Orbis Environmental

DSEAR and ATEX specialists

LEV Duty Holder Day, 11th September 2026

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Orbis Environmental

DSEAR and ATEX specialists

Proudly employee-owned through an **Employee Ownership Trust**.

10 years

Our 10th birthday

Celebrating on
3 September 2026

14

Specialist consultants UK wide

Expertise across industries.
Capacity and continuity.

3,000+

DSEAR assessments

Practical support for complex workplace risks.

The DSEAR risk assessment process

Stage 1

Understand the site

Review site plans, schematics and process information.

Visit the site to understand the process and gather data.

Inspect plant and equipment. Take relevant measurements.

Stage 2

Assess and hand over

Full DSEAR risk assessment and hazardous area classification.

Client handover and walkthrough to confirm understanding.

Confirm achievable corrective actions and next steps.

Stage 3

ATEX assessment

Develop and implement the full asset register for all electrical and mechanical equipment in hazardous areas.

Inspect equipment and record findings in an inspection log.

Ongoing support and training

Ongoing consultancy and support with changes to scope, process or design.

Operator, supervisor and line manager training. Two-day DSEAR coordinator course for workplace leads and designated site contacts.

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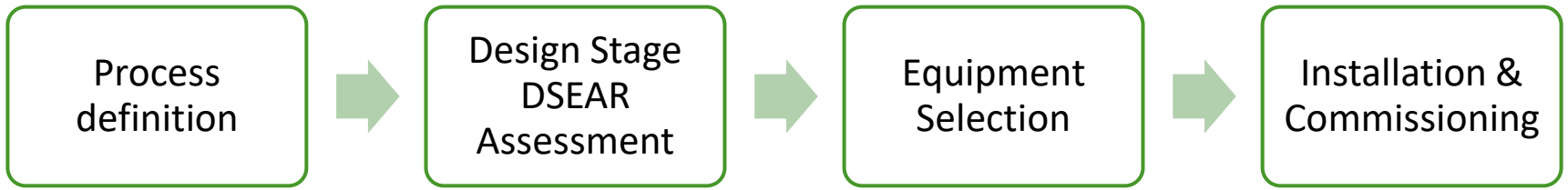
Design Stage DSEAR Assessment

Allow hazards to be engineered out rather than managed after installation.

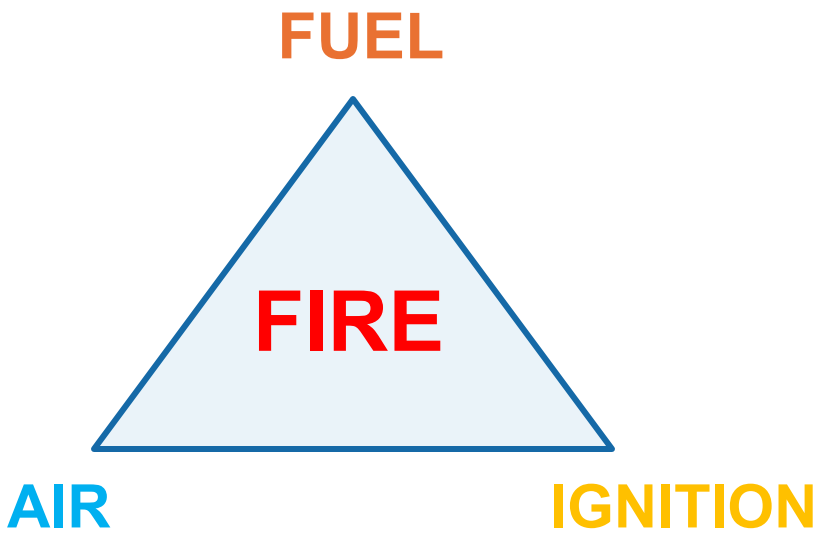


Make DSEAR a cost-effective control measure before the system is built.

Is it combustible or explosive?

First identify what the extraction system is handling.

Combustible dust or fume particles, flammable vapour or mist, or a mixture.



Fumes and Vapours

Vapours and spray mists from the actual product.

Dusts and powders

Wood, food, plastics and some metals.

Concentration matters

Vapour: acetone example

Flammable range in air (% by volume)

10% of LEL = 0.25% volume in air
Could potentially lead to No Zone

Dust: use the tested MEC

Minimum explosible concentration

50 g/m³

Hypothetical tested MEC

A proposed 10% target would be 5 g/m³. Check peaks, failures, deposits and filter-cleaning cycles.

When is a DSEAR assessment needed?

Assess dangerous substances and the process; classify areas where necessary.

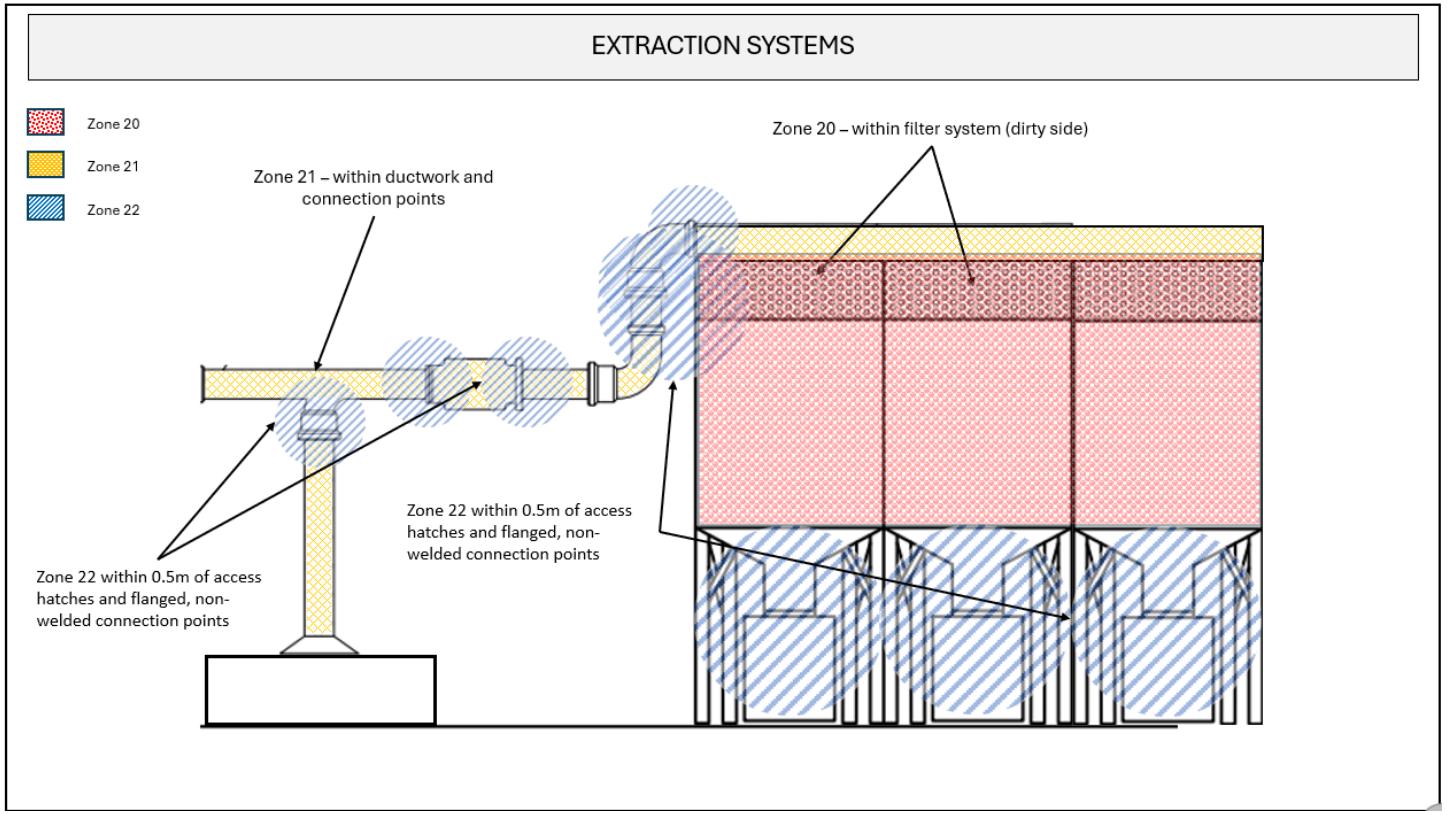
EI Part 15: flammable-fluid capacity thresholds

Location	Gas at 1 bar(a)	Liquefied flammable gas	Flammable liquid above its flash point
Indoors	50 litres	5 litres	25 litres
Outdoors	1,000 litres	100 litres	200 litres

Above these thresholds for gases, liquids and vapours, area classification is typically required.

Below them, a separate risk assessment is still needed.
These are not DSEAR exemptions or combustible-dust thresholds.

Example - Hazardous areas within an extraction system



Main Standards

- BS EN IEC 60079-10-1 – flammable gases and vapours.
- BS EN 60079-10-2 – combustible dusts and powders.
- EI Part 15 – installations handling flammable fluids.
- IGEM/SR/25 – natural gas installations.
- HSE L138 – DSEAR Approved Code of Practice.
- HSE HSG103 – safe handling of combustible dusts.
- HSE HSG140 – safe use and handling of flammable Liquids
- WIS32 – Wood Dust

ATEX rating and ignition control

Match the equipment to the zone and the substance.

Check category / EPL, gas or dust group, temperature and ambient limits.

Electrical equipment

ATEX rated motors, switches, sensors and other electrical devices.

Suitable Ex protection for the classified atmosphere.

Mechanical equipment

ATEX rated fans, blowers, agitators and rotary equipment.

Control friction, hot bearings and mechanical sparks.

Static control

Earthing and bonding across the installation.

Check continuity and suitable conductive components.

Equipment selection, installation and ongoing condition all matter.

Main Industry Challenges

Ongoing compliance and inspection

Keep the equipment register, inspection records and actions up to date.

Electrical equipment

BS EN IEC 60079-17:2024

- ATEX Equipment Asset Register
- Periodic Inspection ATEX Equipment (close, detailed and visual)

Mechanical equipment

- Heat Sources I.E. Bearings, Friction
- Earth and Bonding Protection
- Leak Inspection

Explosion protection

- Explosion Venting Inspection
- Suppression Maintenance
- Non-Return Valve Inspection
- Rotary Valve Inspection

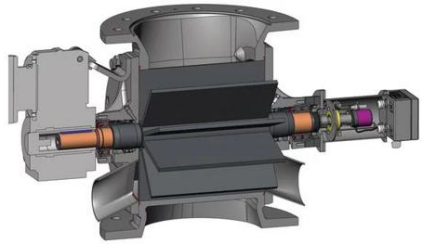
Alongside regular LEV testing, scheduled PPM and IEC Fixed Electrical Test

Set intervals by risk and deterioration. Dust or moisture may justify annual or shorter checks.

Explosion Protection Examples

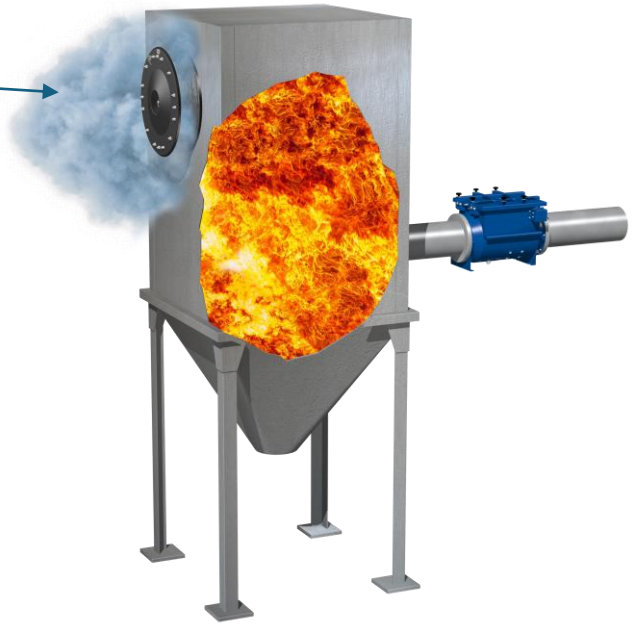
Isolation

Certified non-return / flap valves and rotary valves suitable for explosion isolation.



Suppression

A designed detection and suppression system acts before damaging pressure develops.



Venting to a safe location

Engineered panels release pressure through a suitable discharge route.

Benefit of DSEAR Risk Assessment for LEV systems?

First Step = Does the system need to be ATEX Rated?

Just because it may handle dusts or fumes, it doesn't always need to be ATEX rated

DSEAR Assessment and Hazardous Area Classification

£4,000–£6,000

DSEAR Assessment and HAC = The difference of needing full ATEX Plant or not.

Upgrade or replacement

£40,000–£80,000

Sensible difference in cost for ATEX rated LEV System vs Standard LEV System

Illustrative project costs. Assessment may still identify a need to upgrade.

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Industry Problem - Your system is not ATEX-rated!

Already handling combustible dust, powder, fumes or flammable vapours?

Either by Design gap, or Change in process / substance - What now?

It's going to cost, either way.

01 Establish a safe basis

A specialist Risk Assessment, DSEAR Assessment and ATEX Assessment is needed.
Identify Controls required to achieve sufficiently Low Risk!!!

02 Make targeted changes

- Increased Inspection
- Thermal Imaging
- Hourly / Shift start cleaning
- Temporary or Retro-Fit Explosion Panels
- Vast increase in Emergency Preparedness
- Staff Training level up

03 Maintain the controls

Supervisors and Management sign off
Active inspection and support
Clear timeline for replacement or upgrade

All temporary arrangements until a new system can be installed.
An alternative to full replacement needs a documented safe basis.

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Thank You

Who are Orbis

Employee Ownership Company

Celebrating 10 years

Specialist DSEAR and ATEX Assessors and Consultants

UK Wide Coverage (And worldwide projects)

Additional Services

- Fire Risk Assessment
- Fire Design Strategy
- Lightning Protection Systems
- Occupational Hygiene – Noise, Air, Vibration, EMF
- COSHH Management Support
- Legionella Risk Assessments and Monitoring
- PUWER Assessments

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Any questions?

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