ATEX DIRECTIVES

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vanBeek
THE STANDARD IN SCREW CONVEYING

ATEX DIRECTIVES

ATEX is an abbreviation of the French name "ATmosphère EXplosible" and is used to indicate two European Directives in the field of explosion hazard under atmospheric conditions. From 1 June 2003 organisations where an explosion hazard exists in the EU must comply with Directive 1999/92/EC, referred to as ATEX 137, now ATEX 153. The second accompanying Directive is 94/9/EC, referred to as ATEX 95, which is specially intended for equipment that is used in places where there may be an explosion hazard. From 20 April 2016 ATEX 95 was transferred to ATEX 114 Directive 2014/34/EU. From November 2019 IECEx applies as a global standard.

ATEX 153 – Social Directive

This Directive sets out the minimum requirements for health and safety of employees who work in a potentially explosive atmosphere. In the Netherlands this Directive is included in the national legislation and regulations by means of the Working Conditions Decree (ARBO Besluit). Employers of companies with a potential explosion hazard must according to the Directive draw up and maintain an 'Explosion safety document'. Some important parts of this explosion safety document are a list of possible ignition sources according to EN 1127-1 and a zone classification according to EN-IEC 60079-10-1 and NPR 7910-1 for gas and 60079-10-2 and NPR 7910-2 for dust.

ATEX 114 – Product Directive

The ATEX 114 Directive describes regulations for compliance with the essential health and safety requirements for electrical and non-electrical equipment and safety systems in places ("zones") where a dust or gas explosion hazard may occur. In the Netherlands this Directive is included in the Explosive Material Decree and describes the general safety objectives. The ATEX 114 Directive classifies equipment into groups and categories depending on the scope and protection level offered. The Directive includes two equipment groups: Group I (Mining) and Group II (Above ground). A distinction is then made into three categories; these indicate the protection level of the equipment. The protection level ultimately determines in which zone equipment may be used.

IECEx

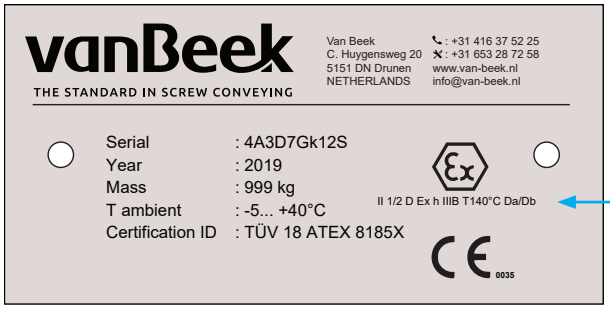
Globally the standards are drawn up by the International Electrotechnical Commission (IEC). The standards relating to explosion protection are the IECEx standards and relate to the certification of products and personal competencies. If equipment must be used outside Europe, IECEx may be required or be a good basis for local legislation and regulations.

The procedure to be followed for ATEX 114 certification depends on the nature of the equipment and the category.

Category	Equipment	Zone	Certification
1	Equipment which is safe in normal operation, expected faults and unexpected faults.	Use in **zone 0** (category 1G) or **zone 20** (category 1D).	For both electrical and non-electrical equipment according to **Category 1,** for use in **zone 0/20,** legally required certification of products (EC Type approval) and production processes (Quality Assurance Notification) or a single item acceptance by an ATEX Notified Body applies.
2	Equipment which is safe in normal operation and expected faults.	Use in **zone 1** (category 2G) or **zone 21** (category 2D).	For electrical equipment according to **Category 2** for use in **zone 1/21** legally required certification of products and production processes by an ATEX Notified Body applies.
			For non-electrical equipment according to **Category 2** for use in **zone 1/21** establishment of a Technical Construction Dossier with an ATEX Notified Body applies; certification of products and quality system is not necessary in this case.
3	Equipment which is safe in normal operation.	Use in **zone 2** (category 3G) or **zone 22** (category 3D).	For all equipment (both electrical and non-electrical) according to **Category 3** for use in **zone 2/22** "self-certification" applies, here the manufacturer himself carries out a construction assessment, risk-analysis and any necessary testing; certification of products and quality system is not necessary in this case.

Explanation of ATEX coding

The ATEX coding indicated on the nameplate is a specification of the ignition protection methods and of the ATEX environment in which the machine may operate. The coding is explained below using an example.



II 1/2 D Ex h IIIB T140°C Da/Db

II The machine belongs to group II: intended for above ground use in an explosive atmosphere.

1/2 The machine is internally suitable for category 1 and externally for category 2.

D The machine is suitable for use in an explosive atmosphere caused by flammable dust.

h As a protection method against ignition structural safety by construction measures is used.

IIIB Dust group.

T140°C The maximum surface temperature that can arise in case of a malfunction in the machine in a dusty atmosphere is 140°C.

Da/Db Equipment protection level.

N.B: An 'X' after the certificate number means that you as installer/user must bear in mind specific conditions for use. You can find these conditions in both the manual and in the certificate belonging to the product. Such a product is certified as 'equipment' and does not therefore require an additional assessment.

Relationship between ATEX 153 (formerly ATEX 137) **and ATEX 114** (formerly ATEX 95)

ATEX 153 zone		Classification according to product standards	ATEX 114 category		EPL (Equipment Protection Level)	
Gas	Dust	Protection level	Gas	Dust	Gas	Dust
0	20	Very high	1G	1D	Ga	Da
1	21	High	2G	2D	Gb	Db
2	22	Normal	3G	3D	Gc	Dc

Gas groups, temperature classes and their relationship

Group	T1 (450°C)	T2 (300°C)	T3 (200°C)	T4 (135°C)	T5 (100°C)	T6 (85°C)
I	Methane					
IIA	Acetone	Butane	Petroleum	Acetaldehyde		
	Ammonia		Diesel oil			
	Ethane		Kerosene			
	Ethyl acetate		Fuel oil			
	Methanol		Hexane			
	Propane					
	Styrene					
	Toluene					
	Coal gas	Ethylene	Hydrogen sulphide		Ethyl ether	
IIB	Carbon monoxide	Propylene oxide				
IIC	IIC Hydrogen	Acetylene				Carbon disulphide

Gas and dust groups

Environment	Permitted equipment group	Representative material					
Underground	I	Methane					
Gas, above ground	IIA	Propane	Butane				
	IIB	Propane	Butane	Ethylene	Coal gas		
	IIC	Propane	Butane	Ethylene	Coal gas	Hydrogen	Acetylene
Dust, above ground	IIIA	Tobacco	Coarse sawdust				
	IIIB	Tobacco	Coarse sawdust	Milk powder			
	IIIC	Tobacco	Coarse sawdust	Milk powder	Graphite powder (Toner)		

DELIVERY RANGE VAN BEEK TYPE APROVAL

II 1/- D Ex h IIIA...IIIC T140°C Da/-
II 1/2 D Ex h IIIA...IIIC T140°C Da/Db
II 1/3 D Ex h IIIA...IIIC T140°C Da/Dc

II 1/- G Ex h IIA...IIC T140°C Ga/-
II 1/2 G Ex h IIIA...IIC T140°C Ga/Gb
II 1/3 G Ex h IIIA...IIC T140°C Ga/Gc


(1) EU-TYPE EXAMINATION CERTIFICATE

(2) Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere - Directive 2014/34/EU

(3) EU-Type Examination Certificate Number

TÜV 18 ATEX 8185 X Issue: 00

(4) Equipment: Screw conveyors diameter 75, 100, 150, 200, 250, 300, 350, 400, 500

(5) Manufacturer: Van Beek B.V.
(6) Address: Christiaan Huygensweg 20
5151 RP Drunen, Netherlands

(7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26th February 2014, certifies this product which has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report 5078Ex8185.00/18

(9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 1127-1:2011 EN 80079-0:2012/A11:2013 EN 80079-36:2016 EN 80079-37:2016

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.

(12) The marking of the equipment shall include the following:

II 1/- D Ex h IIIA...IIC T... °C Da/- II 1/- G Ex h IIA...IIC T... °C Ga/-
II 1/2 D Ex h IIIA...IIC T... °C Da/Db II 1/2 G Ex h IIA...IIC T... °C Ga/Gb
II 1/3 D Ex h IIIA...IIC T... °C Da/Dc II 1/3 G Ex h IIA...IIC T... °C Ga/Gc

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz Cologne, 2019-03-25

Dipl.-Ing. Andreas Mastrike

This EU-Type Examination Certificate without signature and stamp shall not be valid.
This EU-Type Examination Certificate may only be reproduced in its entirety and without change, subject to approval by the TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group, Am Grauen Stein 51105 Köln
Tel. +49 (0) 221 806-0 Fax: + 49 (0) 221 806 1114

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Certificate

Quality Assurance Notification
Standard Directive 2014/34/EU

Certificate Regist. No. 01 220 1809037

The Certification Body for Explosion Protection of TÜV Rheinland Industrie Service GmbH Reported under no. 0035 certifies:

Certificate Holder: Transportschroeven- en Machinefabriek van Beek B.V.
Christiaan Huygensweg 20
5151 DN Drunen
Netherlands

Scope: Production, final equipment inspection and testing of conveyor systems

Types of protection: h

An audit was performed, Report No. 1809037. Proof has been furnished that the requirements according to Directive 2014/34/EU Annex IV are fulfilled.

The due date for all future audits is 22nd of November

Validity: The certificate is valid from 03.12.2018 until 22.11.2021
First certification December 2018

Wuppertal, 03.12.2018

TÜV Rheinland Industrie Service GmbH
Am Grauen Stein, D-51105 Cologne
Dipl.-Ing. Rolf Hinsche

www.tuv.com

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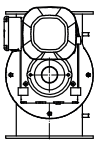
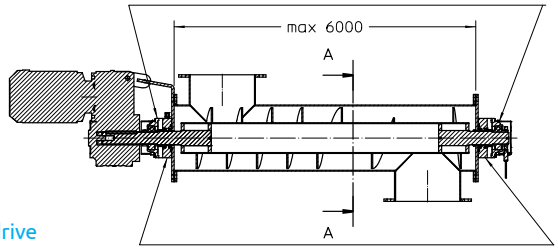
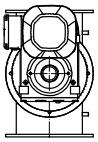
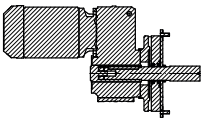




Shaft-mounted drive





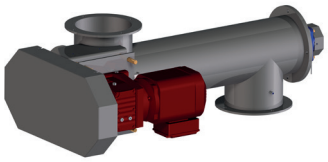
Flange drive

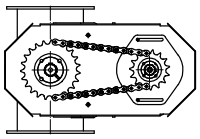
Bearing type

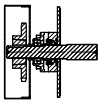
- Ball-bearing flanged
- Ball-bearing plummer block
- Axial-radial bearing

Sealing options

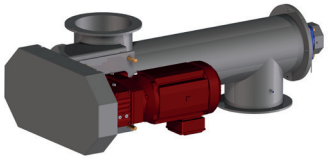
- Van Beek air seal
- Van Beek grease-filled seal
- Van Beek stuffing box cord seal
- Van Beek stuffing box cord seal with grease ring
- Van Beek stuffing box cord seal with air ring

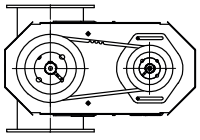


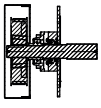




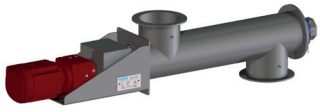
Chain drive

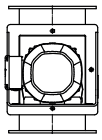


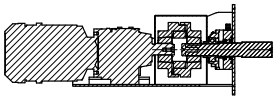




Belt drive

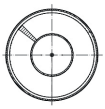




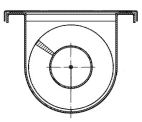


Straight drive with flexible coupling

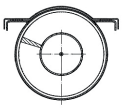
Available designs (A-A)



Tube



Trough



Omega trough

Available types

75
100
150
200
250
300
350
400
500

ATEX categories

ATEX 153 zone		ATEX 114 category		80% Type approval Van Beek	20% Single item inspection NoBo	Storage TCD Van Beek	Storage TCD NoBo	EPL (Equipment Protection Level)	
Gas	Dust	Gas	Dust					Gas	Dust
0*	20	1G*	1D	✓		✓		Ga	Da
					✓	✓	✓		
1	21	2G	2D			✓	✓	Gb	Db
2	22	3G	3D			✓		Gc	Dc

* only internal product zone

VAN BEEK TYPE APROVAL

Based on years of expertise in the area of ATEX and intensive cooperation with TÜV Rheinland, Van Beek has since 1 February 2019 had a unique ATEX type approval for part of its delivery programme. This type approval applies to category 1 machines (G or D) and is the evidence of the high quality of systems specifically designed for ATEX that Van Beek produces.

Would you like more information about ATEX?
Then contact Van Beek, call +31 (0)416 37 52 25
or mail to info@van-beek.nl.

Van Beek would be pleased to improve your production process with innovative solutions. Contact us to explore the options.

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