



CONFORMITY EXAMINATION CERTIFICATE

Certificate No.: CA 195/2

Certification Body: TÜV SÜD Industrie Service GmbH
Gottlieb-Daimler-Str. 7
70794 Filderstadt - Germany

Certificate Holder: Pfeifer Drako
Drahtseilwerk GmbH
Rheinstraße 19 - 23
45478 Mülheim an der Ruhr - Germany

Manufacturer: Pfeifer Drako
Drahtseilwerk GmbH
Rheinstraße 19 - 23
45478 Mülheim an der Ruhr - Germany

Product: Rope drive with a rope with plastic sheathing (TPU), for use as a part of the drive for traction sheave elevators.

Type: **DRAKO PTX 300**
6 mm / 6,5 mm

Basis of examination: - 2014/33/EU (Februar 2014), Annex I
- EN 81-20:2020
- EN 81-50:2020

Test report: CA 195/2 of 2021-07-22

Outcome: The product conforms to the requirements of the basis of examination if the requirements of the annex to this conformity examination certificate are kept.

Date of Issue: 2021-07-22

Valid until: 2026-07-21

Achim Janocha
Certification Body LCC



**Annex to the certificate concerning the examination of conformity
No. CA 195/2 of 2021-07-22**



Industrie Service

1 Scope of application

1.1 Rope drive with a rope with plastic sheathing (TPU), for use as a part of the drive for traction sheave elevators.

Typ: **DRAKO PTX 300**
Nominal diameter: **6 mm or 6,5 mm**

1.2 Technical Data

Nominal diameter d_{Nom} including sheath (TPU)	6 mm or 6,5 mm
Diameter of steel rope d_{St}	5 mm
Rope construction	7x7+7x19 W sZ
Stroke type and direction	Cross stroke right
Tensile strength of the wire	> 1770 N/mm ²
Minimum breaking load F_{min}	28 kN

1.3 The rope drive with a rope with plastic coating, type DRAKO PTX 300 may be used in elevator installations according to the following definitions:

DRAKO PTX 300 ($d_{Nenn} = 6 \text{ mm}$)				
Suspension	1:1	1:1	2:1	2:1
With additional pulley	No	Yes	No	Yes
Maximum number of trips	3,3 million.	1,65 million	1,1 million	0,83 million
Numbers of single bends of the rope part with highest levels of wear	1	2	3	4

DRAKO PTX 300 ($d_{Nenn} = 6,5 \text{ mm}$)				
Suspension	1:1	1:1	2:1	2:1
With additional pulley	No	Yes	No	Yes
Maximum number of trips	4,5 million	2,25 million	1,5 million	1,2 million
Maximum numbers of trips with reverse bending	--	600.000	--	400.000
Numbers of single bends of the rope part with highest levels of wear	1	2	3	4

Annex to the certificate concerning the examination of conformity No. CA 195/2 of 2021-07-22



Industrie Service

2 Conditions

2.1 The requirements of Directive 2014/33/EU ('Elevator Directive') with regard to deviations of the rope drive from the harmonized standards EN 81-1:1998+A3:2009 (D), Clause 9 or EN 81-20:2020 (D), Clause 5. 5 are guaranteed if the steel wire rope type DRAKO PTX 300 of the construction 7x7+7x19 W sZ, R0 > 1770 N/mm², with a nominal rope diameter $d_{Nom} = 6 \text{ mm}$ or $d_{Nom} = 6.5 \text{ mm}$ minimum breaking load $F_{min} = 28 \text{ kN}$, cross lay right is used and

- the rope safety is at least = 12,
- the ropes are used in elevator installations with a fully enclosed shaft.
- the ropes are not used for firefighters' elevators,
- lubrication and cleaning of the ropes is prohibited,
- the ropes are not exposed to open fire or sparks.
(attention must be paid to this during installation of the elevator system) and
- the rope end connections are installed without major lateral deflection.

2.2 The DRAKO PTX 300 must be exchanged if it meets any of the following criteria:

DRAKO PTX 300 ($d_{Nom} = 6 \text{ mm}$)				
Suspension	1:1	1:1	2:1	2:1
With additional pulley	No	Yes	No	Yes
Maximum number of trips	3,3 million	1,65 million	1,1 million	0,83 million
Numbers of single bends of the rope part with highest levels of wear	1	2	3	4

DRAKO PTX 300 ($d_{Nom} = 6,5 \text{ mm}$)				
Suspension	1:1	1:1	2:1	2:1
With additional pulley	No	Yes	No	yes
Maximum number of trips	4,5 million	2,25 million	1,5 million	1,2 million
Maximum numbers of trips with reverse bending	--	600.000	--	400.000
Numbers of single bends of the rope part with highest levels of wear	1	2	3	4

Counterbending is only assumed if the distance between the rope contact points on two consecutive fixed rope sheaves does not exceed 200 times the rope diameter.

In addition, the ropes must be replaced according to the manufacturer's specifications at the latest when one of the following discard criteria occurs:

- positional displacement of the steel rope inside the sheath,
- deformation of the sheath (creasing, necking),
- in case of recognizable penetration of moisture into the rope,
- permanent deformation due to twisting of the rope,
- wire ends protruding through the sheath if more than 3 over $6 \times d$ or more than 9 over $30 \times d$ ($d = \text{nominal rope diameter}$)
- damage to the sheath with large-scale detachment over a length of more than $5 \times d$ ($d = \text{nominal rope diameter}$),
- sheath overlappings, and
- strand breakage.

2.3 In the event of damage to the sheath caused during installation of the ropes or by external damage (e.g. during installation and maintenance work), the suspension ropes must be replaced immediately.

2.4 The traction capacity of the suspension ropes shall be calculated in accordance with EN 81-1:1998+A3:2009 (D), Annex M (informative) or EN 81-50:2020 (D), Clause 5.11 or equivalent.

2.5 The traction sheave diameter must be 120 mm when using DRAKO PTX 300 DT.

Annex to the certificate concerning the examination of conformity No. CA 195/2 of 2021-07-22



Industrie Service

- 2.6 The traction sheave must be fitted with a hardened or unhardened semi-circular groove made of steel or cast iron:
- | | | |
|---------------|---|---------------------------------------|
| Opening angle | $30^\circ \leq \gamma \leq 60^\circ$ | |
| Radius | $3,05 \text{ mm} \leq r \leq 3,60 \text{ mm}$ | bei $d_{\text{Nom}} = 6 \text{ mm}$, |
| Radius | $3,30 \text{ mm} \leq r \leq 3,60 \text{ mm}$ | bei $d_{\text{Nom}} = 6,5 \text{ mm}$ |
- 2.7 The diameter of the pulley must be at least 120 mm when using DRAKO PTX 300.
- 2.8 The pulley must be designed with a semi-circular groove.
- | | | |
|---------------|---|---------------------------------------|
| Opening angle | $30^\circ \leq \gamma \leq 60^\circ$ | |
| Radius | $3,05 \text{ mm} \leq r \leq 3,60 \text{ mm}$ | bei $d_{\text{Nom}} = 6 \text{ mm}$, |
| Radius | $3,30 \text{ mm} \leq r \leq 3,60 \text{ mm}$ | bei $d_{\text{Nom}} = 6,5 \text{ mm}$ |
- 2.9 During the test prior to initial start-up and the periodic tests, the driving capability shall comply with EN 81-1:1998+A3:2009 (D) Annex D and EN 81-20:2020 (D), Clause 6.3, respectively.
- 2.10 The car shall be held in the landing without sliding away when loaded with 125% of the rated load according to EN 81-1:1998+A3:2009 (D) or EN 81-20:2020 (D).
- 2.11 The car, empty or loaded with nominal load, shall be decelerated during emergency braking to a speed not exceeding the design of the buffers, including reduced buffer stroke.
- 2.12 The car must not be lifted when the counterweight is resting on the buffers and the powerplant is running in the upward direction.
- 2.13 A description of the criteria for detecting discard maturity shall be included in the form of operating and maintenance instructions.
- 2.14 The lateral deflection angle of the ropes must not exceed 0.5° .
- 2.15 All further requirements of EN 81-1:1998+A3:2009 (D) or EN 81-20:2020 (D) in respect of relating to rope drives must be complied with, such as:
- Connection of the rope end attachment (80% of the minimum breaking force).
 - Load compensation of the suspension means
 - Protection on traction sheaves and rope sheaves (rope stay, deflector)
 - Visual inspection of traction sheave ensured
- 2.16 Due to the specified maximum permissible number of rides, the elevator installations must record the rides via a safe counter (e.g. by means of a power-failure-proof non-resettable electrical counter). When the specified maximum permissible number of rides is reached, the elevator shall be safely shut down by the controller at the next landing and the suspension ropes shall be replaced.

3 Remarks

- 3.1 The test results refer only to the test object and the associated test of conformity.
- 3.2 The range of application of the rope drive with a rope with plastic sheathing, type DRAKO PTX 300, is limited to the tested system configurations listed in the annex to the conformity test certificate No. CA 195/2. For an extension of the application range further tests with the configurations deviating from the conformity test certificate are required.
- 3.3 The rope manufacturer has specified discard criteria that deviate from DIN 15020
- 3.4 Should new information become available, the Testing Laboratory reserves the right to impose additional conditions for the use of the rope drive or to modify existing conditions.
- 3.5 The certificate of conformity test No. CA 195/2 may be attached to the required notification documents as a decision-making aid for the Notified Body.
- 3.6 The product shall be clearly marked with a reference to the manufacturer and the type designation in order to be able to verify the conformity of the tested product with the series production.
- 3.7 When installing the ropes, it must be prevented that the twisting of the rope leads to a closing or individual rope sections up to the point of twisting off the rope.

**Annex to the certificate concerning the examination of conformity
No. CA 195/2 of 2021-07-22**



Industrie Service

- 3.8 Each change of direction is considered as a trip to be counted by the trip counter.
- 3.9 The manufacturer has prepared instructions for detecting the discard maturity of the plastic-sheathed rope, type DRAKO PTX 300 (Information of the manufacturer Pfeifer Drako, Drahtseilwerk GmbH & Co. KG for the detection of discard maturity dated 24.03.2015 (pages 1 - 4)).

**Enclosure of the certificate concerning the examination of conformity
No. CA 195/2 of 2021-07-22**



Industrie Service

Authorised Manufacturer of Serial Production – Production Sites (valid from: 2021-07-22):

Company **Pfeifer Drako
Drahtseilwerk GmbH**

Address Rheinstraße 19 - 23
45478 Mülheim an der Ruhr – Germany

- END OF DOCUMENT -

Base: Information of the manufacturer dated 2021-07-06

Note: The English text is a translation of the German original. In case of any discrepancy, the German version is valid only.