

Introduction



Leminar Air Conditioning Industries Qatar WLL, is a sheet metal HVAC duct work and accessories manufacturing company serving the construction industry in Qatar since 2004. This is a Joint venture between highly accredited M/s Dyarco International Group, Qatar and Oasis Capital Holding Ltd, UK. Being ISO 9001:2008 certified and with strict Quality policies in place, Leminar has been highly successful to meet the growing requirements of the HVAC industry and provide contractors with utmost quality product and with on-time deliveries.

With manufacturing facility of over 25000sft, equipped with state of the art machinery, Leminar is one of the largest manufacturers producing high-quality products ranging from HVAC Sheet metal GI/MS/SS/ Al ducts, GI Spiral ducts, Fire Rated ducts, Sound Attenuators, Control Dampers, VAV Boxes, Fire Dampers, Louvers and other accessories.

Having long standing strategic tie-ups with elite principles of international repute like Galloway Acoustics (U.K), Fenland Fire Contracts Ltd (UK), Spiro (Switzerland), Leminar delivers products which are in strict adherence with the latest International standards - SMACNA, DW144-, ASHRAE, NFPA, BS and are approved by accreditation bodies – UL, UKAS, LPCB, Qatar Civil Defense.

Leminar promises to be a highly reliable partner to cater the diverse requirements of the industry and thereby contribute to the overall vision of Qatar2030.

Our Business Partners



Leminar is a sole licensee manufacturer of Gallway Fenland Fire Duct System in Qatar



Leminar Air Conditioning Industries Co. Qatar (WLL) is a joint venture company of 01 Oasis Capital Holding, UK and Dyarco Inernational Group, Qatar.



Leminar is a sole licensee manufacturer of Sound attenuators and other range of Acoustic products in Qatar



Leminar has an agreement with SPIRO for Spiral round ducts and the same are being manufactured on dedicated SPIRO machines.

ISO 9001:2008 Certificate

Leminar Air Conditioning Industries Co. W.L.L.

Doha, Qatar



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Recent Key Projects



- Al Bayt Staduim
- Qatar Rail Doha Metro Redline, Major stations @ Education city
- Manateq
- -Doha City centre expansion phase II
- Doha Festival City
- -Qatar Umm Haloul Power plant
- -New port project NPP/0026
- Doha Souq
- Mega reservoir package A&C
- Qatar National Museum
- IKFA Doha
- Mall of Oatar

- Doha Mall @ Abu Hamour
- Qatar Education city Convention centre
- Oatar SilhouetteTower
- Barzan Camp phase -01 Pkg3 housing complex
- Doha modern printing press building
- St. Regis Hotels & Residential towers
- -Sheraton Doha resorts and convention hall
- Ashghal schools
- The Pearl Qatar Viva Bahriya 17 & 11 towers





















Rectangular Duct System

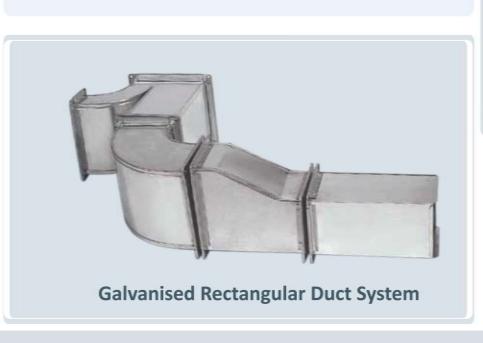
Leminar's Rectangular Duct System is manufactured to meet the most stringent HVAC/Industrial specifications and quality standards using Leminar's vast experience and expertise in the field and its state-of-the-art equipment.

For over a decade, Leminar's Rectangular Duct System is available for various HVAC and other industrial/commercial applications. Energy efficiency through minimum air leakage rate and indoor air quality are the basis of Leminar's engineered products.

Ducts are manufactured on CNC machinery such as Auto fold & Shearing machines, Plasma Arc Cutting machines, and Auto Seaming machines.

Leminar Rectangular Ducts are available in the following construction :-

- Galvanised Construction: Leminar's GI rectangular ducts are fabricated out of hot dipped galvanised sheets in accordance with ASTM A 653, Lock forming quality with G90 / Z27 (275 grams / m²) zinc coating.
- Stainless steel:-Leminar's SS ducts are fabricated out from prime SS sheets of 316 / 304 grades with fully welded longitudinal and transverse joints.
- Black steel / Mild steel ducts:- Leminar's black steel ducts are fabricated from hot rolled / cold rolled black steel sheets with fully welded longitudinal and transverse joints.
- Aluminium ducts:- Leminar 's Aluminium ducts are fabricated from aluminium sheets of AA1100 / Equal grade of sheets with Hemmed 'S' & Drive 'C' cleats or flanged type transverse joints.





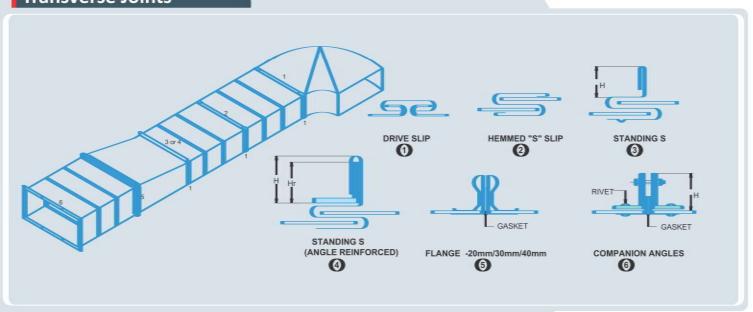
Rectangular Duct System

Product Features:

- Excellent quality ducts fabricated from a variety of GI sheet makes.
 (Nisshin, Japan / Jindal, India / Nippon, Japan / equal .)
- Mild / Black steel and Stainless steel rectangular ducts can be fabricated with fully welded longitudinal and transverse joints for airtight and watertight joints.
- Duct construction as per DW144 / SMACNA/ASHRAE standards provides superior strength, low leakage rate and vibration free products.
- No limitation on duct size. Any size of duct can be constructed.
- Less leakage with superior quality slip on flange transverse joints with integral sealant.
- All GI ducts shall be with beading at 300mm distance, which act as stiffeners and help minimizing vibration and drumming noise of duct sheet panels. Tie rods and stiffeners shall be provided, if required.
- Factory fabricated and "Ready to Install" ducts at the site.
- Accurate in finished dimensions.
- Special identification stickers on duct pieces cross referred to AC units/drawings/areas for an easy installation process.
- Quick and easy installation without the use of special tools.



Transverse Joints



SPIROFLO



SPIROFLO" Spiral Duct System is manufactured to meet the most stringent specifications and quality standards using our vast experience and expertise in the field. This system is available in our range of products for various applications. Energy efficiency, indoor air quality and fine workmanship are the basis of our engineered products.

Leminar duct-shop is equipped with following original "Spiro" Made in Switzerland machines:-

- 1. Tube former (Range- 100mm up to 1600mm diameter)
- 2. Gore locker machine
- 3. Stitch welding machine
- 4. Rolling Machine ·

The "SPIROFLO" System is made on from sheet metal consisting of lockseamed round spiral tubes with an extra deformation on lock in the seam (The 'Bubblan' patent).

Product Features:

- Superior strength, low leakage rate & low pressure drop.
- Reduces low frequency noise.
- Sizes available are 100, 125,140, 160, 180, 200, 224, 250,280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1120, 1250, 1400, 1500, 1600 mm.
- Covers all pressure applications from low/medium to high pressure systems.
- Lower installation and operating cost.
- Aesthetic design for visible duct installation.
- Savings on sheet metal material due to reduced surface area as well as savings on associated items such as insulation, adhesives, canvas cloth, supports etc.
- The patented "Bubblan" reel makes sure to produce a fixed lock seam and assured duct quality.
- Meets all the duct construction standards like DW-144 SMACNA, Eurovent, etc.
- Spiral tubes can be supplied in 6 mtrs length. Hence, less number of joints with reduced cost and low leakage in the system.
- ► Top quality of Airtight seam and Diameter tolerance.
- Superior Performance through standard galvanised steel.









GALLOWAY FENLAND FIREDUCT SYSTEMS

Galloway Fenland Fire Duct System

Approximately 85% of deaths in fire situations are caused by smoke inhalation. Non- fire resisting ductwork systems can be responsible for allowing the initial spread of fire between compartments, and by allowing the rapid spread of smoke and decomposition products. The correct use of fire resistant ductwork will maintain fire compartmentation and assist in the safe dispersal of smoke and hazardous fumes.

The Fenland Fire Duct system is an augmented ductwork construction utilizing the latest manufacturing techniques to which an intumescent coating is factory applied. As the coating is spray applied, this allows the ductwork system to be manufactured in any cross sectional shape to suit the application, producing a flanged single skin Fire Rated Ductwork system giving Stability and Integrity of up to 4 hours.



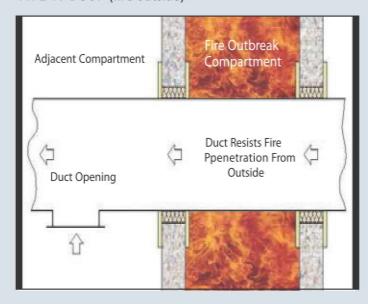
Leminar Air Conditioning Industries is the sole manufacturing licensee for Galloway Fenland duct system-UK for Qatar · All Leminar personnel are trained by FFC-UK and Galloway Group –UK experts for its applications and constructional equire

The Galloway Fenland Fire Duct System complies with the requirements of Method 3 of BS 5588 part 9: 1989 & Method 3 (clause: 33.4.3.4) of BS 9999:2008, has been fully tested in accordance with BS 476 part 24: 1987 (ISO 6944: 1985) for 4 hours stability and integrity for Type A ducts (Fire outside) and 3 hours stability, integrity and 2 hours insulation for Type B ducts (fire inside).

The Galloway Fenland Fire Duct System has been tested and assessed by the BRE Centre for Fire Resistance (formerly the Loss Prevention Council) as being suitable for use as, "a Fire Rated Ventilation Duct, a Smoke Extract/Outlet Duct or a Kitchen Extract Duct."

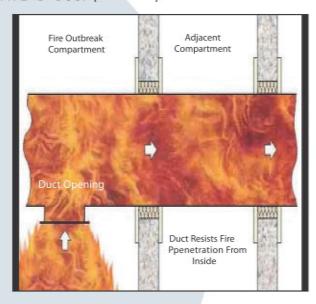
The Galloway Fenland Fire Duct System is assessed by Warringtonfire Exova and listed in their mideast scheme.

TYPE 'A' DUCT (fire outside)



Up to 4 hours- stability, integrity and insulation. Typical for escape lobby ventilation and staircase pressurisation systems.

TYPE 'B' DUCT (fire inside)



Up to 3 hours-stability, integrity and 2 hours insulation. Typical for kitchen extract, smoke extract and other fire rated systems.



Galloway Fenland Fire Duct System

In accordance with BS 476 Part 24: 1987 for the fire resistance of ventilation ductwork which is expressed in minutes of duration of heating in accordance with the ISO 834: 1985 (Cellulosic - Standard Time/Temperature Curve) until failure occurs to one or more of the criterion:

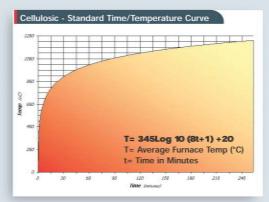
Stability: Stability failure shall be deemed to have occurred in duct 'A' within the furnace and in ducts 'A' and 'B' outside the furnace when the duct no longer fulfils it's intended function. (For smoke outlet ducts stability failure will also be deemed to have occurred when there is any restriction of the cross sectional area of the duct to 75% or less of its original area).

Integrity: The presence and formation of any cracks, holes or other openings outside the furnace through which flames or hot gases can pass.

Insulation: Insulation failure shall be deemed to have occurred when thetemperature rise above initial ambient on the unex posed surface of the duct outside the furnace exceeds either:

- 140 °C as an average value above ambient. or
- 180 °C as a maximum value above ambient.

For a Kitchen extract duct (Type A) these temperature limits also apply to the inside surface of the duct within the furnace.



Reasons to choose Leminar

- The FFC-UK fire rated duct system is tested to the most stringent international standards and certified by independent laboratories
- FFC-UK Duct system has been approved by local Fire and Safty Qatar Civil Defence
- FFC-UK Duct system has been approved by all the major MEP consultants/ Clients and have been used on various prestigious projects.
- Liminar is one and only company in the region which is having the facility of duct fabrication and fire rated coating application all under one roof. This ensures a stringent quality control, easy co-ordination due to single point responsibility and faster deliveries
- All the raw materials like the FFC 250 coating, FFC intumescent Acrylic sealant are manufactured and imported from UK.
- Leminar strictly follows the method statement for fabrication of the ducts as defined by FFC-UK for duct fabrication to ensire compliance with test standards.
- Leminar shall assist with any tecnical matter that may arise during installation at site.
- Leminar's tecnical team has been fully trained and authorized by FFC-UK Group to issue a Certificate of Conformity upon satisfactory inspection of the installed ducts by MEP contractors.
- The Fenland Fire duct system will also provide 2 hours insulation for temperatures upto 350 degrees celcius without application of any extanal insulation meterial, this can assist in keeping the expensive insulation coststo a minimam and can make all the difference where space may be at a premium



The Smoke Extract ductwork should be constructed in accordance with the Galloway Fenland specification for Fire Resistant ductwork, to provide 120 Minutes Stability, 120 Minutes Integrity 120 Minutes Insulation (or 120 Minutes fire Insulation to suit a smoke temperature of 300C) when tested to the requrements of BS476 part 24:1987 by a recognised NAMAS / UKAS Accredited laboratory.

The ductwork systems should be manufactured and installed in accordance with BS5588 part 9:1999 and becapable of providing type 'B' fire containment. Under normal non-fire operating conditions the ductwork should conform to the clss C pressure/leakage classification of the current HVCA DW/144 specification for sheet.





Galloway Acoustics – UK

Sound attenuators are basically a system to allow the passage of airflow while at the same time providing an acoustic loss or reduction to the passage of sound or noise.

Leminar Air Conditioning Industries is the sole manufacturing licensee for Galloway Acoustics-UK product range for Qatar

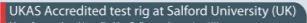
Tests and Certifications

Galloway Acoustics range of silencers has been independently tested to BS 4718 and ISO 7235 on a UKAS accredited rig at Salford University (England, UK). These tests were undertaken to determine static insertion losses, flow- generated noise and pressure loss on a set range of silencers fabricated with specific acoustic splitter and airway dimensions.

Also the sound attenuators are tested to BS 476 part 24:1987 for 2 hrs fire rating for temperatures upto 300 degree celcius by Exova Warringtonfire UK. No additional fire coating is required in this case for temperatures upto 300 degree celcius.

Key technical personnel from Leminar have been fully trained by Galloway acoustics-UK experts with respect to acoustic design, calculations and selection of the range of silencers. Galloway Acoustics design engineers are constantly on hand to assist Leminar with technical queries as and when required.

All silencers are at the Leminar factory are manufactured as per requirements of Galloway Acoustics- UK. This ensures continuity of the product tested performance across all projects where 'Galloway Silencers' are used. Therefore, the acoustic products as manufactured by Leminar Air Conditioning Industries would require no further acoustic testing.





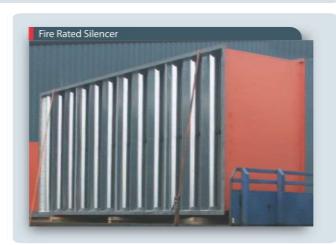


Galloway Acoustics – UK

Product range

- Rectangular silencers of Galvanised, Stanless Steel, Aluminium construction (Class A,B&C)
- Circular silencere of Galvanised, Stainless Steel, Aluminium construction.
- ► Fire rated construction meeting requirements of BS 476 part 4 (Fire) and BS 5588 Part A (smoke)
- Silencers with Melinex lining over the infill material which are suitable for Kitchen ducts, clean room applications and where hygiene is of utmost importance.
- High temperature casing silencers suitable for smoke extract ductwork systems, tested to BS 476 part 24:1987 for 2 hrs fire rating for temperatures upto 566 degree celcius by Warringtonfire Exova-UK and do not require any additional fire coating.
- Multi-section Silencers for any width or height.
- Vertical Bend, Horizontal Bend, T-section, Z-section silencers.
- Crosstalk attenuators.
- Acoustic and Non Acoustic louvers.
- Acoustic screens and enclosures.





Applications

- ▶ Airports ▶ Hospitals ▶ Public buildings like mosques, theaters, libraries, museums, swimming pools, etc.
- ▶ Hotels, Restaurants, Shops, Stores ▶ Industrial buildings like warehouses, workshops, garages, etc.

Bypass & Pressure Independent type VAV`s

Leminar Variable Air Volume (VAV) Control Units are Duct mounted Pressure dependent bypass type units, ideal for low and medium pressure applications. These units are suitable for both cooling and heating systems. The temperature can be preset on the electronic analogue/digital thermostat, which senses the room temperature and controls the VAV Unit. The required quantity of air to each zone is pumped in to the area based on the load requirement and the balance air bypassed through the bypass section of the VAV unit above false ceiling or to return air ducts.

Specifications:

Casing- 20 BWG galvanised steel.

Dampers-

- 1) 20 BWG galvanised steel.
- 2) VAV casing is internally lined with 1/2" thick (13mm), 32kg/m3 density BGT faced acoustic liner

Controls- Neptronic-Canada/ Equal make Modulating actuators (Available in 5 Nm & 10 Nm. and Digital thermostat).

Available range: 75 cfm to 3000 cfm

Product Features:

- Easy to install.
- Can be used to add zone control to various areas of the existing building.
- These units can easily be located to suit interior requirements.
- These units are provided with integral inlet and bypass balanc-ing dampers.
- ▶ Special acoustic treatment helps to achieve low NC levels for various applications.
- Design ensures low pressure drops on air side.
- Electronic digital thermostat ensures precise temperature
- Minimum air volume stop is provided which requires field adjustment to suit the application.



Leminar Fire Dampers

Fire dampers are passive fire protection products used in heating, ventilation, and air conditioning (HVAC) ducts to avoid the spread of fire inside the ductwork and prevent it from spreading to the adjacent compartments. When a rise in temperature occurs, the **fire damper** closes, usually activated by a thermal element which melts at temperatures higher than ambient but low enough to indicate the presence of a fire, allowing springs to close the damper blades.

Leminar, with the state of the art infrastructure, highly competent resources backed up with meticulous quality management systems have designed a damper that can meet the stringent requirements of UL 555 standard for static operations for 1 ½ hour rating.

Flotek Fire dampers

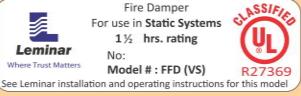
Model: FFD (VS)

Features:

- Curtain blade type
- Fire rating: UL 555 tested 1 ½ hour for static systems
- 100 % free area (blades outside the airstream)
- Complies to NFPA 90A & SMACNA requirements
- Dampers available in Single and Multi-section

Standard Construction

- Frame: 1.20 mm (18 G) Galvanised steel
- Blades: 0.80 mm (22 G) Galvanised steel with Interlockings.
- Fusible link: The link is rated at 165 degrees F and is secured by 18 G steel straps.
- Blade ramp: Formed from 1.20 mm (18 G) thick Galvanised steel.
- Springs: 0.30 mm thick x 19 mm wide formed from stainless steel
- Installation: Vertical
- Finish: Mill finish



Sample sticker fixed on Flotek fire damper

R27369

Fire Dampers



Laboratory Testing Pictures

Single Section Testing



Multisection Testing



Volume Control Dampers

Leminar Control dampers are manufactured to meet the most stringent specifications and quality standards using our vast experience and expertise in the field. Automatic intake dampers and manual balancing dampers are available in our range of products for various applications. Energy efficiency, indoor air quality and fine workmanship are the basis of our engineered products.

Types of Control Dampers:

- Rectangular Dampers with parallel or opposed blades and External Linkage Type (DL Series)
- Rectangular Dampers Gear Driven (DGD Series)
- Motorised Dampers (MD Series)
- Balancing Dampers (DSB Series)
- Round Dampers (RD Series)
- Back Draft Dampers (BD Series)

Product Features:

- ▶ High performance and strength.
- Aerofoil blades.
- Axles are bolted to each blade end in order to ensure no slip.
- Concealed heavy duty and maintenance free blade linkage.
- Opposed blade action for modulating air balancing applications and parallel blades for open/close applications.
- ▶ To prevent leakage, blade edges are fitted with synthetic seals as an option.
- ▶ Dampers are offered with flange connections or slip driven connections for easy installation.

Types of Control Dampers















Access Doors

Leminar range of duct access doors has been designed to allow easy and convenient access to the equipments within HVAC ductwork, while providing a secure, positive seal when closed.

Specifications:

- 22G galvanised steel flanged frame for strength.
- Double skinned 24 G galvanised door panel.
- 1 inch thick insulation.
- Notched knock over tabs and camlock fasteners.
- Positive seal synthetic gaskets.
- Safety retaining chain on removable door as an option item.
- Continuos piano type hinge standard on model AD-HCL.

Product Features:

- Progressive action, zinc plated camlocks for secure closure 1 inch (25 mm) thick insulation for reduced noise and heat transfer (2 inch thick insulation option is also available).
- Synthetic gaskets for positive seal.
- Sizes and models to suit most applications.
- Available hinges and safety chains (option).
- Meets SMACNA construction specifications.

Air Filters

Air filters are available in our range of products for various applications. Energy efficiency, indoor quality and fine workmanship are the basis of our engineered products.

AL Series

Aluminium filter media Galvanised Steel Frame (Aluminium frame optional)

SYN Series

Synthetic Filter media Galvanised Steel Frame (Aluminium frame optional)

Standard Construction

- ▶ Frame : 24G Galvanised Steel or 24G Aluminium available as an option.
- Filter media : Aluminium Mesh or Synthetic media as per customer requirement.
- Min. size : 4 inch x 4 inch (100 mm x 100 mm)
- Max. size: Multiple section unlimited

Product Features:

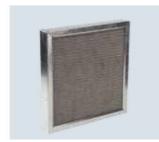
- Versatility and consistent performance in air intake & extract application.
- ▶ Durable construction & excellent filtration
- Rugged GI frame (aluminium frame as optional) with aluminium filter media or synthetic filter media.











Leminar's Milestones

2004



Leminar Air Conditioning Industries Co. Qatar (WLL), (A joint venture company of Leminar Dubai and Dyarco International WLL) was formed.

2010



ISO 9001:2008 certification from LRQA (UK) was awarded to Leminar Air Conditioning Industries Co. Qatar (WLL)

2011

QATAR CIVIL DEFENCE APPROVAL

Qatar Civil Defence Approval for Fire rated ducts

2013



Enhancement of product range by manufacturing Galloway (UK) make Acoustic Louvres, Enclosures & Screens



Leminar is the sole licensee of Galloway Acoustics products like sound attenuators, acoustic louvers, acoustic enclosures, acoustic screens all over Qatar



Leminar's Flotek products includes manufacturing of Rectangular ducts, Fire dampers, Volume control dampers, Bypass type / Pressure Independent VAV's Access doors, Filters, etc.



FIRE RATED DUCT SYSTEM

Leminar is the sole licensee of Galloway Fenland Fire rated duct system all over Qatar. This system is tested to international standards and approved by local civil defense.



THE LEAK PROOF DUCT SYSTEM

Leminar manufactures Spiral duct & fittings on dedicated SPIRO tubeformer, gorelocker and stitchwelder machines.



Where Trust Matters

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ISO 9001:2008 CERTIFIED



A sole manufacturing licensee of Galloway Group (UK) for products like fire rated Ducts, Sound Attenuators and other Acoustic products in Qatar