +/or BMS
- BMS alarm notification via Alarm Monitoring System (AMS)
- Nominal 5mA current open/closed
- Max 200mA in operation
- Allows bi-direction airflow.



LVV40S

STANDARD SIZES AVAILABLE (MM)

WIDTH	150	200	250	300	350	400	450	500	550	600
HEIGHT	150	200	250	300	350	400	450	500	550	600

STANDARD DEPTHS AVAILABLE (MM)

DEPTH	100	150	200	225	250	300

Other non-standard sizes may be available - please ask for details. **Note:** The LVV40S is housed within a 20mm non-combustible enclosure. Aperture sizes should take account of the 40mm excess in height/width. Such that for a 200x200mm LVV40S, then the overall size with enclosure, will be 240x240mm.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Fire: BS EN 1364-5:2017.
- Smoke: BS 476-31.1:1983 (shutterplate).

Performance
- Can be used to provide up to 60 minutes resistance to fire + cold smoke.

Size
- Width: 150mm - 600mm (in 25mm increments).
- Height: 150mm - 600mm (in 25mm increments).

Minimum wall depth
- Minimum wall thickness 90mm.

Free area
- Approx 30% - 37% free area.
- Size dependent.

Application
- Suitable for rigid + flexible walls.

Orientation
- LVV40S must be in the vertical plane.

Positional requirements (Certifire)
- The upper edge of the grille shall be no higher than 3000mm from floor level.
- The lower edge of the grille shall be no closer than 400mm to floor level.

Material
- PVC slats with an intumescent core.
- Electro mechanically operated smoke shutter mechanism.

Finish
- Silver as standard.

Fixing
- Each fire + smoke air transfer grille is manufactured to size. When ordering please ensure the aperture can accommodate the non-combustible housing and allow up to a 5mm gap around the perimeter.
- Screwed and bedded in Lorient intumescent sealant.

Use with
- Talkback damper control system.
- Optional Alarm Monitoring System (AMS) and battery backup.
- Optional cover grille.

Certification

(CF564)

LORIENT
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LVH44S

HIGH PERFORMANCE FIRE + SMOKE AIR TRANSFER GRILLE

These products provide a unique solution to the problem of containing both fire and smoke in emergency conditions yet offering good air transfer through apertures in elements of building construction. Using the same intumescent configuration as the LVH44, but incorporating an electro mechanically operated smoke shutter mechanism. Can provide up to 120 minutes fire and smoke resistance.



Key benefits

- Contains cold smoke + toxic gases remote from source of fire
- Simple installation
- Auto reset + fail-safe
- Safe low DC voltage
- Status reporting + auto-cycling via Talkback Damper Control Monitor (DCM)
- Optional audio warning facility
- Connects to fire panel +/or BMS
- BMS alarm notification via Alarm Monitoring System (AMS)
- Nominal 5mA current open/closed
- Max 200mA in operation
- Allows bi-direction airflow.



LVH44S

STANDARD SIZES AVAILABLE (MM)

WIDTH	200	250	300	350	400	450	500	550	600
HEIGHT	200	250	300	350	400	450	500	550	600

Other non-standard sizes may be available - please ask for details. **Note:** The LVH44S is housed within a 20mm non-combustible enclosure. Aperture sizes should take account of the 40mm excess in height/width. Such that for a 200x200mm LVH44S, then the overall size with enclosure, will be 240x240mm.

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Fire: BS EN 1634-1:2014.
- Fire: BS EN 1364-5:2017.
- Smoke: BS 476-31.1:1983 (shutterplate).

Performance
- Can be used to provide up to 120 minutes resistance to fire + cold smoke.
- EI rating of 120 minutes when used in conjunction with a cover grille.

Size
- Width: 200mm - 600mm (in 50mm increments).
- Height: 150mm - 600mm (in 50mm increments).

Minimum wall depth
- Minimum wall thickness 95mm.

Free area
- Approx 30% free area.

Application
- Suitable for rigid + flexible walls.

Positional requirements
- The upper edge of the grille shall be no higher than 3000mm from floor level.
- The lower edge of the grille shall be no closer than 400mm to floor level.

Finish
- Silver as standard.

Material
- Z275 galvanised steel.
- Metal slats with an intumescent core.
- Electro mechanically operated smoke shutter mechanism.

Orientation
- LVH44S is best suited in the vertical plane.

Fixing
- Each fire + smoke air transfer grille is manufactured to size. When ordering please ensure the aperture can accommodate the non-combustible housing and allow up to a 5mm gap around the perimeter.
- Screwed and bedded in Lorient intumescent sealant.

Use with
- Talkback damper control system.
- Optional Alarm Monitoring System (AMS) and battery backup.
- Optional cover grille.

Specification

LVHCTD + LVH44/LVH54

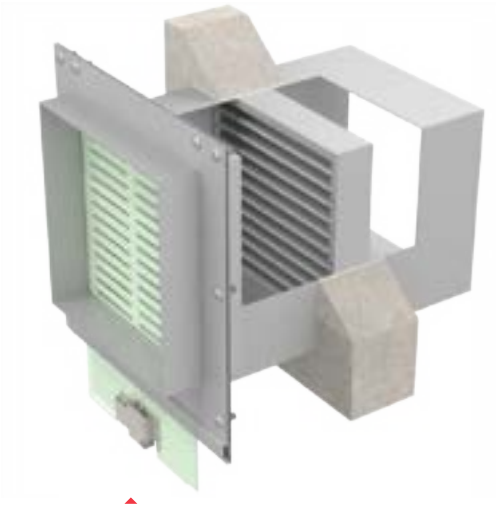
CASSETTE TYPE DAMPER

Lorient's Cassette Type Damper allows simple and rapid duct installation in small spaces, along with excellent access during commissioning and servicing. When used with an LVH44 or LVH54 air transfer grille can provide up to 240 minutes fire and smoke resistance.

240

Key benefits

- Sliding cold smoke shutter module allows easy access for servicing
- Easy installation of air transfer grille into fire compartment boundary
- Shutter plates tolerate a pressure differential of 300Pa
- Low cold smoke leakage rates
- May be used purely as a cold smoke damper by excluding the air transfer grille
- Can incorporate either LVH44 or LVH54 air transfer grilles
- Controlled by 'Talkback' system providing status information + auto-cycling.



LVHCTD
Shown with LVH54

STANDARD SIZES AVAILABLE (MM)

WIDTH	200	200	250	250	300	300	300	300	350	400	400	400	450	450	450	600	600	600
HEIGHT	150	200	200	250	150	200	250	300	250	150	250	300	250	300	450	150	250	300

Other non-standard sizes may be available - please ask for details.

SYSTEM SPECIFICATIONS

Performance

- Inclusion of LVH44 air transfer grille will provide up to 120 minutes fire resistance.
- Inclusion of LVH54 air transfer grille will provide up to 240 minutes fire resistance and 30 minutes insulation.

Size

- Width: 200mm - 600mm (in 50mm increments).
- Height: 150mm - 300mm (in 50mm increments).

Thickness

- Depth: Subject to application.

Free area

- Approx 40% free area.

Application

- Suitable for ducts.

Material

- Manufactured using welded galvanised steel sheet with the smoke shutter plate location formed by galvanised steel spacer strips.
- Intumescent fire seal strip prevents hot gas leakage.
- Shutter plate assembly is produced from 3 sheets of fire resistant glass reinforced plastic of low toxicity.
- Actuator motor and circuit board are protected within a removable galvanised steel enclosure.

Use with

- Talkback damper control system.
- LVH44 or LVH54 air transfer grilles (optional).

Specification

LORIENT
ASSA ABLOY

TALKBACK DAMPER CONTROL SYSTEM

All ducts and airways in doors and walls can be protected against fire and hot smoke using Lorient intumescent air transfer grilles. However, these grilles will not prevent the passage of cold smoke which can be equally dangerous.

Damper / Shutter Assembly

To address this problem Lorient has developed a smoke damper assembly for use in conjunction with Lorient intumescent air transfer grilles.* The assembly comprises three slotted plates - two fixed plates sandwiching a central moving plate. The central plate is operated by a fail-safe motorised actuator. A movement of just 10mm changes the relative positions of the slots from "through flow" to "fully closed".

Talkback Damper Control System

Most large buildings require a significant number of FD30S and FD60S fire doors (30 or 60 minute fire doors which also provide protection against cold smoke) within any one fire zone. These doors may be a considerable distance apart, or even on different floors.

The Talkback system has been designed to control up to sixteen air transfer grille assemblies from one centralised status monitoring unit. A unique 2-way communication system operates between the Damper Control and Monitor Unit (DCM) and the air transfer grille actuators. This facilitates a rapid assessment of the status of the installation and immediately identifies and locates any defective air transfer grilles.

Talkback is designed to give peace of mind to a building's occupants in that it:

- is fail-safe – the smoke shutters will automatically close in the event of an alarm, power failure or damage to the wiring
- resets automatically – when the alarm is cancelled or power restored
- is self-testing – every 24 hours the dampers are automatically closed and opened to check they are working and to dislodge any dust and debris between the moving parts
- continuously monitors the status of each damper and displays this on the DCM
- is easy and quick to install – simple loop wiring is used and the damper units are supplied ready assembled and tested
- uses a safe 12V DC supply to open and close the dampers
- has been successfully tested in accordance with the requirements of the Electro Magnetic Compatibility and Low Voltage Directive and therefore bears the CE mark (copies of the relevant test reports are available on request).

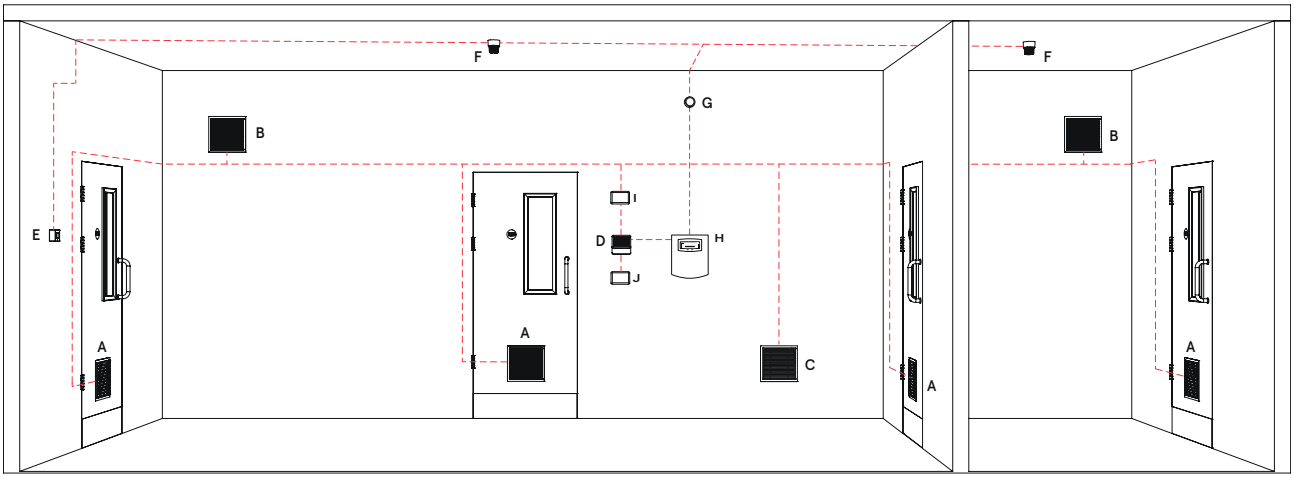


Talkback DCM

Damper & actuator

***Note:** 'S' suffix added to product code. Shutter assembly cannot be added to standard air transfer grilles retrospectively.*

TYPICAL INSTALLATION OF THE LORIENT TALKBACK SYSTEM



A: Door mounted fire + smoke air transfer grilles
B: End of duct fire + smoke air transfer grilles
C: Wall mounted fire + smoke air transfer grilles
D: Power + monitor unit
E: Fire point
F: Smoke sensors
G: Fire alarm
H: Fire alarm panel

TALKBACK DAMPER CONTROL SYSTEM

The talkback damper control system offers a number of operating features as standard, including:

FEATURE	DETAIL
FAIL SAFE	Designed to close automatically in the event of a fire alarm being activated, a power failure or wiring damage.
AUTO RESET	Will reset automatically to the open position when the fire alarm is cancelled or power restored.
AUTO CYCLING	Once in every twenty-four hours each air transfer grille/shutter is closed and re-opened to prevent a build up of dust or debris between moving parts.
RING WIRING	Up to 16 air transfer grilles/shutters can be connected via a 3-core cable that can be arranged in a ring. The Damper Control Monitor (DCM) powers the dampers/shutters using only safe low DC voltages.
CONTINUOUS MONITORING	"Talkback" air transfer grilles are monitored continuously by the Lorient DCM which identifies the status of each individual air transfer grille/shutter through its unique address.
POSITIVE CLOSING	Energy stored within a capacitor on each air transfer grille/shutter actuator is used to power the electric motor to the closed position in the event of a fire alarm being activated.
SOLID STATE	Solid state microchip technology is employed to provide versatility and reliability.
ASSEMBLED / TESTED	Each air transfer grille/shutter is assembled and fully tested at Lorient, therefore requiring no adjustment to the mechanism on site, facilitating simple installation. It is only necessary to confirm that each damper has been allotted its own address and resetting if required.
COMPATIBILITY	The "Talkback" system is designed to interface with any fire alarm panel and subsequent to the initial installation, additional air transfer grilles/shutters can be incorporated up to a maximum of 16 per DCM.
C E MARKING	Successfully tested in accordance with the requirements of Electro Magnetic Compatibility and Low Voltage Directive, and therefore bears the CE mark. (Conformité Européen).
ADDRESSABLE ACTUATORS	Each actuator address number can be set on site but air transfer grilles must not be allotted a shared number on the same DCM.

OPTIONAL FEATURES:

AUDIO WARNING	An extra optional Audio Monitoring System (AMS) can be connected to the DCM wiring circuit. This device would be incorporated to draw attention to the DCM status display in the event of a fault occurring.
B.M.S MONITORING	The Audio Monitor can be used to communicate with a Building Management System (BMS) or fire panel. A no volt contact (normally open) is provided for within the AMS in order to provide a fault indicator to the BMS.
BATTERY BACK UP	The DCM incorporates a connection for a battery back up option. An appropriate re-chargeable battery and enclosure is available from Lorient if required.

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TALKBACK SPECIFICATION

ATG MODELS: LVN20S, LVH20S, LVH44S, LVV40S, LVHCTD, TALKBACK

TEST STANDARDS	BS 476-31/31.1 BS 476-20/22 BS EN 1364-5 (LVV40S + LVH44S) AS 1530-4 (LVH20S) EN 58001-1:1992 EN 58002-1:1992 IEC 1010-1:1990, Amendment 1:1992 and Amendment 2:1995
DESIGNATION	Smoke control shutter system. Provides fire + smoke resistance in conjunction with intumescent air transfer grille.
APPLICATION	Door, wall + duct: Effective for cold smoke.
SUPPLY VOLTAGE	230 VAC 50/60 Hz
OUTPUT VOLTAGE	12.8 VDC
INPUT TRIGGER FIRE PANEL	24 VDC or No Volt Contact
B.M.S TRIGGER	No Volt Contact
SHUTTER ACTUATOR CURRENT DRAW	5mA per actuator in open position / 200mA on opening
BATTERY BACKUP (OPTIONAL)	Capacity 12 VDC 1.2 Ah
CABLE RUNS	Ring Circuit (Max 1 Circuit): 1.5mm2 3 core cable max 150m 2.5mm2 3 core cable max 250m Radial Circuit (Max 2 Circuits): 1.5mm2 3 core cable max 75m 2.5mm2 3 core cable max 125m
DCM DIMENSIONS	165 w x 155 h x 125 d mm
BATTERY BACKUP DIMENSIONS	160 w x 120 h x 72 d mm
AMS DIMENSIONS	105 w x 105 h x 55 d mm
SMOKE SHUTTER DIMENSIONS	Max size determined by air transfer grille choice and application. Various options covered under third party certification : Certifire CF564
DCM CONNECTIONS	Mains Supply: (+ve / -ve) Alarm Interface 1: 24V Normally On (+ve / -ve) Alarm Interface 2: 0 Volt Normally Closed (+ve / -ve) Supply/Signal 1: 12.8 VDC (+ve / -ve / Sig) Supply/Signal 2: 12.8 VDC (+ve / -ve / Sig) Battery Backup: (+ve / -ve)
SYSTEM MONITORING	Auto cycles each damper every 24hrs DCM displays damper status (Open/Closed/Fault or Not Connected) Communication between DCM & damper every 10s Fail Safe within 10s of signal loss Manual Test override for alarm simulation

TALKBACK APPLICATION:
DOORS + PANELS

Door mounted smoke shutters are installed within an aperture at the centre of the thickness as shown in Fig. 1. These may be protected with pressed steel cover grilles fitted to both faces of the door.

Where fire resistance is required, a pair of louvered intumescent air transfer grilles is fitted within the aperture, one to either face of the shutter as shown in Fig. 2. In both cases wiring for the actuator is usually routed from the door leaf to the frame via a conductor hinge as shown in Fig. 3.

FIG. 1

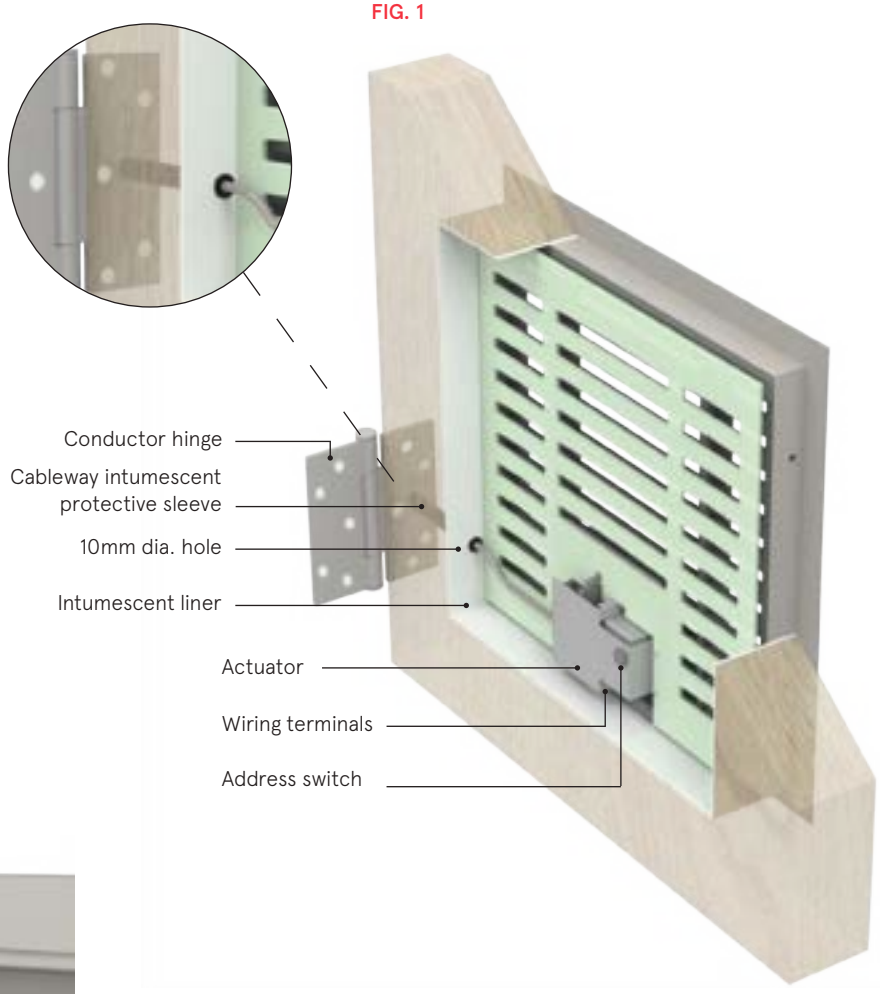


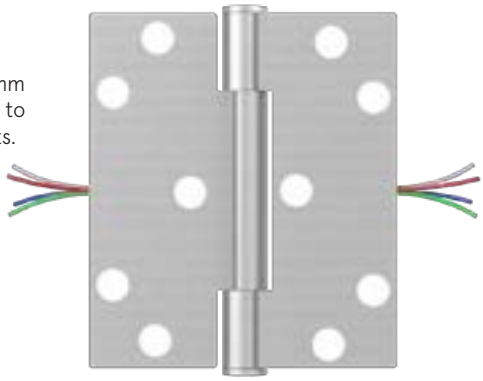
FIG. 2



Fixing screws pass through pre-drilled holes in the intumescent grille uprights and screwed through flange into door leaf.

FIG. 3

These positions to be marked with 6mm dia hole in the leaf to establish drill points.



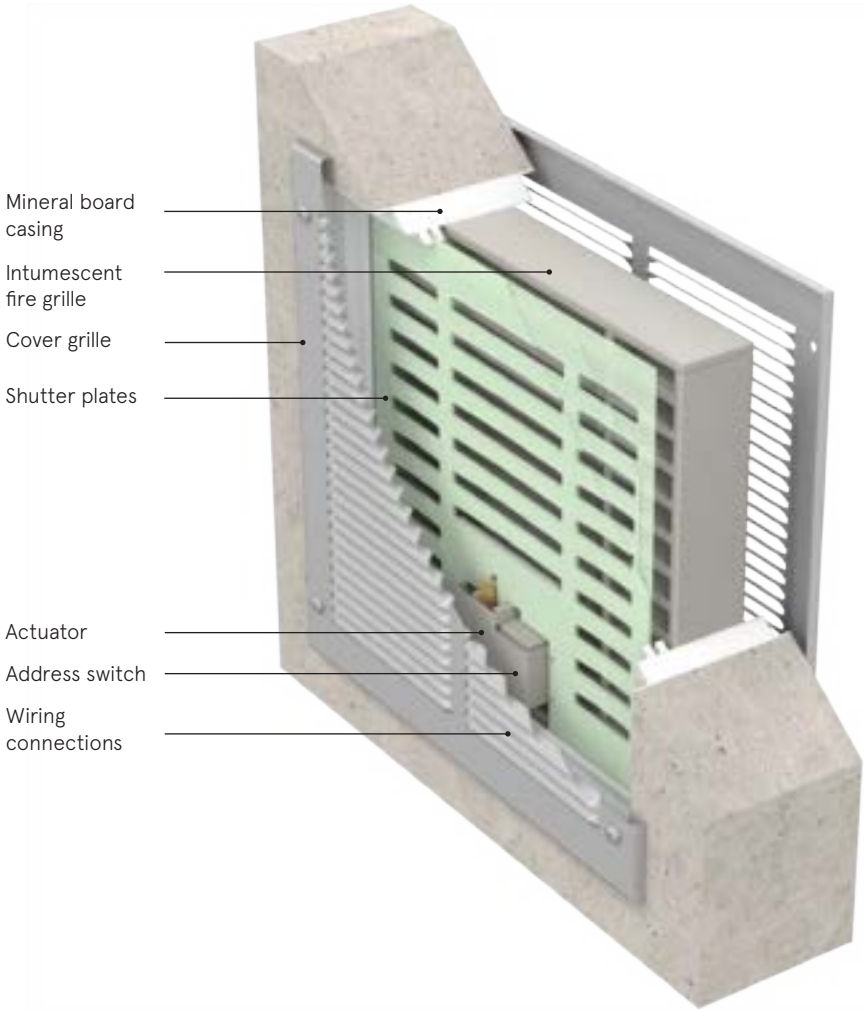
LORIENT
ASSA ABLOY

TALKBACK APPLICATION: WALLS

Wall mounted air transfer grilles with fire + cold smoke containment should be installed with the fire grille as close to the centre of the wall thickness as possible. It is usual to protect the internal components with pressed steel cover grilles fixed to each face as shown in Fig. 4.

The period of fire integrity may be varied by using different types of Lorient fire grilles e.g. 60 minutes, 120 minutes etc. Where only smoke containment is required the fire grille can be omitted.

FIG. 4



TALKBACK APPLICATION: DUCTS

The electrically driven shutter plates provide cold and warm smoke control and where fire resistance is required an intumescent air transfer grille such as a Lorient LVH54 is included in the assembly as shown below in Fig. 5.

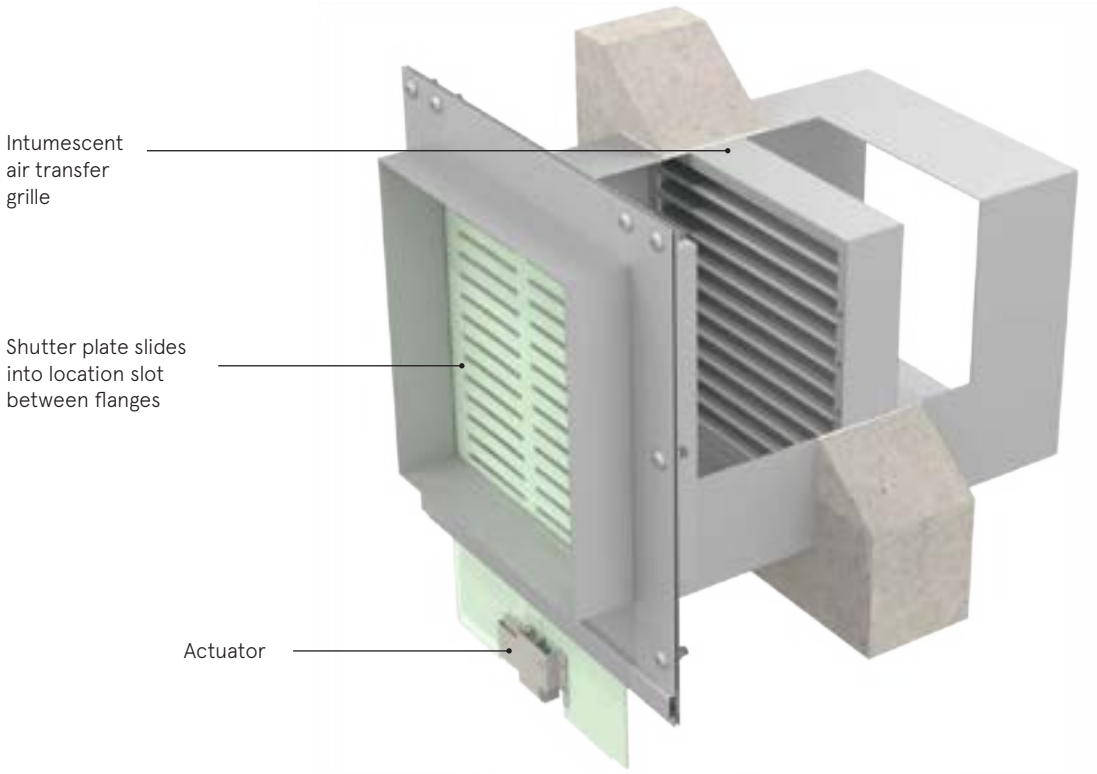
Combined air transfer grille and ventilation duct damper system

In some installations it is desirable to have door mounted air transfer grilles and dampers mounted in ventilation ducts controlled by the same system, particularly where zone control is needed. Lorient air transfer grilles and duct mounted dampers can be controlled by a common "Damper Control & Monitor" (DCM) and if required may be interfaced with the Building Management System. It is also possible to control other manufacturer's mechanical dampers with a DCM using a Lorient interface device.

General description "Talkback"

The "Talkback" system comprises a DCM and up to 16 uniquely addressed smoke control units. The interconnecting 3-core cable can be installed as a "ring" for greater reliability and maximum range, or for a limited number of damper/shutters they may be connected by spurs if necessary. The unique 2 way communication system between the DCM and the smoke control unit actuators facilitates rapid assessment of serviceability of the installation and immediately identifies the location of a defective damper.

FIG. 5



COVER GRILLES + FIXINGS

Lorient cover grilles offer flexibility when considering aesthetics. They are available in a wide range of colours and finishes and are face fixed to walls or doors providing a cost-effective solution.

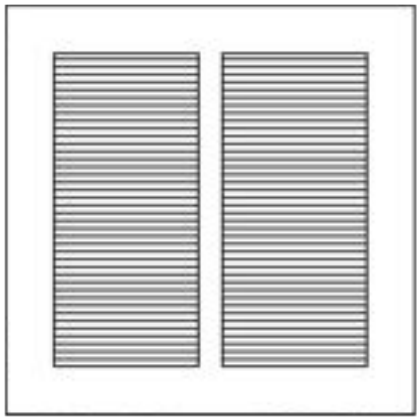


STEEL COVER GRILLES (RVCG)

Lorient steel cover grilles are face fixed to doors, walls or end of ducts, offering an aesthetic appearance to the range of intumescent air transfer grilles. They are supplied with a powder coat finish and fixing screws as standard.



5mm



NOMINAL SIZE

Border size varies with size of cover grilles



Mild steel grille

AIR TRANSFER GRILLE / COVER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	198 x 198	298 x 298	398 x 398
MAX APERTURE SIZE	205 x 205 210 x 210 Doors + 5mm Walls +10mm	305 x 305 310 x 310 Doors + 5mm Walls +10mm	405 x 405 410 x 410 Doors + 5mm Walls +10mmm
COVER GRILLE OVERALL SIZE	251 x 251 (+51mm of actual size)	351 x 351 (+51mm of actual size)	451 x 451 (+51mm of actual size)

F + S AIR TRANSFER GRILLE / COVER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	240 x 240	340 x 340	440 x 440
MAX APERTURE SIZE	245 x 245 250 x 250 Doors + 5mm Walls +10mm	345 x 345 350 x 350 Doors + 5mm Walls +10mm	445 x 445 450 x 450 Doors + 5mm Walls +10mm
COVER GRILLE OVERALL SIZE	341 x 341 (+101mm of actual size)	441 x 441 (+101mm of actual size)	541 x 541 (+101mm of actual size)

SYSTEM SPECIFICATIONS

Construction

- Manufactured from 20swg mild steel with pre-set angled vanes at a 30° downward deflection and 8.5mm pitch. Vanes are horizontal and allow bi-directional airflow.

Size

- Cover grilles can be supplied in a wide range of sizes to suit the intumescent air transfer grilles. Sizes from 100 x 100mm up to 600 x 600mm in 50mm increments, in either configuration, offer great flexibility when selecting grille sizes.
- Each cover grille is manufactured to the nominal aperture size + 51mm.

Material

- Pressed steel and aluminium options available.

Free area

- Typical free areas of steel cover grilles are:
- 150 x 150mm: 67%
- 200 x 200mm: 65%
- 300 x 300mm: 69%
- 450 x 450mm: 70%
- 600 x 600mm: 70%
- Note: Will change the free air flow characteristics of the air transfer grille.

Application

- Suitable for walls, doors or end of ducts.
- Weather louvre options available for external applications.
- Note: Not recommended for external wall applications or high levels of moisture. Please refer to weather louvres which can be supplied as alternatives.

Finish

- Standard powder coat finishes are white and silver.
- Other colours to suit customer requirements are available. (Non-standard - charges and lead times apply).

Fixing

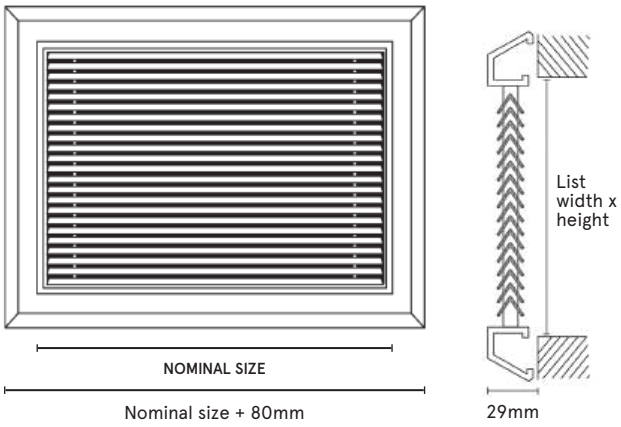
- Screw fixed. Supplied with fixing screws as standard.
- Max aperture size is the ATG actual size +10mm for walls and +5mm for doors.

Use with

- LVV40, LVH44, LVV40S, LVH44 + LVH20S.

ALUMINIUM COVER GRILLES (NV6)

Lorient Vision proof flanged grille suitable for surface mounting onto doors, wall or partitions. Especially useful for narrow doors or fireblock installations. The aluminium 'V' shape chevron blade mounted on a close 8mm pitch renders see through vision impossible.





Aluminium cover grille

AIR TRANSFER GRILLE / COVER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	198 x 198	298 x 298	398 x 398
MAX APERTURE SIZE	205 x 205 210 x 210 Doors + 5mm Walls +10mm	305 x 305 310 x 310 Doors + 5mm Walls +10mm	405 x 405 410 x 410 Doors + 5mm Walls +10mmm
COVER GRILLE OVERALL SIZE	280 x 280 (+80mm of actual size)	380 x 380 (+80mm of actual size)	480 x 480 (+80mm of actual size)

F + S AIR TRANSFER GRILLE / COVER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	240 x 240	340 x 340	440 x 440
MAX APERTURE SIZE	245 x 245 250 x 250 Doors + 5mm Walls +10mm	345 x 345 350 x 350 Doors + 5mm Walls +10mm	445 x 445 450 x 450 Doors + 5mm Walls +10mm
COVER GRILLE OVERALL SIZE	400 x 400 (+160mm of actual size)	500 x 500 (+160mm of actual size)	600 x 600 (+160mm of actual size)

SYSTEM SPECIFICATIONS

Construction
- Manufactured from extruded aluminium. Vanes are horizontal and allow bi-directional airflow.

Size
- Cover Grilles can be supplied in a wide range of sizes to suit the intumescent dampers. Sizes from 100 x 100mm up to 1200 x 1200mm in either configuration offer great flexibility when selecting grille sizes.
- Each cover grille is manufactured to the nominal aperture size + 80mm.

Material
- Aluminium

Free area
- Approx. 45%.
- Note: Will change the free air flow characteristics of the air transfer grille.

Application
- Suitable for walls, doors or partitions.
- Weather louvre options available for external applications.
- Note: Not recommended for external wall applications or high levels of moisture. Please refer to weather louvres which can be supplied as alternatives.

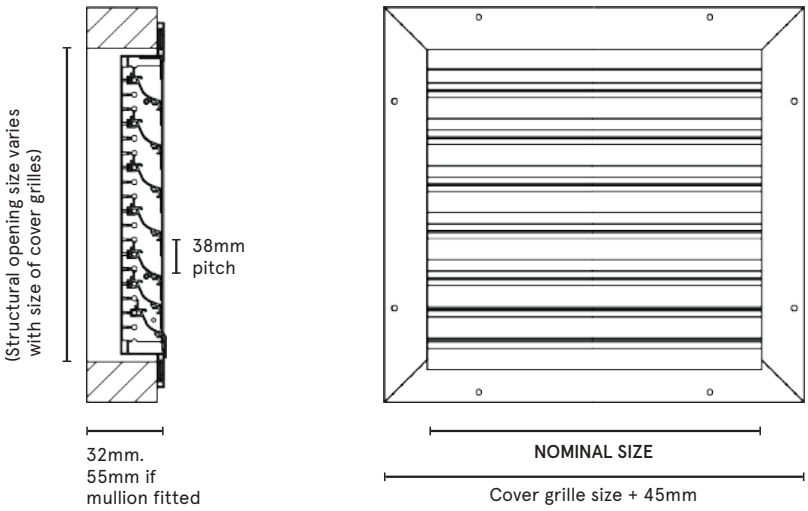
Fixing
- Flange screw fixing using self tapping screws provided.

Finish
- Standard powder coat finishes are white and silver.
- Other colours to suit customer requirements are available. (Non-standard - charges and lead times apply).

Use with
- LVV40, LVH44, LVV40S, LVH44 + LVH20S.

WEATHER LOUVRES (WHF38)

The unique blade profiles utilised on the Lorient high performance louvre have been designed to offer maximum weather protection when spaced at louvre pitches of 38mm. Designed for small and medium scale louvre applications in exposed areas with high wind or rain.



SYSTEM SPECIFICATIONS

Construction
- Manufactured from extruded aluminium. Vanes are pre-set angled at a 30° downward deflection and allow bi-directional airflow.

Size
- Available in a wide range of sizes from 200 x 200mm up to 1000 x 1000mm. Above this size units are supplied in multiple sections.

Blade pitch
- 38mm.

Material
- Aluminium.

Free area
- Approx. 45%.
- Note: Will change the free air flow characteristics of the air transfer grille.

Application
- Suitable for walls.
- For external applications.

Fixing
- Flange screw fixing using pre-drilled countersunk fixing holes and screws. Flanges can be supplied un-drilled upon request.

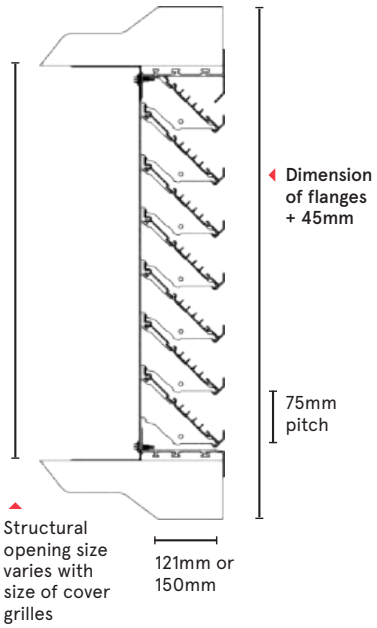
Finish
- White or silver as standard.

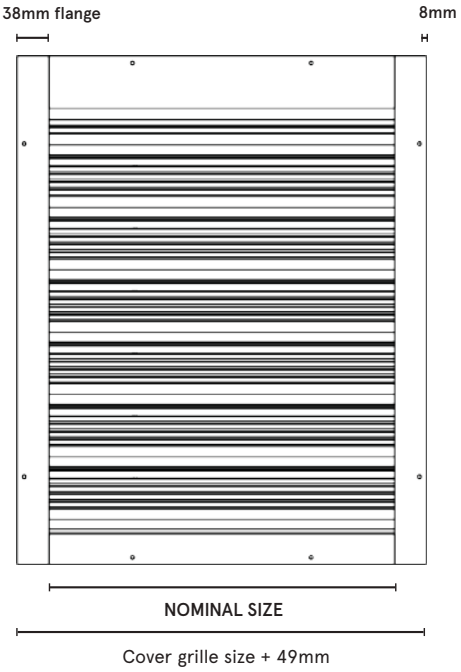
Options
- Birdguard as standard.
- Insect screen (optional).

Use with
- LVH44 + LVH50.

WEATHER LOUVRES (WHF75)

The unique blade profiles utilised on the Lorient high performance louvre have been designed to offer maximum weather protection when spaced at louvre pitches of 75mm. Designed for medium to large scale louvre applications in exposed areas with high wind or rain.





SYSTEM SPECIFICATIONS

Construction
- Manufactured from extruded aluminium. Vanes are pre-set angled at a 30° downward deflection and allow bi-directional airflow.

Size
- Available in a wide range of sizes from 300 x 300mm up to 1500 x 1800mm. Above this size units are supplied in multiple sections.

Blade pitch
- 75mm.

Material
- Aluminium.

Free area
- Approx. 50%.
- Note: Will change the free air flow characteristics of the air transfer grille.

Application
- Suitable for wall or window fitting.
- For external applications.

Fixing
- Flange screw fixing using pre-drilled countersunk fixing holes and screws. Flanges can be supplied un-drilled upon request.

Finish
- White or silver as standard.

Options
- Birdguard as standard.
- Insect screen (optional).

Use with
- LVH44 + LVH50.

CE INTUMESCENT ACOUSTIC ACRYLIC SEALANT

Lorient CE Marked Intumescent Acoustic Acrylic Sealant designed to cover the Construction Products Regulation 2011 (CPR) requirement for linear gap seals and penetration seals.

When exposed to fire, it expands in volume to fill all cavities; providing a necessary hot smoke seal.

It's suitable for sealing gaps between fire resistant walls and floors, between conduits and walls/floors and between fire resistant walls and structural supports. Lorient Intumescent sealant is also recommended for sealing the perimeter of fire and smoke resistant air transfer grilles.



CE Intumescent Acoustic Acrylic Sealant

SYSTEM SPECIFICATIONS

Test evidence

- CE Marked.
- Fire: BS EN 1366-3:2004.
- Fire: BS EN 1366-4:2006.
- Fire: BS EN 13501-2:2016.
- Acoustic: BS EN ISO 10140-2:2010.
- Building Construction: BS EN ISO 8339:2005.
- Building Construction: BS EN ISO 9046:2004 for the types Z_1 + Z_2 use categories specified in ETAG 026-3.
- ETA 21/0975, ETA 21/0976, ETAG 026-2 + ETAG 026-3.

Performance

- Provides effective acoustic containment.
- Can provide up to 240 minutes fire resistance.

Applications

- Specially formulated for adhesion to a wide range of materials including: wood, metal, plastic, concrete, masonry and plasterboard materials.
- A linear gap seal for gaps in wall and floor constructions and as a linear joint seal where wall and floor constructions abut.
- A penetration seal around metallic pipes and electrical cables to reinstate the fire resistance performance of wall and floor constructions.
- Sealing the perimeter around fire and smoke resistant air transfer grilles in doors, walls, ducts floors and ceilings.

Material

- Polymer content increased for improved flexibility - tolerates differential movement in everyday service.

Availability

- Supplied in individual 310ml cartridges or in boxes of 25 units.

Finish

- White as standard. Other colours available to special order

Storage + cleaning

- Store in cool dry conditions between 5°C - 30°C. Do not allow to freeze.
- Water based - tools can be cleaned using soap and water.

INTUMESCENT SEALANT

Lorient Intumescent Sealant is a versatile seal solution to fill gaps and movement joints; and for use where rigid seals are impractical.

When exposed to fire, it expands in volume to fill all cavities; providing a necessary hot smoke seal.

It's suitable for sealing gaps between fire resistant walls and floors, between conduits and walls/floors and between fire resistant walls and structural supports. Lorient Intumescent sealant is also recommended for sealing the perimeter of fire and smoke resistant damper/air transfer grilles.



Intumescent Sealant

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20:1987.

Performance
- Provides effective acoustic containment.
- Can provide up to 240 minutes fire resistance.

Material
- Polymer content increased for improved flexibility - tolerates differential movement in everyday service.

Availability
- Supplied in individual 310ml cartridges or in boxes of 25 units.
- Also available in 600ml foils.

Finish
- White, grey + brown as standard. Other colours available to special order.

Applications
- Specially formulated for adhesion to a wide range of materials including: wood, metal, plastic, concrete, masonry and plasterboard materials.
- A linear gap seal for gaps in wall and floor constructions and as a linear joint seal where wall and floor constructions abut.
- A penetration seal around metallic pipes and electrical cables to reinstate the fire resistance performance of wall and floor constructions.
- Sealing the perimeter around fire and smoke resistant air transfer grilles in doors, walls, ducts floors and ceilings.

Storage + cleaning
- Store in cool dry conditions between 5°C - 30°C. Do not allow to freeze.
- Water based - tools can be cleaned using soap and water.

ACOUSTIC, AIRFLOW + PRESSURE LOSS

Knowing the pressure drop through an air transfer grille is a critical consideration when designing a new system or upgrading an existing layout. It is therefore critical that accurate information is available to the designer.

To ensure confidence when specifying Lorient air transfer grilles we have conducted extensive pressure and acoustic testing programs across our range of intumescent air transfer grilles.

The tests were conducted at the Noise Control Research Laboratories in Ireland to the following International Standards:

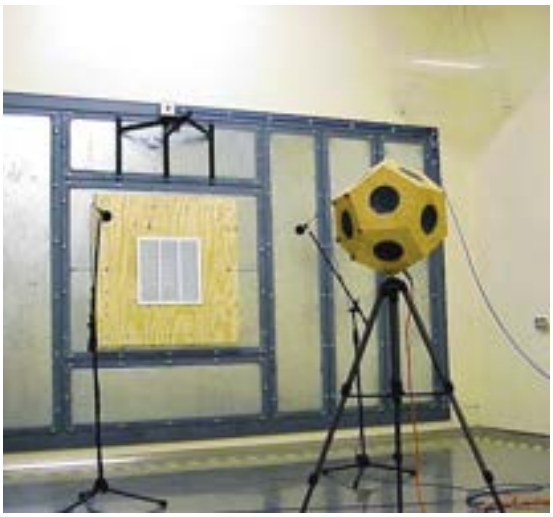
ISO 5135:1999

Acoustics: Determination of sound power levels of noise from air-terminal devices, air terminal units, dampers and valves by measurement in a reverberation room.

ISO 3741:2010

Acoustics: Determination of sound power levels of noise sources using sound pressure. Precision methods for reverberation rooms.

NCRL test report BF2001-SP 22/06/00 outlines the pressure loss and acoustic characteristics of Lorient LVH44 intumescent fire dampers. Test data has been summarised and presented in various nomograms to allow engineers to make accurate informed decisions that allow specification of the correct product at the optimum size.





Images: NCRL Acoustic and pressure loss test

AIR TRANSFER GRILLES: NOMOGRAM

Guide on how to use the Lorient Nomogram Tool

TABLE 1

Obtaining pressure loss and acoustic information for a Lorient intumescent air transfer grille of a known size

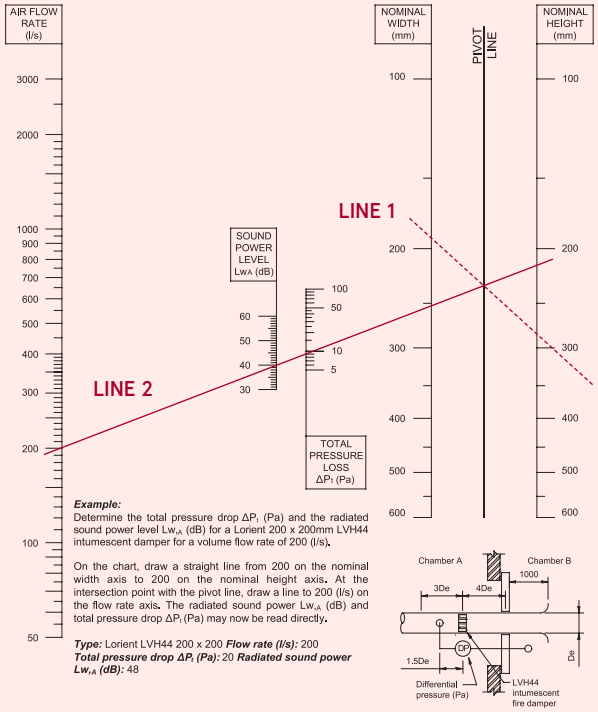
Draw a line to connect the width and height dimensions of the air transfer grille (Line 1).

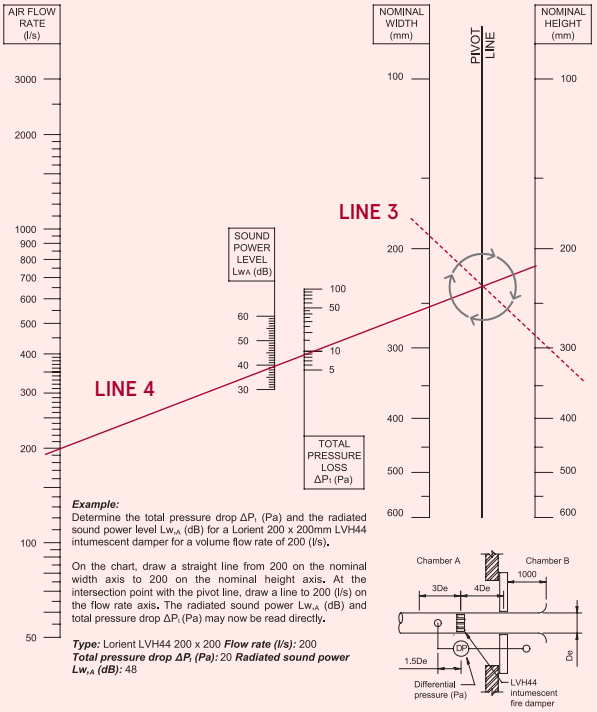
Select the desired system airflow rate value and connect this to the point where Line 1 intersects the Pivot Line (Line 2). Pressure loss and acoustic sound power levels can now be read off the two scales.

TABLE 2

Selecting an appropriate size Lorient intumescent air transfer grille when system pressure drops and airflow rates are known

Draw a line between the known flow rate and pressure loss values and extend this to the pivot line (Line 3). A line can now be drawn through this pivot line intersection (Line 4) and rotated to choose an appropriate air transfer grille height and width.

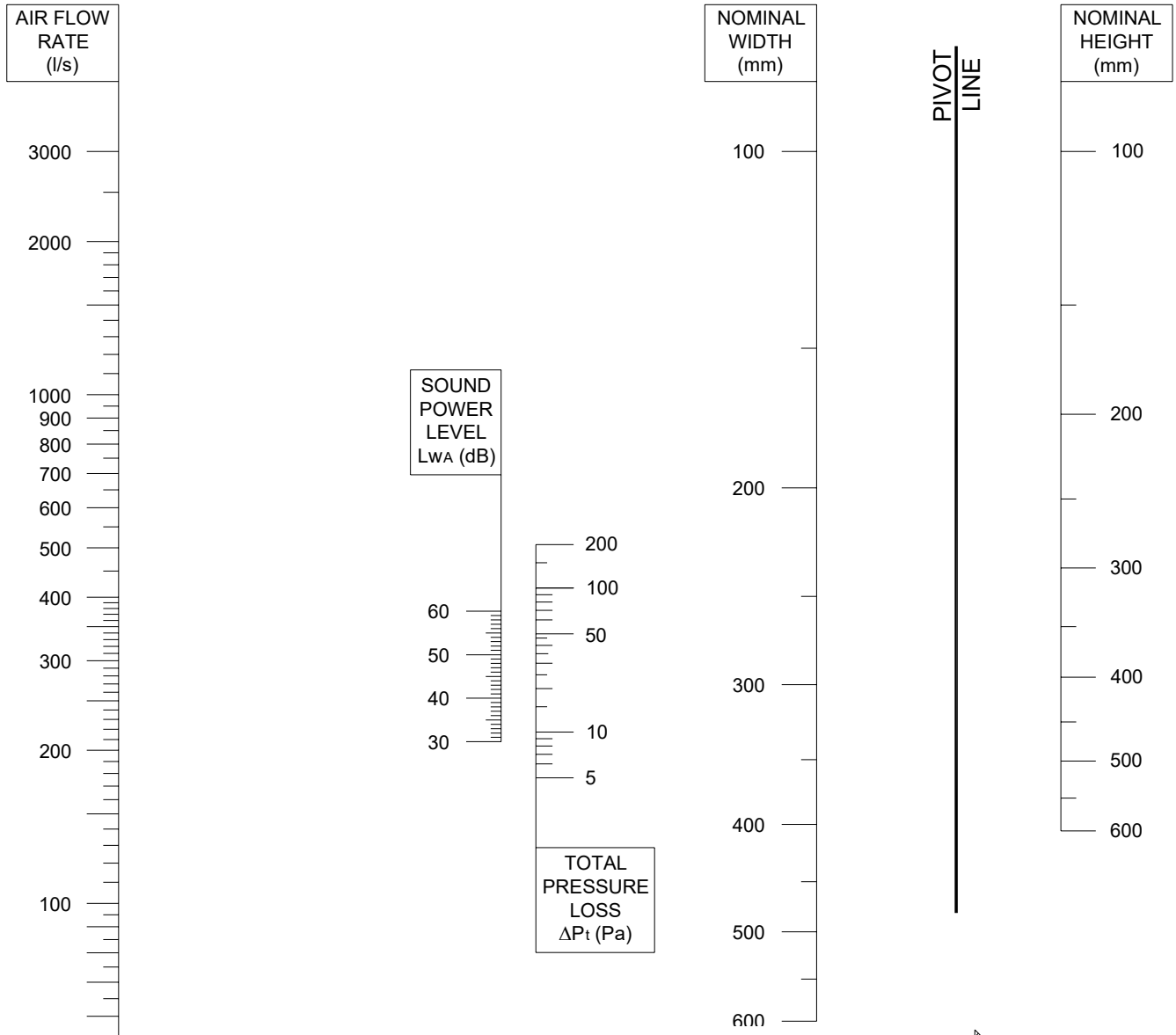




Note: Nomogram information based on Lorient sponsored test: NCRL report BF2001-SP 22/06/00

LVV40 NOMOGRAM FOR WALL/DOOR MOUNTED APPLICATIONS

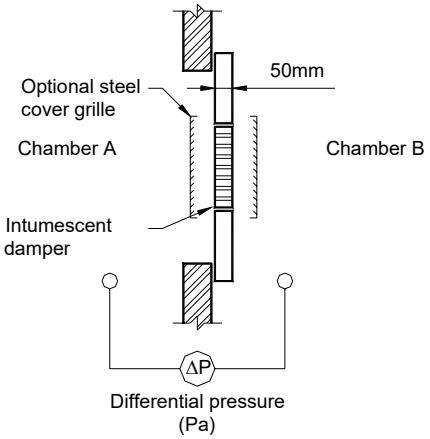
Performance Criteria: The acoustic + aerodynamic performance is based on a wall/door mounted application with a Lorient Polyproducts LVV40 intumescent air transfer grille fitted with cover grilles.



Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw,_A$ (dB) for a Lorient 200 x 200 LVV40 intumescent damper for a volume flow rate of 150 (l/s).

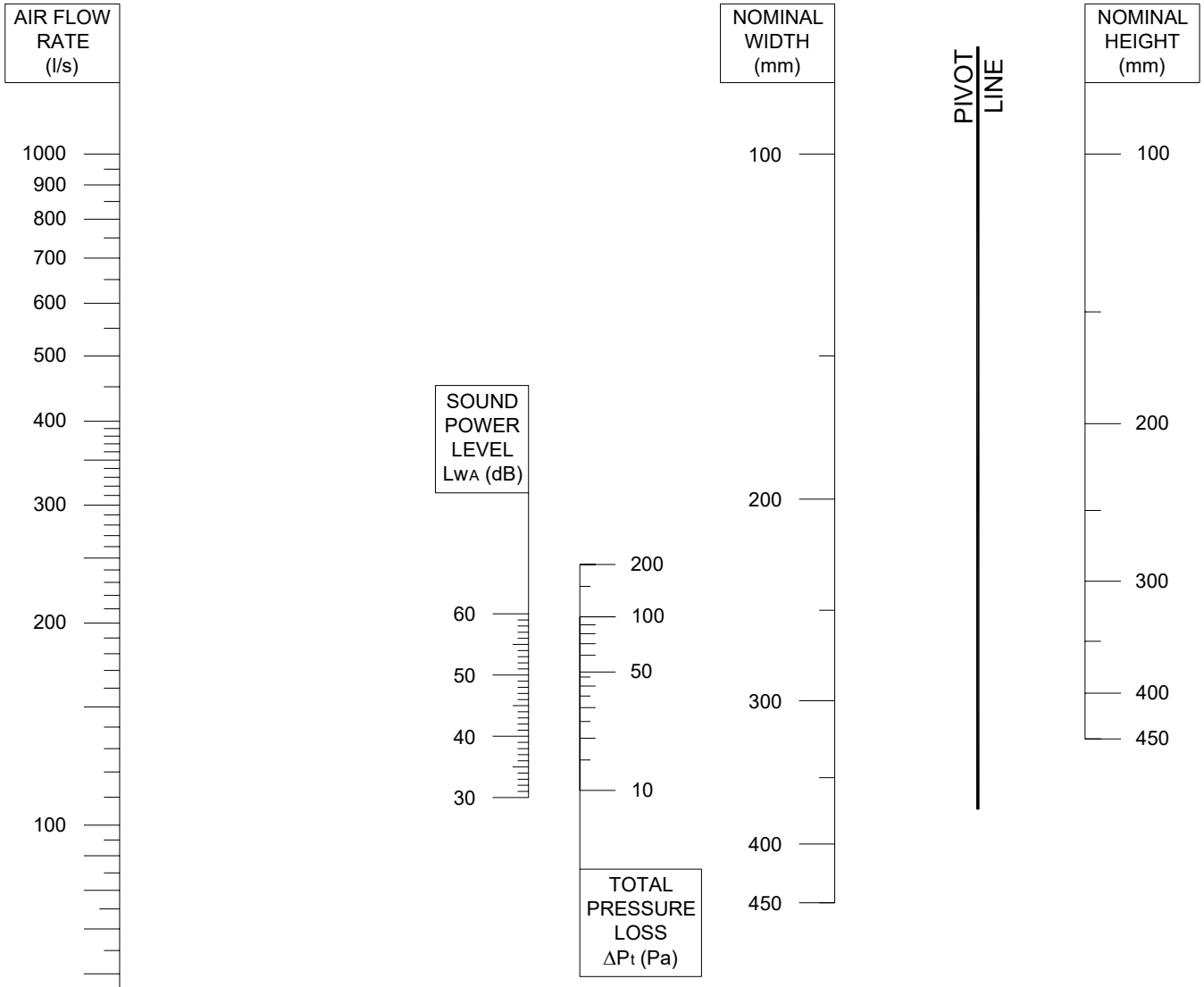
On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 150 (l/s) on the flow rate axis. The radiated sound power $Lw,_A$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVV40 200 x 200
Flow rate (l/s): 150
Total pressure drop ΔP_t (Pa): 52
Radiated sound power $Lw,_A$ (dB): 52



LVN20 NOMOGRAM FOR WALL/DOOR MOUNTED APPLICATIONS

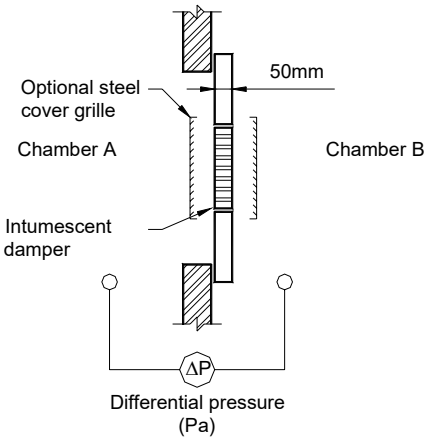
Performance Criteria: The acoustic + aerodynamic performance is based on a wall/door mounted application with a Lorient Polyproducts LVN20 intumescent air transfer grille fitted with no cover grilles.



Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 200 x 200 LVN20 intumescent damper for a volume flow rate of 50 (l/s).

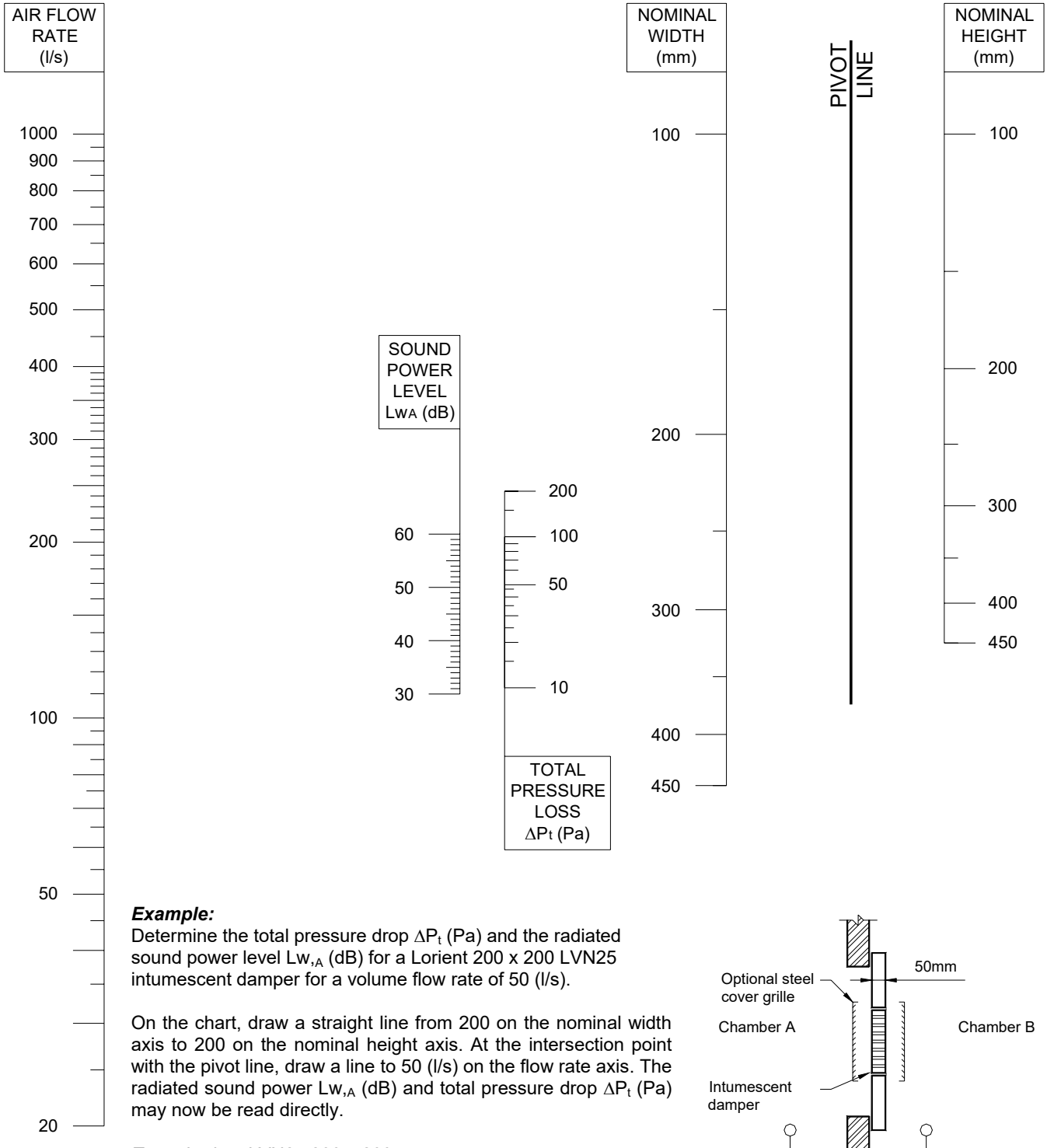
On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 50 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVN20 200 x 200
Flow rate (l/s): 50
Total pressure drop ΔP_t (Pa): 15
Radiated sound power $Lw_{,A}$ (dB): 37



LVN25 NOMOGRAM FOR DOOR MOUNTED APPLICATIONS

Performance Criteria: The acoustic + aerodynamic performance is based on a door mounted application with a Lorient LVN25 intumescent air transfer grille fitted with no cover grilles.



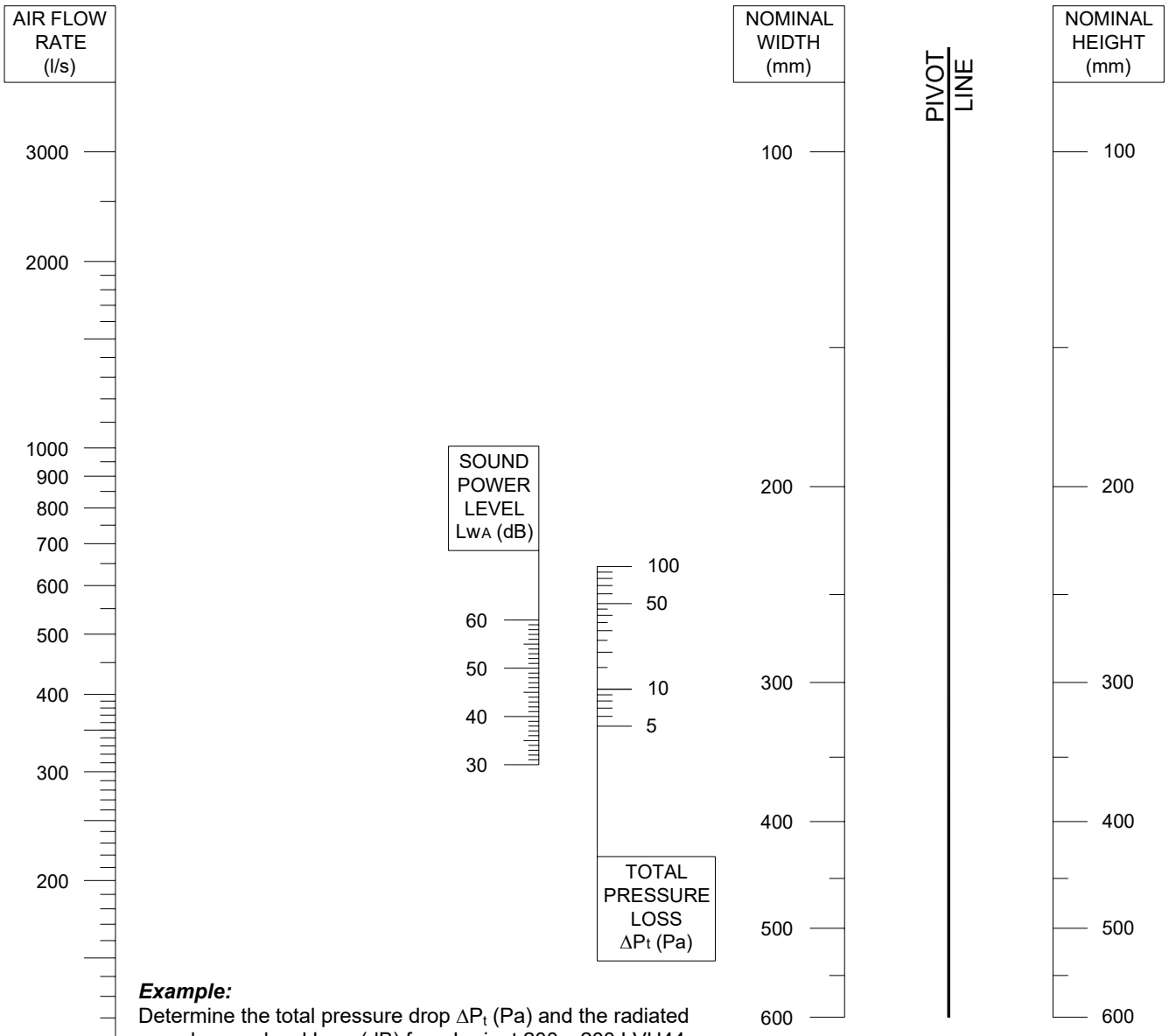
Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 200 x 200 LVN25 intumescent damper for a volume flow rate of 50 (l/s).

On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 50 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVN25 200 x 200
Flow rate (l/s): 50
Total pressure dropΔ P_t (Pa): 15
Radiated sound power $Lw_{,A}$ (dB): 37

LVH44 NOMOGRAM FOR RECTANGULAR DUCTS

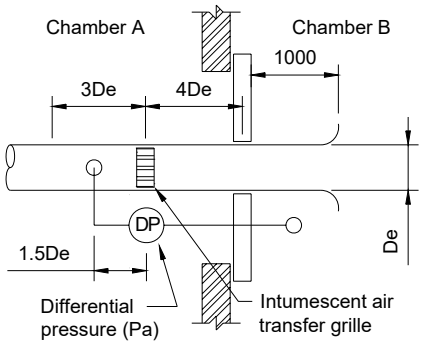
Performance Criteria: The acoustic + aerodynamic performance is based on a duct mounted application with a Lorient Polyproducts LVH44 intumescent air transfer grille installed within a rectangular duct.



Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 200 x 200 LVH44 intumescent damper for a volume flow rate of 200 (l/s).

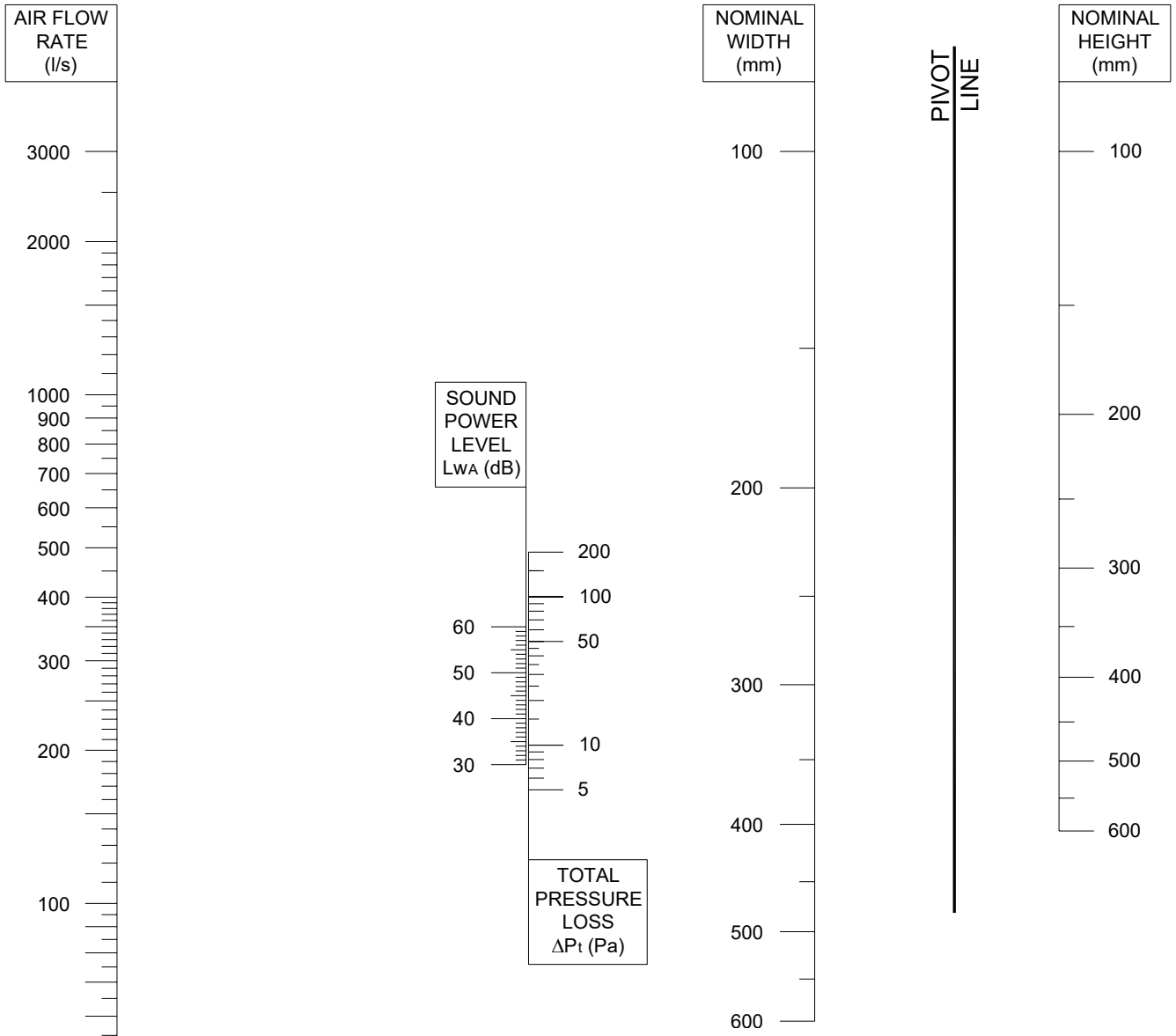
On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 200 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVH44 200 x 200
Flow rate (l/s): 200
Total pressure drop ΔP_t (Pa): 20
Radiated sound power $Lw_{,A}$ (dB): 48



LVH44 NOMOGRAM FOR WALL/DOOR MOUNTED APPLICATIONS

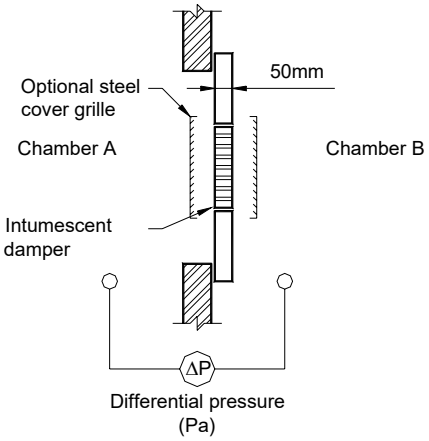
Performance Criteria: The acoustic + aerodynamic performance is based on a wall/door mounted application with a Lorient Polyproducts LVH44 intumescent air transfer grille fitted with cover grilles.



Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 200 x 200 LVH44 intumescent damper for a volume flow rate of 100 (l/s).

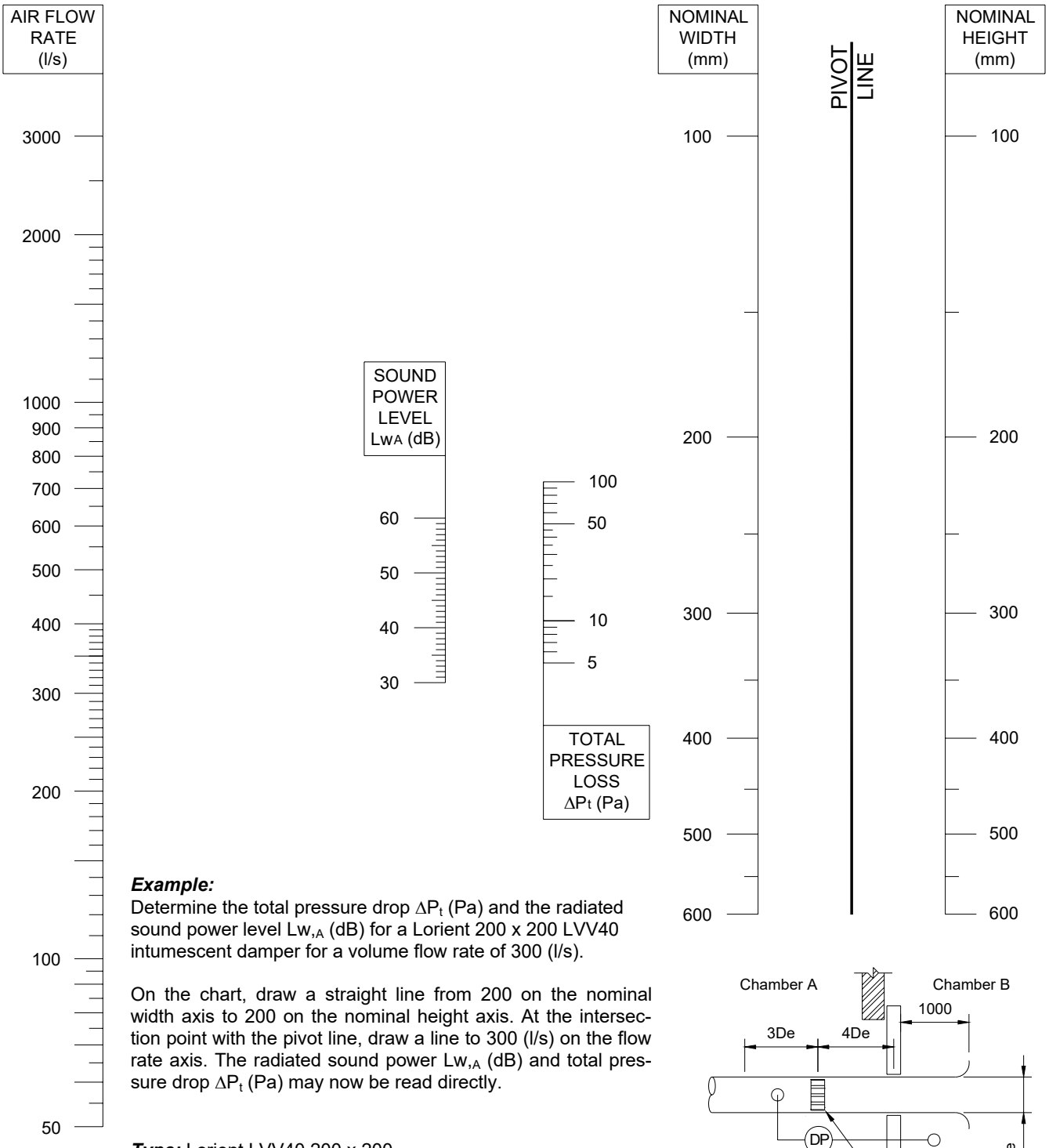
On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 100 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVH44 200 x 200
Flow rate (l/s): 100
Total pressure drop ΔP_t (Pa): 28
Radiated sound power $Lw_{,A}$ (dB): 48



LVV40 NOMOGRAM FOR RECTANGLUAR DUCTS

Performance Criteria: The acoustic + aerodynamic performance is based on a duct mounted application with a Lorient Polyproducts LVV40 intumescent air transfer grille installed within a rectangular duct.



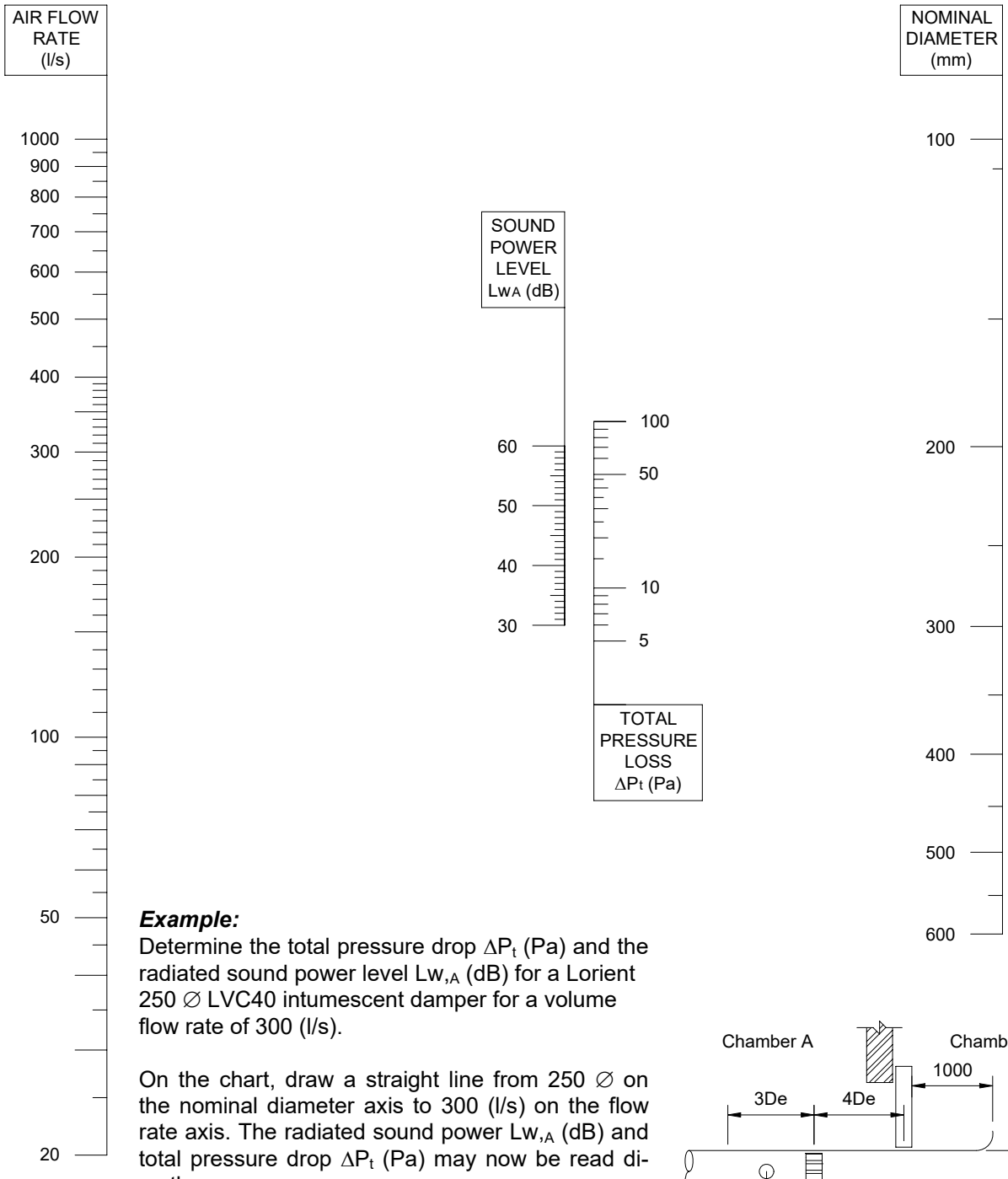
Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 200 x 200 LVV40 intumescent damper for a volume flow rate of 300 (l/s).

On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 300 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVV40 200 x 200
Flow rate (l/s): 300
Total pressure drop ΔP_t (Pa): 35
Radiated sound power $Lw_{,A}$ (dB): 49

LVC40 NOMOGRAM FOR CYCLINDRICAL DUCTS

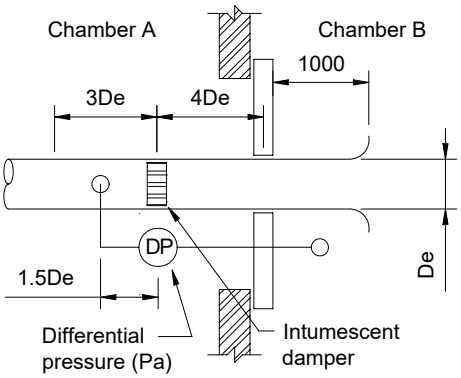
Performance Criteria: The acoustic + aerodynamic performance is based on a duct mounted application with a Lorient Polyproducts LVC40 intumescent air transfer grille installed within a cylindrical duct.



Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 250 ∅ LVC40 intumescent damper for a volume flow rate of 300 (l/s).

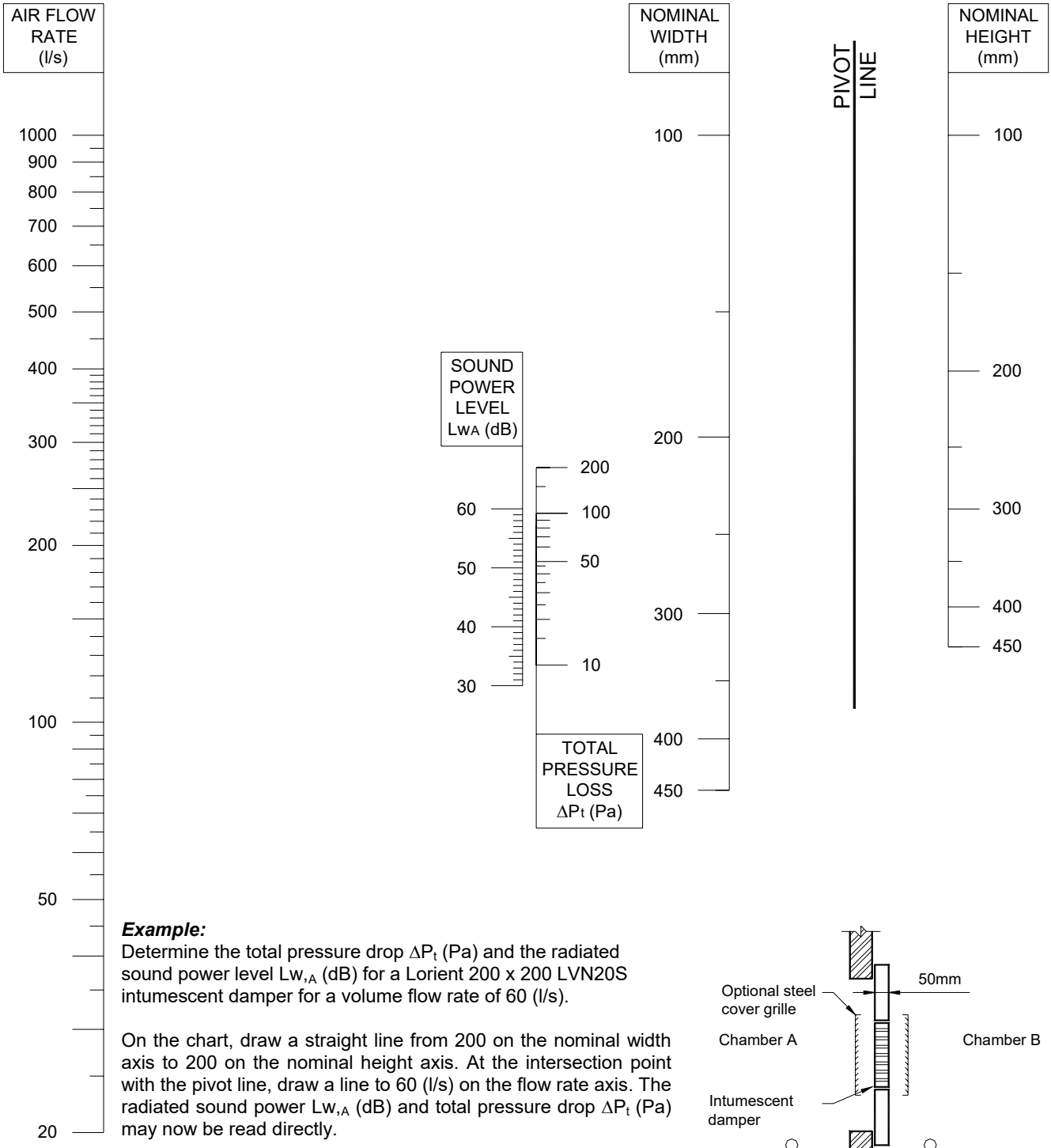
On the chart, draw a straight line from 250 ∅ on the nominal diameter axis to 300 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVC40 250 ∅
Flow rate (l/s): 300
Total pressure drop ΔP_t (Pa): 33
Radiated sound power $Lw_{,A}$ (dB): 51



LVN20S NOMOGRAM FOR DOOR MOUNTED APPLICATIONS

Performance Criteria: The acoustic + aerodynamic performance is based on a wall/door mounted application with a Lorient Polyproducts LVN20S fire + smoke rated intumescent air transfer grille fitted with no cover grilles.



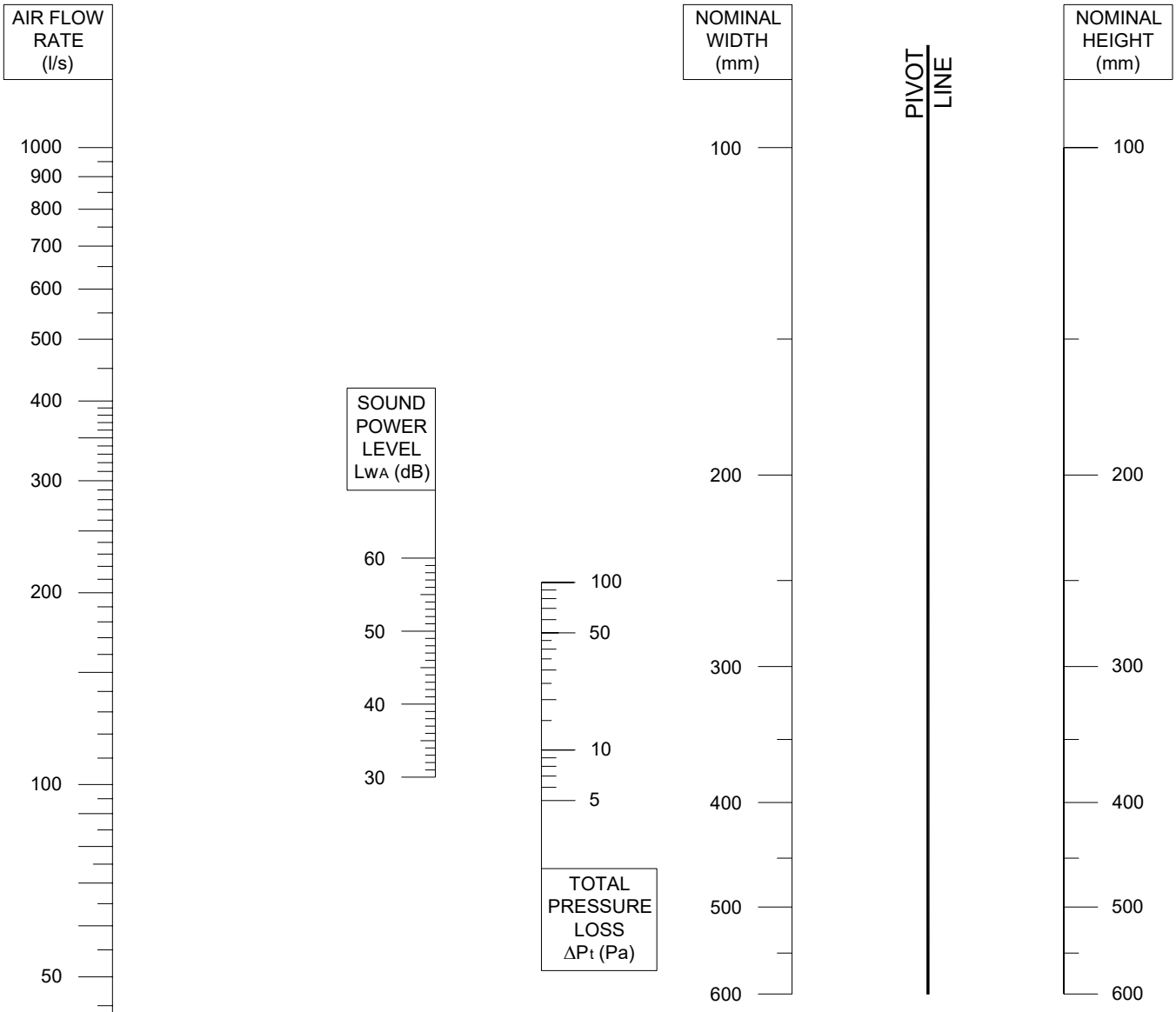
Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 200 x 200 LVN20S intumescent damper for a volume flow rate of 60 (l/s).

On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 60 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVN20S 200 x 200
Flow rate (l/s): 60
Total pressure drop ΔP_t (Pa): 42
Radiated sound power $Lw_{,A}$ (dB): 45

LVV40S NOMOGRAM FOR WALL MOUNTED APPLICATIONS

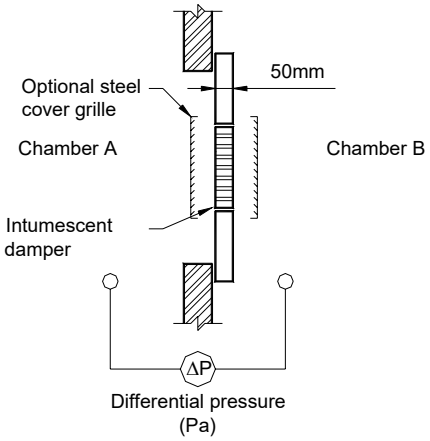
Performance Criteria: The acoustic + aerodynamic performance is based on a wall mounted application with a Lorient Polyproducts LVV40S fire + smoke rated intumescent air transfer grille fitted with cover grilles.



Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw,_A$ (dB) for a Lorient 200 x 200 LVV40S intumescent damper for a volume flow rate of 60 (l/s).

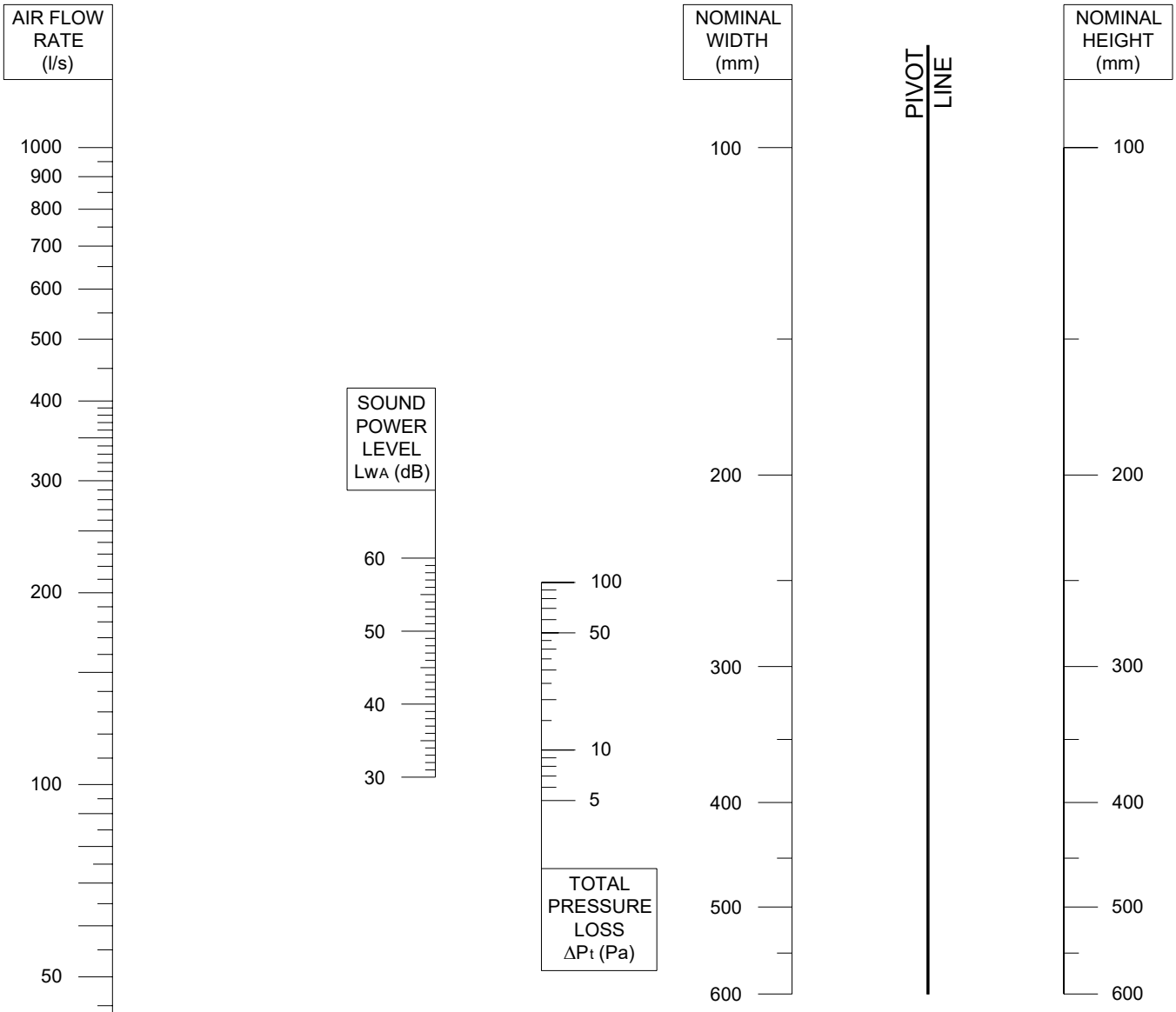
On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 60 (l/s) on the flow rate axis. The radiated sound power $Lw,_A$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVV40S 200 x 200
Flow rate (l/s): 60
Total pressure drop ΔP_t (Pa): 23
Radiated sound power $Lw,_A$ (dB): 34



LVH44S NOMOGRAM FOR WALL MOUNTED APPLICATIONS

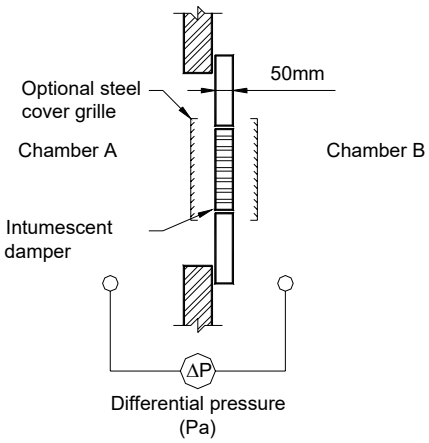
Performance Criteria: The acoustic + aerodynamic performance is based on a wall mounted application with a Lorient Polyproducts LVH44S fire + smoke rated intumescent air transfer grille fitted with cover grilles.



Example:
Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level $Lw_{,A}$ (dB) for a Lorient 200 x 200 LVH44S intumescent damper for a volume flow rate of 60 (l/s).

On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 60 (l/s) on the flow rate axis. The radiated sound power $Lw_{,A}$ (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

Type: Lorient LVH44S 200 x 200
Flow rate (l/s): 60
Total pressure dropΔ P_t (Pa): 23
Radiated sound power $Lw_{,A}$ (dB): 34



FREE AREA CHARACTERISTICS

'Free Area' is the area within an aperture unobstructed by the components of an air transfer grille product when in the normal or open position through which air is free to flow.

Its size can be given in square metres, square centimetres, square millimetres, square feet or square inches.

The sketch shows a typical air transfer grille fitted in a door where the aperture size is indicated by the heavy line i.e. W x H. The shaded area represents the components of the grille and the non-shaded area within the aperture is the **'free area'**.

As can be seen the free area equals the aperture area minus the shaded area and is often expressed as a percentage of the area of the aperture.

i.e FREE AREA =

$$\frac{\text{unshaded area}}{\text{width x height of aperture}}$$

Example

If the overall dimensions of the grille are 0.298 metre by 0.298 metre this gives an area of 0.08804 square metres. If the components of the grille are each 6mm thick then the free area (un-shaded) will be found from:

$$\frac{(298 - (16 \times 6))}{1000} \times \frac{(298 - (4 \times 6))}{1000}$$

= 0.0553 sq.meters

Divide the shaded area by the aperture area to give the percentage of free area:

0.0553/0.298 x 0.298 x 100

= 62.33%

Air Velocity

Is the speed of passage of air and is usually measured in metres per second or in imperial terms in feet per second.

An indication of velocities can be gauged by noting that 2 metres per second is approximately equivalent to 7.2 kilometres per hour or 4.5 miles per hour (a brisk walking pace).

Volumetric Flow

Is the volume of air movement in a specific time and is usually given in cubic metres per hour or litres per second. Volumetric flow through a damper is calculated by multiplying the free area of the product by the velocity of the air passing through it.

Example

The free area 0.0553 sq. metres from the previous example shown in figure one multiplied by preferred velocity of **2.0 metres per second** gives a **volumetric flow** of:

0.0553 x 2.0 = 0.1106 cubic metres per second or 398.16 cubic metres per hour.

Pressure Differential

In order to create air movement through any ventilation system it is necessary to create a pressure differential from one end of the system to the other. Though this can be achieved by natural phenomena in the building such as "stack effect" it is more usual to incorporate motor driven fans.

The pressure differential created reduces as the distance from the fan increases due to frictional losses along the route, e.g. Duct walls. The differential will be further reduced when the air stream meets a partial obstruction such as a damper.

Loss of pressure differential means that the volumetric airflow will also be reduced. It is therefore important to make allowances for the pressure losses that will be encountered when dampers or any other products that cause a degree of obstruction to the airflow are incorporated in the system.

To assist in these calculations each Lorient air transfer product has been tested to measure the pressure losses incurred through a range of pressure differentials and velocities. Values can be selected from the differential pressure charts provided in this publication.

Air pressure differentials in the UK and Europe are usually given in Pascals (Pa).

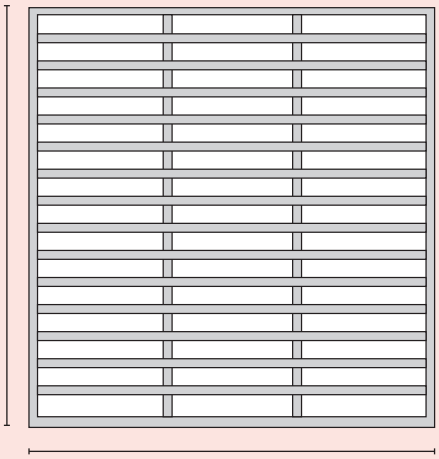


Fig. 1

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Air Changes

The number of air changes that are required within a room in a given period so that the air quality can be maintained at an acceptable level when the room is used for its intended purpose.

The following are general recommendations to maintain satisfactory air quality within certain locations:

- Boiler house or plant room: **15 - 30**
- Hospital operating theatres: **15 - 17**
- Canteens: **8 - 12**
- Lavatories and toilets: **6 - 7**
- Hospital general rooms and wards: **6**
- Offices: **4 - 6**
- Factories and Laundries (subject to special regulations): **more than 4.**

Example of Air Volume Calculation:

In order to establish the volume of air required per hour for a particular room the room volume should be multiplied by the number of changes needed per hour.

A hospital ward measuring 10 metres x 6 metres x 3.2 metres high and needing 6 air changes per hour requires:

10 x 6 x 3.2 x 6 = 1152 cubic metres of air supply per hour.

It is worth noting that if the air change is induced by extraction at the above rate "make up" air must

be introduced into the room at the same rate. In most cases it is necessary to provide fire and smoke protection along both the "supply air" and the "extract air" routes.

Example of Calculation of Air Transfer Grille Requirements:

It has been decided that air will be extracted from the above ward through ducting and the supply air will be introduced through air transfer grilles mounted in the 2 doors that give access to the ward. If one grille is to be used per door then the volumetric flow needed will be: 1152/2 = 576 cubic metres per hour. Given that the free area of the relevant grille type is 62% and the velocity is 2.0 metres per second, then the area of the grille can be calculated:

$$\frac{576 \times 100}{2.0 \times 60 \times 60 \times 62} = 0.129 m^2$$

This gives a theoretical grille size of 0.36 x 0.36 metres.

Selection of Appropriate Air Transfer Grille

Having calculated the theoretical grille size, select the next standard size above (i.e. from the example 400mm x 400mm) then check the acoustic and pressure drop charts to confirm acceptable performance values.

Useful Conversion Data

Pressure:

1 Pascal (Pa) = 1 Newton / per m^2

1 Bar = 105 N/ m^2 = 0.1 mega Pascals = 14.7 pounds per square inch

Note: A Newton is that force which, applied to a mass of one kilogram, gives it an acceleration of one metre per second per second.

1 N = 1 kg m/s2

Length:

One foot = 305 mm or 30.5 cm

Area:

One square foot = 930 cm^2

Volume:

1 $metre^3$ = 1000 litres or 1000 000 cm^3 = 35 $feet^3$ or 60700 $inch^3$.





Images: LVH44 air transfer grille

FREE AREA CHARACTERISTICS

LVV40	MM	CM	M	% FREE AREA
100 X 100	4,650mm²	46.5cm²	0.00465m²	46.50%
150 X 150	12,555mm²	125.7cm²	0.0125m²	55.80%
200 X 200	23,280mm²	233cm²	0.0233m²	58.20%
250 X 250	38,250mm²	383cm²	0.0383m²	61.20%
300 X 300	54,180mm²	542cm²	0.0542m²	60.20%
350 X 350	75,636mm²	756cm²	0.0756m²	61.74%
400 X 400	97,600mm²	977cm²	0.0976m²	61%
450 X 450	128,790mm²	1,288cm²	0.128m²	63.60%
500 X 500	155,500mm²	1,554cm²	0.155m²	62.20%
550 X 550	192,280mm²	1,922cm²	0.192m²	64%
600 X 150	53,998mm²	539cm²	0.0539m²	59.90%
600 X 500	189,400mm²	1,894cm²	0.189m²	63.13%
600 X 600	227,520mm²	2,278cm²	0.227m²	63.20%



LVC40 SIZE	MM	CM	M	% FREE AREA
LVC 100Ø	2,868mm²	28.7cm²	0.0028m²	38.03%
LVC 150Ø	8,185mm²	81cm²	0.0081m²	47.58%
LVC 200Ø	15,550mm²	155.5cm²	0.0155m²	55.25%
LVC 250Ø	26,389mm²	263cm²	0.0263m²	53.75%
LVC 300Ø	41,765mm²	417.6cm²	0.0417m²	59.88%
LVC 350Ø	48,923mm²	489cm²	0.048m²	50.85%
LVC 400Ø	75,241mm²	752.4cm²	0.0752m²	60.47%
LVC 450Ø	77,412mm²	774cm²	0.0774m²	48.50%
LVC 500Ø	107,054mm²	1,070.5cm²	0.1070m²	54.96%
LVC 550Ø	120,537mm²	1,205cm²	0.1205m²	50.73%
LVC 600Ø	147,671mm²	1,476.7cm²	0.1476m²	64.50%



LVH44	MM	CM	M	% FREE AREA
100 X 100	4,240mm²	42.4cm²	0.00424m²	42.40%
150 X 150	10,800mm²	108cm²	0.0108m²	48%
200 X 200	22,520mm²	225.5cm²	0.0225m²	56.30%
250 X 250	35,438mm²	354cm²	0.0354m²	56.70%
300 X 300	54,900mm²	549.8cm²	0.0549m²	61%
350 X 350	73,872mm²	738cm²	0.073m²	61%
400 X 400	98,240mm²	982.3cm²	0.09824m²	61.40%
450 X 450	121,095mm²	1,211cm²	0.121m²	59.80%
500 X 500	157,750mm²	1,578cm²	0.157m²	63.10%
550 X 550	188,416mm²	1,884cm²	0.1884m²	62.28%
600 X 600	231,660mm²	2,316cm²	0.231m²	64.35%



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LVH50	MM	CM	M	% FREE AREA
100 X 100	4,240mm²	42.4cm²	0.00424m²	42.40%
150 X 150	10,800mm²	108cm²	0.0108m²	48%
200 X 200	22,520mm²	225.5cm²	0.0225m²	56.30%
250 X 250	35,438mm²	354cm²	0.0354m²	56.70%
300 X 300	54,900mm²	549.8cm²	0.0549m²	61%
350 X 350	73,872mm²	738cm²	0.73m²	61%
400 X 400	98,240mm²	982.3cm²	0.09824m²	61.40%
450 X 450	121,095mm²	1,211cm²	0.121m²	59.80%
500 X 500	157,750mm²	1,578cm²	0.157m²	63.10%
550 X 550	188,416mm²	1,884cm²	0.1884m²	62.28%
600 X 600	231,660mm²	2,316cm²	0.231m²	64.35%



LVH54	MM	CM	M	% FREE AREA
100 X 100	4,240mm²	42.4cm²	0.00424m²	42.40%
150 X 150	10,800mm²	108cm²	0.0108m²	48%
200 X 200	22,520mm²	225.5cm²	0.0225m²	56.30%
250 X 250	35,438mm²	354cm²	0.0354m²	56.70%
300 X 300	54,900mm²	549.8cm²	0.0549m²	61%
350 X 350	73,872mm²	738cm²	0.073m²	61%
400 X 400	98,240mm²	982.3cm²	0.09824m²	61.40%
450 X 450	121,095mm²	1,211cm²	0.121m²	59.80%
500 X 500	157,750mm²	1,578cm²	0.157m²	63.10%
550 X 550	188,416mm²	1,884cm²	0.1884m²	62.28%
600 X 600	231,660mm²	2,316cm²	0.231m²	64.35%



LVH44C	MM	CM	M	% FREE AREA
LVHC 98Ø	2,967mm²	29.6cm²	0.0029m²	39.34%
LVHC 148Ø	8,527mm²	85.2cm²	0.0085m²	52.36%
LVHC 200Ø	16,766.2mm²	167cm²	0.0167m²	53.36%
LVHC 248Ø	27,532mm²	275.3cm²	0.0275m²	56.9%
LVHC 300Ø	14,388mm²	143cm²	0.0143m²	**
LVHC 350Ø	55,732mm²	557cm²	0.00557m²	58.59%
LVHC 400Ø	mm²	cm²	m²	
LVHC 450Ø	74,520mm²	745cm²	0.00745m²	47.27%
LVHC 498Ø	97,876mm²	978.7cm²	0.0978m²	50.25%



COVER GRILLES	MM	CM	M	% FREE AREA
100 X 100	6,300mm²	63cm²	0.0063m²	63%
150 X 150	15,187mm²	152cm²	0.0152m²	67.50%
200 X 200	26,200mm²	262cm²	0.0262m²	65.50%
250 X 250	42,375mm²	424cm²	0.0424m²	67.80%
300 X 300	62,550mm²	626cm²	0.0625m²	69.50%
400 X 400	103,040mm²	1,031cm²	0.103m²	64.4%
450 X 450	142,155mm²	1,422cm²	0.142m²	70.20%
500 X 500	172,500mm²	1,726cm²	0.172m²	69%
600 X 600	253,800mm²	2,539cm²	0.254m²	70.50%



FREE AREA CHARACTERISTICS

LVN20 SIZE	MM	CM	M	% FREE AREA
200 X 200	10,666mm²	106.6cm²	0.0106m²	27.20%
250 X 250	16,387mm²	163cm²	0.0163m²	26.22%
300 X 300	26,446mm²	264.4cm²	0.02644m²	29.78%
350 X 350	3,3811mm²	338cm²	0.0338m²	27.60%
400 X 400	50,911mm²	509.1cm²	0.0509m²	32.14%
450 X 450	63,266mm²	632cm²	0.0632m²	21.24%
500 X 500	8,527mm²	769.5cm²	0.0769m²	31.02%
550 X 550	90,169mm²	901cm²	0.09m²	29.80%
600X 600	126,392mm²	1,263cm²	0.126m²	35.10%



LVN25 SIZE	MM	CM	M	% FREE AREA
200 X 200	12,512mm²	125.1cm²	0.0125m²	31.9%
300 X 300	31,013mm²	310.1cm²	0.0310m²	34.92%
450 X 450	73,962mm²	739cm²	0.0739m²	36.50%
600 X 600	130,416mm²	1,304.1cm²	0.1304m²	36.46%



TALKBACK F+S DAMPERS	MM	CM	M	% FREE AREA
200 X 200	8,240mm²	82.4cm²	0.0082m²	20.6%
250 X 250	15,437mm²	154.3cm²	0.0154m²	24.7%
300 X 300	26,640mm²	266.4cm²	0.0266m²	29.6%
350 X 350	37,975mm²	379.7cm²	0.0379m²	31.0%
400 X 400	50,880mm²	508.8cm²	0.0508m²	31.8%
450 X 450	69,862mm²	692.5cm²	0.0692m²	34.2%
500 X 500	86,250mm²	862.5cm²	0.0862m²	34.5%
600 X 600	133,200mm²	1,332cm²	0.1332m²	37.0%



LVN20S	MM	CM	M	% FREE AREA
200 X 200	8,089mm^2	80.8cm^2	0.0080m^2	20.6%
250 X 250	14,059mm^2	140.5cm^2	0.0140m^2	22.8%
300 X 300	25,024mm^2	250.2cm^2	0.0250m^2	28.1%
350 X 350	37,440mm^2	374.4cm^2	0.0374m^2	30.9%
400 X 400	49,234mm^2	492.3cm^2	0.0492m^2	31.8%



LVN25S	MM	CM	M	% FREE AREA
200 X 200	8,089mm^2	80.8cm^2	0.0080m^2	20.6%
250 X 250	14,059mm^2	140.5cm^2	0.0140m^2	22.8%
300 X 300	25,024mm^2	250.2cm^2	0.0250m^2	28.1%
350 X 350	37,440mm^2	374.4cm^2	0.0374m^2	30.9%
400 X 400	49,234mm^2	492.3cm^2	0.0492m^2	31.8%



LVV40S	MM	CM	M	% FREE AREA
150 X 150	4,013mm^2	40.13cm^2	0.004m^2	17.80%
200 X 200	8,089mm^2	80.89cm^2	0.00808m^2	20.22%
250 X 250	14,059mm^2	140.59cm^2	0.014m^2	22.49%
300 X 300	25,024mm^2	250.24cm^2	0.025m^2	27.80%
350 X 350	37,440mm^2	374cm^2	0.0374m^2	30.56%
400 X 400	47,208mm^2	472cm^2	0.0472m^2	29.50%
450 X 450	40,575mm^2	405cm^2	0.04m^2	20.03%
500 X 500	110,000mm^2	1,100cm^2	0.11m^2	33%
550 X 550	103,011mm^2	1,030cm^2	0.103m^2	34%
600 X 600	80,000mm^2	800cm^2	0.08m^2	32%



LVH44S	MM	CM	M	% FREE AREA
150 X 150	4,013mm^2	40.13cm^2	0.004m^2	17.80%
200 X 200	8,089mm^2	80.89cm^2	0.008m^2	20.22%
250 X 250	14,059mm^2	140.59cm^2	0.014m^2	22.49%
300 X 300	25,024mm^2	250.24cm^2	0.025m^2	27.80%
350 X 350	37,440mm^2	374cm^2	0.037m^2	30.56%
400 X 400	47,208mm^2	472cm^2	0.047m^2	29.50%
450 X 450	40,575mm^2	405cm^2	0.04m^2	20.03%
500 X 500	110,000mm^2	1,100cm^2	0.11m^2	33%
550 X 550	103,011mm^2	1,030cm^2	0.103m^2	34%
600 X 600	80,000mm^2	800cm^2	0.08m^2	32%





ADDITIONAL INFORMATION

DESIGN + SPECIFICATION

Lorient provides technical support for the design, specification and installation of its smoke control systems.

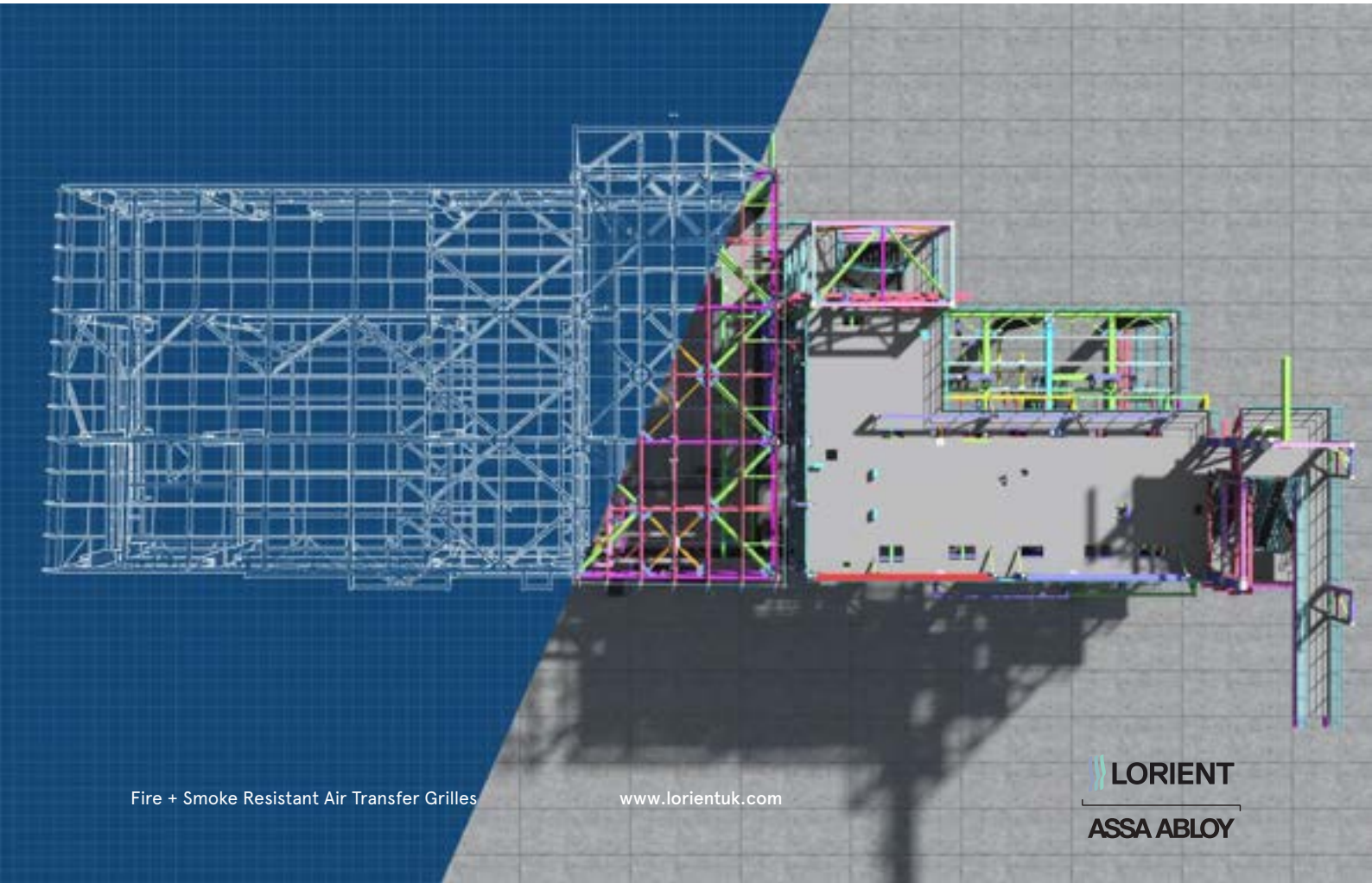
Given the importance of the protection provided, it is recommended that Lorient is involved in the earliest stages of specification to ensure the most effective and economical system is specified and installed.

A comprehensive specification overview which covers the design and operation of Lorient smoke control systems is available; please visit our website or consult our Technical Department.



LVN20S fire + smoke resistant air transfer grille

Call our Technical Services team
+44 (0)1626 834252



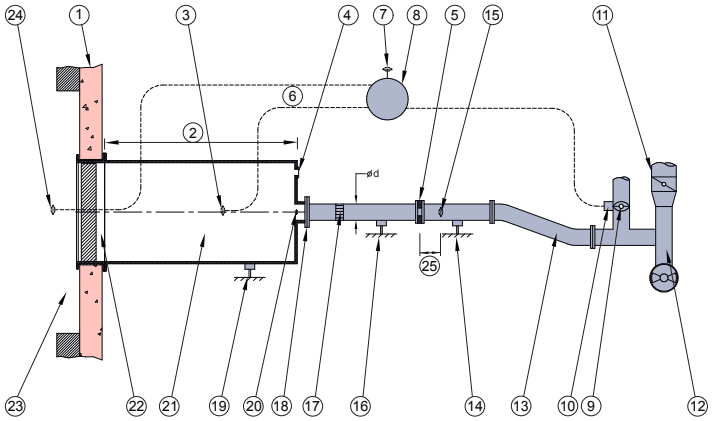
Fire + Smoke Resistant Air Transfer Grilles

www.lorientuk.com

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TEST METHODS

Figure 1: Example of a general test arrangement - air transfer grilles



Current ISO 10294-5 / AS1530.4 Fire Test Methods for dampers and air transfer grilles installed in ducts

Legend

1. Supporting construction (wall)
2. 2 x diagonal (to a maximum of 2m)
3. Pressure sensor (on centreline)
4. Observation port
5. Orifice plate or venturi
6. Pressure differential (300 Pa)
7. Pressure sensor in laboratory
8. Pressure differential control box
9. Pressure control dilution damper
10. Pneumatic actuator or manual control
11. Balancing damper
12. Fan
13. Flexible connecting duct
14. Support
15. Thermocouple
16. Support
17. Flow straightener
18. Flange
19. Support
20. Thermocouple at exit from connecting duct
21. Connecting duct
22. Test air transfer grille
23. Furnace chamber
24. Pressure sensor (on centreline of air transfer grille)
25. Distance: thermocouple to orifice = 2d

Lorient LVH54/LVH44 intumescent air transfer grilles are approved in accordance with the latest air transfer grille test method detailed in IS 10294-5/ AS 1530.4.

This stringent test method is based on a fire test with the additional burden of a negative 300Pa pressure differential applied to the unexposed face of the air transfer grille during the test period (essentially drawing hot furnace gasses through the air transfer grille). Failure is now determined when the leakage rate exceeds 360m³/hr/m² (corrected to STP).

Specifiers should ensure that air transfer grilles are approved in accordance with the latest test requirements rather than relying on data that relates to old superseded test methods.



LVH44 intumescent air transfer grille



AS1530.4 2014 air transfer grille testing

SMOKE LEAKAGE

The air transfer grilles are supplied factory assembled and tested. When used in conjunction with Lorient fire containment intumescent air transfer grilles, tests have shown that they provide an effective barrier to fire and smoke at all temperatures.

It is therefore possible to create airways through fire resistant constructions and still meet the requirements of Building Regulations and the recommendations of BS 9999. The graphs show the estimated smoke leakage rates determined from tests carried out under the conditions of BS EN 1634-3. The results have been interpolated to show the leakage rates using different sizes of air transfer grilles/shutter assemblies.

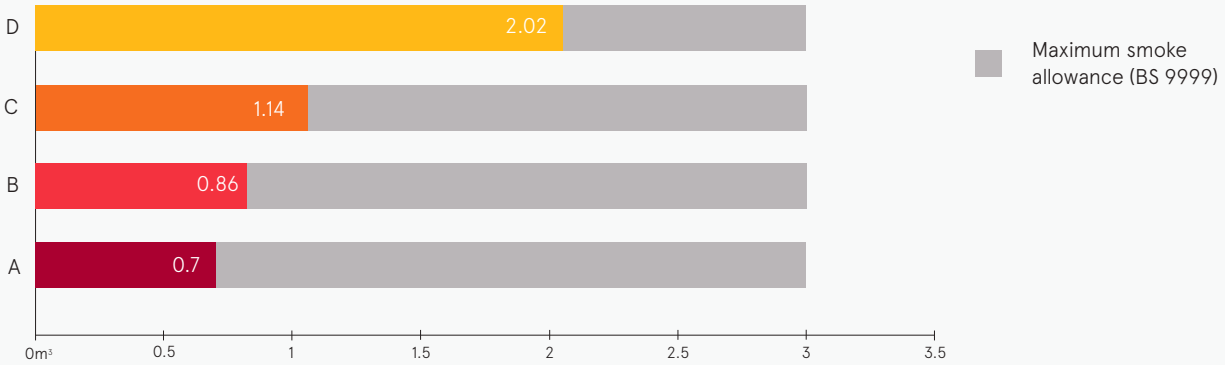
Lorient fire containment air transfer grilles are made up of either PVC or metal slats with an intumescent core.

A sudden increase in temperature resulting from the presence of flames or hot gases causes the slats and framing components to swell to many times their original thickness, fusing together to provide an effective barrier to the passage of fire and hot smoke.



LVN20S fire + smoke resistant air transfer grille

Smoke leakage determined under the conditions of BS 476-31.1 / BS EN 1634-3 at a pressure differential of 25Pa (positive). Total smoke leakage of door leaf and 200mm x 200mm LVN20S air transfer grille.



A LP1504 / LAS1212 (Head + Jamb)

B LP1504DS / LP1504 (Head + Jamb)

C LP1504DS / LAS1212 (Head + Jamb) LAS8008 / LAS4012 (Threshold)

D LP1504DS / LP1504 (Head + Jamb) *LP1504DS fully interrupted at hinges*

COMMISSIONING + MAINTENANCE

We offer a professional and expert commissioning service for fire and smoke air transfer grilles.

We check and test the installation and components of Lorient fire + smoke air transfer grilles; and issue a fully detailed service report, highlighting status and compliance.

Our comprehensive service covers a number of factors, including:

- Checking the system is installed as per Lorient recommendations and is compliant with test evidence.
- Checking the full functionality of the system, which can be coupled with witness testing to demonstrate functionality and compliance if required.
- Providing documented evidence that the system is functioning as per requirements.
- Providing documented installation detail, which can be used in off-site support and/or included in site handover.
- Reducing delays caused by improper installation which require technical support.

Please contact our Testing + Technical Services team for pricing and further information on **+44 (0)1626 834252** or email **testing@lorientuk.com**



LVN20S in through flow position



LVN20S in closed position

FINISHES INFORMATION

Our wide range of colours and finishes provides inspiration for all types of buildings; from luxurious and contemporary hotels, to bright and bold nurseries and schools – there's a perfect colour or finish available to suit every project.

An in-house, RAL colour matching service is available for those wishing to coordinate air transfer grilles or flanges with other architectural features, such as door furniture and trims. Special colours are created using a powder coated finish for a higher aesthetic or to complement bespoke interiors. Please ask for bespoke project pricing and lead times on these specials.

All air transfer grilles are manufactured in Lorient's UK facility, to exacting standards and have been designed and developed to deliver the perfect combination of stylish looks and outstanding performance.

We extend our offering way beyond colour and finishes – specialising in assisting and developing customised solutions through collaboration with our customers. Utilising in-house expertise, custom-made products are created to suit customers' requirements.



TESTING + TECHNICAL SERVICES

We've built our reputation on the quality and dependability of our products, and our investment in R&D has played a pivotal role in keeping our products at the forefront of our industry. Our dedicated Testing and Technical Services division has established itself as an important facility for manufacturers and designers of doors, windows, glazing systems and hardware, to name just a few.

TESTING SERVICES

Whether you're investigating new materials, or developing new or existing products, right through to durability testing and benchmarking performance – our team of experts will support you throughout the process. We are able to offer:

- Fire testing (indicative)
- ATG commissioning and maintenance for fire & smoke resisting air transfer grilles
- Mechanical cycling
- Environmental chamber analysis
- Attendance at external fire tests
- Consultancy services.



ADDITIONAL INFORMATION

TECHNICAL REFERENCES

Lorient is quality assured under the disciplines of BS EN ISO 9001:2015.

Accreditation to this standard is an assurance that we conduct our business to the complete satisfaction of our customers with regard to design solutions, manufacturing consistency and management procedures.

As a result, this internationally recognised standard for quality management generates customer confidence. Regular audits of our company procedures are undertaken by qualified BSI staff to ensure ongoing compliance with all aspects of the standard.

BS EN ISO 9001:2015 Certificate No. Q6104

Lorient has attained the BS EN ISO 14001:2015 accreditation for environmental management, making us the first seal manufacturer to have achieved this important award. This internationally recognised standard shows that we have demonstrated our commitment to responsible environmental behaviour, including prevention of pollution, control and reduction of waste, and ongoing monitoring and improvement of our environmental performance. Achieving ISO 14001 is just one part of our ongoing commitment to operate in a sustainable way.

BS EN ISO 14001:2015 Certificate No. EMS 541906

FITTING INSTRUCTIONS

Comprehensive fitting instructions are available to download from our website **www.lorientuk.com**

MAINTENANCE

Lorient intumescent air transfer grilles, including those positioned behind cover grilles, will require periodic cleaning with a damp cloth.

The use of intumescent materials means there are no moving parts. The product is trouble free in operation and easy to maintain – periodic testing is unnecessary.

HANDING + STORAGE

No special precautions are required when handling Lorient air transfer grilles / dampers, but they should always be treated with care. The products do not fall within the scope of COSHH regulations. Lorient dampers/air transfer grilles should be stored away from heat, in the dry, and protected from impact damage.

GUARANTEE OF ORIGIN

Each production is identified unobtrusively on the edge of the air transfer grille with the Lorient name and a code reference. This ensures the product and details of its production can be traced should the need arise.

Unidentifiable substitute products should never be accepted.

MADE IN BRITAIN

We are proud to have been granted the prestigious Made in Britain marque for our products, designed and manufactured at our main facility in South West of the UK.

INTELLECTUAL PROPERTY

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This brochure is protected by copyright and neither the drawings nor the text may be reproduced or transmitted in any form without prior consent from Lorient. Lorient products described in this brochure are protected by patents and design registrations in Great Britain and other countries. We are committed to continually enhancing and improving our product range. We reserve the right to change product specifications from time to time without prior notice. E&OE.

June 2024.

TRADE ASSOCIATIONS

Lorient is a member and active contributor to the following:

ACCREDITATIONS

BBA

BBA approvals provide independent assurance for the designer, specifier and end-user as to the 'fitness for purpose' of building products.

CERTIFIRE

Operated by Exova Warringtonfire, CERTIFIRE is an accredited independent product conformity scheme that requires products to meet the requirements of the tests, to add minimal resistance to opening and closing forces, to prove long term performance under a variety of service conditions, and to be permanently marked for easy identification.

IFC

IFC Certification Ltd is a UKAS approved and internationally recognised provider of third party Certification services – designed to give confidence to specifiers, users, occupiers, owners and enforcement bodies that products have been thoroughly and independently evaluated and will continue to be manufactured to the same specification as originally tested.

UL

UL is a global independent safety science company that tests a diverse range of products; representative samples of a product must be tested and meet UL's stringent requirements to carry the marque. These requirements are based primarily on UL's published and nationally recognised Standards for Safety. Businesses, consumers and regulatory authorities around the world recognise the trusted rigour and technical excellence of UL certifications. Lorient is proud to have achieved the UL Mark on many of its products. These are detailed on individual pages.

CPDs

We offer three fully-accredited CPD seminars. Impartially presented by knowledgeable speakers, the seminars are structured to be technically informative, and provide practical advice.

Performance Door Design: The Basics of Sound Reduction

Effective acoustic containment helps to improve the quality of the built environment, preserving privacy as well as excluding unwanted noise. With changing regulations, it's essential to be informed of the relevant requirements and the implications for door assemblies.

Our acoustic CPD seminar covers:

- the nature of sound, examining airborne transmission of sound;
- regulatory requirements and British Standards that relate to acoustic performance;
- test procedures and interpretation of test reports;
- effective design of door assemblies for acoustic performance, including door construction and the influence of sealing systems;
- design conflicts between acoustic performance, durability and ease of operation of the door;
- independent accreditation.

The Role and Performance of Fire and Smoke-Resisting Door Assemblies

The importance of fire and smoke resisting door assemblies is illustrated by the 216 fire related fatalities and 6,910 casualties in fires (2019/20). Apart from the human toll, property losses each year approach £2.52 billion.

Our fire and smoke containment CPD seminar covers:

- hard facts concerning deaths, injuries and property damage caused by fire and smoke;
- regulatory requirements for fire and smoke resisting door assemblies;
- the nature and behaviour of smoke;
- effective design of door assemblies for smoke containment, including the threshold gap;
- design conflicts between fire containment, smoke containment, durability and ease of operation of the door;
- independent accreditation.

The Regulatory Reform (Fire Safety) Order 2005 and its implications for fire doors

The RRO consolidated 70 pieces of legislation; shifted responsibility for fire safety management; abolished the Fire Safety Certificate; established the Fire Risk Assessment and created major change in legal liability.

Our RRO CPD seminar covers:

- an overview of the RRO;
- product solutions;
- the dangers of fire and smoke;
- the importance of fire doors – including installation and maintenance.

Our CPD materials have been independently verified and certified by the RIBA as CPD approved. A certificate for 1 hour's CPD will be provided, which contributes to Continuing Professional Development requirements.

If you are interested in booking a seminar, please contact our Marketing department or email **cpd@lorientuk.com**



AIR TRANSFER GRILLE CPD WEBINAR

We're delighted to offer a CPD entitled:
The Specification + Design of Air Transfer Grilles / Dampers.

This is a fantastic addition to our growing collection of CPD seminars and explores:

- the latest test standards and building regulations;
- the major difference between intumescent air transfer grilles and dampers;
- the importance of correct specification, installation and maintenance;
- plus it offers practical solutions to fire and smoke containment over a range of applications.

All of our CPD seminars are available to view virtually, please speak to our Marketing Department for further information on **01626 834252** or email **mktg@lorientuk.com**





COMPREHENSIVE SUPPORT

We continue to lead the way in Research + Development. As a company we have over 40 years' experience, so our experts are well equipped to listen, help and advise you on your sealing system requirements.

Technical Services

We're happy to provide specialist advice on acoustic, smoke and fire protection for refurbishment and new build projects. If you need assistance, you can call our Technical Services team.

Alternatively, we can arrange a site visit to get a clearer idea of your needs and how we can help you. We also provide copies of test reports and samples where needed; and can give guidance on how best to meet Building Regulations and Standards.

Web Support

Our website features a comprehensive range of supporting documents covering the entire range of products, including installation guides and CAD drawings. All of our brochures and product datasheets are also available for download, together with copies of certification and specification texts.

Customisation

If you have a particular requirement which isn't covered by the applications in this brochure, we may be able to supply an existing non-standard item, or even develop a customised solution for you. Utilising in-house expertise, bespoke products are created to your requirements; from a functional or aesthetic perspective, or both.

Lorient's dedicated Technical Services team supports and works as part of your design team, offering informed product advice and guidance on regulatory requirements and standards.

Call our Technical Services team

+44 (0) 1626 834252

www.lorientuk.com

SEALING SOLUTIONS

Detailed information about our products can be found in the following brochures:

Lorient Architectural Seals

A variety of door sealing systems including perimeter seals, drop seals, threshold plates, door bottom seals and many more.

Fire, Smoke and Acoustic Seals for Door Assemblies

Our core range of high performance fire, smoke and acoustic seals.

Fire and Smoke Resistant Air Transfer Grilles

A comprehensive range of intumescent air transfer grilles for doors, walls, ducts, floors and ceilings.

Fire Resistant Door Hardware Protection

Letterplates, door viewers, door edge protectors and intumescent kits that can safely be installed into fire rated doors without compromising the fire/smoke performance.

Fire Resistant Glazing Systems

Fire resistant glazing systems for doors, screens and partitions

Acoustic Sealing Systems for Door Assemblies

A comprehensive series of acoustic sealing systems for various types of door construction.

Copies of these brochures are available by calling **+44 (0)1626 834252** or download from our website **www.lorientuk.com**

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GLOSSARY OF TERMS

A

AIR TRANSFER GRILLE: FIRE RESISTANT

A device that when activated by a rise in temperature of the air stream provides containment of fire + hot gases in addition to the normal function of an air transfer grille, but is not intended to control cold smoke.

AIR TRANSFER GRILLE: FIRE + SMOKE RESISTANT

A device which provides containment of cold smoke, fire + hot gases by either interface with smoke sensors or by a rise in temperature of the air stream in addition to the normal function of an air transfer grille.

AIR VELOCITY

Is the speed of passage of air and is usually measured in metres per second or in imperial terms in feet per second.

ASSESSMENTS

For test data based on BS 476 series of tests, documents from competent persons or fire test bodies providing broad ranges of application based on a range of fire test data. Products and systems may only be used in applications covered in the range of the assessment.

In the case of BS EN test and classification systems, formal rules for direct and extended application of test data are used. Previous use of 'assessments' are limited to permitted processes within the formal rules. Assessment of arbitrary methods may not be forthcoming!

B

BREAK-AWAY DUCT JOINT

A joint connecting a fire damper spigot or sleeve to the attached duct work which will allow collapse of the ductwork during a fire without disturbing the integrity of the fire damper. 'Break-away' and flexible joints incorporate materials, fixings, clamps, etc, that are manufactured from a non - fire resistant material with a low melting point such as aluminium, plastic, etc

C

CAVITY BARRIERS

Construction, other than a smoke curtain, provided to close a concealed space against penetration of smoke or flame, or provided to restrict the movement of smoke or flame within such a space.

COMPARTMENTATION

The division of a building into areas by using solid walls and floors to prevent the spread of fire and/or smoke.

COMPARTMENT WALL

A fire resisting wall used to separate one fire compartment from another.

COMPARTMENT FLOOR

A floor used to separate one fire compartment from another.

D

DUCT/DUCTWORK

A system of enclosure of any cross sectional shape for the distribution or extraction of air.

E

EXPANSION FRAME

A factory fitted installation frame supplied by the air transfer grille (ATG) manufacturer that forms a complete assembly with the appropriate ATG fitted therein. This frame allows the ATG to expand under fire conditions and must be to a design which has been successfully fire tested.

F

FIELD OF APPLICATION OF TEST DATA

In the European classification system, formal rules exist for direct and extended rules for the field of application of fire test data. The rules will be provided in BS EN 1366-2 and BS EN 15882-2 respectively.

FIRE COMPARTMENT

Enclosed space, which may be sub-divided, separated from adjoining spaces by fire barriers / fire separating elements.

FIRE CONTAINMENT

Precautions which contain the fire to the smallest possible area, and control the threat to life safety and the extent of property damage.

FIRE SEPARATING ELEMENT

A compartment wall, compartment floor, cavity barrier and construction enclosing a protected escape route and/or a place of special fire hazard (as defined in Approved Document B).

FIRE-STOP

A linear joint seal provided to close an imperfection of fit or design tolerance between elements or components to restrict the passage of fire and smoke. The fire-stopping system must be fire tested as part of the fire damper system.

FREE AREA

Is the area within an aperture unobstructed by the components of an air transfer grille product when in the normal or open position through which air is free to flow. Its size can be given in square metres, square centimetres, square millimetres, square feet or square inches.

I

INSULATION [I]

This is the time in completed minutes for which the fire damper continues to maintain its separating function during the test without developing temperatures on its unexposed surface for which either:

a) increases the average temperature above the initial average temperature by more than 140°C or

b) increases at any location (including the roving thermocouple) above the initial average temperature by more than 180°C.

INTEGRITY [E]

After the start of the fire test, the leakage through the fire damper shall not exceed 360m³/h/m²) (corrected to 20°C). The integrity around the perimeter of the fire damper shall continue to maintain its separating function during the test without either:

- *causing the ignition of a cotton pad*
- *permitting a penetration of a gap gauge*
- *resulting in sustained flaming.*

INTUMESCENT

A material which does not immediately melt on exposure to elevated temperature but first expands to a cellular structure many times its original volume, sometimes accompanied by pressure development.

L

LEAKAGE [S]

Leakage through a fire damper shall not exceed 200m³/h/m² (corrected to 20°C). The requirement for leakage during the ambient leakage test need not be met after 5 minutes test duration.

NOTE - The result of the fire test shall be stated in terms of time elapsed to the completed minute from the commencement of the heating to the time when the fire damper failed to satisfy the criteria for integrity, insulation or leakage, or the termination of the heating, whichever is the shortest.

N

NON COMBUSTIBLE MATERIAL

See Approved Document B Table 6, which includes the following text:

Any material which when tested to BS 476-11:1982 does not flame nor cause any rise in temperature on either the centre (specimen) or furnace thermocouples. Products classified as non-combustible under BS 476-4:1970.

Any material classified as class A1 in accordance with BS EN 13501-1:2002.

Products made from one or more of the materials considered as Class A1 without the need for further testing as defined in European Commission Decision 2003/424/EC of 6 June 2003 amending Decision 96/603/EC , etc.

P

PENETRATION SEAL

The system used to restore/maintain the fire rating of the fire barrier at the position where the damper/ductwork to pass through the barrier. The penetration seal system must be tested as part of the air transfer grille / fire damper system.

PRESSURE DIFFERENTIAL

In order to create air movement through any ventilation system it is necessary to create a pressure differential from one end of the system to the other. Though this can be achieved by natural phenomena in the building such as "stack effect" it is more usual to incorporate motor driven fans.

R

RESPONSIBLE PERSON

The term 'Responsible person' is defined in several ways:-

[a] in relation to a workplace, the employer, if the workplace is to any extent under his control.

[b] in relation to any premises not falling within [a]

[i] The person who has control of the premises (as occupier or otherwise) in connection with the carrying on by him of a trade, business or other undertaking (for profit or not), or

[ii] The owner, where the person in control of the premises does not have control in connection with the carrying on by that person of a trade, business or other undertaking.

S

SLEEVE + ANGLE INSTALLATION METHOD

This method applies a sleeve to the outside of the damper casing, to which angles are fitted on either side of the compartment wall to hold the damper in position.

Particular attention must be paid to the individual fire damper manufacturer's data and fixing instructions. Failure to do so may result in a non-compliant installation.

SUPPORT SYSTEM

The components used for suspending and/or fixing a damper assembly to either the fire barrier itself or an adjacent floor, wall or soffit.

T

TEST EVIDENCE

Data obtained from a fire resistance test carried out to determine the suitability of a product, system or combinations to seal service penetrations. In respect to fire dampers, this means fire testing to BS EN 1366- 2 and classification of performance to BS EN 13501-3:2005. Historical data to BS476-20/22 will only be applicable in certain instances (e.g. fan shut-down on detection of fire) see Approved Document B: Fire safety. Tests to be undertaken by an UKAS accredited laboratory or equivalent.

The following text is provided for clarity: *The definition of the three elements of the performance criteria of dampers tested to BS EN 1366-2 (1999) are:*

- *integrity [E]*
- *insulation [I]*
- *leakage [S].*

V

VOLUMETRIC FLOW

Is the volume of air movement in a specific time and is usually given in cubic metres per hour or litres per second. Volumetric flow through an air transfer grille is calculated by multiplying the free area of the product by the velocity of the air passing through it.

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