



## Ignition hazard assessment

*Equipment:* Screw conveyor with diverter valve  
*TAG.no.:* JHS400-2  
*Location:* Building C - 2nd floor  
*Ex-zone:* Zone 21 II 2D IIIB T300°C

Acc. to: NEN-EN-ISO 80079-36/37

Source			Frequency of ignition source without measures applied				Measures applied to prevent the ignition source becoming effective			Frequency of ignition source with measures applied						
No.	Ignition source	Cause	During normal operation	During foreseeable malfunction	During rare malfunction	Not relevant	Reason	Description of the measure	Basis	Technical documentation	During normal operation	During foreseeable malfunction	During rare malfunction	Not relevant	Resulting EPL	Necessary restrictions
1	Hot surfaces	Bearings		x			Bearings can generate heat when running dry or due to wear / damage	Temperature sensors on bearing to prevent the bearings running hot	ISO 80079-37 6.5; ISO 80079-37 8.2	Assembly drawing po213213-1; Datasheet Temperature-Sensor-01			x		Gb, Db	Control of ignition source "b" (b1)
2	Hot surfaces	Friction conveyor screw - product	x				Heat due to friction	Tip speed: 0,73 m/s (Ø400 mm @ 35 rpm) < 1 m/s Therefore no significant heat source is expected	ISO 80079-36 6.4.3	Assembly drawing po213213-1; Datasheet Gearmotor-01; User manual				x	Ga, Da	Constructional safety "c"
3	Hot surfaces	Mechanical seal		x			Over tightening of seal results in too much friction (packed gland)	Replace st. seal with pressurised air mech. seal	ISO 80079-37 5.3.2	Assembly drawing po213213-1; Seal drawing JH01X01-07				x	Ga, Da	Constructional safety "c"
4	Hot surfaces	Increased friction due to overfilling of machine		x			Overfilling increases pressure and therefore increases heat generated by friction	Place (Ex) level sensor at the end of the conveyor to stop the machine when full (at limit)	ISO 80079-37 6.5; ISO 80079-37 8.2	Assembly drawing po213213-1; Datasheet level-Sensor-01			x		Gb, Db	Control of ignition source "b" (b1)
5	Hot surfaces	Gearbox	x				Ex apparatus can cause ignition sources	Ex apparatus fitting for determined zone	N/A	Manual Gearbox_01				x	Ga, Da	IIIB T120°C
6	Flames and hot gases	Hotworking during maintenance	x				Maintenance work to surrounding areas	Working permits are required in the zone to avoid risk of working in hazardous conditions	Arbobesluit art. 2.42a	N/A				x	Ga, Da	Organisational
7	Mechanical sparks	Foreign object (e.g. bolts) in the machine		x			Foreign objects could enter machine through product	Place grid above inlet to avoid foreign objects entering the machine	-	Assembly drawing po213213-1;			x		Gb, Db	Constructional safety "c"



## Ignition hazard assessment

*Equipment:* Screw conveyor with diverter valve  
*TAG.no.:* JHS400-2  
*Location:* Building C - 2nd floor  
*Ex-zone:* Zone 21 II 2D IIIB T300°C

Acc. to: NEN-EN-ISO 80079-36/37

Source			Frequency of ignition source without measures applied				Measures applied to prevent the ignition source becoming effective			Frequency of ignition source with measures applied						
No.	Ignition source	Cause	During normal operation	During foreseeable malfunction	During rare malfunction	Not relevant	Reason	Description of the measure	Basis	Technical documentation	During normal operation	During foreseeable malfunction	During rare malfunction	Not relevant	Resulting EPL	Necessary restrictions
8	Mechanical sparks	Screw flight touches through wall during malfunction		x			If conveyor screw or shaft-end breaks the conveyor screw may touch the wall	Place rotation detection sensor (with max 10% rpm-deviation) on shaft-end to detect a broken shaft	-	Assembly drawing po213213-1; Inductive sensor datasheet Ro.Sensor_02			x		Gb, Db	Control of ignition source "b"
9	Electrical equipment	Motor	x				Electrical motor can cause ignition sources	Ex apparatus fitting for determined zone	N/A	Manual Motor_01			x		Gb, Db	IIIB T120°C
10	Electrical equipment	Rotation sensor	x				Electrical equipment can become ignition sources when subjected to dust	Ex apparatus fitting for determined zone	N/A	Datasheet Ro.Sensor_02			x		Gb, Db	IIC/IIIC T80°C
11	Stray electric currents / cath. protection	Short-circuit / earth fault			x		Conveyor frame + drive + support + conveyor screw are adequately bonded and earthed	No further measures necessary	N/A	ISO 80079-36 6.6.2			x		Gb, Db	
12	Static electricity	Static charge in isolated component (diverter flap)	x				Isolated diverter flap gets brushed by the product continuously	Bond flap to frame to prevent discharge	ISO 80079-36 6.7.2	Assembly drawing po213213-1			x		Gb, Db	
18	Adiabatic compression and shock waves	Pneumatic cylinder in valve			x		Vaporized lubricants in pneumatic lines can act as an ignition source	No further measures necessary	N/A	N/A			x		Gb, Db	Constructional safety "c"

Resulting category: 2D h IIIB T120°C