



SUBMARINE CABLE

FOR THE FISH FARM MARKET



SUBMARINE CABLE

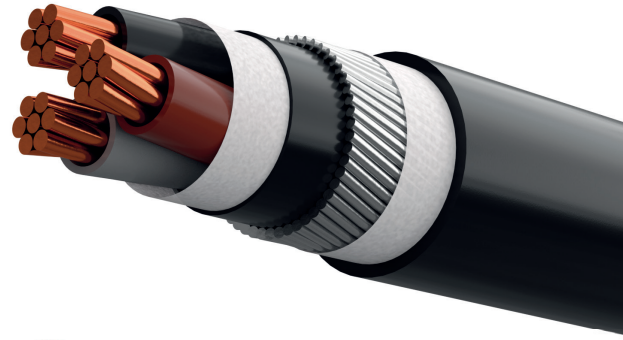
Working with cable installation in and under water, require cables that are adapted to extreme conditions. We have extensive experience in customized cables that meet all the requirements for this environment.

In recent years, we have developed completely new designs and solutions for the growing fish farming industry. We manufacture submarine cable up to and including 3kV.



PRODUCT RANGE

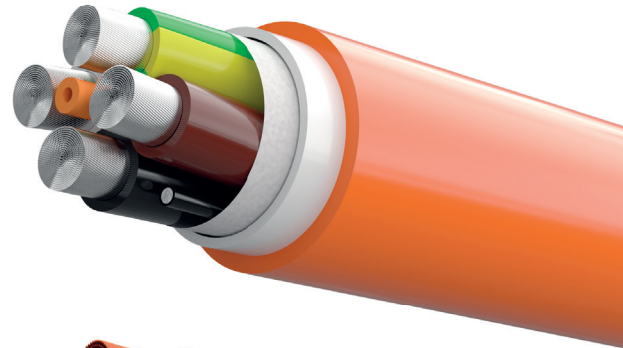
AQUALine Power



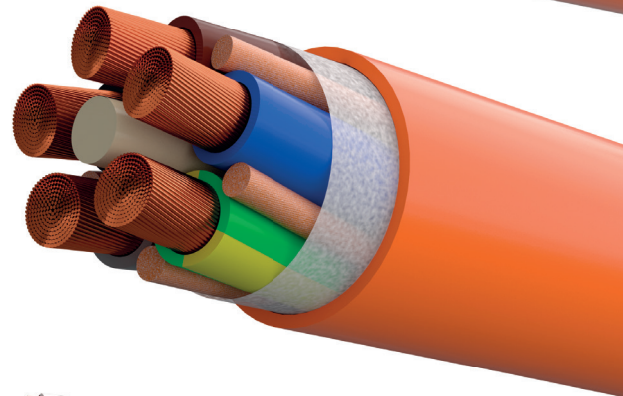
AQUALine Power Flex



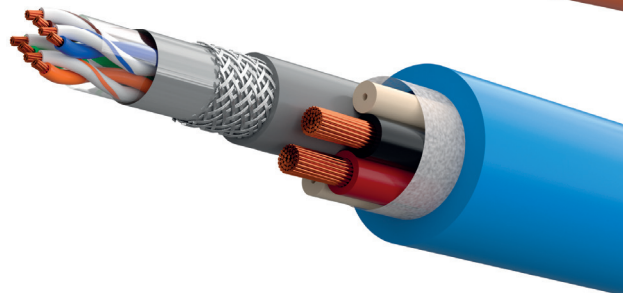
AQUALine Fish Farm Hybrid



AMOExtreme



AQUALine Communication



AQUALine Power

APPLICATIONS:

Steel armoured cable suitable for installation in water and direct burial. AQUALine Power has an inner and outer sheath of polyethylene which makes the cable suitable for installations in water. Between the two sheaths there is an armour of galvanized steel wires for strain relief and protection against mechanical stresses.

On request with fiber optic cable inside, the name will be AQUALine Power Hybrid.

PROPERTIES:

Conductor temperature	+90°C
Temp, Fixed installation	-30 to +90°C
Voltage rating $U_0/U(U_m)$	0,6-1(1,2) kV

STANDARDS:

Conductor	IEC 60228,2
Construction	IEC 60502-1
Smoke density	IEC 61034-2
Halogen free	IEC 60754-1,2



Construction

Conductor	Bare copper class 2
Insulation	XLPE
Bedding	PE
Screen	N.a
Armoring	Galvanized steel wire 1,6mm
Outer sheath	PE
Marking	AQUALine Power -size- 0,6/1kV yy/ww (customer unique marking on request)
Color	Black or customers choice
Minimum bending radius, fixed installation	OD x 15
Packaging	Drums

Number of cores X conductor cross- section	Inner/Outer sheath	Outer diameter	Weight	Current rating installation in open air, ambient 30°C
	[mm]	[mm]	[kg/km]	[A]
3X16	1/1,8	22,2	1070	100
3X25	1/1,8	27,3	1460	127
3X35	1/1,9	28,1	1850	158
3X50	1/2	31,6	2610	192
3X70	1,2/2,2	37,7	3430	246
3X95	1,2/2,3	41,6	4290	298
3X120	1,2/2,4	45,8	5130	346
3X150	1,2/2,7	53,3	6260	399
3X185	1,6/2,9	58,8	7370	456
3X240	1,6/3,1	66,7	9720	538
4X16	1/1,7	24,8	1490	100
4X25	1/1,9	30,1	1900	127
4X35	1/1,9	30,8	2310	158
4X50	1,2/2,1	35,3	3330	192
4X70	1,2/2,3	42,6	4360	246
4X95	1,4/2,5	47,6	5340	298
4X120	1,4/2,6	51,4	6490	346
4X150	1,6/2,7	54,1	7700	399
4X185	1,6/2,9	58,8	8840	456
4X240	1,6/3,1	66,7	11300	538
4G16	1/1,7	24,8	1490	100
4G25	1/1,9	30,1	1900	127
4G35	1/1,9	30,8	2310	158
4G50	1,2/2,1	35,3	3330	192
4G70	1,2/2,3	42,6	4360	246
4G95	1,4/2,5	47,6	5340	298
4G120	1,4/2,6	51,4	6490	346
4G150	1,6/2,7	54,1	7700	399
4G185	1,6/2,9	58,8	8840	456
4G240	1,6/3,1	66,7	11300	538
5G16	1/1,8	26,6	1600	100
5G25	1/2	32,4	2130	127
5G35	1,2/2	33,6	3020	158
5G50	1,2/2,2	38,9	3910	192
5G70	1,2/2,4	46,0	5210	246
5G95	1,4/2,6	51,4	6550	298
5G120	1,4/2,8	55,9	7720	346
5G150	1,6/2,7	54,1	9590	399
5G185	1,6/2,9	58,8	11100	456
5G240	1,6/3,1	66,7	13860	538

AQUALine Power Flex

APPLICATIONS:

Steel armoured cable suitable for installation in water and direct burial. AQUALine Power Flex has an inner and outer sheath of polyethylene which makes the cable suitable for installations in water. Between the two sheaths there is an armour of galvanized steel wires for strain relief and protection against mechanical stresses. As standard the cable is produced with flexible copper conductors. On request with fiber optic cable inside, the name will be AQUALine Power Flex Hybrid.

PROPERTIES:

Conductor temperature	+90°C
Temp, Fixed installation	-30 to +70°C
Voltage rating U ₀ /U	0,6-1kV

STANDARDS:

Conductor	IEC 60228,5
Construction	EN 60502-1 IAP
Smoke density	IEC 61034-2
Halogen free	IEC 60754-1,2



Construction

Conductor	Bare flexible copper class 5, tinned on request
Insulation	XLPE
Inner sheath	PE
Armour	Galvanized steel wires
Outer sheath	PE
3-core identification	Brown, Black, Grey
4-core identification (4X -size)	Blue, Brown, Black, Grey
4-core identification (4G -size-)	Yellow/Green, Brown, Black, Grey
5-core identification	Yellow/Green, Blue, Brown, Black, Grey
Marking	AQUALine Power Flex -size- 0,6/1kV yy/ww (customer unique marking on request)
Outer sheath color	Black (Other colors on request)
Bending radius, fixed installation	OD x 15
Test Voltage	3500V
Max depth, installation in water	300 meter

Number of cores X conductor cross- section	Inner/Outer sheath	Outer diameter	Weight	Current rating installation in open air, ambient 30°C
	[mm]	[mm]	[kg/km]	[A]
3X16	1/1,7	21,6	1070	100
3X25	1/1,8	26,1	1460	127
3X35	1/1,8	29,5	1850	158
3X50	1/1,9	32,6	2610	192
3X70	1,2/2,1	38,7	3430	246
3X95	1,2/2,2	41,4	4290	298
3X120	1,2/2,5	48,4	5130	346
3X150	1,2/2,6	53,2	6260	399
3X185	1,6/2,8	58,7	7370	456
3X240	1,6/3,1	66,8	9720	538
4X16	1/1,7	24,4	1490	100
4X25	1/1,9	28,6	1900	127
4X35	1/1,9	32,6	2310	158
4X50	1,2/2,0	36,5	3330	192
4X70	1,2/2,3	43,9	4360	246
4X95	1,4/2,4	47,3	5340	298
4X120	1,4/2,6	54,2	6490	346
4X150	1,6/2,7	54,1	7700	399
4X185	1,6/2,8	58,7	8840	456
4X240	1,6/3,1	66,8	11300	538
4G16	1/1,7	24,4	1490	100
4G25	1/1,9	28,6	1900	127
4G35	1/1,9	32,6	2310	158
4G50	1,2/2,0	36,5	3330	192
4G70	1,2/2,3	43,9	4360	246
4G95	1,4/2,4	47,3	5340	298
4G120	1,4/2,6	54,2	6490	346
4G150	1,6/2,7	54,1	7700	399
4G185	1,6/2,8	58,7	8840	456
4G240	1,6/3,1	66,8	11300	538
5G16	1/1,8	26,1	1600	100
5G25	1/1,9	30,8	2130	127
5G35	1,2/2,0	35,6	3020	158
5G50	1,2/2,2	40,2	3910	192
5G70	1,2/2,4	47,5	5210	246
5G95	1,4/2,6	51,2	6550	298
5G120	1,4/2,7	58,8	7720	346
5G150	1,6/2,7	54,1	9590	399
5G185	1,6/2,8	58,7	11100	456
5G240	1,6/3,1	66,8	13860	538

AQUALine Fish Farm Hybrid

APPLICATIONS:

Flexible cable specially designed for fish farming industry, for power supply applications from land to an islet or island. AQUALine Fish Farm Hybrid has an inner sheath of polyurethan which has very good mechanical properties that can withstand high mechanical stress and good flexibility. The outer sheath of polythylene make the cable suitable for installations in water. As standard the cable comes with tinned flexible copper conductors.

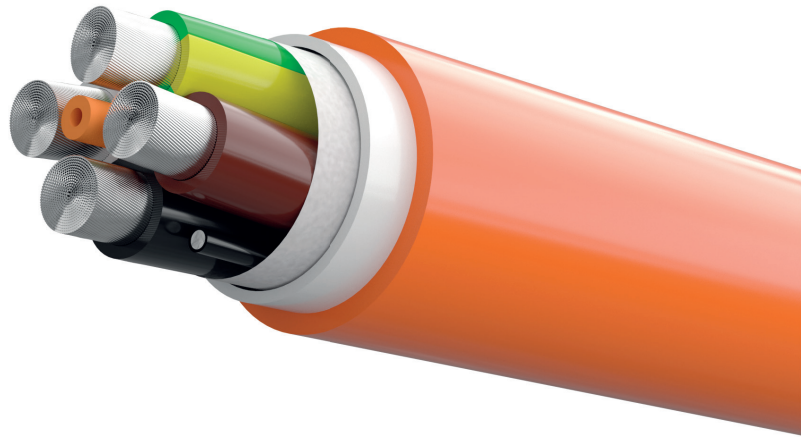
On request without fiber optic inside, the name will be AQUALine Fish Farm and will have separate EANcode.

PROPERTIES:

Conductor temperature	+90°C
Temp, Fixed installation	-30 to +70°C
Voltage rating U ₀ /U	0,6-1kV

STANDARDS:

Conductor	IEC 60228,5
Construction	EN 50363,5 EN 50363,10-2 EN 50363,8
Halogen free	IEC 60754-1



Construction

Conductor	Tinned flexible copper class 5
Insulation	XLPE
Inner sheath	TPU
Outer sheath	PE
Optional	Fiber optic cable, Empty tube for fiber optic cable
3-core identification	Yellow/Green, Brown, Blue
4-core identification	Yellow/Green, Brown, Blue, Grey
5-core identification	Yellow/Green, Blue, Brown, Blue, Grey
Marking	AQUALine Fish Farm Hybrid -size- 0,6/1kV yy/ww (customer unique marking on request)
Outer sheath color	Orange (Other colors on request)
Bending radius, fixed installation	OD x 6
Bending radius, flexible installation	OD x 10
Test Voltage	3500V
Max depth, installation in water	300 meter

Number of cores X conductor cross- section	Nominal outer diameter	Weight	Current rating installation upon or on surface, ambient 30°C
	[mm]	[kg/km]	[A]
3G10	19,6	500	61
3G16	21,8	710	82
3G25	25,4	1020	108
3G35	31,1	1430	135
3G50	33,1	1885	168
3G70	39,3	2550	207
3G95	42,3	3270	250
3G120	47,0	3890	292
3G150	53,5	4920	335
3G185	57,8	5850	382
3G240	69,8	8030	453
4G10	22,7	660	61
4G16	25,2	940	82
4G25	27,9	1390	108
4G35	32,5	1755	135
4G50	36,3	2450	168
4G70	43,3	3310	207
4G95	47,5	4340	250
4G120	51,4	5050	292
4G150	59,3	6360	335
4G185	64,2	7585	382
4G240	77,7	10400	453
5G10	24,2	790	61
5G16	27,4	1155	82
5G25	29,9	1580	108
5G35	35,5	2100	135
5G50	40,5	2900	168
5G70	46,7	4040	207
5G95	51,2	5271	250
5G120	60,6	6590	292
5G150	64,1	7810	335
5G185	69,5	9320	382

AMOEExtreme

APPLICATIONS:

AMOEExtreme is designed for use under extreme conditions. The outer sheath of TPU makes the cable very resistant to mechanical stress and mineral oils. AMOEExtreme is suitable for installations in water to a depth of 100 meter which makes it particularly suitable for use in the fish farming industry. The cable can be specially designed acc. to customer requests, such as hybrid cable with power and control in the same cable. AMOEExtreme is designed for 0.6/1kV, which makes the insulating thickness and the outer sheath diameter larger than the standard PUR cables.

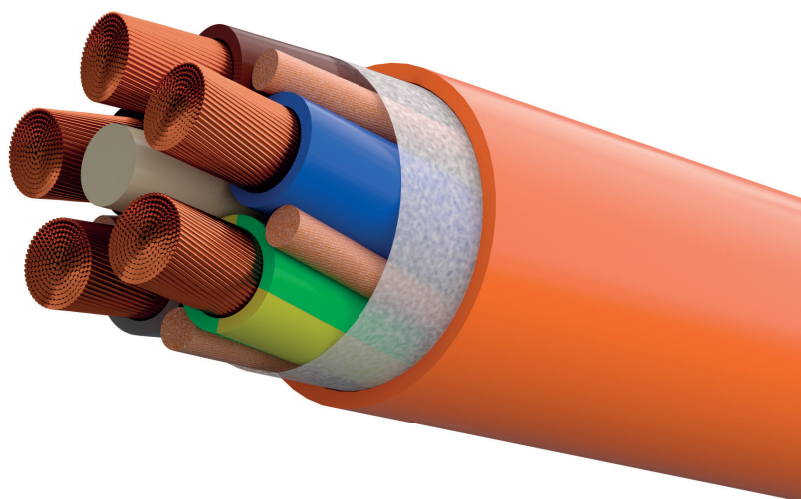
On request with fiber optic inside, the name will be AMOEExtreme Hybrid and will have separate EANcode.

PROPERTIES:

Conductor temperature	+90°C
Temp, Fixed installation	-40 to +85°C
Voltage rating U ₀ /U	0,6-1kV

STANDARDS:

Conductor	IEC 60228,5
Construction	EN 50363,1 EN 50363,10-2
Halogen free	IEC 60754-1
Oil resistance	IEC 60811-404



Construction

Conductor	Bare flexible copper Class 5
Insulation	Cross-linked EPR
Filler	Helical lapping tape (fillers if needed)
Outer sheath	TPU
3-core identification	Yellow/Green, Brown, Blue
4-core identification	Yellow/Green, Brown, Black, Grey
5-core identification	Yellow/Green, Blue, Brown, Black, Grey
Marking	AMOEExtreme -size- 0,6/1kV yy/ww CE (customer unique marking on request)
Outer sheath color	Orange (Other colors on request)
Bending radius, fixed installation	4 x Outer diameter
Bending radius, flexible installation	8 x Outer diameter
Flame retardant	On request
Test Voltage	3500V
Max depth, installation in water	100 meter

Number of cores X conductor cross- section	Nominal outer diameter	Weight	Current rating installation upon or on surface, ambient 30°C
	[mm]	[kg/km]	[A]
1X10	8,8	143	98
1X16	9,8	198	132
1X25	11,4	295	179
1X35	12,7	396	218
1X50	14,3	546	276
1X70	16,8	748	347
1X95	18,6	998	416
1X120	20,9	1195	488
1X150	23,2	1514	566
1X185	25,2	1773	644
1X240	29,2	2346	775
1X300	32,2	2809	898
1X400	34,7	3720	1026
3G1,5	9,5	110	18
3G2,5	10,8	154	26
3G4	12,1	212	34
3G6	13,8	294	44
3G10	16,5	467	61
3G16	18,7	652	82
3G25	22,1	980	108
3G35	24,9	1320	135
3G50	28,5	1827	168
3G70	33,7	2529	207
3G95	37,7	3362	250
3G120	42,7	4078	292
3G150	47,5	5168	335
3G185	51,9	6079	382
3G240	60,4	8098	453
4G1,5	10,8	144	18
4G2,5	12,2	202	26
4G4	13,6	277	34
4G6	15,5	382	44
4G10	18,3	598	61
4G16	20,8	840	82
4G25	24,7	1296	108
4G35	28,0	1748	135
4G50	32,1	2421	168
4G70	38,2	3343	207
4G95	42,6	4442	250
4G120	48,4	5380	292
4G150	53,9	6816	335
4G185	58,9	8013	382
4G240	68,6	10667	453

Number of cores X conductor cross- section	Nominal outer diameter	Weight	Current rating installation upon or on surface, ambient 30°C
	[mm]	[kg/km]	[A]
5G1,5	11,7	171	18
5G2,5	13,4	246	26
5G4	15,0	337	34
5G6	17,0	466	44
5G10	19,8	721	61
5G16	22,5	1018	82
5G25	26,8	1572	108
5G35	30,6	2138	135
5G50	35,2	2970	168
5G70	41,9	4105	207
5G95	46,8	5465	250
5G120	53,1	6616	292
5G150	59,2	8389	335
5G185	64,7	9865	382
5G240	75,4	13136	453





AQUALine Communication

APPLICATIONS:

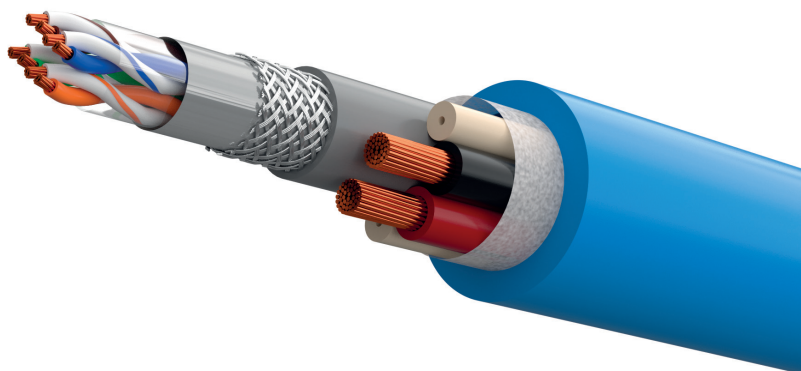
Special hybrid cable suitable for under water installations where the camera needs power and communication.
The cable is UV-resistant and has good resistance to salt water.

PROPERTIES:

Conductor temperature	+70°C
Temp, Fixed installation	-25 to +70°C
Voltage rating U _o /U	100V

STANDARDS:

Conductor	IEC 60228,5
Construction	EN 50363,3
	EN 50363,10-2



Construction

Conductor	Bare or tinned flexible copper class 5
Insulation	PVC
LAN-cable	Several types available
Outer sheath	TPU
Core identification	Red/Blue
Marking	AQUALine Communication 2x2,5 + -LAN Type-
Color	Blue
Bending radius, fixed installation	OD x 6
Outer diameter	12,8±1,0 mm



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