

Reaching Targets: We'll go with you.

Power cables 1 to 45 kV





Step by step

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Powerful performance

The European force is here:
nkt cables!

A company whose success is firmly based on experience, competence and size. A combination of tradition and the modern age: 9 plants in 5 European countries and one plant in China, 2,200 employees – a European force which earns international respect.

The name **nkt cables** stands for a flourishing European company – for competent cable solutions in selected markets of the power industry, installation technology and industry.

Customer-oriented system solutions are created by concentrating on competence centres, linking knowledge and ability and developing new ideas on the subject of power transmission.

The main focus is the **competence centre in Cologne** in the heart of Europe. Qualified employees from all divisions provide all-round support in the areas of wires and cables for railways, optical fibre, ground wires and accessories, high voltage cables and accessories and low and medium-voltage cables. From this centre, we forward tailor-made cable solutions are delivered all over the world.

Powerful performance

- 9 plants in
- 5 European countries
- 1 plant in China
- 2.200 employees
- Competence Centre in Cologne

- 
- 1 Cologne
 - 2 Nordenham
 - 3 Hettstedt
 - 4 Asnæs
 - 5 Stenlille
 - 6 Kladno
 - 7 Czechowice-Dziedzice
 - 8 Warszowice
 - 9 Drammen

Well-advised

The nkt cables sales team: concentrated competence for custom-made projects

We regard each task as a new challenge! No two problems are alike. Together with you the dedicated team at **nkt cables** will work out a **customized solution**.

We are flexible when it comes to short cable lengths, difficult installation or special environment conditions.

Short deadlines, extensive coordination and logistic questions – the **sales team at nkt cables** in Cologne will always be at your service – informing and advising you in a number of foreign languages.

Training measures and comprehensive IT support guarantee our success – since selling is our passion!

Well-advised

- ✓ Dedicated, multi-lingual team
- ✓ Customized solution
- ✓ Short deadlines
- ✓ Intensive training



Purposeful

Concentrating flexibly on what's important, avoiding ballast, looking for simple solutions

We need sophisticated technology to be able to act flexibly throughout the company group. Modern IT systems enable us to plan efficiently, to budget wisely and to proceed analytically **throughout Europe**.

Whether wireless recording systems are required in the production process chain or interface problems with **individual IT solutions** have to be solved – our data processing experts are experienced and creative – no matter how difficult the job on hand.

Concentrating on what's important – **avoiding ballast**: that's our maxim for optimising internal workflows and BtoB processes with our customers.

Converting complicated procedures into simple applications, taking care of what is really important – that's our target!

Purposeful

- ↳ Modern IT systems
- ↳ Wireless recording systems
- ↳ Optimised BtoB solutions
- ↳ Avoiding ballast



Discover technology

State-of-the-art production processes guarantee future-oriented quality

Modern production equipment, production processes up to the very latest standard, pioneering technologies: the basics which enable us to competently fulfil your tasks.

Modern, competitive equipment supports us in our aim of implementing your wishes innovatively and custom-made to your requirements.

The quality of our performance is verified and continually being safeguarded. Important certification processes at home and abroad are guaranteed by internal test systems and independent institutes. At **nkt cables** you will find a highly efficient quality management system which will benefit you one hundred percent.



- ↳ Pioneering technologies
- ↳ 4 CCV plants
- ↳ nkt cables quality

Discover technology



"Tension" – up to your home!

Low -voltage cables with aluminium conductors

Highly modern plants guarantee top-quality cable products. Well thought-out short process paths, **waste-free use** of raw materials and intelligent, low-cost logistics ensure maximum product quality and attractive prices.

Pre-qualified with well-known utilities in Europe we supply:

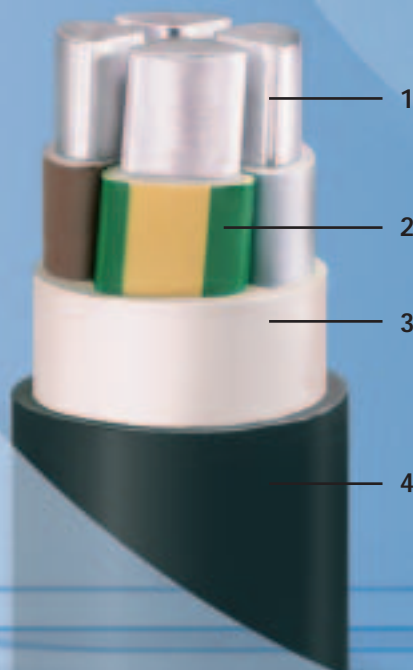
multi-core PVC or XLPE insulated cables with PE or PVC outer sheath

- with cross-sections from **4 x 35 mm² to 4 x 240 mm²**
- with round, solid or sector-shaped, solid or stranded conductors

- insulated with PVC or XLPE
 - with or without concentric conductor
 - with PVC or PE outer sheath
 - **NAYY, NAY2Y, NA2XY, NA2X2Y, NAYCWY**
 - according to VDE 0276-603 or international standards or customer requirements
- ...and, of course, cables with copper conductors **such as NYY, NYCY or NYCWY**

...as power cables for fixed installation, in cable channels and indoors, outdoors, in water and soil

"Tension" up to your home



- own production from **nkt cables** plants
- all standard types
- proven and trusted by utilities
- certified and controlled nkt cables quality

- Key**
- 1 Aluminium conductor
 - 2 PVC insulation
 - 3 Common, extruded core covering
 - 4 PVC sheath

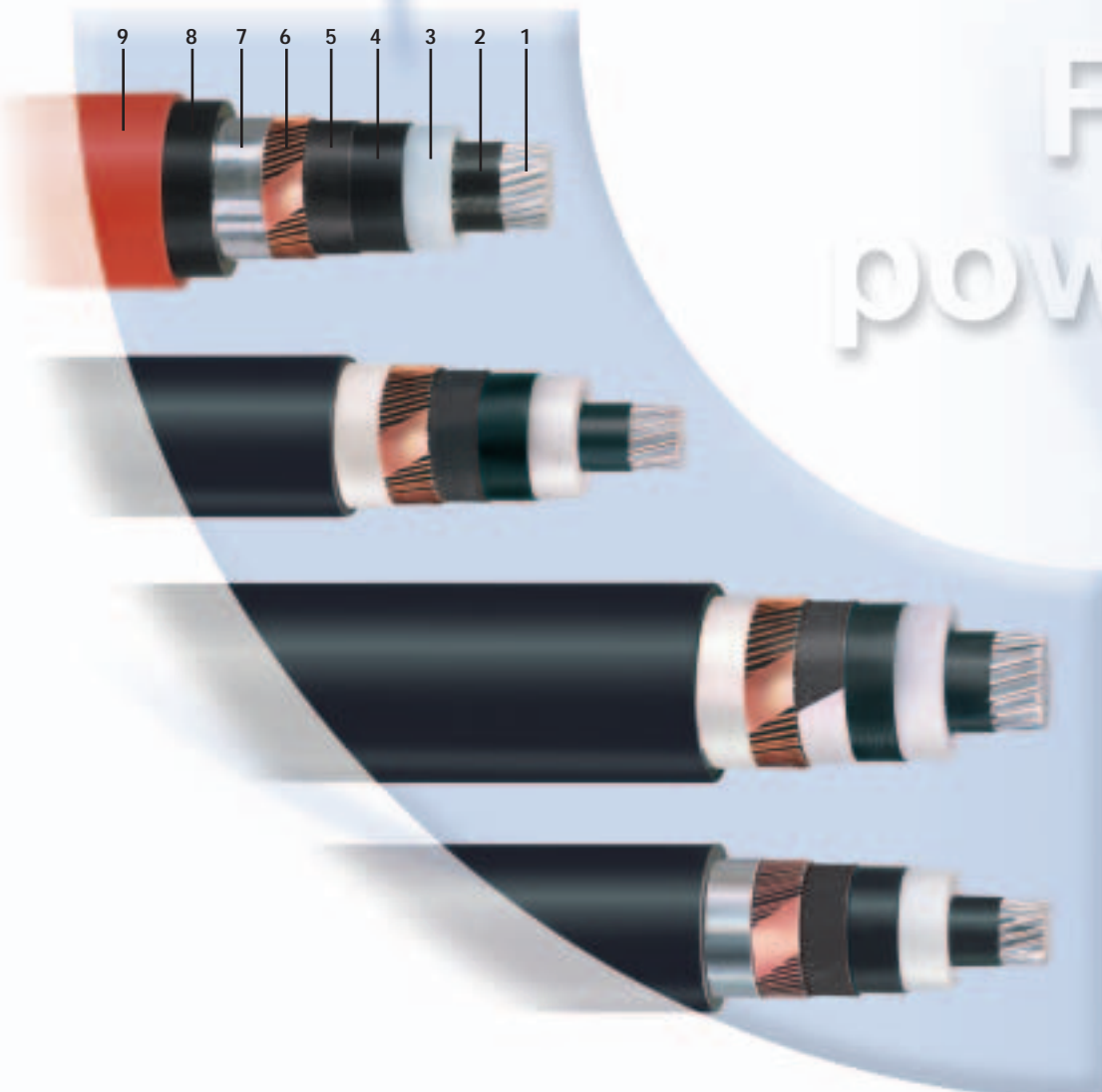
Full power Medium-voltage cables for Germany

In the **Cologne competence centre** we produce single and multi-core medium-voltage cables according to standard or customer specifications for our customers in Germany and Europe.

In the voltage ranges 10 to 45 kV we always have the cables most commonly required in Germany either in stock or in production thus guaranteeing your power supplies.

Cables with aluminium or copper conductors:

- single-core XLPE insulated cable with cross-sections **from 35 mm² to 2,500 mm²**
- in standard version or with
- longitudinally or longitudinally and radially watertight by means of additional protective sheathing,
- with PVC or PE outer sheath or halogen-free, flame-resistant compound



Full
power

Key

- 1 Conductor
- 2 Conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi-conductive swelling tape
- 6 Copper screen
- 7 Laminated Aluminium foil
- 8 PE sheath
- 9 PVC sheath

Types of cable illustrated

(from top to bottom)

NA2XS(FL)2YY

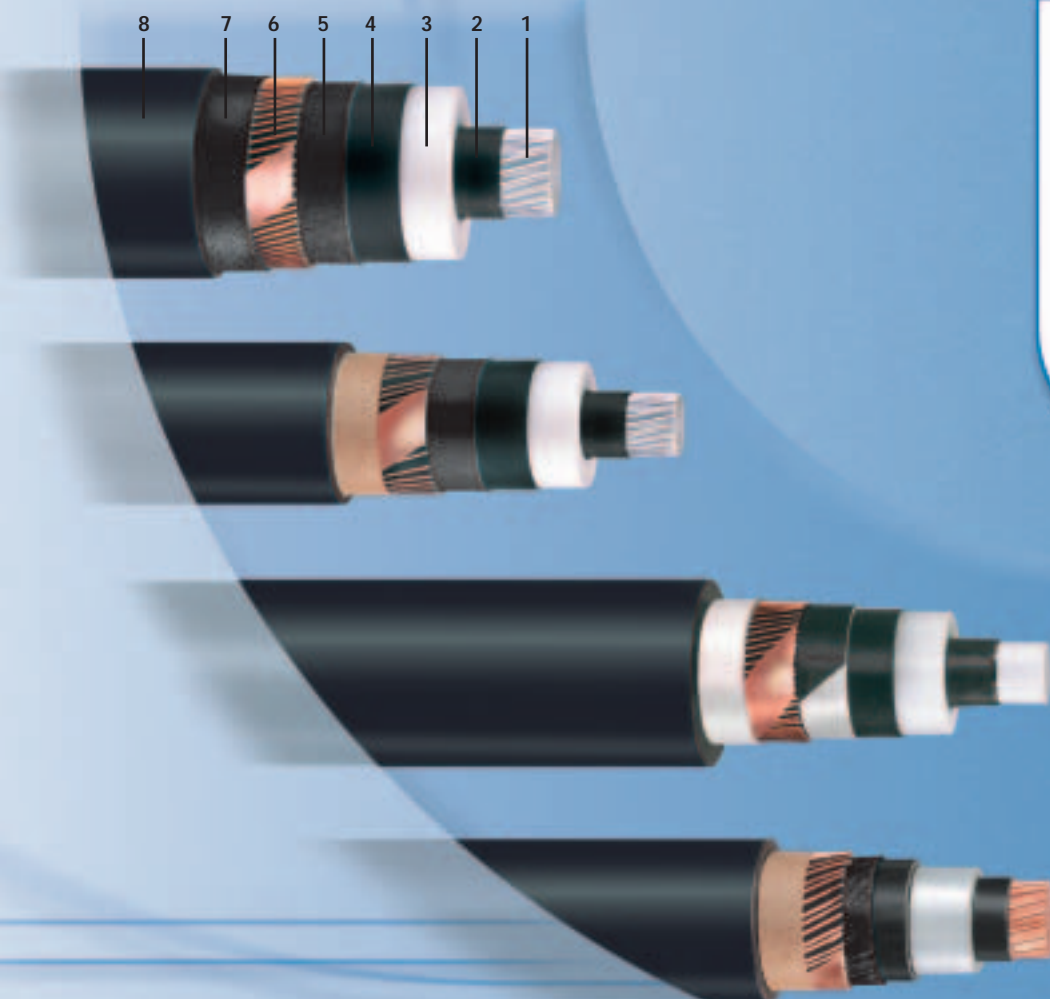
NA2XS(F)2Y

NA2XS(F)2Y

NA2XS(FL)2Y

- in stranded version as a three-core cable
 - with or without armouring
 - e.g. NA2XS2Y, NA2XS(F)2Y, NA2XS(FL)2Y
- ...for use in soil, outdoors, indoors and in cable channels.

You will receive perfect, durable products tested to DIN VDE 0276 and according to the even more stringent **nkt cables** requirements. No matter whether type test, routine test, sample test or test after installation are concerned our production lines and testing methods are transparent. Experienced and highly qualified staff ensure decades of reliability and trust!



What we consider particularly important:

- ✓ own production from the conductor to the sheath
- ✓ all standard types
- ✓ special constructions
- ✓ tested for a long service life
- ✓ short lengths, tailor-made special lengths, standard lengths, long lengths up to 6.000 m
- ✓ certified and controlled **nkt cables** quality

Key

- 1 Conductor
- 2 Conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi-conductive bedding
- 6 Copper screen
- 7 Separating layer
- 8 PE-sheath

Types of cable illustrated

(from top to bottom)

NA2XS2Y

NA2XS2Y

NA2XS(F)2Y

N2XS2Y

Voltage levels

Power cables according to VDE

NA2XS2Y

N2XS2Y

NA2XS(F)2Y

N2XS(F)2Y

NA2XS(FL)2Y

N2XS(FL)2Y

DIN VDE 0276-620
HD 620

6/10 kV

Cross-section*	nom.
Conductor material	
Type of conductor** (round, solid as a possible a	
Conductor diameter	approx.
Conductor screening, wall thickness	min.
XLPE insulation, wall thickness	nom.
Diameter over insulation	min.
	max.
Insulation Screening, thickness	
Copper screen, cross-section	nom.
PE outer sheath	nom.
Outer Diameter	approx.
Cable weight, Cu-cable	approx.
Cable weight, Al-cable	approx.

12/20 kV

Cross-section*	nom.
Conductor material	
Type of conductor** (round, solid as a possible a	
Conductor diameter	approx.
Conductor screening, wall thickness	min.
XLPE insulation, wall thickness	nom.
Diameter over insulation	min.
	max.
Insulation Screening, thickness	
Copper screen, cross-section	nom.
PE outer sheath	nom.
Outer Diameter	approx.
Cable weight, Cu-cable	approx.
Cable weight, Al-cable	approx.

18/30 kV

Cross-section*	nom.
Conductor material	
Type of conductor** (round, solid as a possible a	
Conductor diameter	approx.
Conductor screening, wall thickness	min.
XLPE insulation, wall thickness	nom.
Diameter over insulation	min.
	max.
Insulation Screening, thickness	
Copper screen, cross-section	nom.
PE outer sheath	nom.
Outer Diameter	approx.
Cable weight, Cu-cable	approx.
Cable weight, Al-cable	approx.



* 630 and 800: adapted to DIN VDE 0276-620

** RM = round, stranded / RE = round, solid

mm ²	35	50	70	95	120	150	185	240	300	400	500	630	800
Al/Cu													
Alternative) RM													
mm	6.9	8.2	9.8	11.4	12.8	14.2	16.0	18.3	20.7	23.4	26.5	30.0	34.2
mm	0.3												
mm	3.4												
mm	14.8	16.0	17.7	18.6	20.1	21.6	23.2	25.7	28.4	31.6	34.4	38.0	42.2
mm	16.3	17.5	19.2	20.8	22.8	24.3	25.9	28.4	30.4	33.6	36.4	40.2	44.4
mm	0.3 - 0.6												
mm ²	16	16	16	16	16/25	16/25	16/25	16/25	25	35	35	35	35
mm	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6
mm	25	26	28	29	31	32	34	36	39	42	45	48	52
kg/km	900	1050	1200	1500	1750	2100	2450	3000	3600	4500	5550	7000	8600
kg/km	700	750	800	900	1000	1150	1300	1500	1750	2000	2500	3100	3700

mm ²	35	50	70	95	120	150	185	240	300	400	500	630	800
Al/Cu													
Alternative) RM													
mm	6.9	8.2	9.8	11.4	12.8	14.2	16.0	18.3	20.7	23.4	26.5	30.0	34.2
mm	0.3												
mm	5.5												
mm	19.0	20.2	21.9	23.5	24.3	25.8	27.4	29.9	31.9	35.1	37.9	41.5	45.5
mm	20.5	21.7	23.4	25.0	27.0	28.5	30.1	32.6	34.6	37.8	40.6	44.5	48.5
mm	0.3 - 0.6												
mm ²	16	16	16	16	16/25	16/25	16/25	16/25	25	35	35	35	35
mm	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.7
mm	28	29	31	32	34	35	37	39	41	44	47	52	57
kg/km	1000	1150	1400	1650	1950	2200	2600	3100	3800	4900	5900	7300	9000
kg/km		850	950	1050	1200	1300	1450	1650	1950	2400	2800	3400	4100

mm ²		50	70	95	120	150	185	240	300	400	500	630	800
Al/Cu													
Alternative) RM													
mm		8.2	9.8	11.4	12.8	14.2	16.0	18.3	20.7	23.4	26.5	30.0	34.2
mm	0.3												
mm	8.0												
mm		24.5	26.2	27.8	29.3	30.8	32.4	34.9	36.9	40.1	42.9	46.5	50.7
mm		26.7	28.4	30.0	32.0	33.5	35.1	37.6	39.6	42.8	45.6	49.5	53.7
mm	0.3 - 0.6												
mm ²		16	16	16	16/25	16/25	16/25	16/25	25	35	35	35	35
mm		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.7	2.9
mm		34	35	37	39	40	42	44	46	49	52	56	61
kg/km		1350	1550	1900	2200	2500	2900	3400	4100	5200	6200	7600	9400
kg/km		1100	1150	1300	1450	1550	1750	2000	2250	2700	3100	3700	4400

All the cables mentioned here are supplied with conductive taping over the insulation screen and a separation layer between copper wire screen and PE sheath. They are available as standard cable N(A)2XS2Y, as longitudinally watertight cable N(A)2XS(F)2Y, as longitudinally and radially watertight cable N(A)2XS(FL)2Y.

In European networks Development, production and logistics – Europe is our home!

Presence throughout Europe – no challenge for **nkt cables** – long years of experience and close cooperation with the major European utilities, from the Nordic countries to Spain or from Ireland to Russia, guarantee top quality, flexibility and a wide range of products. Coping with international demands makes us strong, enabling us to find new solutions again and again.

Whether standard cross-sections or submarine cables, or constructions with segmental-conductors with cross-sections of up to 2,500 mm², we set a high value on our **product variety**. Offering low-cost solutions in standard business, producing sophisticated constructions according to complicated customer specifications is what sets **nkt cables** apart – hand in hand with our customers!

In particular, our experience in an international environment increases our ability to come up with answers time and time again.



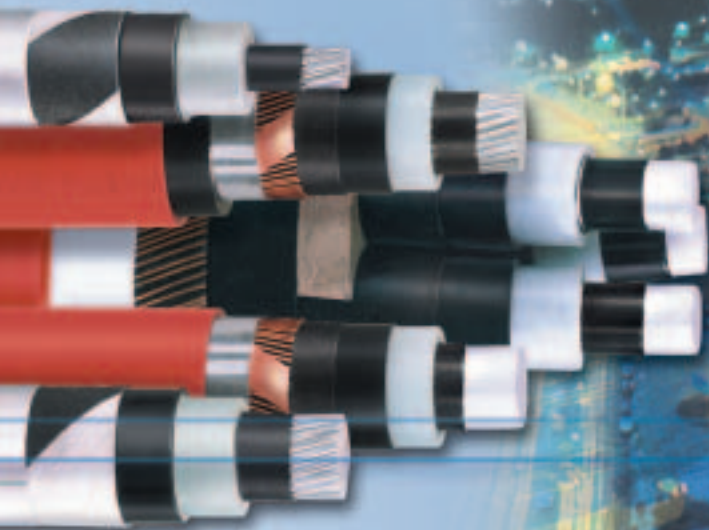
In European networks



Different requirements for voltage levels, conductor constructions-designs, longitudinal water-tightness-proofness, armouring and sheath – we are familiar with European cable requirements. A fact valued by our customers. A well thought-out logistics system ensures that deliveries are made on time and that customers are satisfied even if great distances are involved.

Our powerful arguments:

- ↳ European know-how
- ↳ Customer-specific structures
- ↳ Intelligent logistics
- ↳ Certified and controlled **nkt cables** quality



Variety for Europe

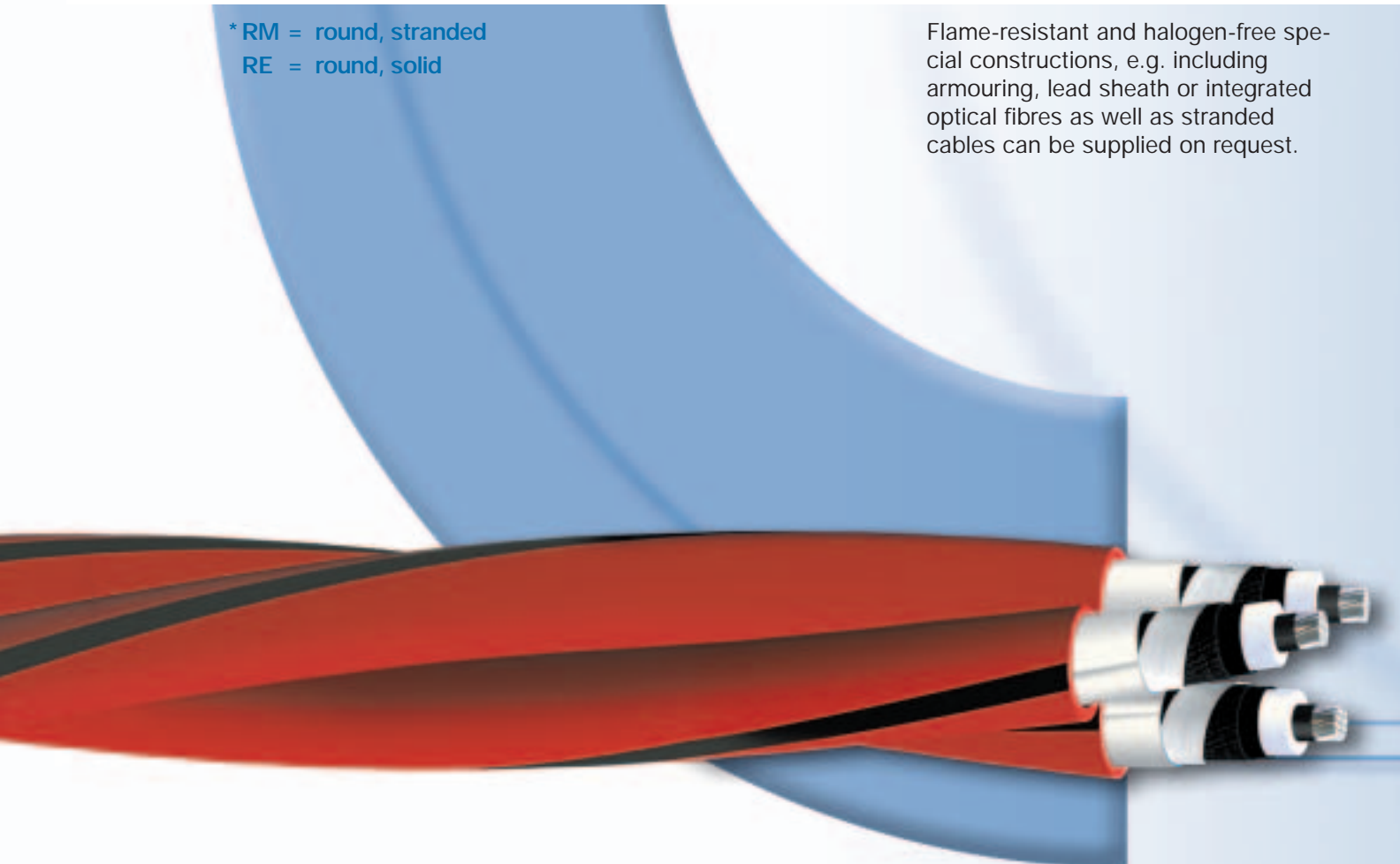
Technical information



Land	France	Belgium	Netherlands	Austria	Spain
Standard	NF C 33-226	NBN 33-323	NEN 3620	ÖVE-K 620	HD 620
Type description, example	NIKOL-AT	EAXeCWB	YMeKrvasdlwd	E-A2XHCJ2Y	RHZ1-OL
Voltage levels					
Conductor cross section					
	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu
Type of conductor*	RM	RM	RE	RM	RM
(round, solid as a possible alternative) (longitudinal watertightness in the conductor if required)					
Isolierhülle inkl. Leitschicht					
Schirmmaterial	Al				
screen cross-sections 16 – 95 mm ² and according to spec.					
as a standard cable, as a longitudinally watertight cable, as a longitudinally and transversally watertight cable					
Sheath material	PE	PE	PE/PVC	PE/PVC	PE
Sheath colours					

* RM = round, stranded
RE = round, solid

Flame-resistant and halogen-free special constructions, e.g. including armouring, lead sheath or integrated optical fibres as well as stranded cables can be supplied on request.





Italy	Denmark	Great Britain	Russia	Poland	Czech Republic	Switzerland	International
HD 620	HD 620	BS 7874	GOST	PN-E	TP-KK-008/95	3437/HD 620	IEC 60502-2
RE4H1R	PEX	Electric Cable	AP BP G	XRUHAKXS	2-AXEKVCEY	XKDT	Electric Cable

3.6/6 to 26/45 kV

35 mm² to 2500 mm²

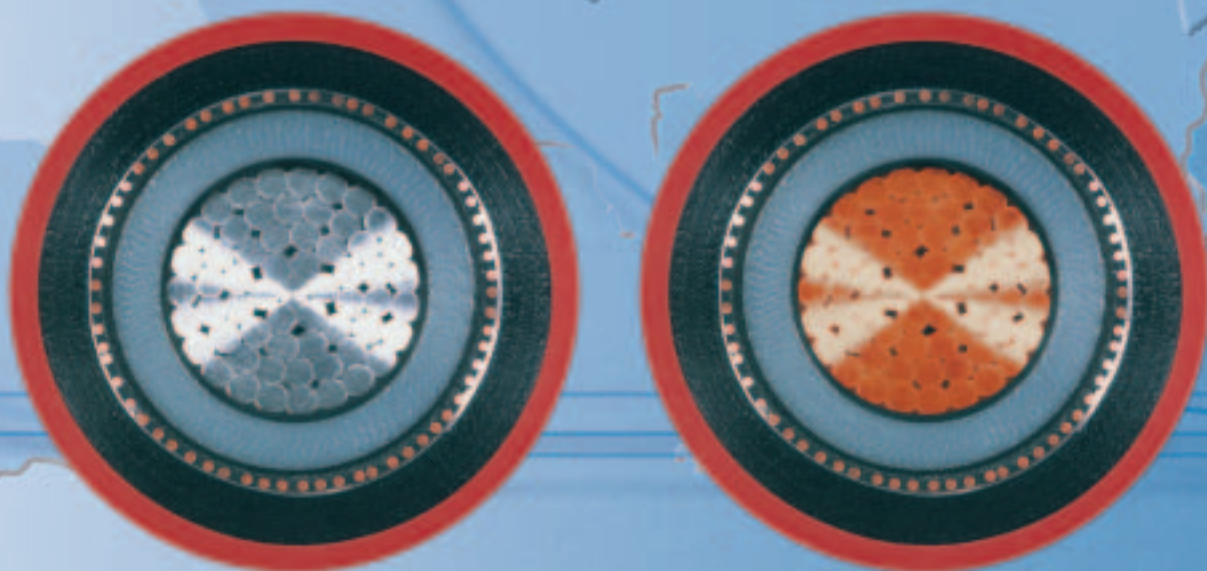
Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu
RM	RE	RM	RM	RM	RM	RM	RM

XLPE

Cu-wire with contact helix

PE/PVC	PE	PE/PVC	PE/PVC	PE/PVC	PE/PVC	PE/PVC	PE/PVC
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black/red/grey



Wind forces

Cable solution for wind power projects - customer oriented and forward looking

In a world where natural resources are limited, investment in alternative power generation is an investment in the future. This includes powerful wind power projects.

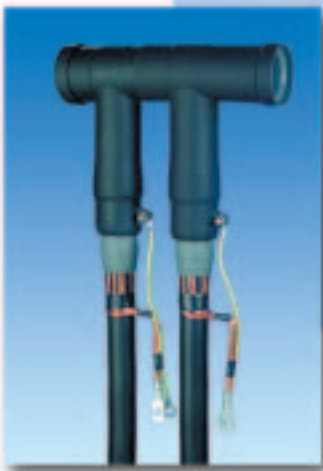
It is impossible to imagine planning and realizing wind parks without the competitive and reliable supplier **nkt cables**. The production of cables in lengths of 6.000 m gives us the prompt ability to respond which is needed for your wind power projects. With larger cross-sections we can meet the demand for more power in your networks.

Our customer-oriented teams work with you to find the solutions you need: tailor-made lengths, just-in-time delivery just to mention a couple of examples – flexibility is our strength – thus ensuring that your installations are cleared in time.

- ↳ 6.000 m lengths
- ↳ better performance
- ↳ exactly fitting length
- ↳ just-in-time delivery

Wind forces

Partnership also means: designed and delivered as per according to the application requirements – from the cable to fittings accessories such as joints, plug-in muffs, connectors or terminations seals. Customer-specific conditions, special lengths or space problems are taken just as much into account as ready-to-install delivery and training.



Project: partnership Assuring support also during training and assembly

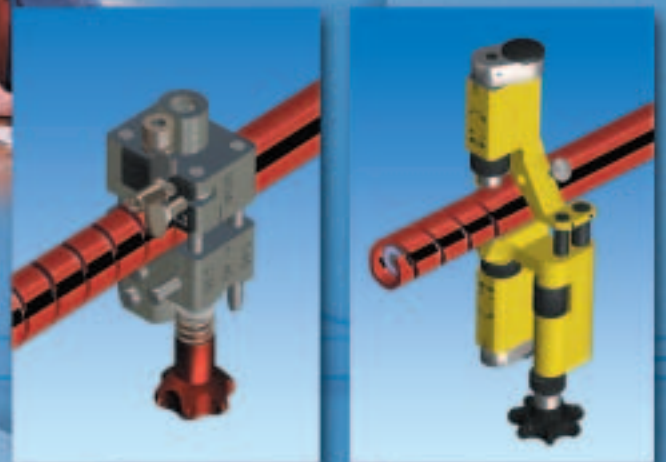
All areas of our company, all our employees, our work processes and services concentrate on one target: teaming up with you to find, develop and produce the best cable solution. We call this project-partnership. **nkt cables** will accompany you right to the finishing line. This also implies we provide theoretical and practical support during technical training, with regard to logistics tasks and "on site" installation work if things are tight now and then. Economically, efficiently and flexibly.



Project: partnership



An optimum cable solution also includes tools such as peeling tools devices to match product and customer requirements, which are available as supplements to our range of products and services.



On the right path

Planning, deliveries, logistics

- that's what cable solution is about!

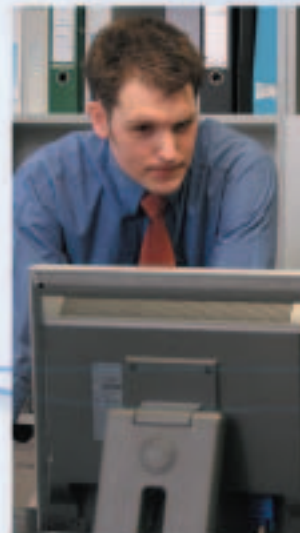
A company's performance cannot only be judged by the quality of its products. Long-term partnerships are only created when customers are listened to. When companies know what partners' process chains are like. When it is clear what security in supply security really means in an emergency and what good stock management is. We analyse your requirements with you.

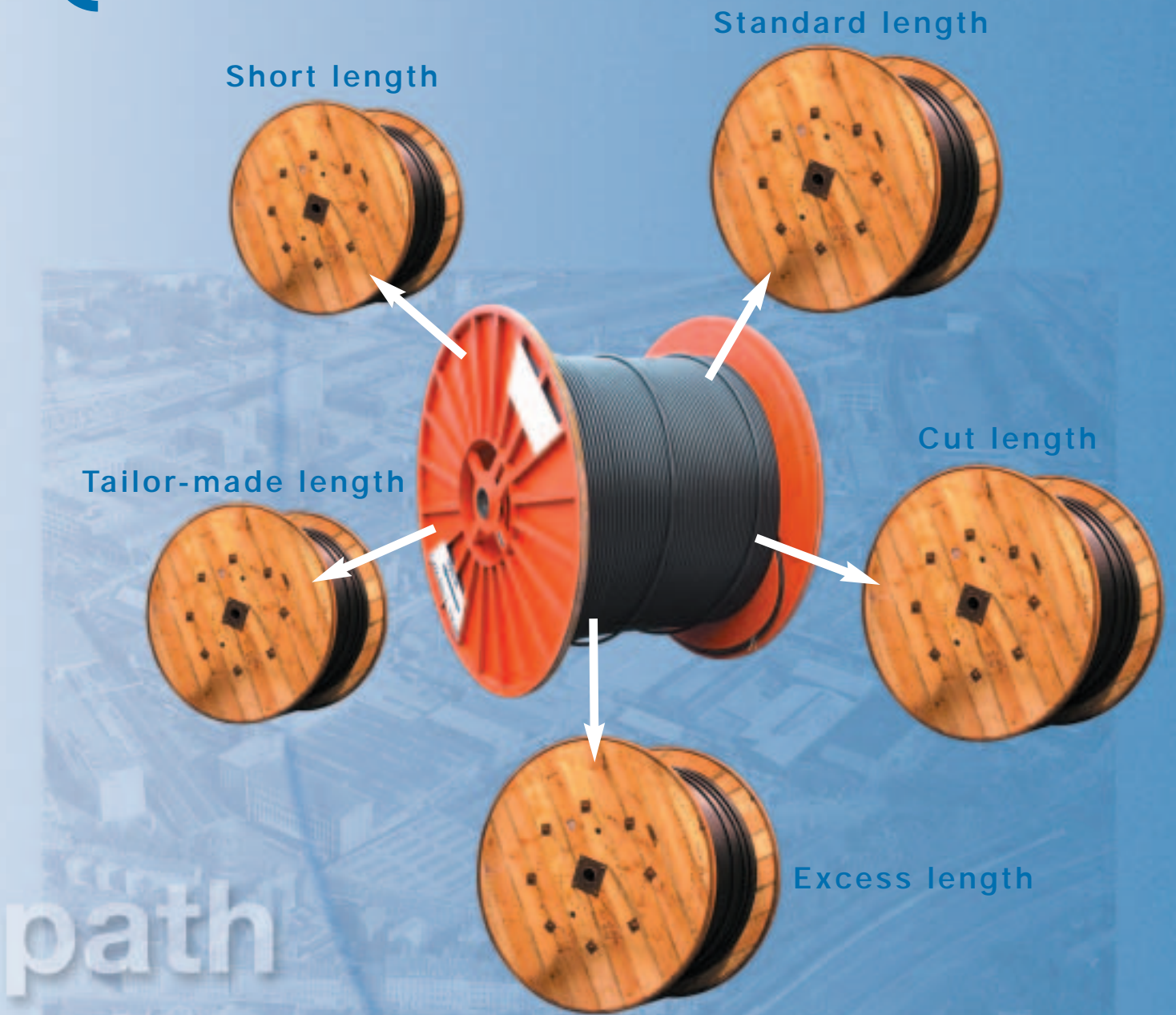
Our cable solution is our contribution to your success:

- Just in time – unloading on site
- Tailor-made lengths – cut lengths to the construction site – excess lengths – avoidance of waste lengths
- Special drums – return drums – drum management via Internet
- Security in supply despite cost-saving reduction of your stock levels
- Optimally planned freight capacities
- IT interfaces – reduction of handling expenses
- Cable accessories – installation works

On the right

Only the perfect optimisation of all logistics processes leads to success. The cable solutions from **nkt cables** will help you.





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When can we get started?

**Europe is growing closer together. Asia is getting nearer.
New markets open up new opportunities**

Many challenges have become more specific, no two tasks are alike. This is also true for the world of medium voltage cables.

Your specific task is our challenge. The beginning of a tailor-made solution. Then we will have reached the target with you.

