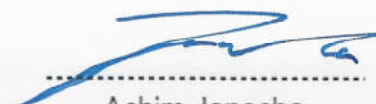




Industrie Service

Certificate concerning the examination of conformity

Certificate No.:	CA 543/1
Certification Body of the Notified Body:	TÜV SÜD Industrie Service GmbH Zertifizierungsstelle für Produkte der Fördertechnik Westendstr. 199 80686 München - Germany
Certificate Holder:	Wire Rope Works Messilot Ltd. Kibbutz Messilot D.N. Bet Shean, 1080400, Israel
Manufacturer of the Test Sample: (Manufacturer of Serial Production - see Enclosure)	Wire Rope Works Messilot Ltd. Kibbutz Messilot D.N. Bet Shean, 1080400, Israel
Product:	Rope drive, for use as part of the machine for traction drive lifts
Type:	8x19W-IWRC 1770 U sZ 6 mm
Directive:	2014/33/EU
Basis of examination:	- EN 81-20:2014 - EN 81-50:2014
Test Report:	CA 543/1 of 2018-03-12
Outcome:	The equipment fulfills the requirements of the test specifications for the respective scope of application stated in the annex of this certificate, keeping the mentioned conditions.
Date of issue:	2018-03-12
Date of validity:	until 2023-03-11



Achim Janocha
Certification Body "lifts and cranes"



Annex to the certificate concerning the examination of conformity No. CA 543/1 of 2018-03-12



Industrie Service

1 Scope of application

1.1 Traction drive lifts, falling within the scope of validity of the Directive 2014/33/EU (Lifts Directive) or whose rope drive according to EN 81-20:2014 (D), Number 5.9.2.1.1 a) will be renewed.

1.2 Technical Data of the rope drive

Characteristics of the rope	Nominal diameter of the rope	d_{Nom}	6 mm ¹⁾
	Minimum breaking load	F_{min}	26,8 kN
	construction / type		8x19W + IWRC 1770 U sZ
	Tensile strength of the wire	R_0	1770 N/mm ²
Traction sheave	Minimum diameter ²⁾	D_{Tmin}	≥ 240 mm
		$D_{\text{T}}/d_{\text{Nom}}$	≥ 40
	V-angle in case of V-groove		$\gamma = 35^\circ$ to $\gamma = 60^\circ$
	U-angle in case of semi-circular undercut groove (U-groove)		$\beta = 75^\circ$ to $\beta = 105^\circ$
Diverting pulleys	Minimum diameter ²⁾	D_{Umin}	≥ 150 mm
		$D_{\text{U}}/d_{\text{Nom}}$	≥ 25

¹⁾ deviating from EN 81-20:2014 (D), Number 5.5.1.2 a) (< 8 mm)

²⁾ deviating from EN 81-20:2014 (D), Number 5.5.2.1 (< 40)

2 Conditions

2.1 The rope safety factor must be at least $S_r = 12$.

2.2 Determination when the ropes have to be discarded must be either (it depends which case occurs first)

- according to DIN 15 020
 - fractured wire 26 times over a length of $30 \times d$
 - fractured wire 13 times over a length of $6 \times d$
- or according to ISO 4344
 - with a diameter reduction of more than 6% related to the nominal rope diameter.

2.3 The part of the rope with the strongest load at the most shall run over the traction sheave and

- one diverting pulley (on the counterweight) or
- two diverting pulleys (at the car).

2.4 The rope traction of the suspension ropes must be calculated according to EN 81-50:2014 (D), section 5.11 or in a manner of the equal value.

2.5 The safety factor of the suspension ropes must be calculated according to EN 81-50:2014 (D), section 5.12.

2.6 The diameter of the traction sheave must be at least $D_{\text{T}} \geq 240$ mm.

2.7 The traction sheave must be designed with a hardened semi-circular undercut groove (U-angle $\beta = 75^\circ$ up to $\beta = 105^\circ$) or with a hardened V-groove (V-angle $\gamma = 35^\circ$ up to $\gamma = 60^\circ$) made of steel.

Annex to the certificate concerning the examination of conformity No. CA 543/1 of 2018-03-12



Industrie Service

- 2.8 The diverting pulley diameter shall be at least $D_U \geq 150$ mm.
- 2.9 The diverting pulleys must be designed with a semi-circular groove made of steel or cast iron (hardened or non-hardened) or made of plastics.
- 2.10 In case of reversed rope bending, the distance from two points of contact of the rope on two consecutive stationary pulleys, shall not be less than 200 times the rope diameter (1200 mm).
- 2.11 All far-reaching requirements of EN 81-20:2014 (D) referring to 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)
- 2.12 The certificate concerning the examination of conformity may only be used in connection with the pertinent annex and the enclosure (list of the authorised manufacturer of series production). This enclosure shall be updated and re-edited following information of the certificate holder.

3 Remarks

- 3.1 The following equivalent number of traction sheaves will be taken as basis:

N _{equiv (t)}	V-groove with groove angles γ of								
	35°	36°	38°	40°	42°	45°	50°	55°	60°
	18.5	16	12	10	8	6.5	5	3.7	3
	Semi-circular groove with undercut and undercut angles β of								
			75°	80°	85°	90°	95°	100°	105°
			2.5	3	3.8	5	6.7	10	15.2

Deviating from EN 81-50:2014 (D), Number 5.12 table 2 some additional V-grooves (V-angle 55° and 60°) will be used, the corresponding equivalent number of traction sheaves $N_{equiv(t)}$ has been determined by interpolation.

- 3.2 A sign with particulars for identification, containing the name of the manufacturer and the type specification must be attached at the product, to be able to check the conformity of the examined product with the series production.
- 3.3 The test results refer to the test specimen and the corresponding examination of conformity only.
- 3.4 The list of safety components (annex III of Directive 2014/33/EU) doesn't contain rope drives. For that reason, no EU-type examination certificate according to annex IV part A (EU-type examination for safety components for lifts) of the Directive 2014/33/EU, can be issued for that.
- 3.5 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.
- 3.6 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 CA 543/1 can be added to the required reading technical dossier as a help for decision of the notified body.

**Enclosure of the certificate concerning the examination of conformity
No. CA 543/1 of 2018-03-12**



Industrie Service

Authorised Manufacturer of Serial Production – Production Sites (valid from: 2018-03-12):

Company	Wire Rope Works Messilot Ltd.
Address	Kibbutz Messilot D.N. Bet Shean, 1080400, Israel

- END OF DOCUMENT -

Base: Information of the manufacturer dated 2016-09-13

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