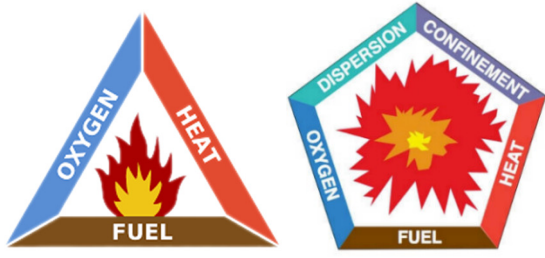


ATEX FAN GUIDE



ATEX is an acronym for ATmospheres EXplosible. Halifax Fan design and manufacture fans in accordance with ATEX directives 2014/34/EU and UKCA 2016 No.1107 covering equipment and protective systems intended for use in potentially explosive atmospheres.



In industrial environments, explosive atmospheres caused by gases, mists, vapours or dust may occur during manufacture, transport or storage. To initiate a fire, fuel, oxygen and a heat source must be present – The Fire Triangle.

The Explosion Pentagon additionally includes dispersion and confinement. Confinement will not only prevent dispersion, it can lead to pressure rise and consequentially an explosion.

Installation category (ISO 13349-1)

- B free Inlet, ducted outlet
- C ducted inlet, free outlet
- D ducted inlet, ducted outlet

Gas	Gas		Dust		°C
	Group	Ignition Temperature	Group	Cloud Ignition Temperature / Layer Ignition Temperature	
Ammonia	IIA	630°C	T1		
Hydrogen	IIC	560°C	T1		
Methane	IIA	537°C	T1		
Toluene	IIA	535°C	T1		
Sugar dust			IIIB	490°C 460°C	
Aluminium dust			IIIC	590°C 450°C	T1 450°C
Ethylene Oxide	IIB	440°C	T2		
Ethylene	IIB	425°C	T2		
Butane	IIA	365°C	T2		
Flour dust			IIIB	490°C 340°C	
Grain dust			IIIB	510°C 300°C	
Acetylene	IIC	300°C	T2		T2 300°C
Petroleum	IIA	247°C	T3		
Hexane	IIA	233°C	T3		
Lignite dust			IIIB	380°C 225°C	
Diesel	IIA	200°C	T3		T3 200°C
Diethyl Ether	IIB	160°C	T4		T4 135°C
Carbon Disulphide	IIC	95°C	T5		T5 100°C T6 85°C

Features of ATEX Fans:

Features are dependent on category and conditions

- ④ Compliance using BS EN 14986:2024 and referenced normative standards
- ④ Technical file lodged in UK and Europe
- ④ Metallic materials resistant to corrosion and/or abrasion
- ④ Fire retardant materials
- ④ Casing seams continuously welded for rigidity
- ④ Impellers designed to 2/3rds material yield stress at design speed and design temperature
- ④ Suitable material pairings in areas of potential rubbing contact - to prevent sparks or hot surfaces occurring
- ④ Earthing Boss for grounding of fan on site
- ④ Positive location of the Impeller
- ④ Vibration monitoring for ATEX 2D fans
- ④ Mechanical run test with vibration to ISO 14694 BV-3 or BV-4
- ④ ATEX certified/compliant ancillaries
- ④ ATEX related Documentation
- ④ Casing to withstand internal explosion (Zone 0 designs)
- ④ Flame arrestors (Zone 0 designs)

Gas Tight:

ATEX fans apart from Zone 0 are not required to be manufactured to a gas tight standard. However, Halifax Fan can offer gas tight leak tests to ISO 13349-2 category G and hydraulic pressure tests up to 11 barg.

INTERNAL (MEDIA) & EXTERNAL (ENVIRONMENT) TO THE FAN CASE

* TYPICAL CORRESPONDING MOTOR DATA

	Conditions	Equipment protection Level	ATEX Directive 1999/92/EC	ATEX Directive 2014/34/EU	Gas/Dust group	Temperature Class	* TYPICAL CORRESPONDING MOTOR DATA	
							Type of Protection	Temperature Class
GAS	An explosive mixture is continuously present or present for long periods	Ga	Zone 0	1G	IIA, IIB, IIC	T1 to T6	Electric driver not permitted	
	An explosive mixture is likely to occur in normal operation	Gb	Zone 1	2G	IIA, IIB, IIC	T1 to T6	Ex db	T4
	An explosive mixture is not likely to occur in normal operation and if it occurs it will exist only for a short time.	Gc	Zone 2	3G	IIA, IIB, IIC	T1 to T6	Ex ec	T3
DUST	An explosive mixture is likely to occur in normal operation	Db	Zone 21	2D	IIIA, IIIB, IIIC	case specific	Ex tb	T125°C
	An explosive mixture is not likely to occur in normal operation and if it occurs it will exist only for a short time.	Dc	Zone 22	3D	IIIA, IIIB, IIIC	case specific	Ex tc	T125°C

*Motor ATEX classified in gas/dust group and temperature class would generally be the same as that for external fan case

Recommended In-Situ Vibration Levels (ISO 14694)

condition	Application Category	Rigid mounting (rms mm/s)	Flexible mounting (rms mm/s)
Start-up	BV-3	4.5	6.3
	BV-4	2.8	4.5
Alarm	BV-3	7.1	11.8
	BV-4	4.5	7.1
Shutdown	BV-3	9.0	12.5
	BV-4	7.1	11.2

Servicing your Equipment

All repairs and replacement parts must match the original design intent to comply with the ATEX certification.

We can also offer skilled site engineers to perform the following:

- ④ Balancing - on and off-site
- ④ Vibration analysis
- ④ Troubleshooting
- ④ Alignment of coupling, motor, and drive belts
- ④ Performance testing
- ④ Maintenance and refurbishment

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CE Ex II INTERNAL 3G Ex h IIB T3 Gc EXTERNAL 2G Ex h IIB T3 Gb
 II INTERNAL 3D Ex h IIIB T250°C Dc EXTERNAL 2D Ex h IIIB T125°C Db

SERIAL No. 234567 **RATED SPEED** 3055 rpm
SIZE & TYPE 24 BLBC **RATED FLOW** 1.52 m³/s
YEAR 2039 **RATED PRESSURE** 7846 Pa
Halifax Fan 39.4567 **INSTALLATION TYPE** D
MAXIMUM INLET TEMPERATURE 40 °C
MECHANICAL DESIGN TEMPERATURE 70 °C
MECHANICAL DESIGN PRESSURE 25 kPa
EN14986:2024

ROTATION VIEWED FROM DRIVE SIDE **CCW**

REFER TO HALIFAX FAN I.O.M. MANUAL

The information in this wall chart is for guidance only and represents Halifax Fans interpretations of the ATEX directive. See relevant directives and regulations for detailed information. Halifax Fan Ltd 2025

