

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Cable Ladders**with type designation(s)
SLZ and accessories

Issued to

OBO Bettermann Hungary Kft.
Bugyi, Hungary

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

Material	Metalic
Suitable for open deck	Yes (see Application / limitation)

This Certificate is valid until **2021-02-15**.Issued at **Høvik** on **2020-02-26**for **DNV GL**DNV GL local station: **Budapest**Approval Engineer: **Nicolay Horn**

Marta Alonso Pontes
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-010790-3**
 Certificate No: **TAE00000Y6**
 Revision No: **1**

Product description

Cable ladder with the type designation SLZ

Classification according to:	IEC 61537 Class
6.1 Material	Metallic
6.2 Resistant to Flame Propagation	Non-Flame Propagation
6.3 Electrical Continuity Characteristics	With Electrical Continuity Characteristics
6.4 Electrical Conductivity	Electrical Conductivity
6.5 Resistance Against Corrosion	Metallic classified according to IEC 61537 Table 1
6.6.1 Minimum Temperature	- 20 °C
6.6.2 Maximum Temperature	+120 °C
6.7 Perforation in the Base Area	Yes
6.8 free base area	Yes
6.9 Impact resistance	Up to 5 J

TYPE:	SLZ L-FT: Light duty ladder with Z rung.
Standard surface:	Hot dip galvanized,
Thickness:	Hot dip galvanized 3,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ L 100 FT	106	1,753	3000	SLZ L 400 FT	406	2,450	3000
SLZ L 200 FT	206	1,983	3000	SLZ L 500 FT	506	2,683	3000
SLZ L 300 FT	306	2,217	3000	SLZ L 600 FT	606	2,917	3000

TYPE:	SLZ L-SG: Light duty ladder with Z rung.
Standard surface:	Primed
Thickness:	Primed 3,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ L 100 SG	106	1,670	3000	SLZ L 400 SG	406	2,293	3000
SLZ L 200 SG	206	1,877	3000	SLZ L 500 SG	506	2,50	3000
SLZ L 300 SG	306	2,087	3000	SLZ L 600 SG	606	2,70	3000

TYPE:	SLZ L-A2: Light duty ladder with Z rung.
Standard surface:	Stainless Steel,
Thickness:	Stainless Steel 3,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ L 100 A2	106	1,670	3000	SLZ L 400 A2	406	2,292	3000
SLZ L 200 A2	206	1,877	3000	SLZ L 500 A2	506	2,500	3000
SLZ L 300 A2	306	2,086	3000	SLZ L 600 A2	606	2,717	3000

Job Id: **262.1-010790-3**
 Certificate No: **TAE00000Y6**
 Revision No: **1**

TYPE:	SLZ L-A4: Light duty ladder with Z rung.
Standard surface:	Stainless Steel,
Thickness:	Stainless Steel 3,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ L 100 A4	106	1,670	3000	SLZ L 400 A4	406	2,292	3000
SLZ L 200 A4	206	1,877	3000	SLZ L 500 A4	506	2,500	3000
SLZ L 300 A4	306	2,086	3000	SLZ L 600 A4	606	2,717	3000

TYPE:	SLZ -FT: Standard duty ladder with Z rung.
Standard surface:	Hot dip galvanized
Thickness:	Hot dip galvanised 5,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ 100 FT	110	3,287	3000	SLZ 400 FT	410	4,983	3000
SLZ 200 FT	210	3,853	3000	SLZ 500 FT	510	5,547	3000
SLZ 300 FT	310	4,417	3000	SLZ 600 FT	610	6,113	3000

TYPE:	SLZ -SG: Standard duty ladder with Z rung.
Standard surface:	Primed
Thickness:	Primed 5,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ 100 SG	110	3,190	3000	SLZ 400 SG	410	4,790	3000
SLZ 200 SG	210	3,723	3000	SLZ 500 SG	510	5,323	3000
SLZ 300 SG	310	4,425	3000	SLZ 600 SG	610	5,857	3000

TYPE:	SLZ-A2: Standard ladder with Z rung.
Standard surface:	Stainless Steel,
Thickness:	Stainless Steel 5,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ 100 A2	110	3,190	3000	SLZ 400 A2	410	4,790	3000
SLZ 200 A2	210	3,724	3000	SLZ 500 A2	510	5,323	3000
SLZ 300 A2	310	4,257	3000	SLZ 600 A2	610	5,857	3000

TYPE:	SLZ-A4: Standard ladder with Z rung.
Standard surface:	Stainless Steel,
Thickness:	Stainless Steel 5,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ 100 A4	110	3,190	3000	SLZ 400 A4	410	4,790	3000
SLZ 200 A4	210	3,724	3000	SLZ 500 A4	510	5,323	3000
SLZ 300 A4	310	4,257	3000	SLZ 600 A4	610	5,857	3000

Job Id: **262.1-010790-3**
Certificate No: **TAE00000Y6**
Revision No: **1**

TYPE:	SLZ-ALU: Standard ladder with Z rung.
Standard surface:	Aluminium,
Thickness:	Aluminium 5,0 mm

Type	Total width (mm)	Weight (kg/m)	Length (mm)	Type	Total width (mm)	Weight (kg/m)	Length (mm)
SLZ 100 ALU	110	1,055	3000	SLZ 400 ALU	410	1,608	3000
SLZ 200 ALU	210	1,245	3000	SLZ 500 ALU	510	1,788	3000
SLZ 300 ALU	310	1,427	3000	SLZ 600 ALU	610	1,969	3000

Application/Limitation

The installation is to be mechanically protected in accordance with DNV GL Rules and especially on weather decks in cargo hold areas and through cargo holds.

Cable ladders must not to be used as a walkway.

The type SLZ-SG can only be used outdoor if painted with an appropriate topcoat after installation.

Type Approval documentation

Data sheets:

OBO catalogue "Cable Ladder Systems", PAGES 24-27 issued 2010-04-07.

Test reports:

OBO Test Report 04-600-SLZL-A2, dated 2019-10-11 (Type Light)
OBO Test Report 04-600-SLZL-A4, dated 2019-10-11 (Type Light)
OBO Test Report 04-600-SLZ-A2, dated 2019-12-09 (Type Standard)
OBO Test Report 04-600-SLZ-A4, dated 2019-12-09 (Type Standard)
OBO Test Report 04-600-SLZ-ALU, dated 2019-12-09 (Type Standard)
OBO Test Report 04-600-SLx-electricalproperties dated 2014-10-08.
OBO Test Report 04-600-SLZL-SWL, dated 2012-06-01 (Type Standard)
OBO Test Report 04-600-SLZL-SWL, dated 2012-06-01 (Type Light)
OBO Test Report 04-600-SLx-Impactresistance, dated 2015-04-27
OBO Test Protocol no 7098002, 7098014, 7098132 & 7098152 dated 2015-12-15/16

Tests carried out

Load bending test, Test for impact resistance, Electrical continuity test according to IEC 61537.

Marking of product

OBO Bettermann- Type designation – Width – Material (cover marking).

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE