

**IBExU Institut für Sicherheitstechnik GmbH**  
An-Institut der TU Bergakademie Freiberg



- [1] **TYPE EXAMINATION CERTIFICATE**  
- Translation -
- [2] **for non-electrical equipment and components**  
**of the equipment groups I and II, categories M2 and 2 as well as 3**
- [3] Type Examination Certificate Number: **IBExU04ATEXB005 X**
- [4] Equipment: **V-belt**  
Types STARBELT  
Profiles SPZ, SPA, SPB, SPC
- [5] Manufacturer: SWR Europe – van Dinther GmbH  
Dieselstraße 27 b-c  
D-44805 Bochum
- [6] Applicant: W. Stennei Antriebselemente GmbH  
Vinckeweg 4 - 8  
D-47119 Duisburg-Ruhrort
- [7] The V-belts mentioned in [4] as well as any acceptable variation thereto is specified in the schedule to this Type Examination Certificate.
- [8] IBExU Institut für Sicherheitstechnik GmbH certifies that the equipment mentioned in [4] has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
The test results are recorded in the test report IB-03-4-006 of 18 March 2004.
- [9] Compliance with Essential Health and Safety Requirements according to Annex II has been assured by compliance with EN 13463-1:2001, prEN 13463-5:2003, CLC/TR 50404:06-2003 and ISO 1813:1998.
- [10] If the sign "X" is placed after the certificate number and/or the marking under [12], it indicates that the equipment is subject to special conditions for safe use specified under [17] in the schedule to this Type Examination Certificate and in the operating instruction.
- [11] This Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.
- [12] The marking of the V-belt mentioned in [4] shall include the following assignments:



**II 2GD c IIB X**

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Freiberg, 19 March 2004

(Prof. Dr. Redeker)

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- Stamp -

Certificates without signature and stamp are not valid.  
This certificate may only be duplicated completely and unchanged.  
In case of dispute, the German text shall prevail.

**Schedule**

[13] **Schedule**

[14] **to TYPE EXAMINATION CERTIFICATE IBExU04ATEXB005 X**

[15] **Description of the equipment**

Anti static V-belts of the type STARBELT  
Profiles SPZ, SPA, SPB and SPC  
Length: depending on profiles of 512 mm up to 12.500 mm  
Range of operating temperature: -40 °C up to +100 °C

[16] **Test Report**

The test results are recorded in the test report IB-03-4-006 of the 18 March 2004.  
The test documents are specified in the annex to the test report.

**Summary of the Test Results:**

The V-belts mentioned in [4] are electrically conductive and fulfil the requirement according to Technical Report CLC/TR 50404:06-2003 for  $RB \leq 10^5 \Omega m$  and depending on profiles the requirement according to ISO 1813.

The V-belts do not readily support combustion when a naked flame is applied to it. (In case of an influence of a 50-W-test-flame for a short time ( $\leq 5$  s) the V-belts do not inflame.)

The V-belts mentioned in [4] of the type STARBELT, profiles SPZ, SPA, SPB and SPC fulfil the requirements for non-electrical devices of the type of protection c (protection by constructional safety) of the equipment group II, category 2GD. The range of operating temperature is mentioned in [15]. The V-belts fulfil the requirements for use in potentially explosive atmospheres whose explosive can be caused by combustible gases or vapours of combustible liquids of the explosion group IIB or by combustible dusts. (Thus, they fulfil the requirements of the explosion group IIA too).

[17] **Special Conditions for safe use**

The V-belts may be used only if their materials under the respective operation conditions resist the mechanical and/or chemical influences respectively corrosion in such way, that the explosion protection is always guaranteed.

At the assembly in an equipment or in protective systems has to be considered the self-heating of the belts in context of the establishment of the temperature class of the equipment or protective system. If necessary, the maximum appearing temperature (under concrete conditions of use and operating conditions) has to be measured.

At the assembly and the operation the specified belt tension and the adjustment have to be kept. The belt tension as well as the gear of the drive assembly have to be controlled in regular intervals, so far as an automatic monitoring is not intended.

The belt pulleys must be electrically conductive and must be included in the compensation of potential.

The contact resistance between V-belt and belt pulley must not be affected by contamination, wax or different things.

The belts must not operate in a dust layer.

The maximum allowable belt speed is 30 m/s.

The V-belts have to be equipped with stable covers. The covers have to protect the belts from the impact of falling objects.

In the covers may be arranged regular openings, which may not exceed the following measurements:

	Circular openings, diameter in mm	Rectangular openings, lateral length in mm
Top side of the cover	4	4
Side part of the cover	8	8

The distance between the cover and rotating parts must be at least 5 mm.

The cover must be electrically conductive and must be included in the compensation of potential and it should not consist of light weight metal. The removing of the cover is only allowed in stand-still.

The instructions for use of belts in explosive areas have to be enclosed to each V-belt and they have to be observed absolutely.

[18] **Essential Health and Safety Requirements**

Confirmed by norms (see [9]).

[19] **Confirmation about the storage of the documents according to Annex VIII of Directive 94/9/EC**

It is confirmed that the documents for the non-electrical equipment mentioned in [4] are deposited with NOTIFIED BODY IBExU (EC-Identification No. 0637) under the number IB-03-4-006, according to Annex VIII of Directive 94/9/EG, appropriate to the commitments of the Directive 94/9/EC, Article 8 (1) b) ii).



(Prof. Dr. Redeker)

Freiberg, 19 March 2004