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Spec Text_1_Vergokan_Cable Trays_EN_2019
April 2019 Edition

Use of Statement of Requirements:

- 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

1 Vergokan Cable Trays

Introduction

Cable trays #blind, #perforated, manufactured in sheet steel.
Cable trays are to be installed in accordance with AREI requirements.
All Vergokan products are manufactured in accordance with quality system ISO 9001.
All Vergokan products are CE marked.
Cable trays are classified in accordance with EN 61537.

1.1 Cable Tray Type

1.1.1 System description and dimensions

The cable tray consists of prefabricated components
folded from perforated sheet steel in U-shape with rolled over edge, type #KBS, #KBSI, #KBSM (I)
folded from perforated sheet steel in U-shape without rolled over edge, type NATO
folded sheet steel with rolled over edge, type #KG #KGI

The height of the vertical side walls is #15, #35, #60, #85 #110 mm.
The width is #50, #75, #100, #150, #200, #300, #400, #500, #600 mm.
(combinations of width, type and height can be verified in the catalogue).

Both are matched according to the type of cable tray, the number of cables and the load, in accordance with Vergokan instructions.

1.1.2 Perforations

cable trays type #KBS, #KBSI, feature 7 x 25 mm perforations in the vertical sides. The bottom of the cable tray is perforated diagonally with 7 x 25 mm punched longitudinal and transverse perforations and 16 mm and 19.5 mm diameter perforations along the centreline for cable feed-through.

cable tray type KBSM (I) features 7 x 25 mm longitudinal perforations of in the vertical sides. The bottom of the cable tray is perforated diagonally with 7 x 25 mm punched longitudinal and

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transverse perforations and 16 mm and 19.5 mm diameter perforations along the centreline for cable feed-through. The cable tray features additional rectangular perforations with 30 x 50 mm rounded corners of, for feeding cables through. They are spaced at 300 mm in the vertical sides and 150 mm in the bottom. The opening through which a cable is fed, is protected by a type **RBKBSM** plastic edge protector, in order to avoid damaging the cable.

the type **NATO** cable tray is not perforated in the vertical sides. The bottom of the cable tray is perforated with 7 x 25 mm longitudinal perforations and 7 x 20 mm transverse perforations.

The type **#KG**, **#KGI** cable trays have a closed bottom and are only perforated at the ends of the vertical sides with 2 vertical rows of 7 x 25 mm longitudinal perforations each in order to enable them to be fastened together.

1.1.3 material thickness

The sheet thickness of the cable trays has been adapted to suit the width, cable load and span. The maximum cable load and deflection permitted per span has been tested by Vergokan in accordance with standard NBN EN 61537 chapter 10.

1.1.4 Compartmentalising

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

The type **#KBS**, **#KBSI**, **#KBSM (I)** cable trays consist of two compartments to separate the high-current lines from low-current lines. They are feature a partition wall

L-shaped type **SLOS**, height matched to the height of the cable tray and which is fixed into the cable tray by means of bolts and nuts.

inverted V-shaped type **SLIS** for a 60-mm high cable tray, which is fastened to the cable tray by means of **CL** clips.

Cable trays **#KG160** **#KG110** consist of two compartments to separate the high-current lines from the low-current lines. They feature a type **SIN** partition wall of a height to match the height of the cable tray and which is fixed in the cable tray by spot-welding.

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1.1.5 Accessories

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

These accessories are to be fixed to the tray with bolts and nuts.

1.1.6 Covers

The cable trays feature **type D** covers, which are secured with the cover clips provided: **DCO** for Sendzimir galvanised covers and **DCL** for hot-dip galvanised covers or stainless-steel covers. For widths of 400 mm and over, the covers feature a diamond cross to provide rigidity.

Cable trays up to a width of 300 mm are provided with **type DZ** covers attached to the cable duct by tightening the swivel clamp. There are 6 swivel clamps provided per 3-m length, (5 clamps with widths of 50 and 75 mm).

1.1.7 Connecting the cable trays

Type **#KBSI**, **#KBSMI**, **#KGI** cable trays are narrowed down over the last 50 mm of the tray. This enables the cable trays to slide into each other and overlap by 50 mm. They are secured in this overlap by means of

- # a **KBV** type quick connector
- # nuts and bolts

Type **#KBS**, **#KBSM**, **#KG** are butt-joined to one another with universal connector plates. These are of the following types

- # **type V** quick connector plate, 200 mm long by a height of
 - # 35 mm(**V35**),
 - # 60 mm(**V60**),
 - # 85 mm(**V85**),

screwed type connector plate

- # **V35.200** 200 mm long by 35 mm high
- # **V60.200** 200 mm long by 60 mm high
- # **V85.200** 200 mm long by 85 mm high
- # **V110.200** 200 mm long by 110 mm high.
- # **KPW** 400 mm long by 115 mm high can be used with cable tray **type KBS110** for large spans.

Type **NATO** cable trays are butt-joined with a **V15.200** pinch connector plate.

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1.1.8 Branch boxes

Branch boxes and junction boxes must be attached to mounting plates which are either to be fitted screwless or fixed to the side wall of the cable trays with bolts and nuts.

1.2 Cable tray hanger type

The cable tray system is to be:

Suspended from #constructional ceilings, #steel structure via threaded rod fixing using:

- # Ceiling bracket type SDBG, for type PBR sloping roof structures
- # Type COMEGACLU, OBZ, CCLI open hanger brackets: cables are inserted on one side.
- # Type BG internal hanger: cables are inserted left or right-hand side.
- # Type OBG, DR trapeze hanger, cables are interwoven.
- # Hanger with CS-type steel cables

Suspended from structural ceilings via type HDHSLECL, HSLE3, HDHSLDCL, HSMES, HDHSMU50, HSMD, HDHSIZ support sections, 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 hanger supports - see Vergokan literature - Chapter 5.

Suspended directly from structural ceilings via open type COMEGACLU, OBZ, CCLI hanger brackets

Fitted on type LOMEGACLU, WSUN, KCL, WKS, WKMP, HDWK, HDWKM, HDWKMD, HDHKI, HDHKIZ wall brackets and WKSS adjustable-angle brackets.

Fitted under a raised floor on type VMB floor brackets.

Fitted flush to the wall on type DR, L, Z, MP sections.

Fitted flush to the wall on type VS41 multifunctional brackets.

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1.3 Materials and surface treatments

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

Type **KBS, KBSI, KBSM(I), KG, KGI, NATO** cable trays are manufactured from continuous hot-dip galvanised strip. It is galvanised by the Sendzimir process in accordance with standards EN 10 143 and EN 10 346.

Type **HDKBS, HDKBSI, HDKGG, HDKGI, HDNATO** cable trays 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 **PEKBS, PEKBSI, PEKBSM(I), PEKG, PEKGI, PENATO** cable trays are manufactured from strip steel finish-painted in accordance with standard EN ISO 12944 with a thermally hardened powder coating (certified in accordance with GSB ST663). After the steel has been pre-treated chemically, 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.

Type **DUKBS, DUKBSI, DUKG, DUKGI, DUNATO** 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.

The cable trays are manufactured from sheet stainless steel and are of the following types

I6KBSI, I6KG, manufactured from AISI 316 L / V4A Stainless steel.

I4KBSI, I4KG, manufactured from AISI 304 / V2A Stainless steel.