ÜNTEL

Quality Through Experience

NAVY CABLES
(TÜRK LOYDU)

REV NO. TÜRK LOYDU-04-2026-R1

Navy Cables
(Türk Loydu)

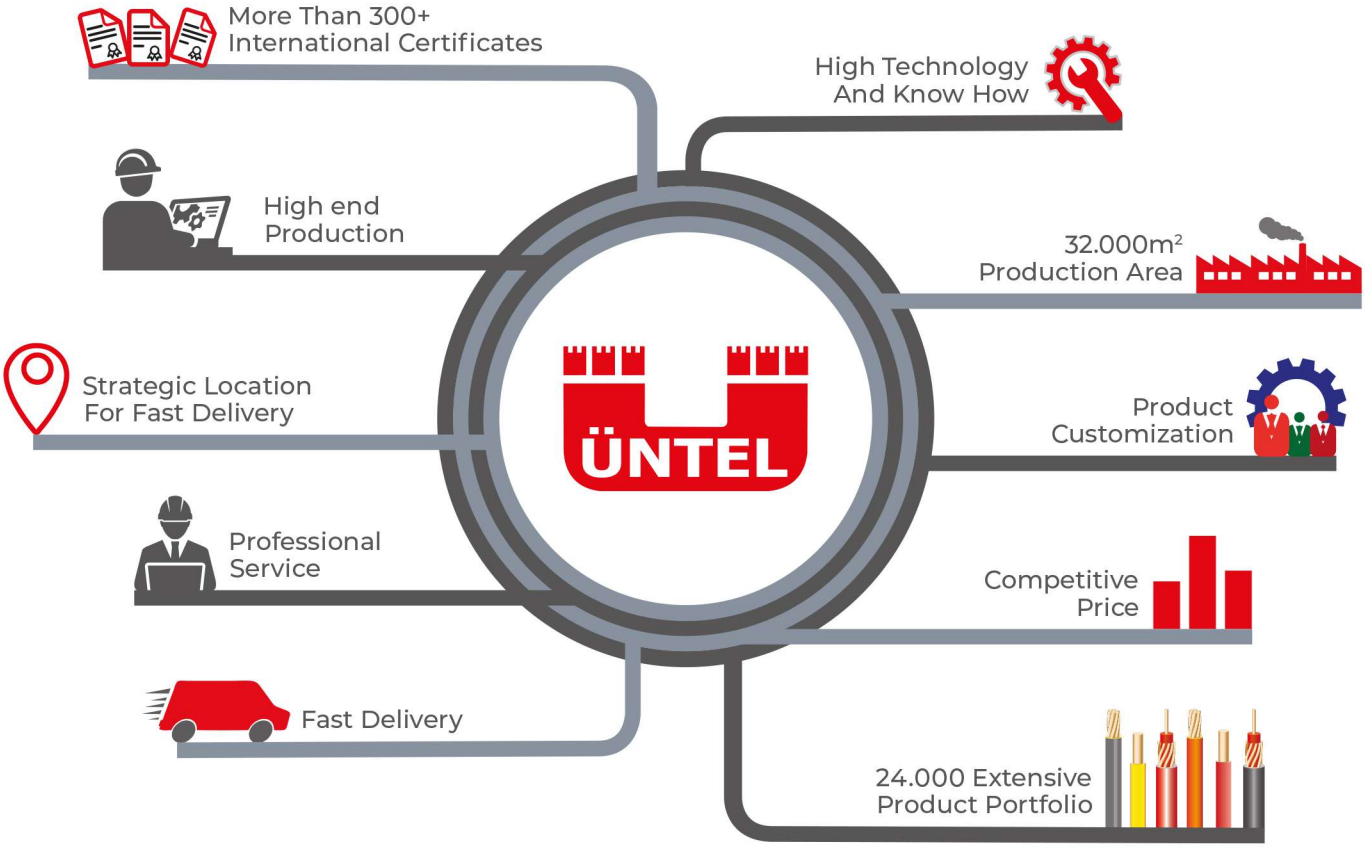
ÜNTEL

Quality Through Experience

HALF A CENTURY OF EXPERIENCE

HALF A CENTURY OF EXPERIENCE

Exporting Over 100+ Countries on 6 Continents



INDUSTRIAL **CABLES** | MARINE **CABLES** | OFFSHORE **CABLES** | MINING & TUNNELING **CABLES** | AIRPORT **CABLES** | RAILWAY **CABLES** | CRANE **CABLES** | DEFENSE INDUSTRY **CABLES** | INSTRUMENTATION **CABLES**

ABOUT US

ÜNTEL KABLO, one of leading cable manufacturers in the world was established in 1972, Turkey. With over 50 years of experience, it is constantly developing and optimizing its product range with the help of advanced technology and well-trained staff.

Product range consists over 24.000 different types of cables, covers both rubber and thermoplastic cables up to Medium Voltage (MV) range. ÜNTEL's power and instrumentation cables supplies energy for industries which requires experience like marine, offshore, mines and tunnels, airports, railways and have been used in industrial ways such as heavy-duty rubber drum reeling cables, welding cables, control cables and fire resistant cables. ÜNTEL is also able to produce tailor made products for special purposes. Today these products are exported over 100+ countries on 6 continents.

By the end of 2009, ÜNTEL finalized the investment of a new high-tech plant near Istanbul. Now continues her operations on 43.000 m² land space with 32.000 m² closed area. By having 3.000 tons copper drawing and 4.000 tons different type of compound processing capacity, ÜNTEL produces 30.000 tones of cable per year. By means of new factory building, state of the art machines and unique ERP system investments ÜNTEL aimed absolute customer satisfaction.

Üntel's laboratories which are approved by organisations that specify the standars are equipped with advanced technology test and measurement devices. Within the scope of Quality System Certificates there is a quality management system presents in Üntel according to ISO, IQnet and TSE quality standarts.. Around 300+ different types of cables are certified by global organisations like VDE, KEMA, ABS, UL, BV, DNV, RINA and TSE.

Üntel Kablo evaluate customer needs and expectations in a sectoral wiev and provide effective solutions with hundred percent customer satisfaction and qualified production philisopy. Üntel's biggest value is well trained and experienced staff and believe that exceptional quality comes through this experience.

Üntel Kablo offers 24.000 different types of Rubber, PVC, PE, LSZH and Polyurethane cables complying with global standards.

Solution partner of your projects..

NAVY CABLES
(TÜRK LOYDU)

Longest journeys start with "trust".

Üntel Kablo is one of the leading manufacturer of shipbuilding cables for navy vessels in Europe and has been producing with approved quality for a half century

In this catalogue, as Üntel Kablo, we present our TÜRK LOYDU approved range of power, control, signal, lighting, and instrumentation cables, specifically designed for fixed installations in defense industry and naval platforms. These cables are engineered particularly for military vessels and fixed marine installations, and are suitable for both below-deck and above-deck applications.

With our long-standing engineering experience and strong R&D infrastructure, we offer a comprehensive product portfolio within the scope of TÜRK LOYDU standards from a single source. The high-performance and reliable cable systems required by increasingly complex and advanced naval platforms are effectively met through Üntel's expertise.

In line with the growing operational demands of naval forces, our solutions are designed for a wide range of platforms including aircraft carriers, frigates, corvettes, patrol boats, mine vessels, landing ships, and submarines. Through our involvement in strategic projects such as TCG Anadolu, we demonstrate our position as a reliable solution partner in the industry.

Üntel Navy cables are preferred by customers due to their ease of installation, enhanced flexibility, practical handling, ease of dismantling, and optimized size and weight. Our products are designed and manufactured to fully comply with the requirements of TÜRK LOYDU standards and specifications. Developed to meet the critical safety requirements of marine platforms, our cables feature low smoke emission and reduced levels of toxic and corrosive gases in case of fire, thereby protecting both equipment and human life.

Üntel marine cables have successfully passed TÜRK LOYDU testing procedures and are fully certified. This NAVY (Türk Loydu) catalogue clearly demonstrates our compliance with both national and international maritime standards.

With over 50 years of manufacturing experience, advanced production technologies, and a highly skilled workforce, Üntel continues to provide high-quality solutions tailored to the specific needs of its customers.

For more detailed technical information, please refer to our product pages. For specific requirements or technical support, our expert team is always at your service.

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CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Seperator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) compound in accordance with IEC 60092-360
Seperator	Seperator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350, IEC 60092-353 and S.P 01/21
Seperator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	1200V AC / 1800V DC
AC Test Voltage	3,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	:ÜNTEL 1200V TİP 1A TAGYEYO / UPNGSG MxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in power, control, and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1611.1	Class 2	1x2,5	7,0	8,0	88	48	31	7,41
1611.2	Class 2	1x4	7,5	8,5	120	51	40	4,61
1611.3	Class 2	1x6	8,4	9,4	146	56	52	3,08
1611.4	Class 2	1x10	9,5	10,5	199	63	71	1,83
1611.5	Class 2	1x16	10,0	11,2	267	67	96	1,15
1611.6	Class 2	1x25	12,0	13,0	392	78	127	0,727
1611.7	Class 2	1x35	13,0	14,0	498	84	156	0,524
1611.8	Class 2	1x50	15,0	16,2	661	97	196	0,387
1611.9	Class 2	1x70	17,0	18,2	875	109	241	0,268
1611.10	Class 2	1x95	19,5	20,5	1.162	123	292	0,193
1611.11	Class 5	1x95	19,6	21,0	1.116	126	292	0,206
1611.12	Class 2	1x120	21,0	22,4	1.440	134	338	0,153
1611.13	Class 5	1x120	21,8	23,0	1.391	138	338	0,161
1611.14	Class 2	1x150	23,0	24,5	1.740	147	389	0,124
1611.15	Class 5	1x150	24,0	25,2	1.683	151	389	0,129
1611.16	Class 2	1x185	25,5	27,0	2.132	162	444	0,0991
1611.17	Class 5	1x185	26,2	27,4	2.020	164	444	0,106
1611.18	Class 2	1x240	29,0	30,5	2.694	183	522	0,0754
1611.19	Class 5	1x240	29,5	31,0	2.620	186	522	0,0801
1611.20	Class 2	1x300	31,5	33,0	3.379	198	600	0,0601
1611.21	Class 5	1x300	32,5	34,0	3.223	204	600	0,0641

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

TİP 1A TAGYEYO FR / UPNGSG-FR

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) compound in accordance with IEC 60092-360
Separator	Seperator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350, IEC 60092-353 and S.P 01/21
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Fire Resistant	IEC 60331-11 & IEC 60331-21
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	1200V AC / 1800V DC
AC Test Voltage	3,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 1200V TİP 1A TAGYEYO FR-180 / UPNGSG FR MxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in power, control, and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm^2)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1614.1	Class 2	1x2,5	7,3	8,4	92	50	31	7,41
1614.2	Class 2	1x4	8,2	9,0	128	54	40	4,61
1614.3	Class 2	1x6	8,8	9,8	155	59	52	3,08
1614.4	Class 2	1x10	10,0	10,8	213	65	71	1,83
1614.5	Class 2	1x16	11,1	12,5	283	75	96	1,15
1614.6	Class 2	1x25	13,0	14,0	409	84	127	0,727
1614.7	Class 2	1x35	14,2	16,0	519	96	156	0,524
1614.8	Class 2	1x50	16,2	17,0	681	102	196	0,387
1614.9	Class 2	1x70	17,9	19,0	896	114	241	0,268
1614.10	Class 2	1x95	20,4	22,0	1187	132	292	0,193
1614.11	Class 5	1x95	20,4	23,0	1141	138	292	0,206
1614.12	Class 2	1x120	22,2	23,5	1467	141	338	0,153
1614.13	Class 5	1x120	22,1	24,5	1408	147	338	0,161
1614.14	Class 2	1x150	24,2	26,0	1768	156	389	0,124
1614.15	Class 5	1x150	24,7	27,0	1713	162	389	0,129
1614.16	Class 2	1x185	26,6	28,0	2157	168	444	0,0991
1614.17	Class 5	1x185	26,9	29,5	2053	177	444	0,106
1611.18	Class 2	1x240	29,6	31,5	2732	189	522	0,0754
1611.19	Class 5	1x240	30,2	33,0	2658	198	522	0,0801
1611.20	Class 2	1x300	32,8	34,5	3417	207	600	0,0601
1611.21	Class 5	1x300	33,3	36,5	3277	219	600	0,0641

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Standard	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) compound in accordance with IEC 60092-360
Bedding	Halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Separator	Optional separator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350, IEC 60092-353 and S.P 01/21
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	1200V AC / 1800V DC
AC Test Voltage	3,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 1200V TİP 1B TAGYEYO / UPNGSG MxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in power, control, and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1612.1	Class 2	2x1,5	11,5	13,1	231	79	19	12,1
1612.2	Class 2	2x2,5	12,5	13,7	280	82	27	7,41
1612.3	Class 2	2x4	13,4	15,0	347	90	34	4,61
1612.4	Class 2	2x6	14,7	16,2	430	97	44	3,08
1612.5	Class 2	2x10	16,2	18,0	562	108	60	1,83
1612.6	Class 2	2x16	19,0	20,5	751	123	81	1,15
1612.7	Class 2	2x25	22,5	24,0	1094	144	108	0,727
1612.8	Class 2	3x1,5	12,0	13,7	269	82	16	12,1
1612.9	Class 2	3x2,5	13,0	14,4	315	86	22	7,41
1612.10	Class 2	3x4	14,0	15,6	392	94	28	4,61
1612.11	Class 2	3x6	15,5	17,6	496	106	36	3,08
1612.12	Class 2	3x10	17,6	19,8	681	119	50	1,83
1612.13	Class 2	3x16	20,0	24,0	913	144	67	1,15
1612.14	Class 5	3x16	20,0	24,0	891	144	67	1,21
1612.15	Class 2	3x25	24,0	25,7	1364	154	88	0,727
1612.16	Class 5	3x25	24,0	25,7	1312	154	88	0,78
1612.17	Class 2	3x35	26,0	28,5	1717	171	109	0,524
1612.18	Class 5	3x35	26,2	28,5	1670	171	109	0,554
1612.19	Class 2	3x50	30,0	33,0	2296	198	137	0,387
1612.20	Class 5	3x50	31,0	33,0	2341	198	137	0,386
1612.21	Class 2	3x70	34,5	38,8	3071	233	169	0,268
1612.22	Class 5	3x70	36,0	39,9	3165	239	169	0,272
1612.23	Class 2	3x95	39,7	43,7	4212	262	204	0,193
1612.24	Class 5	3x95	41,6	44,2	4163	265	204	0,206
1612.25	Class 2	3x120	43,0	47,3	5105	284	237	0,153
1612.26	Class 5	3x120	44,5	47,5	5058	285	237	0,161
1612.27	Class 2	4x4	15,2	17,0	480	102	28	4,61
1612.28	Class 2	4x6	17,0	19,0	580	114	36	3,08
1612.29	Class 2	4x10	19,4	21,8	830	131	50	1,83
1612.30	Class 2	4x16	22,0	24,6	1130	148	67	1,15

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1612.31	Class 5	4x16	22,0	24,6	1097	148	67	1,21
1612.32	Class 2	4x25	26,4	28,6	1667	172	88	0,727
1612.33	Class 5	4x25	26,4	28,6	1605	172	88	0,78
1612.34	Class 2	4x35	29,2	32,5	2171	195	109	0,524
1612.35	Class 5	4x35	31,0	33,0	2209	198	109	0,554
1612.36	Class 2	4x50	33,5	37,4	2953	224	137	0,387
1612.37	Class 5	4x50	34,3	38,4	3011	230	137	0,386
1612.38	Class 2	4x70	38,2	42,	4020	255	169	0,268
1612.39	Class 5	4x70	40,0	43,0	3958	258	169	0,272
1612.40	Class 2	4x95	44,2	48,4	5310	290	204	0,193
1612.41	Class 5	4x95	45,5	48,8	5121	293	204	0,206
1612.42	Class 2	5 G 2,5	16,0	18,9	455	113	17	7,41
1612.43	Class 2	5 G 4	17,5	19,9	556	119	22	4,61
1612.44	Class 2	7 G 2,5	17,5	19,9	530	119	15	7,41
1612.45	Class 2	33x0,75	22,5	26,2	768	157	6	24,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

TİP 1B TAGYEYO FR / UPNGSG-FR

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) compound in accordance with IEC 60092-360
Bedding	Halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Separator	Optional seperator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350, IEC 60092-353 and S.P 01/21
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Fire Resistant	IEC 60331-11 & IEC 60331-21
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	1200V AC / 1800V DC
AC Test Voltage	3,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 1200V TİP 1B TAGYEYO FR-180 / UPNGSG FR MxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in power, control, and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1615.1	Class 2	2x1,5	13,0	14,5	270	87	19	12,1
1615.2	Class 2	2x2,5	13,9	16,0	323	96	27	7,41
1615.3	Class 2	2x4	15,0	17,5	380	105	34	4,61
1615.4	Class 2	2x6	16,3	19,0	462	114	44	3,08
1615.5	Class 2	2x10	18,3	21,0	610	126	60	1,83
1615.6	Class 2	2x16	20,6	23,5	812	141	81	1,15
1615.7	Class 2	2x25	24,4	27,0	1167	162	108	0,727
1615.8	Class 2	3x1,5	13,6	16,0	297	96	16	12,1
1615.9	Class 2	3x2,5	14,6	17,0	355	102	22	7,41
1615.10	Class 2	3x4	15,7	18,5	430	111	28	4,61
1615.11	Class 2	3x6	17,1	19,5	531	117	36	3,08
1615.12	Class 2	3x10	19,5	22,0	724	132	50	1,83
1615.13	Class 2	3x16	21,8	25,0	968	150	67	1,15
1615.14	Class 5	3x16	22,1	25,0	964	150	67	1,21
1615.15	Class 2	3x25	26,0	28,5	1421	171	88	0,727
1615.16	Class 5	3x25	26,4	28,0	1399	168	88	0,78
1615.17	Class 2	3x35	28,7	31,0	1810	186	109	0,524
1615.18	Class 5	3x35	28,8	32,5	1770	195	109	0,554
1615.19	Class 2	3x50	32,7	35,0	2386	210	137	0,387
1615.20	Class 5	3x50	33,0	36,0	2398	216	137	0,386
1615.21	Class 2	3x70	37,1	39,5	3202	237	169	0,268
1615.22	Class 5	3x70	38,0	40,0	3220	240	169	0,272
1615.23	Class 2	3x95	42,7	45,0	4341	270	204	0,193
1615.24	Class 5	3x95	42,9	48,0	4219	288	204	0,206
1615.25	Class 2	3x120	46,3	49,5	5291	297	237	0,153
1615.26	Class 5	3x120	46,1	50,5	5120	303	237	0,161
1615.27	Class 2	4x4	17,2	20,0	512	120	28	4,61
1615.28	Class 2	4x6	18,6	21,5	627	129	36	3,08
1615.29	Class 2	4x10	21,2	24,0	873	144	50	1,83
1615.30	Class 2	4x16	23,9	27,0	1191	162	67	1,15

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1612.31	Class 5	4x16	24,3	27,0	1178	162	67	1,21
1612.32	Class 2	4x25	28,6	31,0	1758	186	88	0,727
1612.33	Class 5	4x25	29,1	31,0	1721	186	88	0,78
1612.34	Class 2	4x35	31,6	34,5	2253	27	109	0,524
1612.35	Class 5	4x35	31,7	36,0	2237	216	109	0,554
1612.36	Class 2	4x50	36,9	39,0	3109	234	137	0,387
1612.37	Class 5	4x50	37,3	40,0	3123	240	137	0,386
1612.38	Class 2	4x70	41,5	44,0	4135	264	169	0,268
1612.39	Class 5	4x70	42,5	44,0	4153	264	169	0,272
1612.40	Class 2	4x95	47,4	50,5	5498	303	204	0,193
1612.41	Class 5	4x95	47,5	53,0	5319	318	204	0,206
1612.42	Class 2	5 G 2,5	17,1	20,0	482	120	17	7,41
1612.43	Class 2	5 G 4	18,8	21,5	604	129	22	4,61
1612.44	Class 2	7 G 2,5	18,6	21,5	572	129	15	7,41
1612.45	Class 2	33x0,75	25,6	34,5	899	207	6	24,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

REV NO. TURK LOYDU-1/01.04.2026


F243

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Separator	Optional seperator tape
Insulation	Ethylene propylene rubber (EPR) compound in accordance with IEC 60092-360
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	1200V AC / 1800V DC
AC Test Voltage	3,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	:ÜNTEL 1200V TİP 1C TAGYYO / UPNGG MxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in power, control, and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1613.1	Class 2	1x25	10,7	12,3	308	74	127	0,727
1613.2	Class 2	1x35	12,0	13,6	405	82	156	0,524
1613.3	Class 2	1x50	13,2	14,9	544	89	196	0,387
1613.4	Class 2	1x70	15,7	17,5	753	105	241	0,268
1613.5	Class 2	1x95	18,2	20,0	1022	120	292	0,193
1613.6	Class 5	1x95	18,3	20,2	975	121	292	0,206
1613.7	Class 2	1x120	19,8	21,8	1274	131	338	0,153
1613.8	Class 5	1x120	20,1	22,0	1224	132	338	0,161
1613.9	Class 2	1x150	21,5	24,2	1562	145	389	0,124
1613.10	Class 5	1x150	21,6	24,3	1505	146	389	0,129
1613.11	Class 5	1x185	24,8	26,8	1830	161	444	0,106
1613.12	Class 5	1x240	27,3	29,6	2402	178	522	0,0801
1613.13	Class 5	1x300	30,0	32,8	2945	197	600	0,0641

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) compound in accordance with IEC 60092-360
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Fire Resistance	IEC 60331-11 & IEC 60331-21
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	1200V AC / 1800V DC
AC Test Voltage	3,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 1200V TİP 1C TAGYYO FR-180 / UPNGG FR MxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in power, control, and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1617.1	Class 2	1x25	11,7	13,0	320	78	127	0,727
1617.2	Class 2	1x35	12,8	14,0	419	84	156	0,524
1617.3	Class 2	1x50	14,6	16,0	560	96	196	0,387
1617.4	Class 2	1x70	16,6	18,0	770	108	241	0,268
1617.5	Class 2	1x95	19,0	20,5	1043	123	292	0,193
1617.6	Class 5	1x95	19,1	21,5	996	129	292	0,206
1617.7	Class 2	1x120	20,7	22,5	1296	135	338	0,153
1617.8	Class 5	1x120	20,8	23,5	1246	141	338	0,161
1617.9	Class 2	1x150	22,8	24,5	1587	147	389	0,124
1617.10	Class 5	1x150	23,4	25,5	1531	153	389	0,129
1617.11	Class 5	1x185	25,6	28,0	1858	168	444	0,106
1617.12	Class 5	1x240	28,9	31,5	2434	189	522	0,0801
1617.13	Class 5	1x300	30,5	34,5	2978	207	600	0,0641

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

TİP 1 TAGYEYO EMC / UPNGSG-EMC

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) compound in accordance with IEC 60092-360
Bedding	Halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Tape	Copper/polyester tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350, IEC 60092-353 and S.P 01/21
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	1200V AC / 1800V DC
AC Test Voltage	3,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 1200V TİP 1 TAGYEYO EMC / UPNGSG-EMC MxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in power, control, and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm^2)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1616.1	Class 2	2x1,5	11,5	13,1	237	79	19	12,1
1616.2	Class 2	2x2,5	12,5	13,7	287	82	27	7,41
1616.3	Class 2	2x4	13,4	15,0	358	90	34	4,61
1616.4	Class 2	2x6	14,7	16,2	438	97	44	3,08
1616.5	Class 2	2x10	16,2	18,0	576	108	60	1,83
1616.6	Class 2	2x16	19,0	20,5	764	123	81	1,15
1616.7	Class 2	2x25	22,5	24,0	1105	144	108	0,727
1616.8	Class 2	3x1,5	12,0	13,7	276	82	16	12,1
1616.9	Class 2	3x2,5	13,0	14,4	324	86	22	7,41
1616.10	Class 2	3x4	14,0	15,6	405	94	28	4,61
1616.11	Class 2	3x6	15,5	17,6	510	106	36	3,08
1616.12	Class 2	3x10	17,6	19,8	695	119	50	1,83
1616.13	Class 2	3x16	20,0	24,0	923	144	67	1,15
1616.14	Class 5	3x16	20,0	24,0	901	144	67	1,21
1616.15	Class 2	3x25	24,0	25,7	1385	154	88	0,727
1616.16	Class 5	3x25	24,0	25,7	1332	154	88	0,78
1616.17	Class 2	3x35	26,0	28,5	1739	171	109	0,524
1616.18	Class 5	3x35	26,2	28,5	1691	171	109	0,554
1616.19	Class 2	3x50	30,0	33,0	2312	198	137	0,387
1616.20	Class 5	3x50	31,0	33,0	2373	198	137	0,386
1616.21	Class 2	3x70	34,5	38,8	3100	233	169	0,268
1616.22	Class 5	3x70	36,0	39,9	3194	239	169	0,272
1616.23	Class 2	3x95	39,7	43,7	4246	262	204	0,193
1616.24	Class 5	3x95	41,6	44,2	4200	265	204	0,206
1616.25	Class 2	3x120	43,0	47,3	5119	284	237	0,153
1616.26	Class 5	3x120	44,5	47,5	5083	285	237	0,161
1616.27	Class 2	4x4	15,2	17,0	491	102	28	4,61
1616.28	Class 2	4x6	17,0	19,0	593	114	36	3,08
1616.29	Class 2	4x10	19,4	21,8	846	131	50	1,83
1616.30	Class 2	4x16	22,0	24,6	1148	148	67	1,15

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1616.31	Class 5	4x16	22,0	24,6	1115	148	67	1,21
1616.32	Class 2	4x25	26,4	28,6	1690	172	88	0,727
1616.33	Class 5	4x25	26,4	28,6	1628	172	88	0,78
1616.34	Class 2	4x35	29,2	32,5	2195	195	109	0,524
1616.35	Class 5	4x35	31,0	33,0	2234	198	109	0,554
1616.36	Class 2	4x50	33,5	37,4	2973	224	137	0,387
1616.37	Class 5	4x50	34,3	38,4	3041	230	137	0,386
1616.38	Class 2	4x70	38,2	42,5	4052	255	169	0,268
1616.39	Class 5	4x70	40,0	43,0	3991	258	169	0,272
1616.40	Class 2	4x95	44,2	48,4	5348	290	204	0,193
1616.41	Class 5	4x95	45,5	48,8	5159	293	204	0,206
1616.42	Class 2	5 G 2,5	16,0	18,9	468	113	17	7,41
1616.43	Class 2	5 G 4	17,5	19,9	570	119	22	4,61
1616.44	Class 2	7 G 2,5	17,5	19,9	544	119	15	7,41
1616.45	Class 2	33x0,75	22,5	26,2	788	157	6	24,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 or class 5 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Separator	Optional separator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	550V AC / 850V DC
AC Test Voltage	2,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 550V TİP 2 TAKYEYO / ULPNGSG MxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in light power, control, distribution and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1621.1	Class 2	2x1,5	7,0	8,4	98	50	19	12,1
1621.2	Class 2	2x2,5	7,7	9,2	138	55	27	7,41
1621.3	Class 2	3x1,5	7,2	8,8	120	53	16	12,1
1621.4	Class 2	3G1,5	7,2	8,8	120	53	16	12,1
1621.5	Class 2	3x2,5	8,0	9,8	167	59	22	7,41
1621.6	Class 2	3G2,5	8,0	9,8	167	59	22	7,41
1621.7	Class 2	4x1,5	7,8	9,8	148	59	16	12,1
1621.8	Class 2	4x2,5	8,7	10,9	199	65	22	7,41
1621.9	Class 2	5x1,5	8,3	10,0	150	60	12	12,1
1621.10	Class 2	5G1,5	8,3	10,0	150	60	12	12,1
1621.11	Class 2	5G2,5	10,5	12,6	219	76	17	7,41
1621.12	Class 2	7x1,5	9,3	11,3	195	68	11	12,1
1621.13	Class 2	7G1,5	9,3	11,3	195	68	11	12,1
1621.14	Class 2	7x2,5	10,3	12,6	272	76	15	7,41
1621.15	Class 2	7G2,5	10,3	12,6	272	76	15	7,41
1621.16	Class 2	10x1,5	10,8	13,1	272	79	11	12,1
1621.17	Class 2	10G1,5	10,8	13,1	272	79	11	12,1
1621.18	Class 2	12x1,5	12,0	14,1	304	85	11	12,1
1621.19	Class 2	14x1,5	12,7	14,9	339	89	11	12,1
1621.20	Class 2	16x1,5	13,2	15,5	382	93	11	12,1
1621.21	Class 2	19x1,5	13,9	16,0	434	96	11	12,1
1621.22	Class 2	24x1,5	15,5	18,3	544	110	11	12,1
1621.23	Class 2	27x1,5	16,6	19,2	595	115	9	12,1
1621.24	Class 2	33x1,5	17,5	20,4	708	122	9	12,1
1621.25	Class 2	37x1,5	20,0	23,1	798	139	9	12,1

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

TİP 2 TAKYEYO FR/ ULPNGSG-FR

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Separator	Optional separator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Fire Resistant	IEC 60331-11 & IEC 60331-21
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	550V AC / 850V DC
AC Test Voltage	2,5 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 550V TİP 2 TAKYEYO FR-180 / ULPNGSG-FR MxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Designed for fixed installation in light power, control, distribution and lighting systems on naval vessels, suitable for both below and above deck applications, and resistant to oil, ensuring reliability and safety in military marine environments.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1622.1	Class 2	2x1,5	8,4	12,0	118	72	19	12,1
1622.2	Class 2	2x2,5	9,5	13,0	160	78	27	7,41
1622.3	Class 2	3x1,5	8,9	12,5	137	75	16	12,1
1622.4	Class 2	3G1,5	8,9	12,5	137	75	16	12,1
1622.5	Class 2	3x2,5	10,0	13,5	190	81	22	7,41
1622.6	Class 2	3G2,5	10,0	13,5	190	81	22	7,41
1622.7	Class 2	4x1,5	9,8	13,5	173	81	16	12,1
1622.8	Class 2	4x2,5	10,8	14,5	227	87	22	7,41
1622.9	Class 2	5x1,5	10,0	13,0	174	78	12	12,1
1622.10	Class 2	5G1,5	10,0	13,0	174	78	12	12,1
1622.11	Class 2	5G2,5	11,5	14,0	241	84	17	7,41
1622.12	Class 2	7x1,5	11,2	13,5	226	81	11	12,1
1622.13	Class 2	7G1,5	11,2	13,5	226	81	11	12,1
1622.14	Class 2	7x2,5	12,5	15,5	301	93	15	7,41
1622.15	Class 2	7G2,5	12,5	15,5	298	93	15	7,41
1622.16	Class 2	10x1,5	13,9	17,5	312	105	11	12,1
1622.17	Class 2	10G1,5	13,9	17,5	312	105	11	12,1
1622.18	Class 2	12x1,5	14,3	18,0	347	108	11	12,1
1622.19	Class 2	14x1,5	15,0	19,0	392	114	11	12,1
1622.20	Class 2	16x1,5	15,8	20,0	438	120	11	12,1
1622.21	Class 2	19x1,5	16,6	21,0	497	126	11	12,1
1622.22	Class 2	24x1,5	19,3	24,5	624	147	11	12,1
1622.23	Class 2	27x1,5	19,8	25,0	685	150	9	12,1
1622.24	Class 2	33x1,5	21,2	27,0	806	162	9	12,1
1622.25	Class 2	37x1,5	22,1	28,0	882	168	9	12,1

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	thylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 3 TASYEYO / UTNGSG KxMxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm^2)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1631.1	Class 2	1x2x0,75	6,0	7,5	55	45	12	26,6
1631.2	Class 2	2x2x0,75	6,7	8,4	74	50	10	26,6
1631.3	Class 2	4x2x0,75	9,6	11,7	166	70	7	26,6
1631.4	Class 2	6x2x0,75	10,8	13,1	217	79	7	26,6
1631.5	Class 2	8x2x0,75	11,9	14,2	271	85	7	26,6
1631.6	Class 2	10x2x0,75	13,7	16,1	327	97	7	26,6
1631.7	Class 2	14x2x0,75	14,9	17,5	394	105	6	26,6
1631.8	Class 2	16x2x0,75	16,1	19,0	463	114	6	26,6

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Separator	Optional separator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Fire Resistant	IEC 60331-11 & IEC 60331-21
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 3 TASYEYO FR-180 / UTNGSG-FR KxMxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1632.1	Class 2	1x2x0,75	6,9	9,6	68	58	12	26,6
1632.2	Class 2	2x2x0,75	7,8	10,4	89	62	10	26,6
1632.3	Class 2	4x2x0,75	11,9	15,0	203	90	7	26,6
1632.4	Class 2	6x2x0,75	14,8	19,0	269	114	7	26,6
1632.5	Class 2	8x2x0,75	16,2	21,0	331	126	7	26,6
1632.6	Class 2	10x2x0,75	17,8	22,5	401	135	7	26,6
1632.7	Class 2	14x2x0,75	19,4	25,0	475	150	6	26,6
1632.8	Class 2	16x2x0,75	21,2	29,0	564	174	6	26,6

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Separator tape
Individual Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape over individual screen
Separator	Optional separator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 4 TASEYEYO / UTNSGSG KxMxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1641.1	Class 2	2x2x0,75	11,1	13,1	177	79	10	26,6
1641.2	Class 2	4x2x0,75	12,9	15,2	271	91	7	26,6
1641.3	Class 2	7x2x0,75	14,9	17,2	388	103	7	26,6
1641.4	Class 2	11x2x0,75	19,6	22,4	594	134	7	26,6
1641.5	Class 2	14x2x0,75	20,8	23,9	713	143	6	26,6
1641.6	Class 2	19x2x0,75	23,4	26,6	926	160	6	26,6
1641.7	Class 2	24x2x0,75	26,4	29,8	1164	179	5	26,6

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Separator tape
Individual Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape over individual screen
Separator	Optional separator tape
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21	Flourine Content	IEC 60684-2
Electrical Tests	S.P 01/21	Flame Retardancy	IEC 60332-1-2
Mechanical Tests	S.P 01/21	Flame Propagation	IEC 60332-3-22 Cat.A
Conductor Resistance	IEC 60228	Fire Resistant	IEC 60331-11 & IEC 60331-21
Insulation Material	IEC 60092-360	Ozone Resistance	IEC 60811-403
Sheath Material	IEC 60092-360	Oil Resistant	IEC 60811-404
Halogen Free	IEC 60754-1 & IEC 60754-2		
Low Smoke	IEC 61034-1&IEC 61034-2		

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 4 TASEYEYO FR-180 / UTNSGSG-FR KxMxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1642.1	Class 2	2x2x0,75	13,5	16,5	227	99	10	26,6
1642.2	Class 2	4x2x0,75	16,2	19,0	343	114	7	26,6
1642.3	Class 2	7x2x0,75	18,4	22,5	486	135	7	26,6
1642.4	Class 2	11x2x0,75	24,7	29,0	744	174	7	26,6
1642.5	Class 2	14x2x0,75	26,3	31,5	881	189	6	26,6
1642.6	Class 2	19x2x0,75	29,7	35,5	213	213	6	26,6
1642.7	Class 2	24x2x0,75	34,8	40,5	243	243	5	26,6

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Optional separator tape
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen 1	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape
Screen 2	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black(other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 5A TAZSYEEYO / ULTNGSSG KxMxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1651.1	Class 2	2x2x0,4	5,8	7,3	76	44	7	57,5
1651.2	Class 2	4x2x0,4	7,7	9,4	132	56	4	57,5
1651.3	Class 2	7x2x0,4	9,4	11,5	193	69	4	57,5
1651.4	Class 2	12x2x0,4	12,8	15,0	290	90	4	57,5
1651.5	Class 2	19x2x0,4	13,8	16,0	384	96	4	57,5
1651.6	Class 2	27x2x0,4	15,5	18,0	491	108	3	57,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Optional separator tape
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen 1	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape
Screen 2	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Fire Resistant	IEC 60331-11 & IEC 60331-21
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 5A TAZSYEEYO FR-180 / ULTNGSSG-FR KxMxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1652.1	Class 2	2x2x0,4	7,3	10,2	90	61	7	57,5
1652.2	Class 2	4x2x0,4	10,1	13,5	162	81	4	57,5
1652.3	Class 2	7x2x0,4	12,5	16,5	240	99	4	57,5
1652.4	Class 2	12x2x0,4	16,0	21,5	357	129	4	57,5
1652.5	Class 2	19x2x0,4	18,5	24,5	483	147	4	57,5
1652.6	Class 2	27x2x0,4	22,0	29,0	637	174	3	57,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Optional separator tape
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21	Flourine Content	IEC 60684-2
Electrical Tests	S.P 01/21	Flame Retardancy	IEC 60332-1-2
Mechanical Tests	S.P 01/21	Flame Propagation	IEC 60332-3-22 Cat.A
Conductor Resistance	IEC 60228	Ozone Resistance	IEC 60811-403
Insulation Material	IEC 60092-360	Oil Resistant	IEC 60811-404
Sheath Material	IEC 60092-360		
Halogen Free	IEC 60754-1 & IEC 60754-2		
Low Smoke	IEC 61034-1&IEC 61034-2		

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	:ÜNTEL 250V TİP 5B TAZSYEYO / ULTNGSG KxMxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1651.7	Class 2	30x2x0,4	17,5	19,0	493	114	3	57,5
1651.8	Class 2	45x2x0,4	20,6	23,0	713	138	3	57,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Optional separator tape
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21	Flourine Content	IEC 60684-2
Electrical Tests	S.P 01/21	Flame Retardancy	IEC 60332-1-2
Mechanical Tests	S.P 01/21	Flame Propagation	IEC 60332-3-22 Cat.A
Conductor Resistance	IEC 60228	Fire Resistant	IEC 60331-11 & IEC 60331-21
Insulation Material	IEC 60092-360	Ozone Resistance	IEC 60811-403
Sheath Material	IEC 60092-360	Oil Resistant	IEC 60811-404
Halogen Free	IEC 60754-1 & IEC 60754-2		
Low Smoke	IEC 61034-1&IEC 61034-2		

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 5B TAZSYEYO FR-180 / ULTNGSG-FR KxMxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1652.7	Class 2	30x2x0,4	22,3	25,0	614	150	3	57,5
1652.8	Class 2	45x2x0,4	22,7	30,5	894	183	3	57,5

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* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Optional separator tape
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21	Flourine Content	IEC 60684-2
Electrical Tests	S.P 01/21	Flame Retardancy	IEC 60332-1-2
Mechanical Tests	S.P 01/21	Flame Propagation	IEC 60332-3-22 Cat.A
Conductor Resistance	IEC 60228	Ozone Resistance	IEC 60811-403
Insulation Material	IEC 60092-360	Oil Resistant	IEC 60811-404
Sheath Material	IEC 60092-360		
Halogen Free	IEC 60754-1 & IEC 60754-2		
Low Smoke	IEC 61034-1&IEC 61034-2		

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	3 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	:ÜNTEL 250V TİP 5C TAZSYEYO / ULTNGSG KxMxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm^2)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1651.9	Class 2	30x2x0,4	22,4	23,4	634	140	1	140

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21	Flourine Content	IEC 60684-2
Electrical Tests	S.P 01/21	Flame Retardancy	IEC 60332-1-2
Mechanical Tests	S.P 01/21	Flame Propagation	IEC 60332-3-22 Cat.A
Conductor Resistance	IEC 60228	Fire Resistant	IEC 60331-11 & IEC 60331-21
Insulation Material	IEC 60092-360	Ozone Resistance	IEC 60811-403
Sheath Material	IEC 60092-360	Oil Resistant	IEC 60811-404
Halogen Free	IEC 60754-1 & IEC 60754-2		
Low Smoke	IEC 61034-1&IEC 61034-2		

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	3 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 5C TAZSYEYO FR-180 / ULTNGSG-FR KxMxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm^2)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1652.9	Class 2	60x2x0,15	26,8	30,0	783	180	1	140

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Separator tape
Individual Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape over individual screen
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black(other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	:ÜNTEL 250V TİP 6 TAZSEYEYO / ULTNSGSG KxMxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1661.1	Class 2	2x2x0,4	9,3	10,9	125	65	7	57,5
1661.2	Class 2	4x2x0,4	10,0	12,0	178	72	4	57,5
1661.3	Class 2	7x2x0,4	12,0	14,1	253	85	4	57,5
1661.4	Class 2	12x2x0,4	15,5	17,4	391	104	4	57,5
1661.5	Class 2	19x2x0,4	18,4	20,8	563	125	4	57,5
1661.6	Class 2	27x2x0,4	22,5	25,0	777	150	3	57,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Separator tape
Individual Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape over individual screen
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21
Electrical Tests	S.P 01/21
Mechanical Tests	S.P 01/21
Conductor Resistance	IEC 60228
Insulation Material	IEC 60092-360
Sheath Material	IEC 60092-360
Halogen Free	IEC 60754-1 & IEC 60754-2
Low Smoke	IEC 61034-1&IEC 61034-2
Flourine Content	IEC 60684-2
Flame Retardancy	IEC 60332-1-2
Flame Propagation	IEC 60332-3-22 Cat.A
Fire Resistant	IEC 60331-11 & IEC 60331-21
Ozone Resistance	IEC 60811-403
Oil Resistant	IEC 60811-404

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black(other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	:ÜNTEL 250V TİP 6 TAZSEYEYO / ULTNSGSG KxMxN mm² IEC 60332-1&3 A [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1662.1	Class 2	2x2x0,4	11,3	14,0	162	84	7	57,5
1662.2	Class 2	4x2x0,4	13,1	16,5	232	99	4	57,5
1662.3	Class 2	7x2x0,4	15,0	19,5	333	117	4	57,5
1662.4	Class 2	12x2x0,4	19,9	25,5	506	153	4	57,5
1662.5	Class 2	19x2x0,4	23,4	30,0	735	180	4	57,5
1662.6	Class 2	27x2x0,4	28,3	36,0	1013	216	3	57,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Separator	Optional separator tape
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Separator tape
Individual Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid
Screen	may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen 1	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape
Screen 2	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21	Flourine Content	IEC 60684-2
Electrical Tests	S.P 01/21	Flame Retardancy	IEC 60332-1-2
Mechanical Tests	S.P 01/21	Flame Propagation	IEC 60332-3-22 Cat.A
Conductor Resistance	IEC 60228	Ozone Resistance	IEC 60811-403
Insulation Material	IEC 60092-360	Oil Resistant	IEC 60811-404
Sheath Material	IEC 60092-360		
Halogen Free	IEC 60754-1 & IEC 60754-2		
Low Smoke	IEC 61034-1&IEC 61034-2		

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Black (other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 5B TAZSYEYO FR-180 / ULTNGSG-FR KxMxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Min. (mm)	Max. (mm)				
1671.1	Class 2	5x3x0,4	12,2	14,3	308	86	4	57,5
1671.2	Class 2	12x3x0,4	16,9	19,3	545	116	4	57,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

CABLE STRUCTURE

Conductor	Bare or tinned stranded class 2 copper in accordance with IEC 60228
Fire Barrier	Fire resistant tape helically wrapped around the conductor
Insulation	Ethylene propylene rubber (EPR) or Cross-linked polyethylene (XLPE) compound in accordance with IEC 60092-360
Separator	Separator tape
Individual Screen	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Inner Covering	Seperator tape or halogen free bedding compound in accordance with IEC 60092-360, Clause 3.5
Screen 1	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Separator tape
Screen 2	Bare or tinned copper wire braid in accordance with IEC 60092-350 and S.P 01/21. Also, the braid may be manufactured in accordance with IEC 60092-353 without a minimum diameter requirement for the braiding wires
Separator	Optional separator tape
Outer Sheath	Halogen-free, flame-retardant thermoset compound of Type SHF2, in accordance with IEC 60092-360

STANDARDS & MAIN CHARACTERISTICS

Design Guidelines	S.P 01/21	Flourine Content	IEC 60684-2
Electrical Tests	S.P 01/21	Flame Retardancy	IEC 60332-1-2
Mechanical Tests	S.P 01/21	Flame Propagation	IEC 60332-3-22 Cat.A
Conductor Resistance	IEC 60228	Fire Resistant	IEC 60331-11 & IEC 60331-21
Insulation Material	IEC 60092-360	Ozone Resistance	IEC 60811-403
Sheath Material	IEC 60092-360	Oil Resistant	IEC 60811-404
Halogen Free	IEC 60754-1 & IEC 60754-2		
Low Smoke	IEC 61034-1&IEC 61034-2		

OPERATING CHARACTERISTICS

Maximum Operating Voltage	250V AC / 355V DC
AC Test Voltage	2 kV AC
Working Temperature	-40°C to +90°C
Min. Bending Radius	6 x D
Current Carrying Capacity	IEC 60092-352

VISUAL AND MARKING

Sheath Colour	Green(other colours on request)
Core Colours	In accordance with S.P 01/21
Marking	ÜNTEL 250V TİP 7 TAZSEYEEYO FR-180 / ULTNSGSSG-FR KxMxN mm² IEC 60332-1&3 A IEC 60331 [YEAR] MADE IN TURKEY [LOT NO] [MPS NO] [XXXX MT]

APPLICATION

Used for fixed installation in telecommunication, signal, radio, radar and data transmission systems on naval vessels. Suitable for both below and above deck applications, resistant to oil and marine environmental conditions.

CAN*	Conductor Type	Cross-section (mm²)	Outer Sheath Diameter		Approx. Cable Weight (kg/km)	Min. Bending Radius (mm)	Current Carrying Capacity(*) (A)	Max. Electrical Resistance at 20°C (ohm/km)
			Nom. (mm)	Max. (mm)				
1672.1	Class 2	5x3x0,4	16,4	21,5	416	129	4	57,5
1672.2	Class 2	12x3x0,4	22,4	30,0	735	180	4	57,5

* Conductor temperature at 90 °C, Ambient air temperature at 45 °C
* CAN : Cable Article Number

TECHNICAL DATA

REFERENCE STANDARDS

S.P 01/21	Principles on Certification of Cables for Naval Ships
IEC 60228	Conductors of insulated cables – classification, cross-sections, and electrical properties
IEC 60092-360	General construction requirements for cables used in shipboard and offshore applications
IEC 60092-353	Power cables for rated voltages 1 kV and 3 kV
IEC 60092-376	Control and instrumentation cables for marine applications
IEC 60331	Fire resistance test – ability of cables to maintain circuit integrity during fire
IEC 60092-350	General construction and testing requirements for shipboard cables
IEC 62153-4-4	Test methods for electromagnetic compatibility (EMC) of cables
IEC 62153-4-3	Screening effectiveness and transmission performance of cables
EN 50289-1-5	Test methods for communication cables (mechanical and electrical tests)
EN 50289	General test standards series for data and communication cables
IEC 60350	Performance measurement standard (commonly for household appliances; context-dependent use)
IEC 60811-501	Mechanical test methods for insulation and sheath materials
IEC 60811-504	Abrasion resistance test
IEC 60811-502	Thermal ageing test methods
IEC 60811-412	Low temperature flexibility test
IEC 60811-506	Environmental stress cracking resistance
IEC 60811-403	Resistance to oils and chemicals
IEC 60216-1	Thermal endurance and ageing characteristics of insulating materials

IEC 60754-2	Measurement of acidity and conductivity of gases released during combustion
IEC 60754-1	Determination of halogen acid gas content
IEC 60684-2	Specifications and test methods for insulating sleeving
DEF-STAN 02-713	UK defence standard for low smoke and low toxicity requirements
IEC 60811-404	Ozone resistance test for cable materials
IEC 60332-1-2	Flame propagation test for a single cable (vertical flame test)
IEC 60332-21	Flame test for small cables
IEC 61032-1	Protection of persons and equipment by enclosures – defines test probes used to verify protection against access to hazardous parts (IP code verification)
IEC 61034-2	Measurement of smoke density of cables under fire conditions
IEC 60331-11	Fire resistance test for cables – circuit integrity under fire (specific method)
IEC 60331-21	Tests for electric cables under fire conditions - Circuit integrity

Correction factor for various ambient air temperatures
(Referance ambient temperature of 45°C)

Maximum rated conductor temperature °C	Correction factors for ambient air temperature of										
	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C
60	1,29	1,15	1,00	0,82	-	-	-	-	-	-	-
65	1,22	1,12	1,00	0,87	0,71	-	-	-	-	-	-
70	1,18	1,10	1,00	0,89	0,77	0,63	0,63	-	-	-	-
75	1,15	1,08	1,00	0,91	0,82	0,71	0,71	-	-	-	-
80	1,13	1,07	1,00	0,93	0,85	0,76	0,76	0,53	-	-	-
85	1,12	1,06	1,00	0,94	0,87	0,79	0,79	0,61	0,50	-	-
90	1,10	1,05	1,00	0,94	0,88	0,82	0,82	0,67	0,58	0,47	-
95	1,10	1,05	1,00	0,95	0,89	0,84	0,84	0,71	0,63	0,55	0,45

CODING AND DESCRIPTION OF CABLES

All cables shall be halogen-free and flame retardant, and shall comply with the following cable types

Type 1	Single-core screened or unscreened, multi-core screened power distribution cable
Type 2	Multi-core screened power distribution, control, or signal cable
Type 3	Screened, paired signal and communication cable
Type 4	Multi-core screened, screened paired signal and communication cable
Type 5	Multi-core, double-screened, paired or multi-core, single-screened, paired low-level signal and communication cable
Type 6	Multi-core screened, screened paired or multi-core, double-screened, multi-core low-level signal and communication cable
Type 7	Multi-core, double-screened, screened triple low-level signal and communication cable

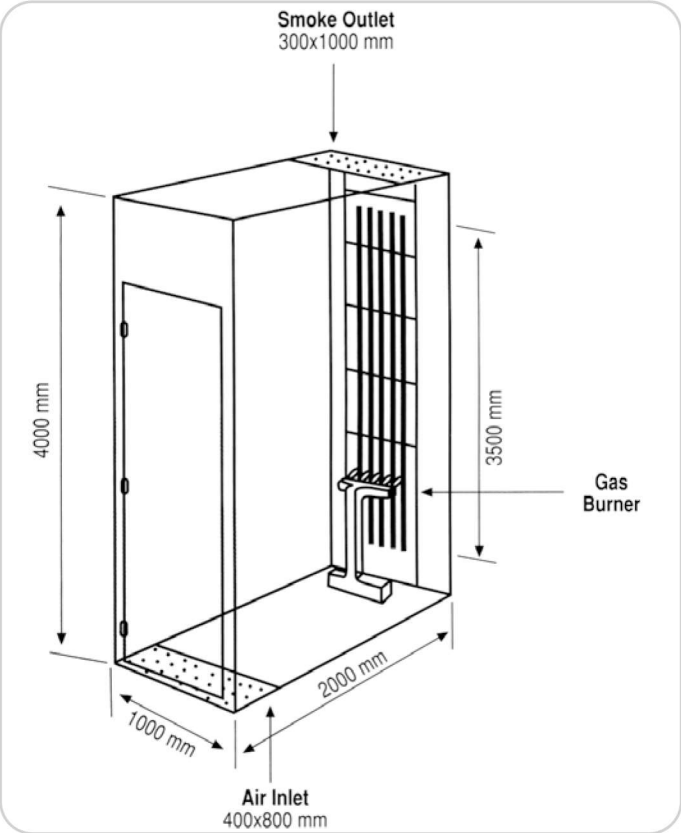
Number of Cores – Color Code Sequence

Number of Cores	Color Code Sequence				
1	Black				
2	Blue	Brown			
3	Grey	Brown	Black		
3G 1,5	Brown	Yellow/Green	Blue		
4	Blue	Brown	Black	Grey	
5	Blue	Brown	Black	Grey	Black
5G 1,5	Blue	Brown	Black	Grey	Yellow/Green
>5	Black cores shall be numbered starting from the innermost and middle core as number 1, continuing outward in sequence. For cables with a protective earth conductor, the earth core shall have green/yellow insulation.				

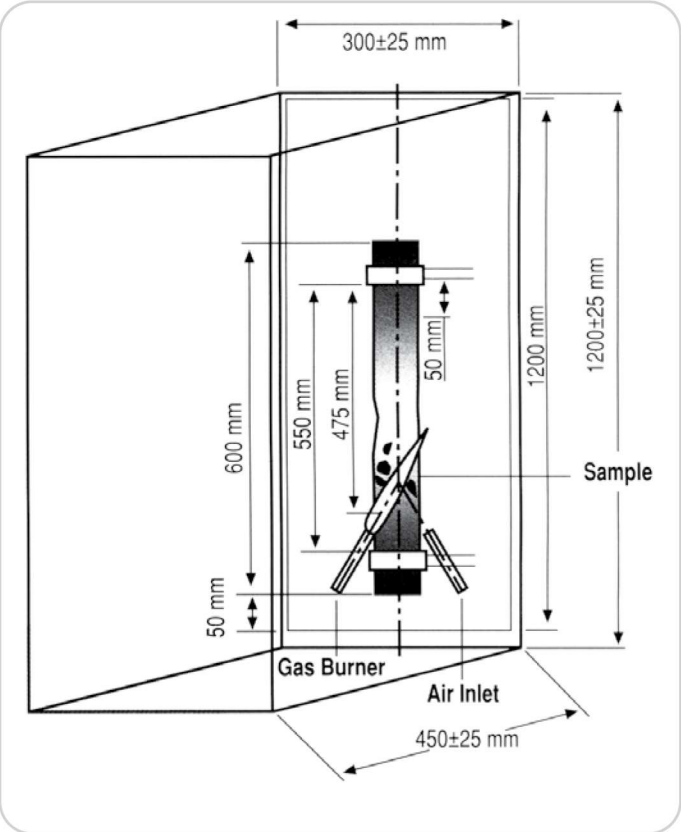
(For power and control cables)

TESTS ON ELECTRIC CABLES UNDER FIRE CONDITIONS

IEC 60332/3 Fire test on bunched and vertical laid cables.
Test chamber



IEC 60332/1 Fire test on a vertical laid single cable.Test chamber



Flame application time

Required volume of combustible material
per 1 m of cable bunch (lt) : V

Flame application time

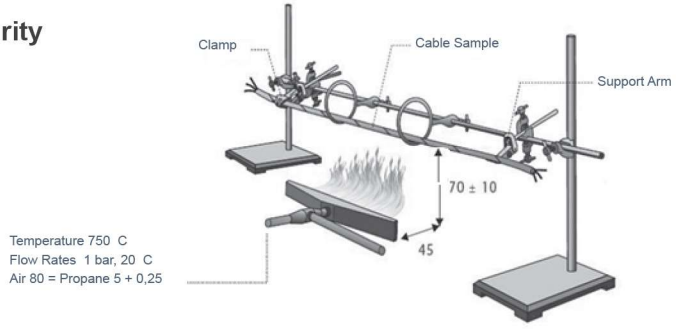
Weight of test piece (kg) : m
Flame application time (s) = 60+m/25

IEC 60332/3 CATEGORY	V	MINIMUM BURNING TIME
A	7lt.	40 minutes
B	3.5lt.	40 minutes
C	1.5lt	20 minutes

Test Conditions of IEC 60332/3

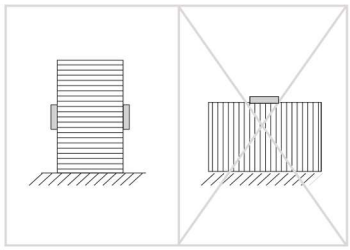
This test is to determine the fire propagation characteristics of a bunch of cables. The test should be carried out if the external wind speed measured by an anemometer fitted on the top of the test rig is not greater than 5 m/s and the temperature of the walls of the test chamber is in between 5 ºC and 40 ºC. The temperature inside of the chamber should be 23±5 ºC before the test

IEC 60331 - 21
Fire Test for circuit integrity

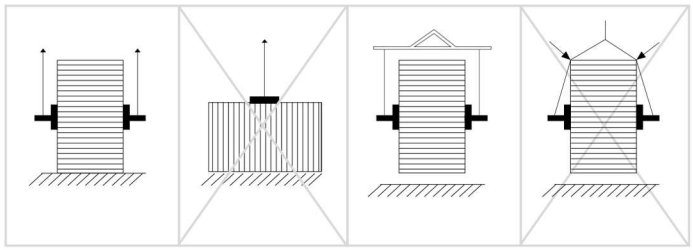


Cables and Drums User Guide Drums Handling

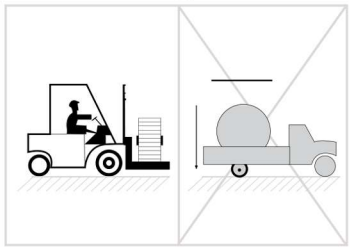
1.1.Position of Drums



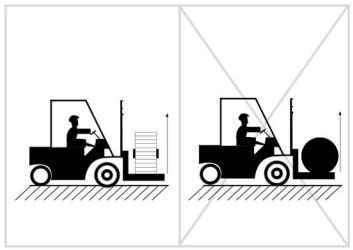
1.2.Loading



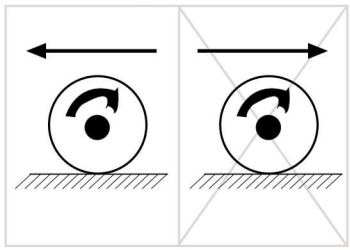
1.3.Unloading



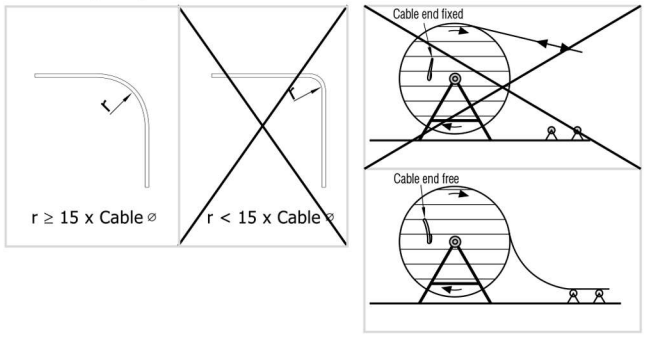
1.4.Handling by forklift



1.5.Rolling

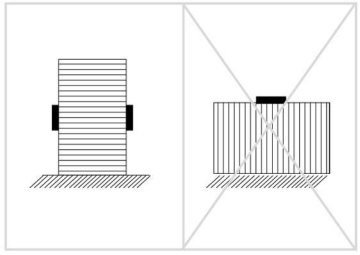


1.6.Paying-off the Cable

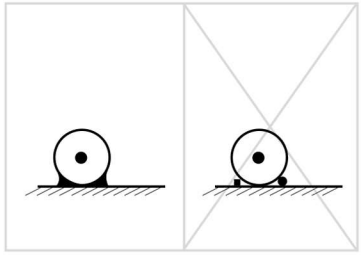


TransportRequirements

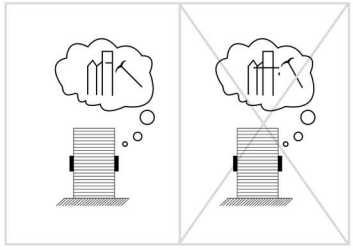
2.1.Position of the Drums



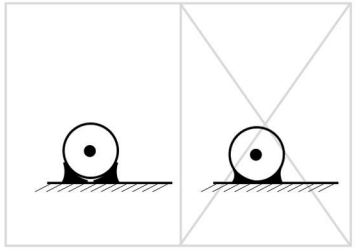
2.2.Fastening Drums



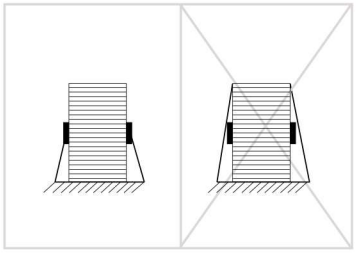
2.3.Use of nails



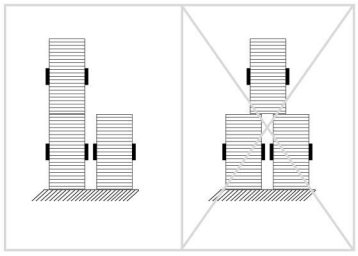
2.4.Bigger Drums



2.5.Binding of the Drums

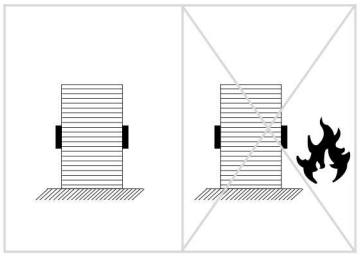


2.6.Multiple Drum Storage

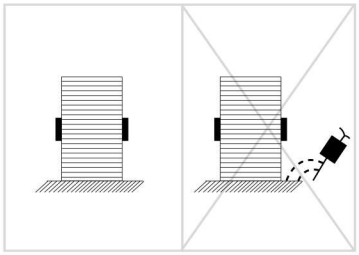


Storage Requirements

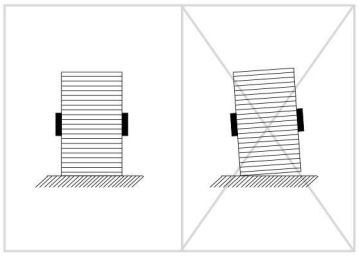
3.1.Do not store near heat sources



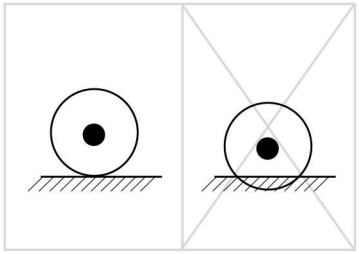
3.2. Do not store on vibrating surfaces. (Ship engine room etc.)



3.3.Do not store on irregular surfaces.

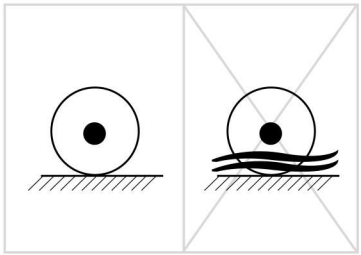


3.4.Do not store on soft surfaces

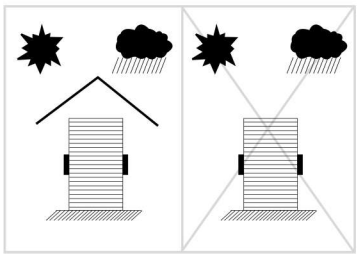


Cables and Drums User Guide

3.5. Do not store on areas liable of flooding. All cable ends must be fully sealed at all times to prevent the ingress of water. It is preferable to store reels off the ground on timbers or other supports. In damp locations, it is advisable to allow at least 3 inches between reels to permit circulation of air.



3.6. If storage is likely to last more than 6 months, drums should be stored in order to be protected from effects like rain, sunlight etc.



OFFSHORE CABLES

AIRPORT CABLES

CRANE CABLES

MINING CABLES

DEFENSE INDUSTRY CABLES

MARINE CABLES

RAILWAY CABLES

INDUSTRIAL CABLES

TUNNELLING CABLES

INSTRUMENTATION CABLES

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