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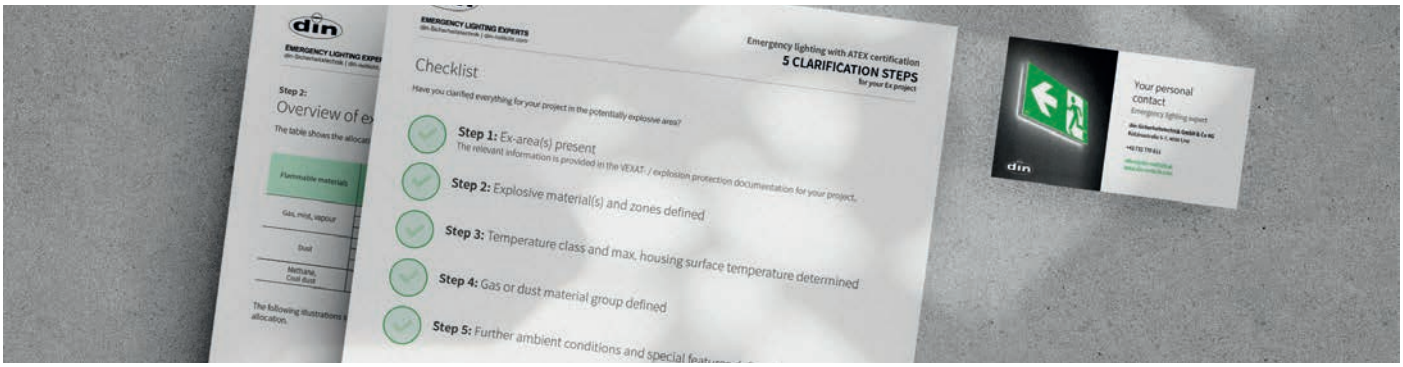
Emergency lighting with ATEX certification
5 CLARIFICATION STEPS
for your Ex project



Checklist

Have you clarified everything for your project in the potentially explosive area?

Step 1: Ex-area(s) present
The relevant information is provided in the VEXAT- / explosion protection documentation for your project.

Step 2: Explosive material(s) and zones defined

Step 3: Temperature class and max. housing surface temperature determined

Step 4: Gas or dust material group defined

Step 5: Further ambient conditions and special features defined

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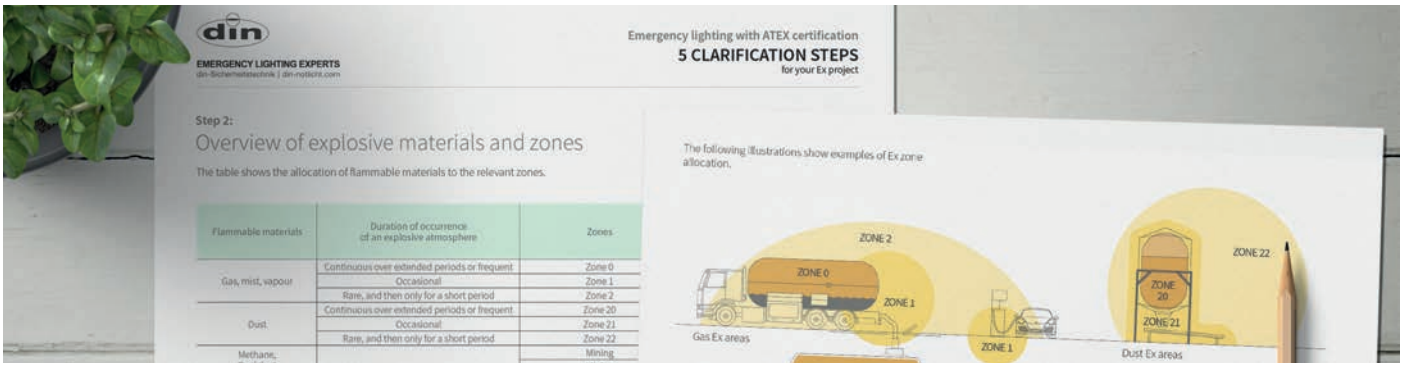


Step 2:

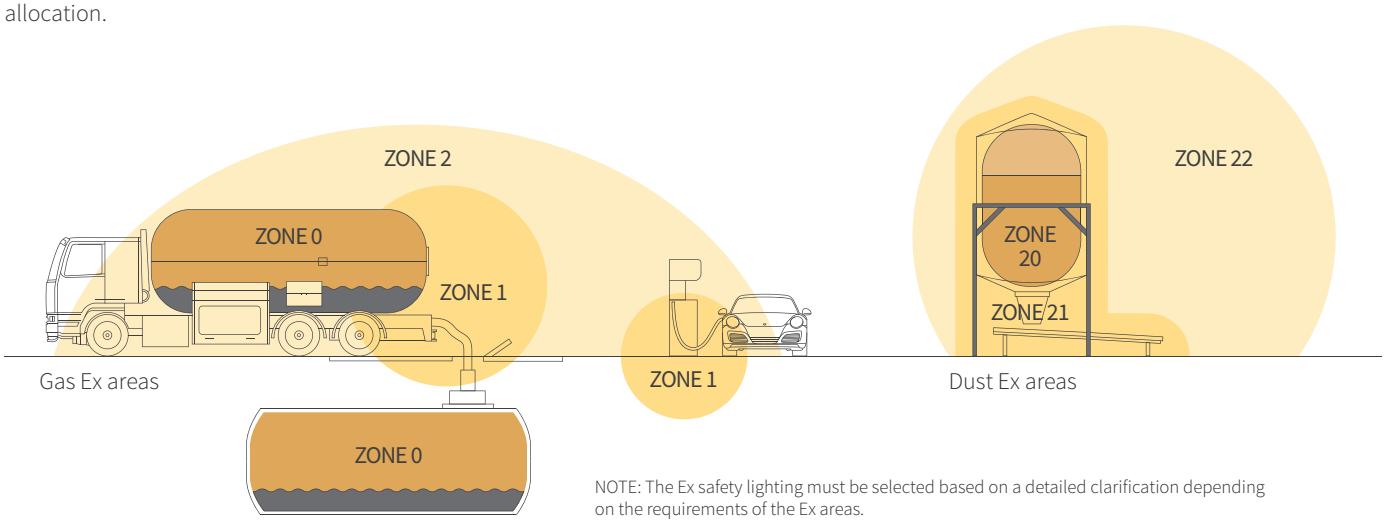
Overview of explosive materials and zones

The table shows the allocation of flammable materials to the relevant zones.

Flammable materials	Duration of occurrence of an explosive atmosphere	Zones	Lights
Gas, mist, vapour	Continuous over extended periods or frequent	Zone 0	
	Occasional	Zone 1	■
	Rare, and then only for a short period	Zone 2	■■
Dust	Continuous over extended periods or frequent	Zone 20	
	Occasional	Zone 21	■
	Rare, and then only for a short period	Zone 22	■■
Methane, Coal dust		Mining	
		Mining	

Legend: ■ CONCEPT Ex ■ INDUSTRY Ex X32

The following illustrations show examples of Ex zone allocation.



NOTE: The Ex safety lighting must be selected based on a detailed clarification depending on the requirements of the Ex areas.

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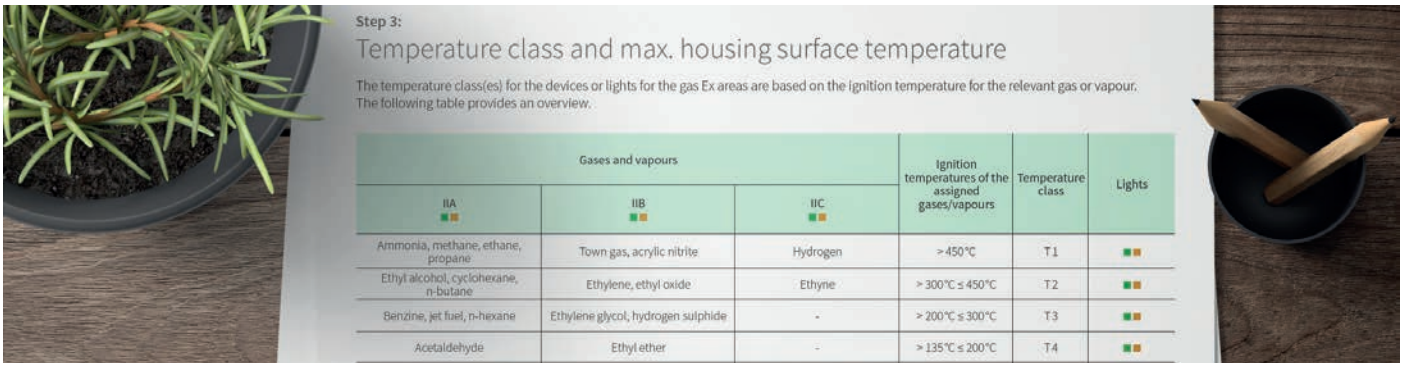

Step 3:

Temperature class and max. housing surface temperature

The temperature class(es) for the devices or lights for the gas Ex areas are based on the ignition temperature for the relevant gas or vapour. The following table provides an overview.

Gases and vapours			Ignition temperatures of the assigned gases/vapours	Temperature class	Lights
IIA ■■	IIB ■■	IIC ■■			
Ammonia, methane, ethane, propane	Town gas, acrylic nitrite	Hydrogen	> 450 °C	T 1	■■
Ethyl alcohol, cyclohexane, n-butane	Ethylene, ethyl oxide	Ethyne	> 300 °C ≤ 450 °C	T 2	■■
Benzine, jet fuel, n-hexane	Ethylene glycol, hydrogen sulphide	-	> 200 °C ≤ 300 °C	T 3	■■
Acetaldehyde	Ethyl ether	-	> 135 °C ≤ 200 °C	T 4	■■
-	-	-	> 100 °C ≤ 135 °C	T 5	■
-	-	Carbon disulphide	> 85 °C ≤ 100 °C	T 6	■

Legend: ■ CONCEPT Ex
■ INDUSTRY Ex X32

The max. device surface temperature for dust Ex areas must be specified by the operating company. This specification depends on whether a dust cloud or dust deposits are present.

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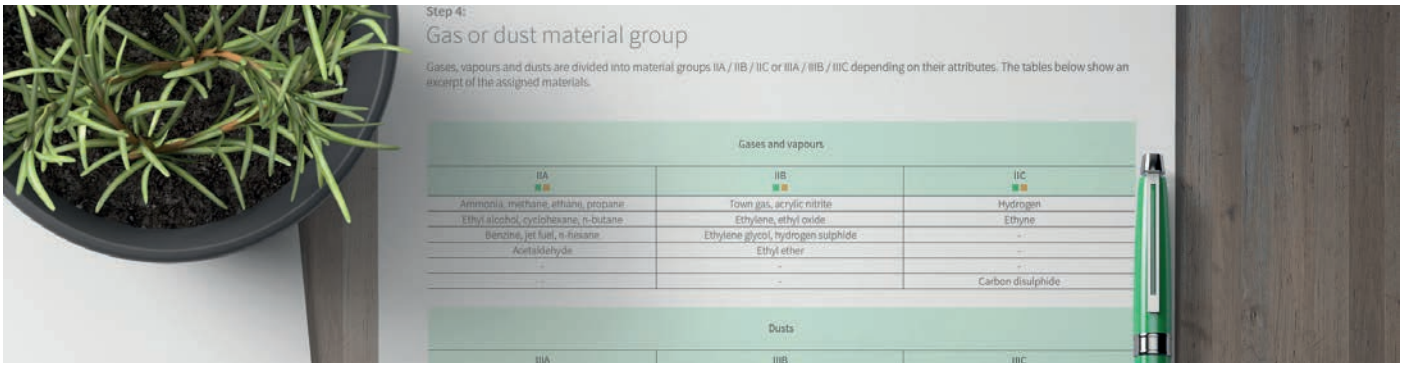

Step 4:

Gas or dust material group

Gases, vapours and dusts are divided into material groups IIA / IIB / IIC or IIIA / IIIB / IIIC depending on their attributes. The tables below show an excerpt of the assigned materials.

Gases and vapours		
IIA	IIB	IIC
Ammonia, methane, ethane, propane	Town gas, acrylic nitrite	Hydrogen
Ethyl alcohol, cyclohexane, n-butane	Ethylene, ethyl oxide	Ethyne
Benzine, jet fuel, n-hexane	Ethylene glycol, hydrogen sulphide	-
Acetaldehyde	Ethyl ether	-
-	-	-
-	-	Carbon disulphide

Dusts		
IIIA	IIIB	IIIC
Flammable lint	Non-conductive dusts	Conductive dusts
e.g.: Cotton lint	e.g.: Wood dust	e.g.: Metal dust

Legend: CONCEPT Ex
INDUSTRY Ex X32

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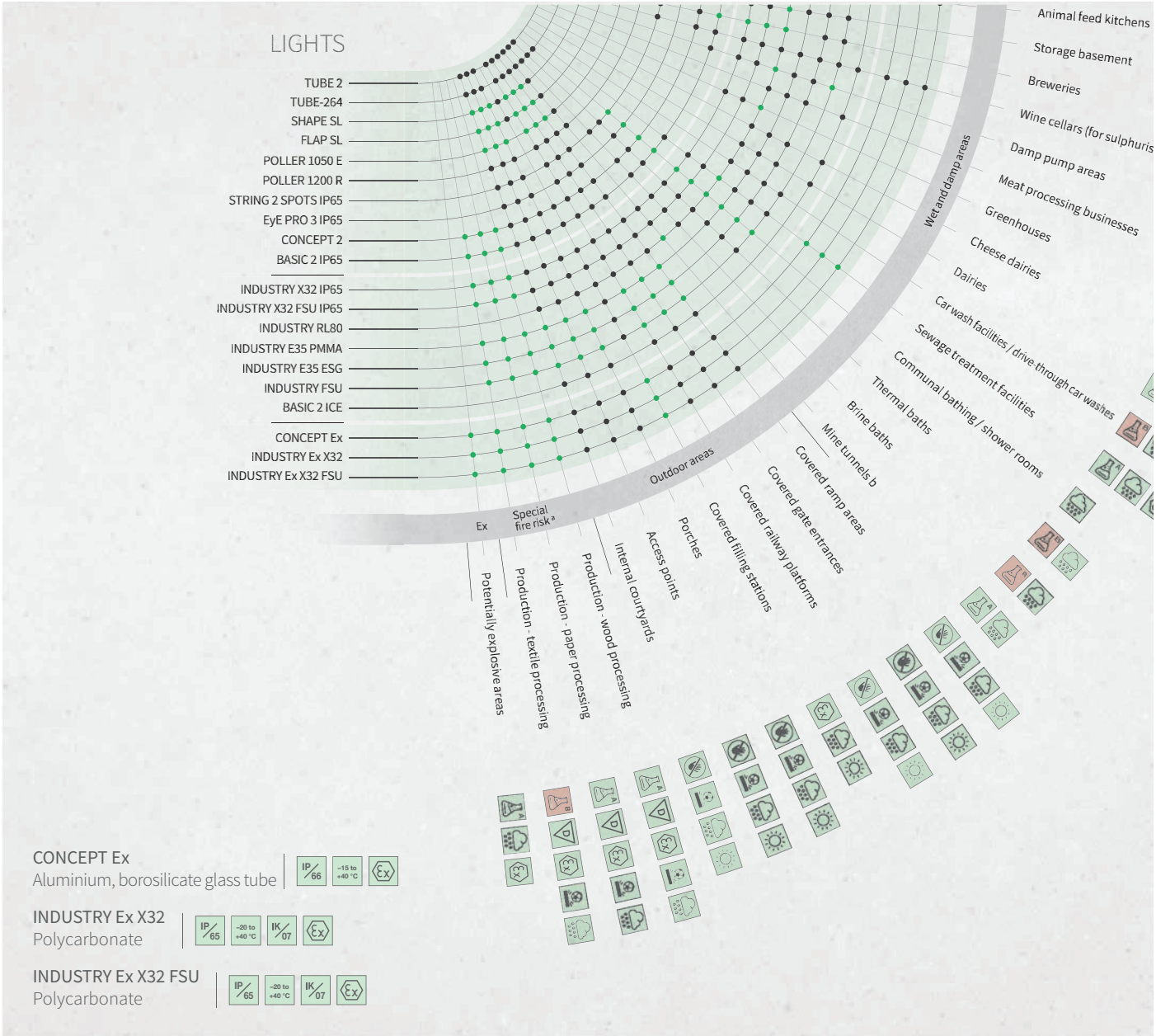
Step 5:

Ambient conditions and special features

Attention must be paid to further ambient conditions and special features in Ex areas in order to be able select the appropriate Ex illuminated escape route signs and safety lighting subsequently. The prevailing ambient temperature, the moisture conditions that are present and the resulting protection class, the required IK impact resistance grade, UV influences due to sunlight and chemical influences can be mentioned as parameters.



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