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Spec Text_3_Vergokan_Tubular_Cable Ladders_EN_2019
April 2019 Edition

Use of specification:

- The '#' character indicates that a choice needs to be made. There is only one option. All text that follows the character and is marked in 'red', is part of this choice.
- All Vergokan brand names are marked in orange.
- there are multiple choices/options available for titles shown in green. These are listed for information purposes.
- any notes are shown in blue

3 Vergokan Tubular Cable Ladders

Introduction

The Vergokan tubular cable ladder range is manufactured from sheet steel.
Cable ladders are to be installed in accordance with AREI requirements.
All Vergokan cable ladders and accessories are manufactured in accordance with quality system ISO 9001.
All Vergokan cable ladders and accessories are CE marked.
Cable ladders are classified in accordance with EN 61537.
Large spans are feasible depending on the type of cable ladder chosen.

3.1 Tubular Cable Ladder Type

3.1.1 System description

Tubular cable ladders consist of prefabricated elements.

Type HDKS tubular cable ladders are factory-assembled from 2 tubular side rails. The rungs are C-profiles welded every 250 mm to the bottom of the rails with the opening facing upwards and downwards alternately. This ensures maximum usable interior height.

Type HDKSR, HDKLIE tubular cable ladders are factory-assembled from 2 tubular side rails. The rungs are tubular profiles flanged onto the bottom of the rails every 250 mm. This ensures maximum usable interior height.

The choice of cable ladder type is dependent on cable volume and load, in accordance with Vergokan instructions.

3.1.2 Perforations

type HDKS cable ladders feature perforated rungs.

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3.1.3 Tubular cable ladder dimensions

- # type HDKS cable ladders are 60 mm high and their usable internal height is 45 mm.
- # type HDKSR cable ladders are 60 mm high and their usable internal height is 33 mm.
- # type HDKLIE cable ladders are 80 mm high and their usable internal height is 55 mm.

The total width of type #HDKS, #HDKSR, #HDKLIE cable ladders is #200, #300, #400, #500, #600 mm depending on cable volume and load.

3.1.4 Compartmentalising

The tubular cable ladders consist of a single compartment and are used exclusively for high-current lines or exclusively for low-current lines.

The tubular cable ladders consist of two compartments to separate the high-current lines from the low-current lines. They feature a type SLOS L-shaped partition wall, height matched to the usable height of the cable ladders and fixed by means of

- # type #HDKS cable ladders with type VM self-locking nuts and bolts
- # for type #HDKSR, #HDKLIE cable ladders with a type HDBKID25 fixing bracket that clamps the partition to the rungs.

3.1.5 Accessories

All accessories are delivered factory-assembled and of a capacity and quality to match the cable ladder.

These accessories are to be fixed to the tubular ladder with connector plates and bolts and nuts type:

- # HDSSU for type HDKS, HDKSR ladders.
- # HDLVIE for type HDKLIE ladders.

3.1.6 Covers

The cable ladders feature covers attached with the cover clamps provided for the purpose. The cover and cover clamp type matches the ladder type.

For type #HDKS, #HDKLIE ladders, a type HDDI cover and #DAVIDKV (for HDKS), #HDDKI (for HDKLIE) cover clamp are utilised.

For widths of 400 mm and over, the covers feature a diamond cross to provide rigidity.

3.1.7 Connecting the tubular cable ladders

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The tubular cable ladders are butt-joined by means of connector plates of a type matched to the cable ladder type:

- # HDSSU for type HDKS, HDKSR ladders.
- # HDLVIE for type HDKLIE ladders.

3.2 Tubular cable ladder hanger type

The cable ladder system is to be:

- # Suspended from #constructional ceilings, #steel structure via threaded rod fixing using:
 - # Ceiling brackets type FL, SDBG, PBR, sloping roof structures possible.
 - # Type DR trapeze hanger, cables are interwoven.

- # Suspended from structural ceilings via type HDHSLECL, HSLE3, HDHSLDCL, HSMES, HDHSMU50, HSMD, HDHSIZ support profiles, for diagonal structures with type HDSKP, HDSKIPE and support brackets type WSUN, KCL, WKS, HDWK, WKUMP, WKMP, WKCL, HDWKM, HDWKMD, HDHKI, HDHKIZ and WKSS adjustable-angle brackets.
for combinations of brackets on hangers - see Vergokan literature - Chapter 5.

- # Mounted on type WSUN, KCL, WKS, WKMP, HDWK, HDWKM, HDWKMD, HDHKI, HDHKIZ wall brackets and WKSS adjustable-angle brackets
- # Mounted flush to the wall with type HDVK2 (for HDKS), type HDABIE (for HDKLIE) stand-off bracket.
- # Mounted flush to the wall on type VS41 multifunctional brackets or on type DR, MP profiles.

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3.3 Materials and surface treatments

The tubular cable ladders are manufactured from steel and treated against corrosion according to the climate in which they are to be used and their function.

Type #HDKS, #HDKLIE cable ladders are manufactured from strip steel. After manufacture, they are hot-dip galvanised in accordance with EN ISO 1461. In this process, after a series of pre-treatments, during which impurities are removed from the material, the steel is immersed in a heated bath of pure molten zinc.

Type #DUKS, #DUKLIE cable trays are manufactured from strip steel given a duplex protection in accordance with the Belgian Duplex BPR 1197 code of practice. This means that after the hot-dip galvanising process (EN ISO 1461) they are painted in accordance with the EN ISO 12944 standard with a thermosetting powder coating (certified in accordance with GSB ST663).

In order to be suitable for painting, the hot-dip galvanised steel undergoes an additional post-treatment as soon as possible after galvanisation, such as elimination of unevenness.

The galvanised steel is then pre-treated in order to be able to apply the coating. This involves removing zinc salts by means of a chemical bath.

After pre-treatment, the powder is applied electrostatically by means of spray guns capable of generating a high negative voltage. Post-curing takes place in a curing oven.