



THE
INNOVATIVE
CABLE
PRODUCER

INSTRUMENTATION CABLES FOR THE
INDUSTRY - AND PLANT CONSTRUCTION

About Us

60
Countries
Using Birtaş
Cable Products

As of 2014 Birtaş Kablo is
exporting its products to
60 countries in
5 continents.

**NO JOB IS TOO BIG OR TOO SMALL FOR US.
WE ARE LOOKING FORWARD TO OUR
COLLABORATION !**

AFGHANISTAN - ARABIA - AZERBAIJAN - BAHRAIN - BELGIUM - BOSNIA - BRAZIL - BULGARIA - CHINA - CROATIA - DENMARK - EGYPT - ETHIOPIA - FRANCE
GERMANY - GREECE - HONG KONG - HUNGARY - INDONESIA - IRAN - IRAQ - IRELAND - ISRAEL - JAPAN - JORDAN - KAZAKHSTAN - KUWAIT - LATVIA - LIBYA
LITHUANIA - MALAYSIA - MALTA - MOROCCO - NETHERLANDS - NORTH CYPRUS - NORTHERN IRELAND - NORWAY - PAKISTAN - POLOYA - PORTUGAL - QATAR
ROMANIA - RUSSIA - SINGAPORE - SLOVAKIA - SLOVENIA - SPAIN - SWEDEN - SWITZERLAND - SYRIA - TRINIDAD - TUNISIA - TURKMENISTAN - UKRAINE
UNITED ARAB EMIRATES - UNITED KINGDOM - USA - UZBEKISTAN

To Be A Reliable Brand Means Bearing Responsibility. We Are Aware Of Our Responsibilities !

Ever since our establishment in 1983, it has been our goal to meet the needs of the global industry and its standards. Therefore we have set out our cable production using up to date technological facilities and continuous innovation, constantly bearing in mind our quality, environmental and social responsibilities.

We are committed to our customers' utmost satisfaction and our flexibility is our advantage, that also lead to our company expansion.

We can produce and deliver standard cables from our product range and special cable types according to our ability, in any needed lengths within the shortest delivery time, gladly meeting your specific requirements.

This mentality has lead us to develop our corporate structure accordingly. Our management, production and R&D staff join this mentality and strives to service every inquiry, quote, and order quickly and efficiently, meeting and often exceeding customers' expectations.

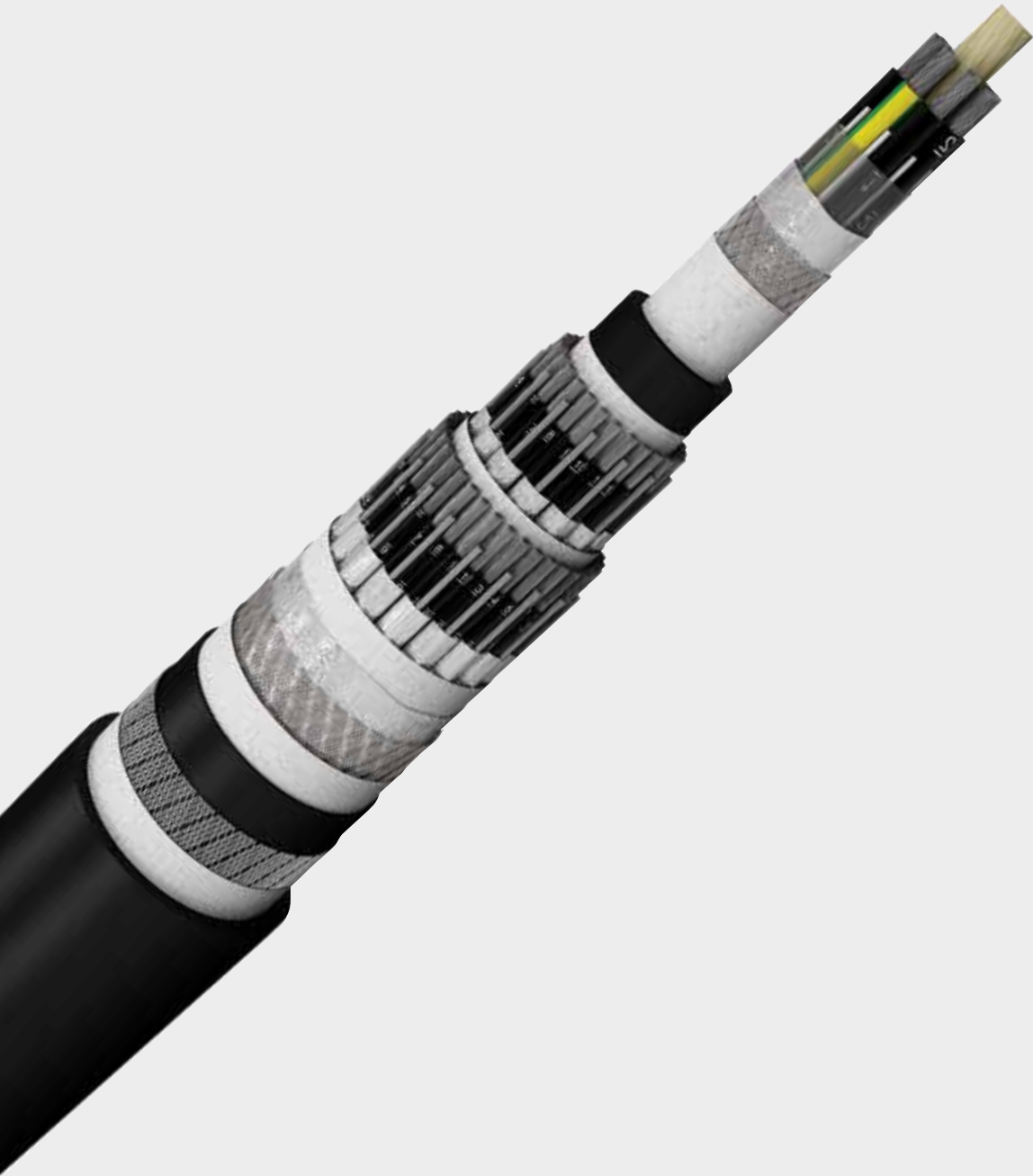
Fast Reliable Competent

- 30 years of experience in special and standard cable manufacturing
- Export to 60 countries all over the world
- Fast communication & customer services
- Short delivery term & guaranteed despatch date
- Professional technical support
- No minimum order quantity

Certifications

- ISO 9001:2008 Quality Management System Certificate / VDE
- GOST - R Certificates
- GOST Fire Safety Certificate
- SWISS Product Certificate
- CE
- Turkish Product Certificates





Instrumentation Cables

The Instrumentation cables are one of the special group of cable product families. These instrumentation cables are suitable for connecting instruments and control systems for analogue or digital signal transmission. These cables are used in industrial plants, petrochemical plants, power/energy stations, fueloil and natural gas plants etc...

These cables shall not be connected directly to mains electricity supply or other low impedance sources. Multi-element cables for use in analogue, digital and control circuits are not designed to be used for power supply. These cables should be installed in accordance with the applicable local and national regulations.

They may or may not be screened and optionally may incorporate armouring and/or moisture or environmental protection layers. The cables shall have a mechanically robust construction and electrical transmission handling properties. The electrical, mechanical, transmission and environmental performance characteristics of the cables, related to their reference test methods are detailed according to instrumentation standards.

The maximum rated voltages of the cables are 90 V, 150V, 300 V, 500 V, 600 V and 1000 V resp. Acc. to related standards.

The instrumentation cables intended to have limited circuit integrity in a fire. Also these instrumentation cables can be designed according to customer's specific requirements.

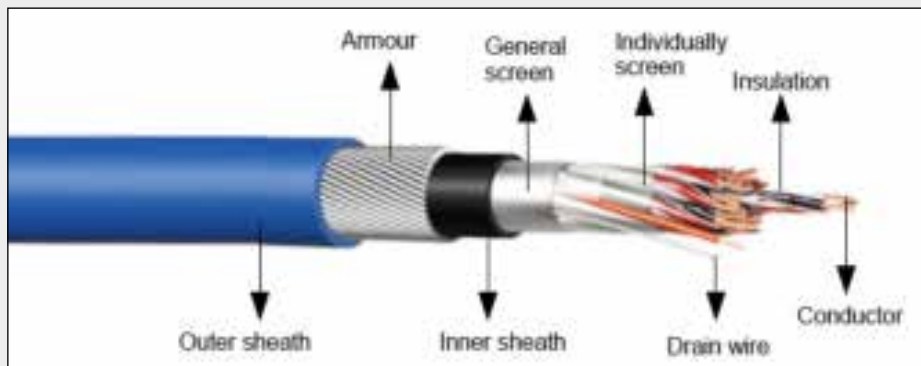
Design Options And Selection Criteria For Instrumentation Cables

A. Applicable Standards For Instrumentation Cables

- PAS 5308 (~BS 5308)
- EN 50288-7
- NF M87-202
- ANSI/ICEA S-73-532 (NEMA WC 57)
- UL 2250

B. Conductor

- Plain and metal coated (tinned) copper conductors acc. to EN 60228 (~IEC 60228)
- EN 60228 Class 1 (solid), class 2 (stranded – mainly with 7 wires) and class 5 (flexible)
- Sizes: 0,5 mm² up to 2,5 mm²
(also possible with other cross-sections)



C. Insulation Materials

- PVC (Y): Polyvinylchloride
- PVC (Yw): Polyvinylchloride high temperature (~+90°C / ~+105°C)
- PE (2Y): Polyethylene
- PP (9Y): Polypropylene
- HFFR (H): Halogen-free flame retardant
- Foam PE (02YS): Foamskin Polyethylene
- XLPE (2X): Cross-linked Polyethylene
- X-HFFR (HX): Cross-linked halogen-free flame retardant
- EPR (R/3G): Ethylene propylene rubber
- TPE: Thermoplastic elastomer
- SR (2G): Silicone (for fire resistant types-Cl ... FE180)

Selection criteria for the insulation materials are acc. to electrical properties, temperature ratings, flame/fire behaviour, connection methods, environmental, chemicals...

D. Protective Wrappings And Interstitial Fillers

Protective wrappings or separator tapes shall be used in cabling elements, under inner sheath or under outer sheath from a material compatible with the cable components.
And also interstitial filler(s) where necessary shall be a material compatible with the cable components.
Fire protective tapes: Mica tapes, ceramifiable silicone tapes, synthetic tapes or fibre-glass tapes are for fire resistant (FE180)

E. Cabling Elements

Cable elements twisted acc. to related standard as multi-cores, pairs, triples and quads. The lay-length of cores, pairs, triples and quads are acc. to related standard.

Core: Insulated conductor

Pair: Two cores twisted to a pair

Triple: Three cores twisted to a pair

Quad: Four cores twisted to a quad



F. Screening

Screenings are for preventing or reducing possible interferences like

- Internal interferences caused by adjacent line circuit in the cable itself
- External induced interferences from sources outside the cable like electric devices, motors, power cables...

Screening can be for individually screening and also for overall screening.

Screening materials :

- (St): Aluminium laminated polyester tape in contact with a tinned copper drain wire
- C: Braiding of tinned copper wires or plain copper
- (St)C: Aluminium laminated polyester tape with braiding of tinned copper wires
- [CuB]:Copper tape

*Combination of screening materials

Individually screening types:

- PIMF: Pair In Metal Foil
- TIMF: Triple In Metal Foil
- QIMF: Quad In Metal Foil

Identification of core / cabling:

- Unscreened or overall screened cables are according to related standard (or others on request)

Individually screened cabling elements:

- Colour code according to related standard (or others on request)
- Identification of each screened elements by numbered tape 1,2,3...etc.

G. Laying-Up Of Cabling Elements

The cable elements shall be assembled together in concentric layers or in unit construction to form the cable core.

H. Inner Sheath / Bedding Materials

PVC (Y): Polyvinylchloride

PVC (Yw): Polyvinylchloride high temperature (~+90°C / ~+105°C)

PE (2Y): Polyethylene

HFFR (H): Halogen-free flame retardant

X-HFFR(HX): Cross-linked halogen-free flame retardant

TPE: Thermoplastic elastomer

Selection criteria for the inner sheath / bedding materials are acc. to electrical properties, temperature ratings, flame/fire behaviour, connection methods, environmental, chemicals, moisture...

I. Moisture Barriers Shall Be Selected From The Below Materials

- Water swellable tapes
- Laminated sheath, consisting of a longitudinal overlapped metallic foil, bonded within the overlapping and to the inner surface of an extruded sheath. Or combination of both of them

J. Chemical And / Or environmental Protection (Multi Layer Sheath (L))

The multi layer sheath consist a laminated sheath and a additional layer of polyamide. And also a laminated sheath shall consist of a logitudinal overlapped aluminium foil with an extruded layer of high density polyethylene according to EN 50290-2-24.

This application of multi layer sheath is a good alternative to the lead sheath application. The multi layer sheath cables have smaller diameter and lighter than the lead sheath cables.



K. Armouring / Metallic Protection

- SWA / R: Galvanised round steel wire armour, helically, coverage more than 95%
- B: Single or double layer of steel tapes, coverage with 100%
- SWB / Q: Braiding of galvanised steel wires, coverage with min. 80% and more

Selection criterias of armouring are acc. to protection against mechanical impacts during installation and operation; the armourings serve as earthing interconnection and screen; protection against external interferences; protection against rodent attacks, direct burials, tensile load, min. required bending radius...

L. Outer Sheath Materials

PVC (Y): Polyvinylchloride (+70°C)
PVC (Yw): Polyvinylchloride high temperature (+90°C / +105°C)
PVC - Arctic / Cold: Polyvinylchloride for cold up to -60°C
PE (2Y): Polyethylene (+70°C)
HFFR (H): Halogen-free flame retardant (+70°C / +90°C / +105°C)
HFFR - Arctic / Cold: Halogen-free flame retardant for cold up to -60°C
X-HFFR(HX): Cross-linked halogen-free flame retardant (+90°C)
TPE: Thermoplastic elastomer (+90°C / +105°C / +125°C)
TPU (PUR) (11Y): Polyurethane (+90°C)

Selection criteria for the inner sheath / bedding materials are acc. to electrical properties, temperature ratings (arctic, cold, high temperatures), flame/fire behaviour, installation and connection methods, environmental conditions , chemicals, UV, sunlight, oil resistant, direct burials, anti-termite, anti-rodent, climatic conditions, moisture...

Outer sheath colours:

Black: For indoor and outdoor applications (best for UV , sunlight resistance)

Blue: For intrinsically safe circuits

Red: For fire resistance

Or other colours on request like grey, green...



M. Test Criteria And Methods Are According To

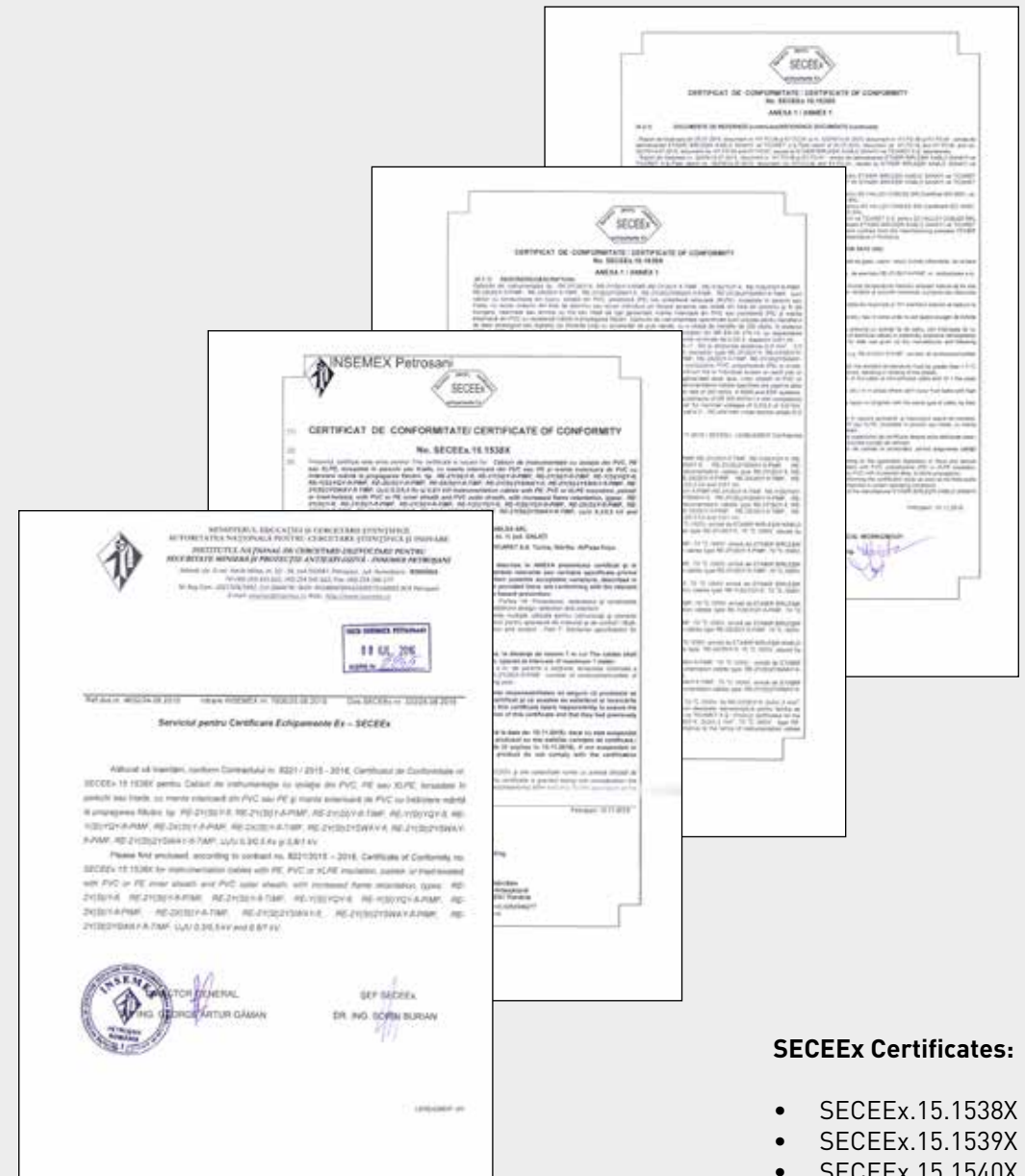
- PAS 5308 (~BS 5308)
- EN 50288-7
- NF M87-202
- ANSI/ICEA S-73-532 (NEMA WC 57)
- UL 2250
- IEC 60811 series
- EN 50290 series
- EN 50289 series

Flame/ Fire Tests:

- EN 60332-1-2 (~IEC 60332-1)
- EN 60332-3-22 Cat A (IEC 60332-3 Cat A)
- EN 60332-3-24 Cat C (IEC 60332-3 Cat C)
- EN 50200
- EN 50362
- IEC 60331-21 / 23 (FE180)
- BS 6387 C/W/Z

Tests For Halogen-Free Type Of Instrument Cables:

- EN 61034-1/2 (IEC 61034-1/2) for Smoke density test
- EN 60754-1/2 (IEC 60754-1/2) for halogen-free properties



SECEX Certificates:

- SECEEx.15.1538X
- SECEEx.15.1539X
- SECEEx.15.1540X



HEADQUARTER

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