

Wibe Cable Ladders

Top level performance for the  
most challenging applications

Cable Support Solutions



**Schneider**  
Electric



# The spine of an exceptional infrastructure

The cable support system is as essential for the building's infrastructure as the bone structure for the body. Installing a reliable, efficient system that is able to supply uninterrupted power and network is the best way to ensure current and future capacity.

As part of one of the most comprehensive cable support solutions on the market, Wibe Cable Ladders offer excellent qualities for the routing of cables in light, medium and heavy-duty applications. For maximum reliability and strength, the range includes a wide variety of supports, accessories and surface treatments, making the Wibe Cable Ladder the perfect choice for any environment.



The Wibe ladders can be fixed onto supports at various distances, depending on the load. Since few jointing elements are needed, the installation process is easy and efficient.

## Versatile and agile

The cable ladders can be mounted in any direction or angle, distributing the cables safely and efficiently throughout the building. Maintenance of both power and network is carried out with little effort by the installer, in a work environment that provides superb accessibility and overview.

Heavy-load capacity



By adding a dividing strip, the installation can support both electrical and network cables on the same ladder.



Complete XYZ system





# Superior ingenuity that still pays off

The hexagon shape is one of nature's most ingenious creations. Just think about a snowflake or a honeycomb. The pressure on the design is distributed evenly, resulting in a remarkably strong and light construction. This insight was the start of the Wibe Cable Ladder story.

## 85 years of expertise

The clever insight of using a ladder for cable management was the start of the Wibe era. The unique consistency of the system enables adjustments and extensions that suit the needs of yesterday, today and tomorrow.

It all started in 1929 with two devoted entrepreneurs in Mora, Sweden. Anders Wikstrand and Victor Berg realized the advantages of using a ladder horizontally as well as vertically. And since these were the times of electrification, they also grasped that the ladder would be perfect for holding electrical cables. Today, Schneider Electric manufactures more than 3.2 million metres of Wibe Cable Ladders each year for operations all over the world. The extensive choice of surface treatments makes the

ladders suitable for a variety of applications, from non-aggressive indoor environments to harsh highly corrosive offshore climate.

### One-of-a-kind consistency

A great idea is sometimes not affected by time and a well-designed structure does not need to be completely changed to suit modern needs, merely refined and tuned. Wibe Cable Ladders and accessories assembled some 85 years ago can still be extended and adjusted.



P185713



**Wibe KHZSP / KHZSPZ**  
Open profile, for extra  
lightweight constructions.



**Wibe KHZ / KHZP / KHZPS**  
The classical hexagon  
shape, enabling optimized  
strength.



**Wibe KHZV / KHZPV**  
Reinforced with a  
supporting bar, for long  
support distances and  
high loads.

# Light, strong and endurable

A product with the right properties fit for purpose will meet the high demands on performance, reliability and cost-efficiency. That is why a thorough analysis of the environment in terms of corrosion, pollution, humidity and salt is crucial before deciding on material and surface treatment. Whether you need a ladder for sheltered, dry indoor applications or the harshest offshore environments, we will find the solution for you. Just take a look at our offer.



## Wibe KHZSP/KHZSPZ

Cable ladder with open profile and perforated rungs

KHZSP

Length: 3, 4 and 6 m. Width: 200-600 mm

Corrosion class: C2 to C5-M

Surface treatment: Pre-galvanized, Thermo plastic coating, Stainless steel AISI 316L

KHZSPZ

Length: 4 and 6 m. Width: 200-600 mm

Corrosion class: C3 to C4

Surface treatment: Hot-dip galvanized,

## Wibe KHZP/KHZPS

Cable ladder with perforated rungs

KHZPS

Length: 6 m. Width: 150-1000 mm

Corrosion class: C2

Surface treatment: Pre-galvanized

KHZP

Length: 3 and 6 m. Width: 150-1000 mm

Corrosion class: C3 to C5-M

Surface treatment: Hot-dip galvanized, Zinkpox®, Stainless steel AISI 316L

## Wibe KHZPV

Reinforced cable ladder with perforated rungs

Length: 6 m.

Width: 200-1000 mm

Corrosion class: C3 to C5-M

Surface treatment: Hot-dip galvanized, Zinkpox®, Stainless steel AISI 316L

## Wibe KHZ

Cable ladder with round rungs

Length: 6 m.  
Width: 150 - 600 mm  
Corrosion class: C3 to C5-I  
Surface treatment: Hot-dip galvanized, Zinkpox®



## Wibe KHZV

Reinforced cable ladder with round rungs

Length: 6 m.  
Width: 200-600 mm  
Corrosion class: C3 to C5-I  
Surface treatment: Hot-dip galvanized, Zinkpox®



## Wibe covers all corrosion classes

### C1

#### Electro-galvanized

For heated facilities with low exposure to corrosion, such as hotels and offices.



### C2

#### Pre-galvanized

For partly outdoor environments with low exposure to corrosion, for example warehouses and parking garages.



### C3

#### Hot-dip galvanized

For urban and light industrial areas with average environmental corrosion, such as breweries and dairies.



### C4

#### Hot-dip galvanized

For areas with high levels of environmental corrosion, humidity and airborne pollution such as industrial and coastal areas, chemical plants, dockyards.



### C5-I

#### Stainless steel AISI 304, Zinkpox®, Thermo plastic coating

For areas with almost permanent high levels of humidity and airborne pollution, such as chemical and heavy industries, tunnels and dockyards.



### C5-M

#### Stainless steel AISI 316L, Thermo plastic coating

For areas with almost permanent high levels of humidity, airborne pollution and salt, such as purifying plants and offshore.



For more information regarding surface treatments and corrosion classes, please see Wibe Cable Ladder product catalogue.

3.2  
million  
metres

manufactured each year.  
Wibe Cable Ladders  
form the backbone of the  
modern infrastructure.

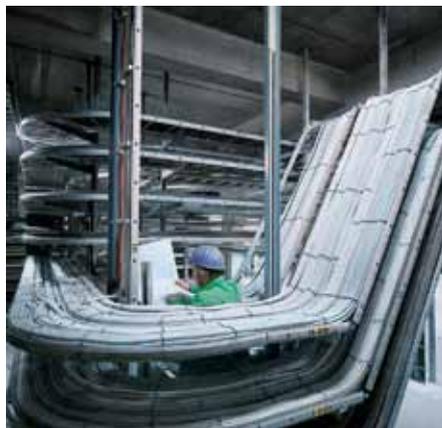
# Experience and knowledge take you higher

## Creating shared value

Throughout the years we have stacked up an outstanding amount of knowledge and skills as part of our resources for continuous product development. Another essential contribution to this is the experience of our customers. Together we investigate the needs of today and tomorrow in our common goal towards finding even more effective, sustainable and future-proof solutions. Our close cooperation brings increased knowledge and stronger competitiveness to both parties, resulting in successful projects that draw attention all over the world.



The Wibe cable ladder system handles routing of power, data and control cables. All with outstanding conditions for high performance and problem-free maintenance.



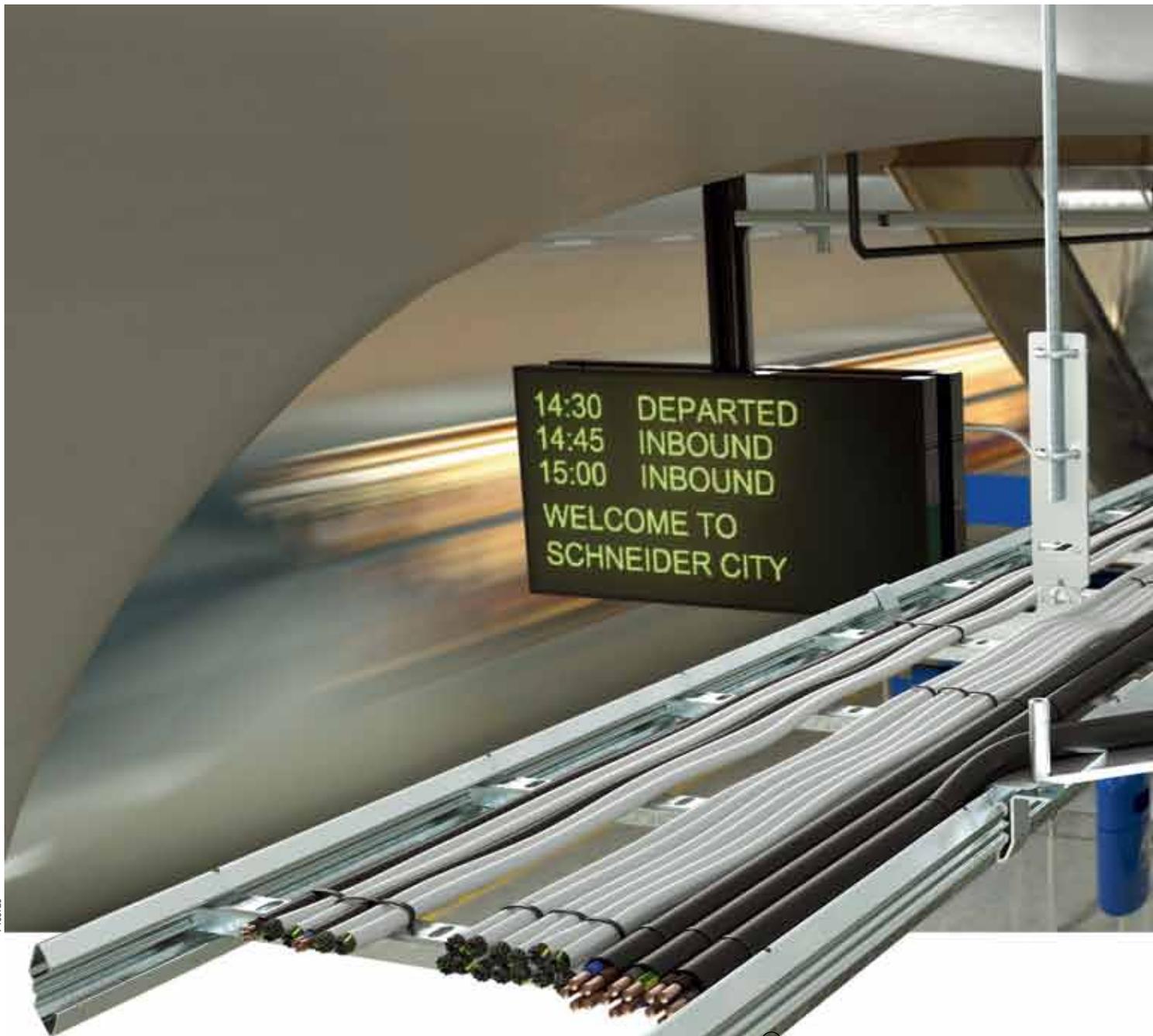
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Burj Khalifa, Dubai. The world's tallest building stretches close to 830 m into the air. As a comparison, the Sears Tower in Chicago reaches 442 m and the Empire State Building in New York comes in at 381 m. Increasing demands on longer, taller and wider constructions call for kilometres of cables – and an infrastructure backbone of comprehensive cable support solutions. As the only approved supplier of cable support to the Hyder Consultant with Emaar, Schneider Electric delivered 1,500 pcs of KHZP Cable Ladders (9,000 metres).



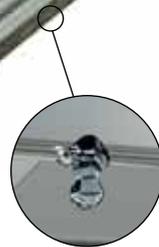
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**The challenge**

A typical urban environment. Thousands of people commuting every day. It is busy and crowded. Departures and arrivals on time are vital and what everybody expects. And there is no room for an inadequate infrastructure.



A smart feature is the drainage holes placed at the top and bottom of the open profiles of the KHZSP stainless steel ladder, preventing moisture from filling up.



**Few parts**

This installation can be completed with a limited selection of ladders and accessories. For more information about each item, see our product catalogue.

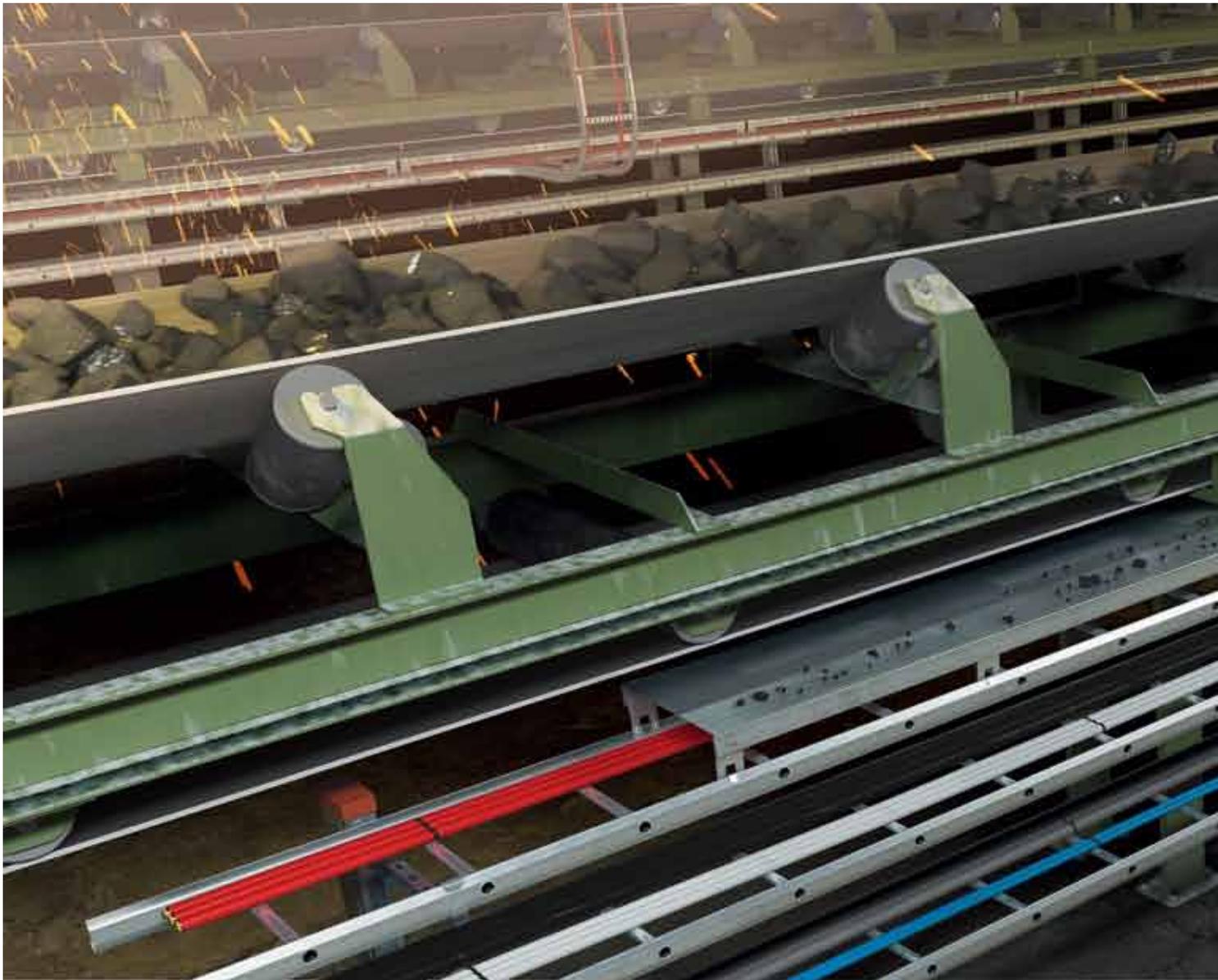


## On track with the future

Today we constantly meet increasing expectations on performance, flexibility and sustainability. Advanced constructions require top quality in every detail and keeping up with technical development is a challenging task. Our goal is to prosper business performance while conserving environmental resources.

The monorail train illustrates a modern, technological city infrastructure, but the idea of an elevated train on a single track actually dates back to the beginning of the 20th century. Today the monorail trains are often used as fast intercity connections, running through tunnels and open landscapes, exposed to rain, ice and snow – at a speed often exceeding 300 km/h.

Yet the journey is smooth, comfortable and quiet. Accentuating demands on capacity and comfort have spurred the development of advanced technique and sophisticated design. With the comprehensive offer that is constantly refined and improved, Wibe Cable Ladders match all the requirements by far.



P135703

#### The challenge

Heavy industrial environment with a lot of pollution. Uptime is crucial, no room for costly production shutdowns.

#### All it takes

The installation above may look complex, but it only requires a minimum of parts. For more information, see our product catalogue.



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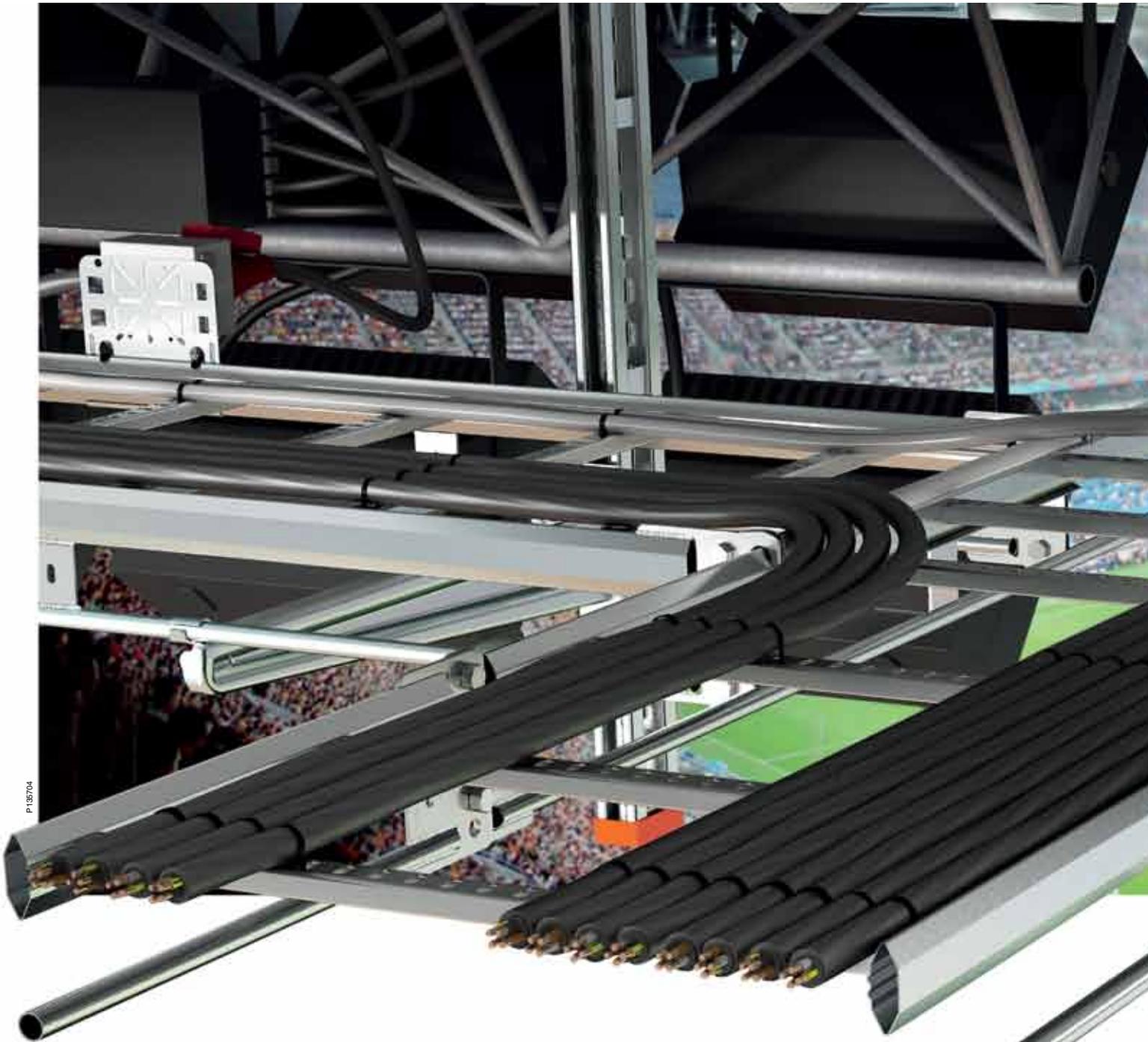


# Breaking ground for heavy-duty applications

No environment is too tough or too dirty. With the appropriate material and ideal surface treatment of the cable support solutions, reliable power and network supply is secured.

It is noisy, busy and very harsh conditions. Maintaining continuous production is top priority, and any malfunctions will jeopardize both safety of the staff and the all-important profitability. Here the cable support solution is really put to the test. The standing vertical

pieces can carry several layers of ladders on top of each other, securing easy maintenance and service. Details like round rungs and cover plates protect the installation from dirt and damage.



P195704

#### The challenge

An environment like a huge sports arena calls for extra strong solutions – both in terms of safety and easy maintenance in odd spaces.



P195719

#### Few but strong

This installation is put together with only a small number of different parts. But the strength is impressive – the KHZPV ladder with the supporting bar has an extraordinary support distance and is the most weight-bearing choice in our offer. See our product catalogue for more information.

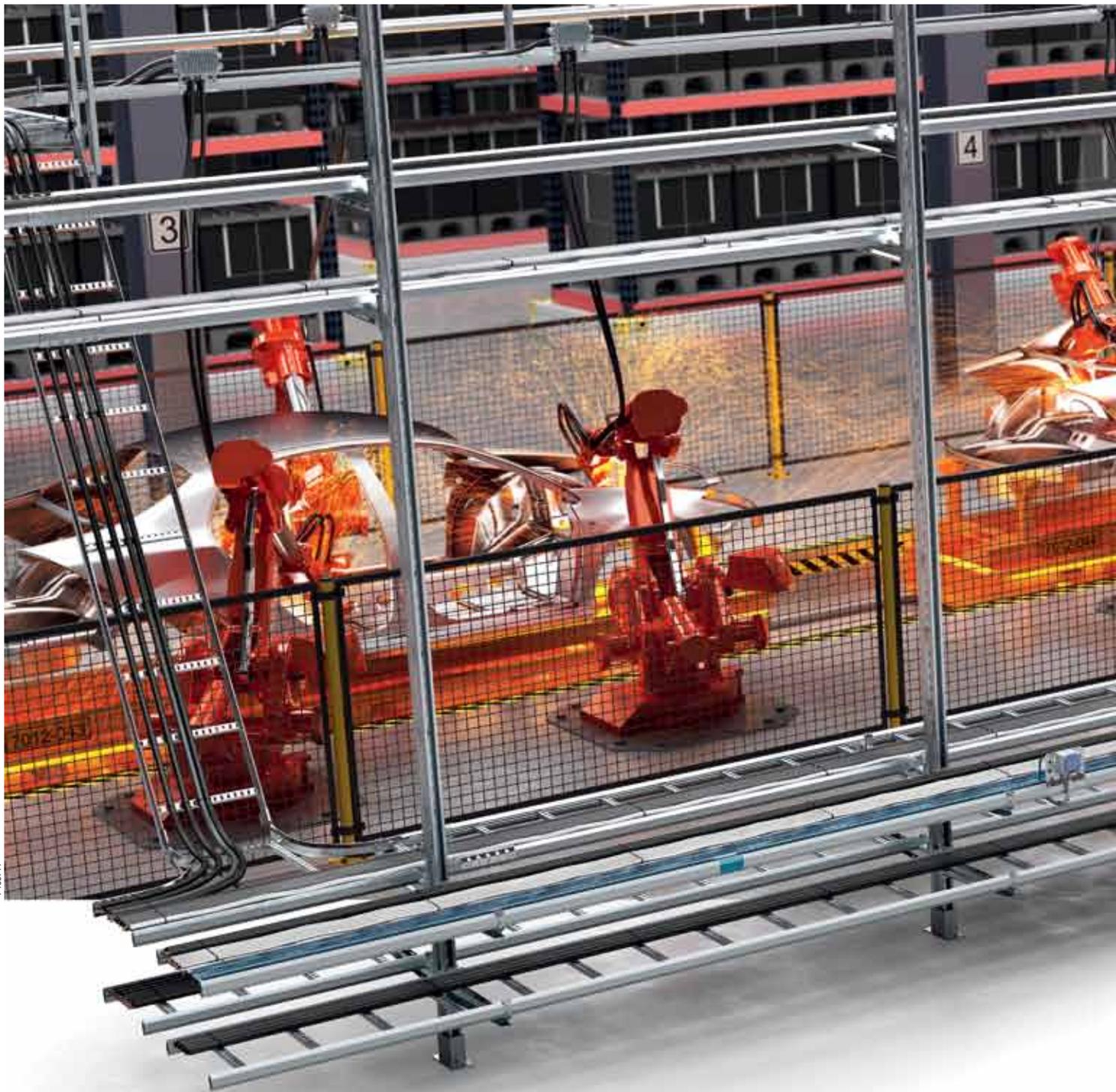


## Safety and dependable operation in focus

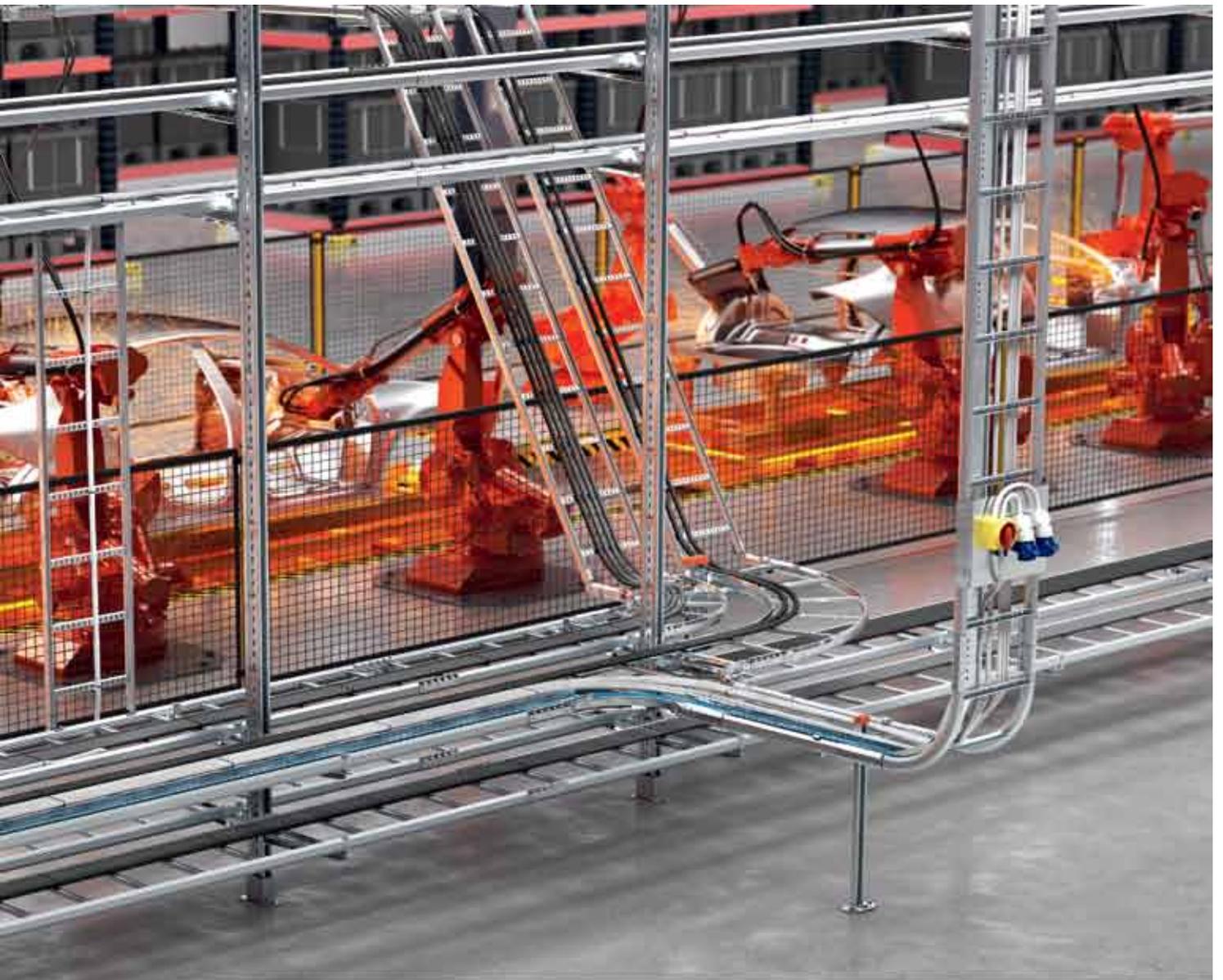
Tens of thousands of people, roaring, cheering, all eyes on the game. High above is the headlight system, sustained by an extensive infrastructure of cable support solutions. Downright performance is what everybody expects. And what they can count on.

If the task is to support error-free, reliable lighting for the field and the audience, along with power and network supply for broadcasting, only the strongest is good enough. Wibe reinforced ladder KHZPV has an impressive distribution load of 150 kg/m (at 4 m support distance), backed up by sturdy vertical pieces,

cantilever arms, junctions etc. Another good feature is the profile protection, allowing safe tap-offs with secured maximum bend radius anywhere on the ladder. Equipped with a label, the profile protection can also be used for clear marking and identification.



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# Organised and ready for constant change

In a high-tech industry the infrastructure needs to be modular and flexible, minimizing the risk of costly downtime when shifting to a new design or model. This is why the Wibe Cable Ladder system must be agile enough to be completely reconfigured in a matter of days.

An advanced industrial environment can really put a strain on the power and network infrastructure. For Wibe cable ladders, there is no application too complicated. Our cable ladder offer includes a wide range of dimensions and accessories like

bends, raisers, cantilever arms, brackets, joints, couplings and much more, making the entire solution flexible and adjustable enough to take on any challenging task.

Ceiling support for any application



Pendant fixing rails up to 6 m



Protective network conduits



P138741



P138742

**Fast and screwless joint**

For straight, rigid joining of ladders, bends, junctions and risers. No extra earthing necessary.

**Coupling 22**

For horizontal or vertical branches at any desired angle. 90° bend, T-junction, X-junctions, or as a riser.



P138736



P138737



Multi-function couplings



Sturdy cantilever arms



Installation plates



Robust floor support

P138726

## What you see is less than what you get – the hidden features



P138747

### Angle plate 33/2

Always recommended with 90° horizontal T-junctions. Fits all our cable ladders.



P138743

### Take-off hooks

For use on ladders to make 90° branches. Use the extra hole for earthing or vertical locking.



P138744

### T-bolt 26F

Easy to fit anywhere in the fixing rail. Sticks and stays in place even before it is fixed with the nut.



P138745

### Junction box plates

Box plates to be mounted in standing or hanging positions on the side sections or between the rungs.



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P138740



# Proven results from all over the world

## Oil & Gas

NABORS 657, Sharjah UAE  
Rig Thule Power, UAE  
BP/ARCO/Technip  
– Al Rayyan Development, Qatar  
Ěská Rafinérská A.S. Czech Republic  
Mazeikiu Nafta, Lithuania  
LNG Terminal, Sines Portugal  
Slovnaft Refinery Eurodiesel HRP 7, Slovakia  
KomiTEK / Lukoil, Usinsk Russia  
Rosneftbunker bulk-oil terminal, Ust-Luga  
Russia  
Lukoil sleetproof mooring line Varandei,  
Barents Sea Russia

## Shipyards

NICO International, UAE

## Ports

NOELL Crane Systems GmbH, Shanghai  
China  
Klasco terminal part 2, Lithuania  
Abu Dhabi Shipbuilding Co, Abu Dhabi

## Power stations

Taweelah A1, UAE.  
Jebel Ali “D” station, UAE  
Jebel Ali “G” station, UAE  
Jebel Ali “K” station, UAE  
Al Reem Island, Abu Dhabi, UAE  
Ras Laffan desalination plant, Qatar.  
Lithuania Electro, Elektrėnai Lithuania  
City-Energy Power Plant, Moscow Russia



#### Wind & geothermal energy

GE Wind Energy Projects: Spain, USA, China, Turkey and Norway

#### Nuclear power stations

Ringhals, Sweden  
 Oskarshamn, Sweden  
 Ignalina, Lithuania  
 PGU-1 Leningradskaya NPP-2, Sosnovy Bor, St.Petersburg Russia  
 PGU-2 Leningradskaya NPP, Sosnovy Bor, St.Petersburg Russia  
 PGU-5 Novovoronezhskaya NPP, Novovoronezh, Voronezh  
 PGU-3 Kolskaya NPP, Polyarnye Zori, Murmansk

#### Chemical plants

Borealis, Stenungsund Sweden  
 Hydro Polymus, Stenungsund Sweden  
 Visbreaker, Litvinov Czech Republika.  
 AICHEMA part1, Lithuania  
 Oxo-Alcohol Plant, China  
 Monsanto Chemicals, Belgium  
 Beakart Chemical, Limburg Netherlands  
 JSC AZOT, Severodonetsk Ukraine

#### Pulp and paper industries

Holmen Paper PM62, Madrid Spain  
 CELBI (Celulose Beira Industrial), Leirosa, Figueira da Foz, Portugal  
 Enso Gutzeit, Finland  
 Pulp mill Roermond, Netherlands  
 P.T. Indah Kiat Pulp & Paper, Jakarta Indonesia  
 Defibrator, China  
 BillerudKorsnäs packaging, Gävle Sweden

#### Steel and aluminium industries

Outokumpo Stainless steel, Avesta Sweden  
 SSAB Borlänge Steel plant, Sweden  
 Rautaruuki, Finland  
 Metallurgie, Belgium  
 Antara Steel Mill, Malaysia  
 Electrometallurgic Plant Sary, Oskol Russia  
 DUBAL Falcon Exp Project BK Gulf, UAE

#### Cement factories

Sharjah Cement Expansion, UAE  
 National Cement, Dubai UAE  
 CEMAG Cement Industry, Iran

#### Glass factories

Jebel Ali Glass Container factory, UAE  
 Emirates Glass factory, UAE  
 Glaverbel. Klin Russia

#### Vehicle industries

Caterpillar plant, Norway  
 Honda Engines, Great Britain  
 Volvo Truck, Belgium  
 Daf, Belgium  
 Lada Car Factory, Togliatti Russia  
 Volvo Povertrain, Skövde Sweden

#### Mines and tunnels

Mersey Tunnel, Liverpool Great Britain  
 Outokumpu Mine, Finland  
 Bredadal Tunnel, Iceland  
 Kempense steenkoolmijnen, Belgium  
 Hitra tunnel 4 km, Norway  
 Lefortovsky tunnel, Moscow Russia

#### Airports

Dubai International Airport exp, UAE  
 Dubai Airport Freezone (Dafza), UAE  
 Dubai Airport terminal 3 concourse 2, UAE  
 Kotoka Airport, Accra Ghana

#### Telecommunications

Dhiraagu, Male Maldiverna  
 Vodafone telecommunications, Ireland  
 ERA, Poland

#### Hotels & commercial buildings

Burj Al Arab Tower, UAE  
 Burj Khalifa, Offices, residences and hotel, Dubai UAE  
 Tbilisi Business Center, Republic of Georgia  
 Siauliu Arena, Siauliu Lithuania  
 IKEA Prague and Ostrava Czech Republic  
 Kista Science Center, Stockholm Sweden  
 The Tower, Dubai UAE

#### Food & Bev industry

Cadburys, Great Britain, Poland and Egypt  
 Lactogal, (Mimosa Dairy plant). Portugal  
 SAB Miller, Jinja Uganda  
 Coca-Cola alu.tin factory, Dmitrov Russia

#### Other projects

Saku Suurhall Arena, Estonia  
 Rikshospital, Oslo Norway



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# Wibe in LNG terminal

## LNG Terminal, Sines Portugal

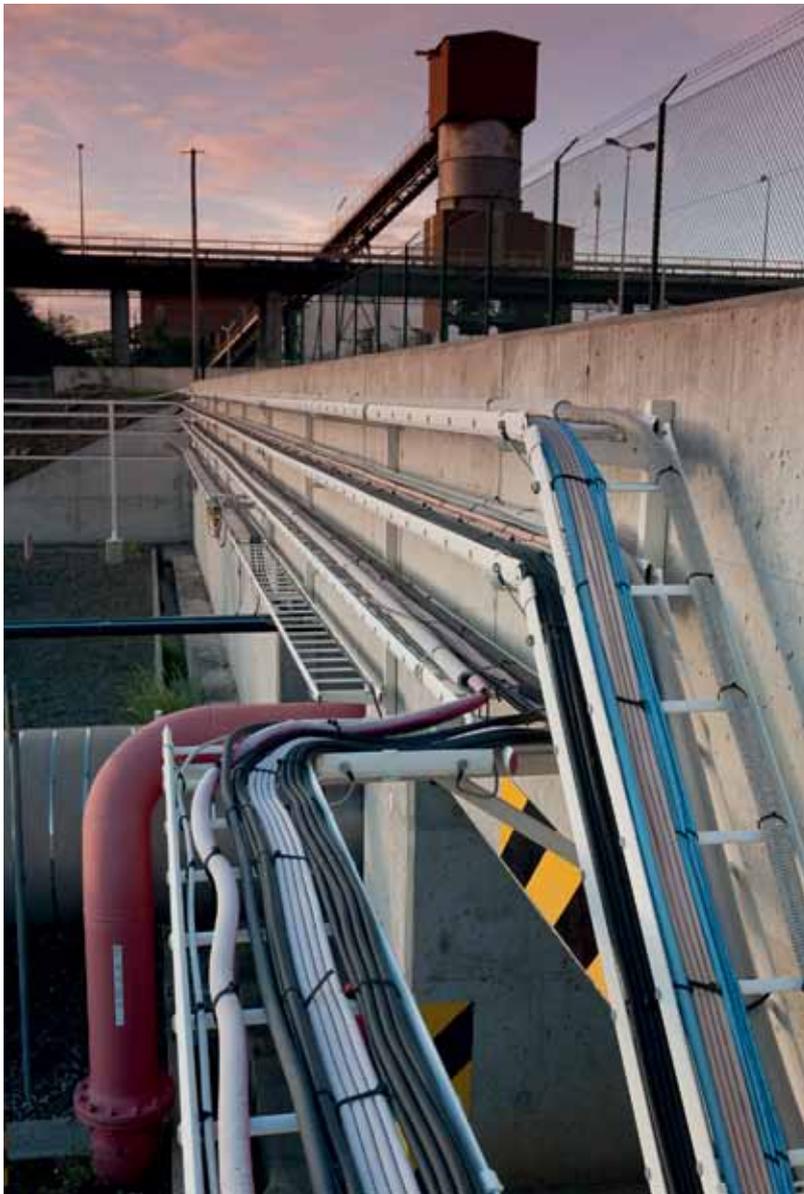
The LNG terminal in Sines is located less than 100 metres from the Atlantic ocean. The area has high levels of humidity and salt. In addition, due to the nature of the process, it is considered a highly explosive environment demanding high levels of precautions.

### The LNG terminal in Sines

Sines, which is Portugal's only LNG import terminal, consists of docking stations, storage tanks and open rack vaporizers for regasification. In 2012 the capacity increased by 50% up to 390,000 cubic metres of liquid natural gas.

### The Wibe application in brief

The facility needs to transport all types of power, instrumentation and data cables to and from the different containment units, electrical substations, heavy duty sea water intake and outfall pumping units and docking stations.



During 2012 the third containment unit was built. Around this containment seven different cable ladder routes were installed, supported by a 40 metre vertically mounted cable ladder. Roughly 4 km of new cable ladders were also installed as a link between the new containment unit and the docking station.

**Customer demands and requirements**

There was a need of very strong, high-quality cable ladders. They should in the long run be able to cope with the tough installation environment. This is essential both when it comes to where the cable ladders are installed, like on the containment side, and the very corrosive environment.

**The Schneider Electric solution**

Today the facility has approximately 16 km of cable ladder KHZP in stainless steel AISI 316L and KHZ in Zinkpox. Between 2002 - 2011 the first 10 kilometres of Wibe cable ladders were installed. 6 km were installed in 2012.

**Corrosion class C5I to C5M**

Very aggressive coastal environment, with exposure to pollution and potential explosives.

**Cable ladders and surface treatment**

KHZP in stainless steel AISI 316L and KHZ in Zinkpox.



# Wibe in Bulk-oil terminal

## Rosneftbunker bulk-oil terminal, Ust-Luga Russia

The Ust-Luga sea trade harbour is located right on the coastline of the Finnish Gulf of the Baltic Sea. In addition, due to the nature of the process, it is considered a highly explosive environment demanding high levels of precautions.

### The bulk-oil terminal

The Rosneftbunker bulk-oil terminal is an end point of the Baltic Pipeline System-2, length 998 km, and owned by Transneft. The facility is intended for receipt of all types of bulk-oil mate-

rials. Three black-oil and diesel discharge railway overpasses are pumping the black oil and diesel over into a number of 30,000 ton reservoirs built along the coastline.



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P138780



P138770



P138789



P138762

### The Wibe application in brief

Construction of an on-shore cable support infrastructure for bulk-oil dispatch for export by sea oil-tankers at a distance of about 100 metres from the Baltic Sea. The construction of three oil-loading technological platforms in the Ust-Luga terminal was split into four stages. It began in 2008 with the construction of platform No.2 together with its appropriate cable support infrastructure.

### Customer demands and requirements

For the outdoor installation the customer demanded a hot-dip galvanized cable support system, as the surrounding environment is medium aggressive. For cable routing inside the transformer sub-stations and power-units, the pre-galvanized cable support system was demanded.

### The Schneider Electric solution

The facility had approximately 80 km of hot-dip galvanized KHZP cable ladders and 20 km of W1/60 cable trays installed on site during 2009 - 2012.

### Corrosion class C2 to C4

Medium aggressive coastal environment, with exposure to pollution and potential explosives.

### Cable ladders and surface treatment

KHZP hot-dip galvanized cable ladders for outdoor use and pre-galvanized cable ladders for indoor use.



# Wibe in a shopping mall

## Mirum Galleria in Norrköping, Sweden



To match a surrounding environment, the Wibe cable ladders can be delivered powder-coated in any chosen colour on special order.

Mirum Galleria, or Hageby Centre as it was formerly called, was originally built in the sixties. The centre was expanded and renovated in 2007 and 2010. In 2012, the name was changed to the Mirum Galleria. Mirum Galleria currently covers 45,000 square metres, of which 38,000 square metres are commercial space.

### Customer demands and requirements

In this project the need was a light and strong cable ladder for indoor use, for light to medium loads, and with accessories supporting floor, wall and ceiling installation.

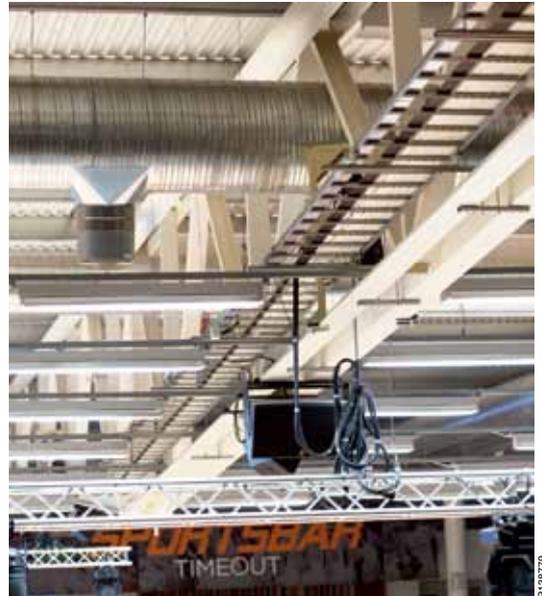
### The Schneider Electric solution

The pre-galvanized cable ladder KHZSP with open side profiles and dedicated accessories was used.

**Corrosion class C2**



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P138779



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# Wibe at Stadium Arena

## Norrköping, Sweden

The Stadium Arena is a sports facility located in Norrköping, Sweden. It opened in December 2008. The stadium is primarily used for basket-ball, indoor athletics and concerts. The basket-ball hall can take up to about 3,500 spectators, including 2,600 seats, while the athletics hall can accommodate up to 1,500 people.

### Customer demands and requirements

In this type of installation, you need an “indoor cable ladder” (i.e. pre-galvanized) that can carry heavy loads with long supporting distances. There is also a need of different solutions for fixing the ladders to the ceiling, floor and on to the walls.

### The Schneider Electric solution

By using cable ladder KHZPS and related accessories all the different requirements were easily managed.

### Corrosion class C2



P128702

Wibe Cable ladders KHZ and KHZP installed at Borealis, Stenungsund Sweden.  
Borealis supports customers with speciality plastics for some of the largest energy supply, oil and water pipeline projects in the world.



P129687

Wibe Cable ladder KHZV installed at Outokumpu Stainless steel, Avesta Sweden.



P126020

Wibe Cable ladder KHZP installed at a Nuclear power station in Russia.



P138521

Wibe Cable ladder KHZP installed at Lukoil sleet-proof mooring line Varandei, Barents Sea Russia.



P129667

Wibe Cable ladder KHZ installed at SSAB Borlänge Steel plant, Sweden.



P129702

Wibe Cable Ladder KHZP installed at BP/ ARCO/Technip – Al Rayyan Development, Qatar.



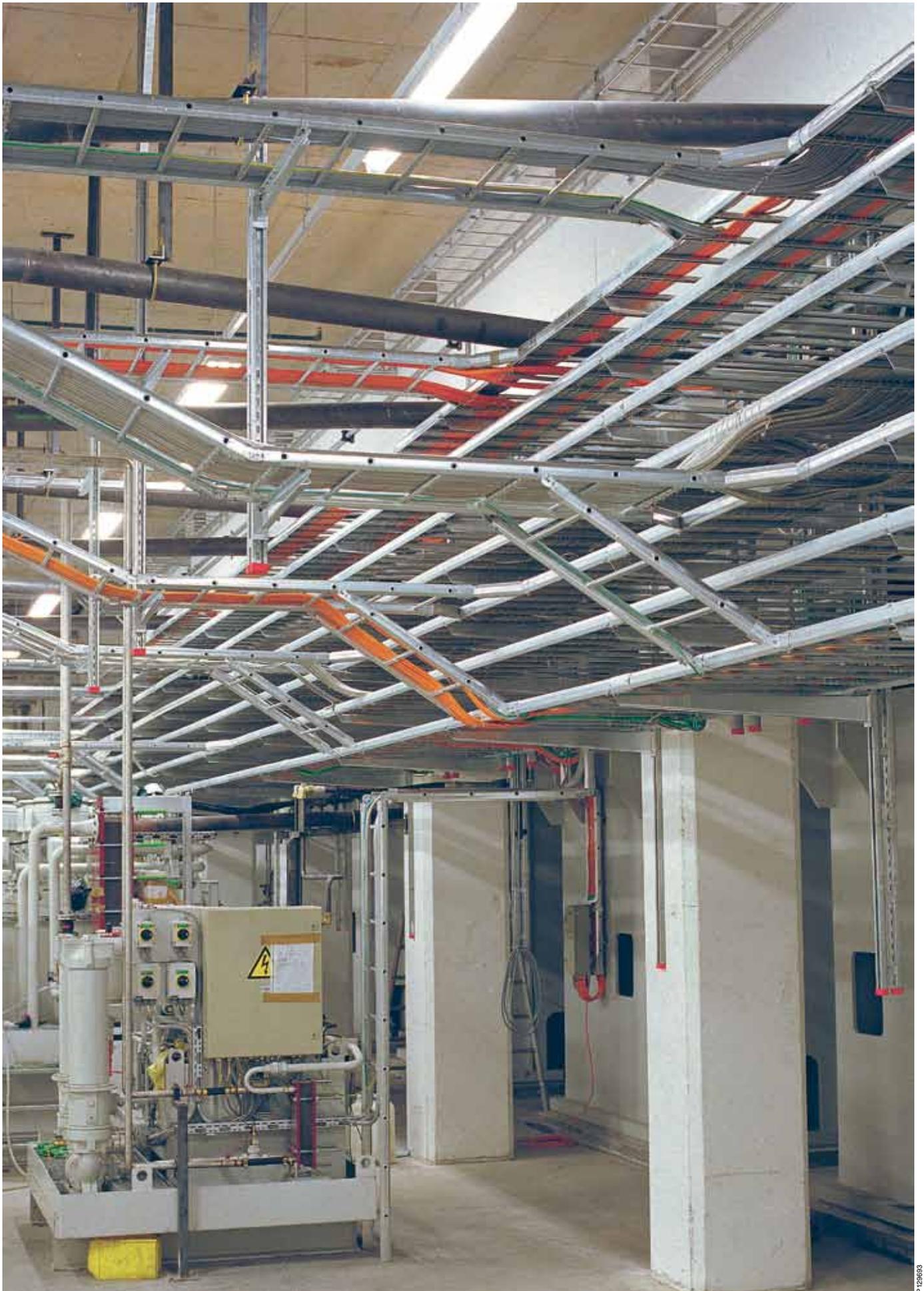
P129658

Wibe Cable Ladder KHZP installed at Kista Science Center, Sweden.



P129750

Wibe Cable Ladders KHZV installed at Gärdstaverken, Sweden.



Wibe Cable Ladders KHZ and KHZP at SAAB Sweden.



# \* Make the most of your energy

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