



Certificate concerning the examination of conformity

Certificate no:	KP 048/1
Certification body:	TÜV SÜD Industrie Service GmbH Zertifizierungsstelle für Produkte der Fördertechnik Westendstr. 199 80686 München - Germany
Applicant:	Gustav Wolf Seil- und Drahtwerke GmbH & Co. KG Sundernstr. 40 33332 Gütersloh - Germany
Date of application:	2011-09-29
Manufacturer:	Gustav Wolf Seil- und Drahtwerke GmbH & Co. KG Sundernstr. 40 33332 Gütersloh - Germany
Product:	Rope drive, for use as part of the machine for traction drive lifts
Type:	PAWO F3 ($d_{Nom} = 6 \text{ mm}$)
Test laboratory:	TÜV SÜD Industrie Service GmbH Zentralbereich Fördertechnik - Sonderbauten Abteilung Aufzüge und Sicherheitsbauteile Gottlieb-Daimler-Straße 7 70794 Filderstadt - Germany
Date and number of the test report:	2011-12-12 KP 048/1
Test specifications:	- Directive 95 / 16 / EC, Annex I - EN 81-1:1998+A3:2009 (D)
Result:	The equipment fulfills the requirements of the test specifications for the respective scope of application stated in the annex, page 1 - 2, of this certificate, keeping the mentioned conditions.
Validity:	2016-12-12
Date of issue:	2011-12-12

Certification body for lifts and cranes

Chadi Nouredine





**Annex to the certificate concerning the examination of conformity
No. KP 048/1 dated 2011-12-12**

1 Scope of application

Traction drive lifts, falling within the scope of validity of the Directive 95/16/EC (Lifts Directive) or whose rope drive / drive according to EN 81-1:1998+A3:2009 (D), number 12.2.1a) will be renewed.

2 Conditions

- 2.1 The requirements of Directive 95/16/EC ('Lifts Directive') concerning the deviations of the rope drive from the harmonised standard EN 81-1:1998+A3:2009 (D), number 9 are guaranteed, if the steel wire rope of type PAWO F3, $R_0 = 1960 \text{ N/mm}^2$, minimum breaking load $\geq 27.5 \text{ KN}$, with a nominal rope diameter $d_{\text{Nom}} = 6 \text{ mm}$, right-hand regular lay is used and
- the rope safety is $v \geq 12$,
 - the diameter of the traction sheave is $D_T \geq 200 \text{ mm}$,
 - the pulley diameters are $D_R \geq 180 \text{ mm}$,
 - the traction sheave is designed with a hardened semi-circular undercut groove (U-angle $\beta \leq 98^\circ$) or a hardened V-groove (V-angle $\gamma \geq 40^\circ$) or a hardened semi-circular groove (without undercut), and shall be made of steel or cast iron and
 - the diverter pulleys are designed with a semi-circular groove ($r = 0.50 - 0.53 \times d$) made of steel, cast iron or plastics.
- 2.2 The decision for rope discard must be either (it depends which case occurs first)
- according to DIN 15 020
 - 12 broken wires within a length of $30 \times d$
 - 6 broken wires within a length of $6 \times d$
 - or according to definition of the rope manufacturer with a diameter reduction of more than 6% related to the nominal rope diameter.
- 2.3 The rope traction of the suspension ropes must be calculated according to EN 81-1:1998+A3:2009 (D), Annex M (informative) or in an equivalent manner.
- 2.4 The safety factor of the suspension ropes must be calculated according to EN 81-1:1998+A3:2009 (D), Annex N.
- 2.5 Without further calculations, the part of the rope with the strongest load at most shall overrun the traction sheave and two diverter pulleys only.
- 2.6 The diameter of the traction sheave shall be $D_T \geq 200 \text{ mm}$.
- 2.7 The traction sheave shall be designed with a hardened semi-circular undercut groove (U-angle $\beta \leq 98^\circ$) or a hardened V-groove (V-angle $\gamma \geq 40^\circ$) or a hardened semi-circular groove (without undercut) and shall be made of steel or cast iron.
- 2.8 The pulley diameter shall be $D_R \geq 180 \text{ mm}$.
- 2.9 The pulleys shall be designed with a semi-circular groove ($r = 0.50 - 0.53 \times d$) made of steel, cast iron or plastics.
- 2.10 All additional requirements of EN 81-1:1998+A3:2009 (D) regarding rope drives must be kept, e.g. like:
- junction of the rope termination (80% of the minimum breaking load)
 - distribution of load of suspension
 - protection for traction sheaves and pulleys (bracket for derailing of the driving rope, nip guards)
 - visual examination on the traction sheave is guaranteed.



3 Remarks

- 3.1 A sign with particulars for identification of the safety component, containing the name of the manufacturer, the sign of the EC type-examination and the type specification must be attached at the product, to be able to check conformity of the examined product with the series production.
- 3.2 The certificate concerning the examination of conformity may be used only in connection with the pertinent Annex.
- 3.3 This certificate is based on the state of the art, which is documented through the current harmonized standards. Changes resp. extensions of these standards or a further development of the state of the art may make a revision of this report necessary.
- 3.4 A criterion – divergent from the DIN 15020 – concerning discarding the rope, has been defined by the rope manufacturer. According to this, the rope has to be discarded with a diameter reduction of more than 6 % related to the nominal rope diameter.
- 3.5 The list of safety components (annex IV of Directive 95/16/EC) doesn't contain rope drives. For that reason no EC type examination certificate according to annex V part A (EC type examination for safety components) of the Directive 95/16/EC, can be issued for that.
- 3.6 If new knowledge should occur, the test laboratory reserves the right, to give additional conditions concerning the use of the rope drive, or to modify existing conditions.
- 3.7 The certificate about an examination of conformity number KP 048/1 can be added to the required reading technical dossier as a help for decision of the notified body.