

Information about HADEF hoists in explosion-proof configuration

EX-Classification

HADEF Hoists in explosion-proof configuration (EX-hoists) comply with directive ATEX 95 (EU-directive 94/9/EU). They are suitable for the following classifications or lower classifications – they must not be used for other classifications:

- CE EX II 2G IIB c T4 for gas
- CE EX II 2D c 135°C for dust
- CE EX II 2G IIB c T3 for gas
- CE EX II 2D c 200°C for dust

i It is up to the responsibility of the owner of the equipment to chose the classification which is suitable for the purpose of use. The relevant directives and prescriptions that apply for installation and operation of explosion-proof equipment must be adhered.



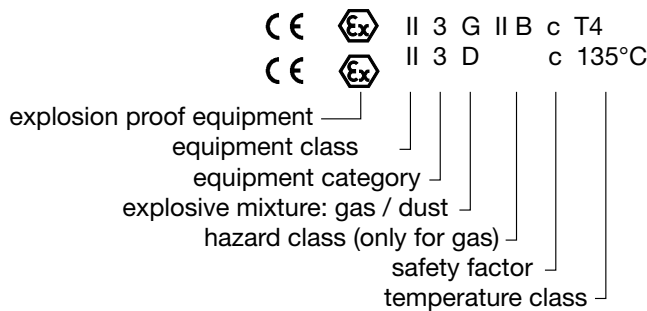
Foto: Kvaerner Oil & Gas Field Development

HADEF explosion-proof equipment is suitable for the following maximum conditions of use in area with risk of explosion:

- Use in zones 1 and 21, or lower classification
- Temperature class T 4 or lower class
- Gas of explosion group IIB or lower classification (except for IIB gas “hydrogen sulphide” and “ethylene oxide”)


EX- classification of the hoist is mentioned on a special EX-type plate.

EX-Classification example:



EX-Classification

EX- Zone	1 and 21
equipment category	2
explosion group for gas	IIB
temperature class for gas	T4
temperature class for dust	in °C

Explosion-proof hoists are marked with  in HADEF price catalogues.
Prices for these hoists are available on request.

General Information

EX-ZONES

Areas with explosion hazard are classified in zones. Information about explosion zones are given in IEC 60079-10 and in the national standards. The following table shows the zones in relation to the equipment category.

Gas/Mist/Steam	Equipment category	Dust	Equipment category	Existing explosive atmosphere
Zone 0	1G	Zone 20	1D	Permanently, long lasting or often
Zone 1	2G	Zone 21	2D	From time to time
Zone 2	3G	Zone 22	3D	Seldomly or shortly

G= gas D= dust

HADEF offers equipment suitable for zones 1 resp. 21.

Explosion Groups for Gas

Combustible gases and steam can be classified by the following temperature classes according to their inflammability:

Substance	inflammation temperature	temperature class	explosion group
Acetone	540°C	T1	IIA
Ammonia	630°C	T1	IIA
Benzol (pure)	555°C	T1	IIA
Ethanoic Acid	485°C	T1	IIA
Ethane	515°C	T1	IIA
Ethylacetat	460°C	T1	IIA
City Gas (lighting gas)	560°C	T1	IIB
Hydrogen Sulfide	270°C	T3	IIB
Hydrogen	560°C	T1	IIC
Ethanol	425°C	T2	IIB
Azetylen	305°C	T2	IIC
Heating Oil	300°C	T3	IIA
Ethanal	140°C	T4	IIA
Ethyl Ether	180°C	T4	IIB

Temperature Classes

When operating the hoist pay attention to the stipulated temperature class and never exceed the max. surface temperature of the hoists.

The maximum surface temperature of the hoist must always be lower than the inflammation temperature of the gas/steam air mixture. It is possible to use the hoists in lower temperature classes if they are classified for higher temperature classes. Our hoists are not suitable for temperature class T5 for gas/air mixtures and for temperature class T6 i.e. carbon disulphide (IIC) as this applies seldomly, only.

Temperature class	Inflammation temperature of gas °C	max. surface temperature of hoist °C
T1	>450	450
T2	>300 <450	300
T3	>200 <300	200
T4	>135 <200	135
T5	>100 <135	100
T6	>85 <100	85

In areas with hazard of explosion by combustible dust, the maximum surface temperature of the hoist may not exceed the inflammation temperature (in °C) of the dust/ air-mixture by more than 2/3.
Due to their temperature classification, HADEF hoists are suitable for use in areas with environmental temperature of – 20 °C up to + 40 °C.

The following HADEF hoists can be supplied in explosion-proof configuration:	Type	Temperature class Dust	Temperature class Gas
HADEF Trolleys			
- push travel trolley	19/90	135°C	T4
- hand geared trolley	22/90	135°C	T4
- push travel trolley	20/94 AFR	135°C	T4
- hand geared trolley	20/94 AFH	135°C	T4
- pneumatic trolley	20/94 AFP	135°C	T4
HADEF Spur Gear Hoists			
- capacities up to 3 t / 2 chain falls	9/98	135°C	T4
- capacities from 5 t / 2 chain falls up to 10 t / 4 chain falls	9/98	135°C	T4
- capacities from 10 t / 2 chain falls up	9/98	200°C	T3
HADEF Spur Gear Hoists combined with Trolley			
- with push travel trolley up to 3 t / 2 chain falls	24/98 HR	135°C	T4
- with push travel trolley from 5 t / 2 chain falls up to 10 t / 4 chain falls	24/98 HR	135°C	T4
- with hand geared trolley up to 3 t / 2 chain falls	24/98 HH	135°C	T4
- with hand geared trolley from 5 t / 2 chain falls up to 10 t / 4 chain falls	24/98 HH	135°C	T4
- with hand geared trolley from 10 t / 2 chain falls up	24/98 HH	200°C	T3
HADEF Spur Gear Hoists combined with Trolley – Low Headroom Configuration			
- with hand geared trolley up to 5 t/3 chain falls	28/98 HR	135°C	T4
- with hand geared trolley from 5 t / 3 chain falls	28/98 HH	135°C	T4
- with hand geared trolley from 10 t / 2 chain falls up to 25 t / 5 chain falls	28/98 HH	200°C	T3
HADEF Spur Gear Hoists combined with Trolley – Ultralow Headroom Configuration			
- with hand geared trolley up to 3,2 t / 2 chain falls	29/98 HH	135°C	T4
- with hand geared trolley from 5 t / 4 chain falls up to 6,3 t / 4 chain falls	29/98 HH	135°C	T4
- with hand geared trolley from 10 t / 2 chain falls up	29/98 HH	200°C	T3
HADEF Pneumatic Chain Hoists			
- stationary	70/06 APS	135°C	T4
- with push travel trolley	70/06 APR	135°C	T4
- with hand geared trolley	70/06 APH	135°C	T4
- with pneumatic trolley	70/06 APP	135°C	T4
HADEF Pneumatic Chain Hoists – Low Headroom Configuration			
- with push travel trolley up to 5 t / 3 chain falls	28/06 APR	135°C	T4
- with hand geared trolley up to 40 t / 2 x 8 chain falls	28/06 APH	135°C	T4
- with pneumatic trolley up to 40 t / 2 x 8 chain falls	28/06 APP	135°C	T4
HADEF Pneumatic Chain Hoists – Ultralow Headroom Configuration			
- with hand geared trolley	29/06 APH	135°C	T4
- with pneumatic trolley	29/06 APP	135°C	T4
HADEF Pneumatic Winch			
	43/86 P	135°C	T4



HADEF hoists may not be used in:

- Zone 0 and 20
- in areas of Zone 1, 2,21 and 22 with IIC gas i.e. Acetylen, Ethyl Nitrate, Arsin, Carbon Disulphide, Hydrogen and IIB gas Hydrogen Sulfide and Ethylene Oxide