CAVEL®

75 Ohm COAXES 189 - EUROPE

50° Anniversario
1968-2018

QUALITY IN

75 Ohm Coaxial Cables

AND ACCESSORIES

PRELIMINARIES

COMPANY PROFILE

Italiana Conduttori Srl has been producing CAVEL coaxial cables since 1968. During this time the company has achieved continuous growth and major recognition in both the Italian and international markets. The company plant and offices, occupying a surface area of 15,000 sqm, are situated in Gropello Cairoli, in the Province of Pavia, some 30 km along the A7 motorway from Milan en route to Genoa. The company has a production capacity over 100.000 km of cables a year.

PRODUCTS PROFILE

The costs of designing and building TV distribution networks necessitate products with better performance integrity and longer life.

CAVEL AN EU PRODUCT MADE IN ITALY

To meet these expectations, CAVEL coaxial cables have been designed to comply with new technological demands. More effective screening techniques have been developed and dimensions reduced, while at the same time enhancing mechanical strength and increasing durability. This has been made possible due to the use of nitrogen gas injected physical foam insulation technology, used for the production of coaxial cable dielectrics. Our service to installers has been improved by the introduction of CABLEBOX dispensers, offering environmental and health and safety benefits, as well as a wide range of connectors and tools.

A COMPANY THAT RESPECTS THE ENVIRONMENT

CAVEL is compliant with the EU RoHS Directive banning the use of certain hazardous chemical substances. In the past we used lead primarily in PVC sheath compounds as a thermal stabiliser. In accordance with the RoHS Directive, we discontinued the use of lead and its derivatives in all products from March 2005. In addition, Regulation 1907/2006 covering the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) came into force on 1 June 2007. Pursuant to the REACH Regulation, our company is categorised as a downstream "user of substances" and as a "producer of articles". For further information please visit our website and download our Declaration of Conformity to the RoHS Directive, as well as our Declaration in accordance with the REACH Regulation.

CAVEL WARRANTY

In recent decades, the updating of our coaxial cable design, the improved quality of our raw materials and the acquisition of modern production equipment have allowed us to guarantee all coaxial cables produced under the CAVEL brand for a period of 15 years. Both the Certificate and Conditions of Warranty can be downloaded from our website.

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An introduction to CPR (Construction Product Directive)

WHAT'S CPR? (EU 305/2011)

The management of CPR firstly has the noble aim to minimize the risks to people and property by reducing the danger of fires. It is the Construction Product Directive that has been applied in all member states of the European Community since July 2013. It concerns the "new era" of power, control and communication cables, both in copper and optical fiber, to be installed in construction works subject to fire requirements of reaction performance. The Directive EU 305/2011 is a Regulation introducing a common technical language and shared evaluation methods that define uniform Euro-Classes, related to cables performance in case of fire.

The conformity of the products with the Regulations is:
- standardized by Spec. EN 50575 in fire reaction requirements, test methods and cable evaluation;
- guaranteed by the DoP (Declaration of Performance) that every manufacturer must issue to the user and by the placement of CE marking on the products;
- specified by each Member State in the declination of Euro-classes according to the applications;
- implemented by designers, builders and users in the selection of appropriate products to be used in specific projects.

CHARACTERISTICS OF CABLES SUBJECT TO CPR

To meet the requirements of: safety in the event of fire, hygiene, health and the environment, the cables used in construction works must guarantee an adequate reaction to fire and a given release of dangerous substances.
In fact, the safety of buildings in case of fire is implemented through:
- the limitation in the generation and propagation of fire and smoke,
- allowing the occupants the opportunity to leave the buildings in safe and good time.
- as well as to guarantee a high level of safety to rescue teams.

The Euro-Classification criteria, are expressed in a synthetic codification, which scans the characteristics of the cables according to the following parameters:
- Fire propagation classes, such as: B2ca, Cca, Dca, Eca, Fca;
- the opacity of the fumes produced, which varies in the parameters: from s1 to s3;
- the dripping of the incandescent particles that can propagate the fire, which varies: from d0 to d2;
- the acidity of the fumes, defining the danger to people and the corrosiveness for things and varies: from a1 to a3

In principle, the Euro-Classes adopted in Europe are those shown in the table below. Since each member State is given the faculty to classify and determinate the places where cables are installed according to their reaction to the fire, a more in-depth verification of the appropriate national documents is suggested, case by case.

Classification, use and evaluation of performance, according to CPR - EU Directive 305/11 and Spec. EN 50575/14

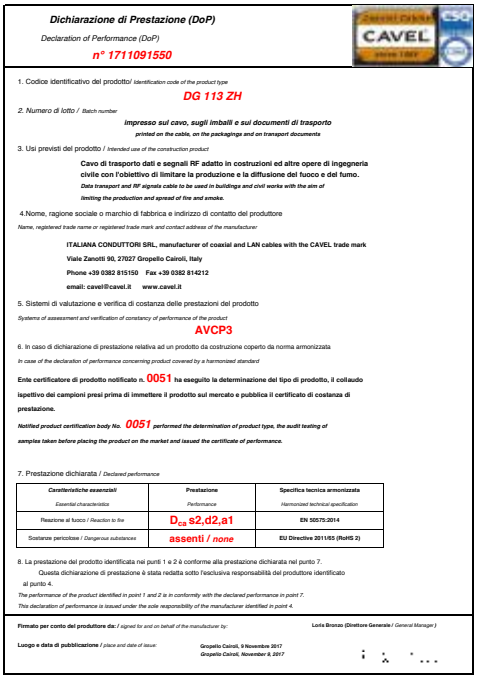
Euro-Class	$B2_{ca}$ s1a d1 a1	C_{ca} s1a d1 a1	C_{ca} s3 d1 a3	D_{ca} s1, d2, a1	E_{ca}	F_{ca}
Risk of Fire	high	middle-high	middle	middle-low	low	
Performance of fire reaction	★★★★	★★★★	★★★★	★★	★	
Installation	in a bundle				individually installed	OUTDOOR installation and use ONLY
Installation Place subject to each National specifications (acc. to DM139/15 in Italy)	under decision of the client or the designer	shopping centers hospitals cinemas schools offices > 25 people	residencial estate large offices workshops large storehouses garages		single residences small offices shops < 400 m^2 small storehouses	
DoP Declaration of Performance	yes					under decision of manufacturer
AVCP System Assessment Verification Constancy Performance system	1+			3		4

CERTIFICATION BODY AND FIRE REACTION REPORT

The Product Classification process starts with the choice of a Notified Body.These institutions are accredited to the European Commission as a Notified Body and they are included in the NANDO (New Approach Notified and Designated Organizational Information System). Cables provided to the Notified Body are submitted to the relevant tests and in case of positive feedback they issue the "Reaction to fire classification report for electric cable".

THE DOP AND THE UPDATING OF TECHNICAL DATA SHEET

Supported by the positive feedback of the tests and the release of the Classification Report, we are in turn authorized to draw up the corresponding DoP - Declaration of Performance, by which we assume the responsibility to declare the fire reaction Class. See the example by side. This document is public and it may be required at our company at any time. For service to anyone who needs it, this document is already available on the corporate website as well. It's easy to trace it by navigating into our web site up to the Data Sheet of each specific cable.



Dichiarazione di Prestazione (DoP)

Declaration of Performance (DoP)

n° 1711091550

1. Codice identificativo del prodotto/ *identification code of the product type*

DG 113 ZH

2. Numero di lotto / *Batch number*

impresso sui cavo, sugli imballi e sui documenti di trasporto

printed on the cable, on the packagings and on transport documents

3. Usi previsti del prodotto / *Intended use of the construction product*

Cavo di trasporto dati e segnali RF adatto in costruzioni ed altre opere di ingegneria civile con l'obiettivo di limitare la produzione e la diffusione del fuoco e del fumo.

Data transport and RF signals cable to be used in buildings and civil works with the aim of limiting the production and spread of fire and smoke.

4.Nome, ragione sociale o marchio di fabbrica e indirizzo di contatto del produttore

Name, registered trade name or registered trade mark and contact address of the manufacturer

ITALIANA CONDUTTORI SRL, manufacturer of coaxial and LAN cables with the CAVEL trade mark

Viale Zanotti 90, 27027 Gropello Cairoli, Italy

Phone +39 0382 815150 Fax +39 0382 814212

email: cavel@cavel.it www.cavel.it

5. Sistemi di valutazione e verifica di costanza delle prestazioni del prodotto

Systems of assessment and verification of constancy of performance of the product

AVCP3

6. In caso di dichiarazione di prestazione relativa ad un prodotto da costruzione coperto da norma armonizzata

In case of the declaration of performance concerning product covered by a harmonized standard

Ente certificatore di prodotto notificato n. 0051 ha eseguito la determinazione del tipo di prodotto, il collaudo ispettivo dei campioni presi prima di immettere il prodotto sul mercato e pubblica il certificato di costanza di prestazione.

Notified product certification body No. 0051 performed the determination of product type, the audit testing of samples taken before placing the product on the market and issued the certificate of performance.

7. Prestazione dichiarata / *Declared performance*

Caratteristiche essenziali / *Essential characteristics*	Prestazione / *Performance*	Specifica tecnica armonizzata / *Harmonized technical specification*
Reazione al fuoco / *Reaction to fire*	D_{ca} s2,d2,a1	EN 50575:2014
Sostanze pericolose / *Dangerous substances*	assenti / *none*	EU Directive 2011/65 (RoHS 2)

8. La prestazione del prodotto identificata nei punti 1 e 2 è conforme alla prestazione dichiarata nel punto 7. Questa dichiarazione di prestazione è stata redatta sotto l'esclusiva responsabilità del produttore identificato al punto 4.

The performance of the product identified in point 1 and 2 is in conformity with the declared performance in point 7. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Firmato per conto del produttore da: / *signed for and on behalf of the manufacturer by:* **Loris Bronzo (Direttore Generale** / *General Manager* **)**

Luogo e data di pubblicazione / *place and date of issue:* **Gropello Cairoli, 9 Novembre 2017** / ***Gropello Cairoli, November 9, 2017***

CE MARKING AND CABLE LABELLING

Conforming to instructions of CEI EN 50575 standards we apply to any single cable's packing unit one so called CE label, whose example is shown on the left side. On the contrary, the label shown on the right side appears on any outer cardboard box or wooden drum, where the Production Lot is also clearly visible.

CPR STATEMENTS ON CABLE'S JACKET

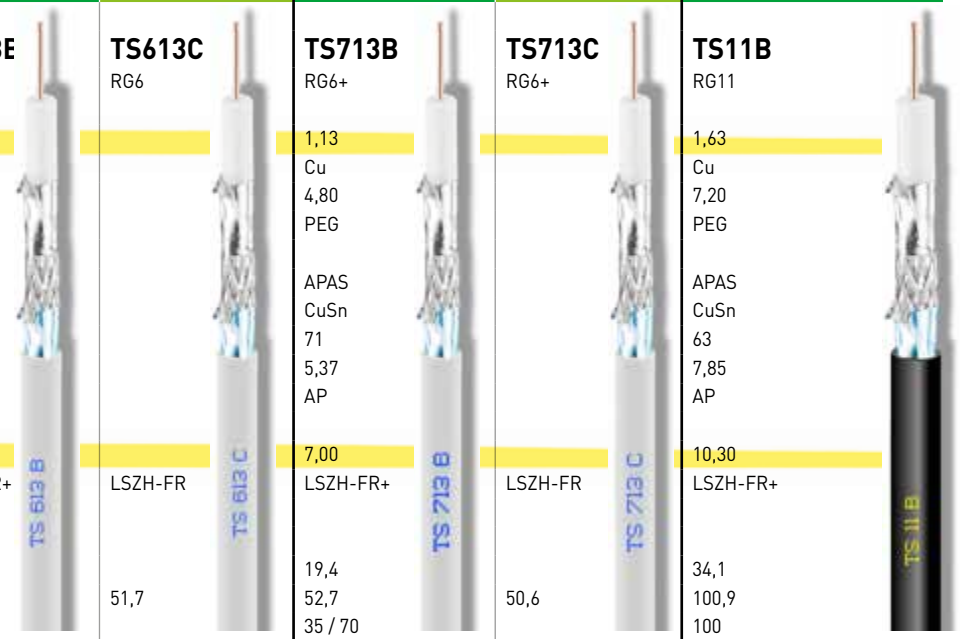
Together with the Euro-Class indication the Production Lot is also printed on the cable's outer jacket, whose code: dddyy (n), provides the following data:

ddd means the day of production (001-365)
yy the year of production
(n) the possible progressive number, if any

We remember that on our website www.cavel.com you can find deeper information and updates about the application of CPR statements in our production company as well as that you can download your own the relevant DoP of each cable, in addition to the relevant Data Sheets.

CPR TOP PERFORMANT COAXES - TRIPLE SHIELD BROADBAND COAXIAL CABLES

Application		Broadband CATV Networks; Triple Play Networks; 4K-UltraHD resolution; LTE protection; DOCSIS 3.1				
Standards	EN50117	2-4	2-4	2-4	2-4	2-3
CPR Class acc. to	**UE 305/2011**	**B2ca s1a d1 a1**	**Cca s1a d1 a1**	**B2ca s1a d1 a1**	**Cca s1a d1 a1**	**B2ca s1a d1 a1**
CAVEL Code		**TS613B**	**TS613C**	**TS713B**	**TS713C**	**TS11B**
RG Ref.		RG6	RG6	RG6+	RG6+	RG11
CONSTRUCTION DATA						
Inner Conductor	Ø mm	1,00		1,13		1,63
	material	Cu		Cu		Cu
Dielectric	Ø mm	4,60		4,80		7,20
	material	PEG		PEG		PEG
Screen						
1. Film Foil Laminate	material	APAS		APAS		APAS
2. Braid	material	CuSn		CuSn		CuSn
Braid Optical Coverage	%	73		71		63
	Ø mm	5,17		5,37		7,85
3. Overlapped Film Foil	material	AP		AP		AP
Outer Sheath	Ø mm	6,90		7,00		10,30
	material	LSZH-FR+	LSZH-FR	LSZH-FR+	LSZH-FR	LSZH-FR+
PHYSICAL DATA						
Copper Contents	kg/km	17,2		19,4		34,1
Cable Weight	kg/km	54,0	51,7	52,7	50,6	100,9
Min. Bending Radius 1/n	mm	35 / 70		35 / 70		100
Max. Tensile Strength	N	120		150		300
ELECTRICAL DATA						
Impedance	Ohm	75±3		75±3		75±2
Capacitance	pF/m	54±2		52±2		52±2
Velocity Ratio	%	82		85		85
Attenuation (at 20°C)						
@ 5 MHz	dB/100m	1,5		1,4		0,9
@ 10 MHz	dB/100m	2,2		1,9		1,3
@ 30 MHz	dB/100m	3,4		3,0		2,0
@ 50 MHz	dB/100m	4,4		3,8		2,6
@ 200 MHz	dB/100m	8,5		7,5		5,0
@ 300 MHz	dB/100m	10,6		9,3		6,2
@ 470 MHz	dB/100m	13,4		11,7		7,9
@ 862 MHz	dB/100m	18,5		16,0		10,8
@ 1000 MHz	dB/100m	20,1		17,3		11,8
@ 1750 MHz	dB/100m	27,3		23,4		16,1
@ 2150 MHz	dB/100m	30,6		26,1		18,2
@ 2400 MHz	dB/100m	32,6		27,8		19,4
@ 3000 MHz	dB/100m	37,1		31,5		25,4
Structural Return Loss (SRL)						
@ 5 - 470 MHz	dB	> 30		> 30		> 30
@ 470 - 1000 MHz	dB	> 28		> 28		> 28
@ 1000 - 2000 MHz	dB	> 26		> 26		> 23
@ 2000 - 3000 MHz	dB	> 22		> 22		> 20
Transfer Impedance (Zt)	Class	A++		A++		A+
@ 5 - 30 MHz	mΩ/m	< 0,9		< 0,9		< 2,5
Screening Attenuation (SA)	Class	A+		A++		A++
Typical Value	dB	> 120		> 120		> 115
DC Resistance inner/outer	Ohm/km	22,5 / 10,4		18 / 10,0		8,5 / 7,5
Loop Resistance	Ohm/km	32,9		28,0		16,0
Sheath Insulation Voltage	kV	3		3		8
Max. Curret (I eff)	A	6		8		16
STANDARD PACKING						
Put-up	mode	reel		reel		drum
Unit Length	m	100		100		500
Unit Packing Content	m	500		500		500
Packing Pattern	mod.	R100M		R100M		PD500
Fits CABLEBOX	item	DS100		DS100		-



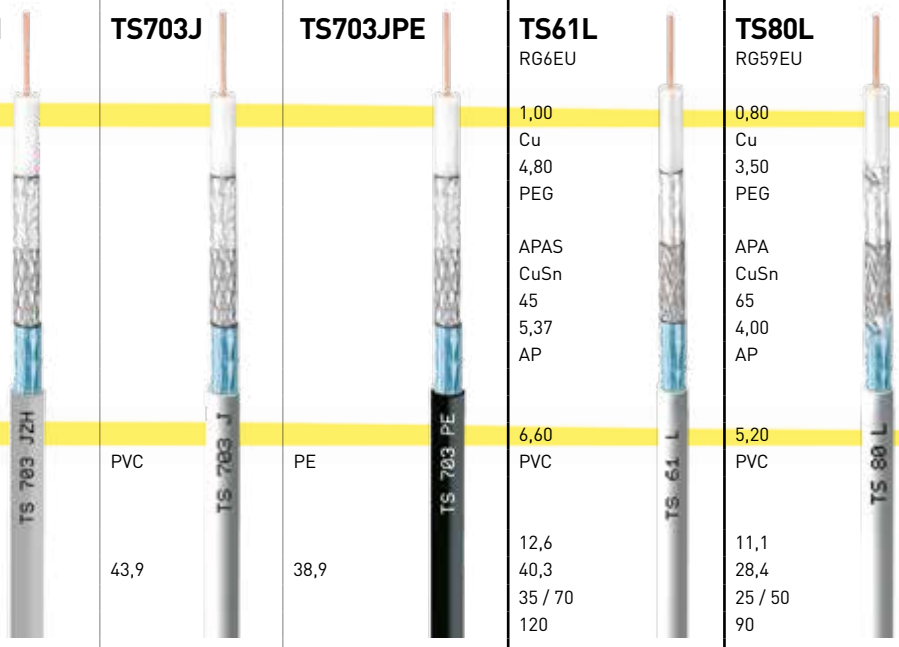
2-3	2-3	2-3	2-3	2-3
Cca s1a d1 a1	**B2ca s1a d1 a1**	**Cca s1a d1 a1**	**B2ca s1a d1 a1**	**Cca s1a d1 a1**
TS11C RG11	**TS22B**	**TS22C**	**TS27B**	**TS27C**
	2,20		2,70	
	Cu		Cu	
	9,90		11,50	
	PEG		PEG	
	APAS		APAS	
	CuSn		CuSn	
	64,0		64,1	
	10,84		12,32	
	13,10		15,30	
LSZH-FR	LSZH-FR+	LSZH-FR	LSZH-FR+	LSZH-FR
	61,9		83,5	
96,7	169,6	163,0	225,7	216,7
	130		150	
	600		800	
	75±2		75±2	
	52±2		52±2	
	85		85	
	0,8		0,8	
	1,1		1,0	
	1,5		1,3	
	2,0		1,7	
	4,0		3,4	
	4,9		4,3	
	6,4		5,4	
	9,1		7,5	
	9,8		8,2	
	13,3		11,3	
	14,9		12,9	
	15,7		13,6	
	18,3		15,3	
	> 30		> 25	
	> 28		> 24	
	> 23		> 23	
	> 20		> 22	
	A+		A++	
	< 2,5		< 0,9	
	A++		A++	
	> 115		> 115	
	5 / 4,5		3,4 / 3,5	
	9,5		6,9	
	8		8	
	21		25	
	drum		drum	
	500		500	
	500		500	
	WD500		WD500	
	-		-	

CPR IN EUROPE

Many European Fire Regulations today can be covered by 4 CPR Classes of power, control and communication cables.
All of them under one community Directive 305/2011 and the right application in each country needs the detailed knowledge of the relevant national rules.

TRIPLE SHIELD BROADBAND COAXIAL CABLES

Application		Broadband CATV Networks; Triple Play Networks; 4K-UltraHD resolution; LTE protection; DOCSIS 3.1				
Standards	EN50117	2-4	2-4	2-5	2-4	2-4
Certification by	dibkom		**Nr. 00017**			**Nr. 00022**
CPR Class acc. to	UE 305/2011	**Dca s1, d2, a1**	**Eca**	**Fca**	**Eca**	**Eca**
CAVEL Code		**TS703JZH**	**TS703J**	**TS703JPE**	**TS61L**	**TS80L**
RG Ref.		RG6+			RG6EU	RG59EU
CONSTRUCTION DATA						
Inner Conductor	Ø mm	1,13			1,00	0,80
	material	Cu			Cu	Cu
Dielectric	Ø mm	4,80			4,80	3,50
	material	PEG			PEG	PEG
Screen						
1. Film Foil Laminate	material	APAS			APAS	APA
2. Braid	material	CuSn			CuSn	CuSn
Braid Optical Coverage	%	45			45	65
	Ø mm	5,37			5,37	4,00
3. Overlapped Film Foil	material				AP	AP
Shorting Fold Film Foil (J)	material	APJ				
Outer Sheath	Ø mm	6,90			6,60	5,20
	material	LSZH	PVC	PE	PVC	PVC
PHYSICAL DATA						
Copper Contents	kg/km	14,6			12,6	11,1
Cable Weight	kg/km	46,3	43,9	38,9	40,3	28,4
Min. Bending Radius 1/n	mm	35 / 70			35 / 70	25 / 50
Max. Tensile Strength	N	150			120	90
ELECTRICAL DATA						
Impedance	Ohm	75±3			75±3	75±3
Capacitance	pF/m	52±2			54±2	52±2
Velocity Ratio	%	85			82	85
Attenuation (at 20°C)						
@ 5 MHz	dB/100m	1,6			2,0	2,1
@ 10 MHz	dB/100m	2,3			2,3	2,9
@ 30 MHz	dB/100m	3,2			3,5	4,5
@ 50 MHz	dB/100m	4,1			4,6	5,7
@ 200 MHz	dB/100m	8,0			8,6	11,1
@ 300 MHz	dB/100m	9,8			10,8	13,7
@ 470 MHz	dB/100m	12,5			13,6	17,4
@ 862 MHz	dB/100m	17,2			18,8	24
@ 1000 MHz	dB/100m	18,6			20,4	25,9
@ 1750 MHz	dB/100m	25,2			27,8	35,1
@ 2150 MHz	dB/100m	28,1			31,1	39,5
@ 2400 MHz	dB/100m	29,7			32,4	42,2
@ 3000 MHz	dB/100m	33,7			37,3	48,0
Structural Return Loss (SRL)						
@ 5 - 470 MHz	dB	> 30			> 30	> 30
@ 470 - 1000 MHz	dB	> 28			> 28	> 28
@ 1000 - 2000 MHz	dB	> 26			> 26	> 26
@ 2000 - 3000 MHz	dB	> 22			> 22	> 22
Transfer Impedance (Zt)	Class	A			A (f > 6,5 MHz)	A++
@ 5 - 30 MHz	mΩ/m	< 4,5			< 6	< 0,9
Screening Attenuation (SA)	Class	A++			A++	A++
Typical Value	dB	> 120			> 120	> 125
DC Resistance inner/outer	Ohm/km	18 / 14			22,5 / 14	35 / 13,5
Loop Resistance	Ohm/km	32,0			36,5	48,5
Sheath Insulation Voltage	kV	3			3	2,5
Max. Curret (I eff)	A	8			6	4
STANDARD PACKING						
Put-up	mode	coil	reel		coil	coil
Unit Length	m	100-250-500	100-250		100-250-500	150
Unit Packing Content	m	500	600-500		500	900
Packing Pattern	mod.	R100M-R250L-R500XL	S100M-S250L		R100M-R250L-R500XL	S150M
Fits CABLEBOX	item	DS100-250 none	DS100-DS250		DS100-250 none	DS100



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COAXIALS FOR TRIPLE PLAY DIGITAL NETWORKS
TRIPLE SHIELD COAXES – TS Series

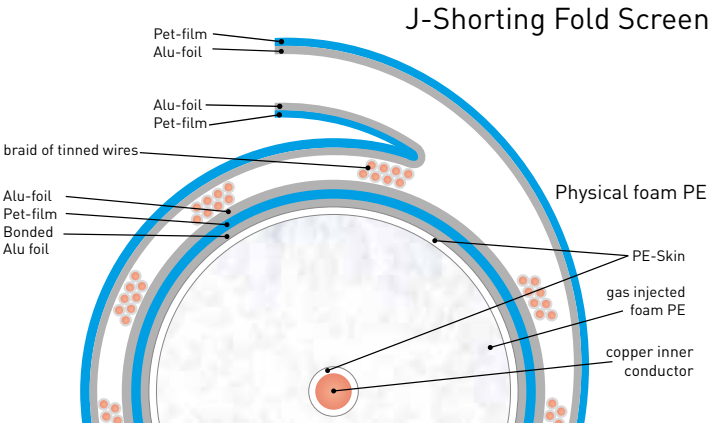
	Fca
TS11J	
RG11	
1,63	
Cu	
7,20	
PEG	
APAS	
CuSn	
63	
7,85	
APJ	
10,30	
PE	
34,6	
86,7	
100	
300	
75±2	
52±2	
85	
1,1	
1,5	
2,2	
2,8	
5,6	
6,9	
8,8	
11,9	
12,8	
17,9	
19,8	
21,0	
24,5	
> 30	
> 28	
> 23	
> 20	
A+	
< 2,5	
A++	
> 120	
8,5 / 7,5	
16,0	
8	
16	
drum	
500	
1x500	
PD500	
none	

The market demand for products offering high screening performance for use in digital broadband communication systems is growing day by day. This is due on the one hand to the increasing number of transmission systems and, on the other hand, to the demand for digital TV programming such as PPV and VOD. Furthermore many operators now offer digital services for internet and digital telephony. Altogether these comprise the so-called Triple Play digital network.
This applies to distribution and reception systems in different fields, including terrestrial, satellite and cable broadband TV networks. All such systems require coaxial cables with more efficient screening features, especially in the so-called Return Path frequency range.

We have introduced two series of cables which both offer the highest Screening Attenuation of Class A++, according to EN50117 specifications.

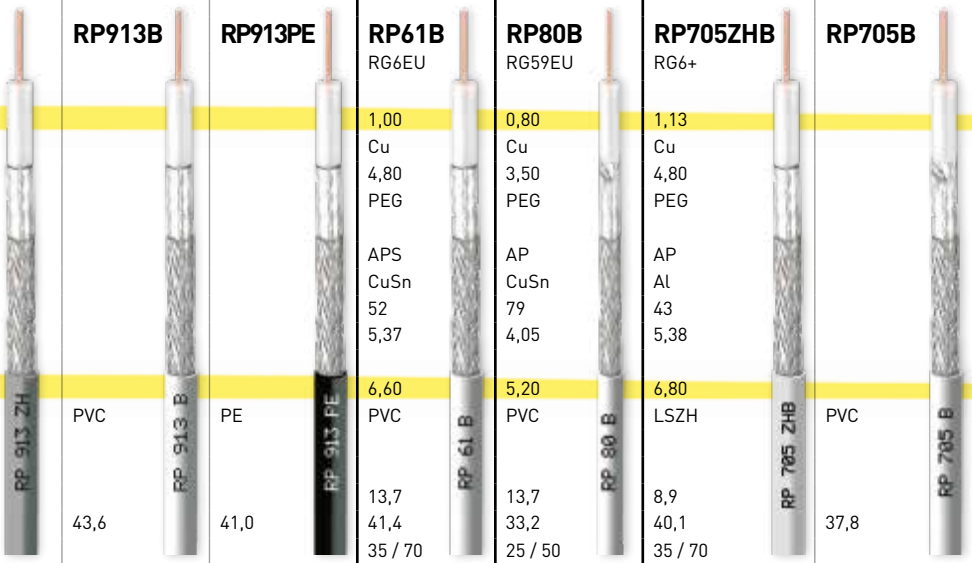
The TS Series includes coaxials provided with the special J-Shorting- Fold Screen. This is an innovative Triple Shielded screen that affords excellent screening attenuation (SA) along the full frequency bandwidth range 30-3000 MHz.
It consists of:
1. An Al/Pet/Al foil film bonded to the dielectric (APAS);
2. One conventional braid of CuSn wires; cable broadband TV networks.
3. Another Al/Pet foil film (AP) over the braid, which is folded back over itself on the overlapping section.

The combination of these screening components guarantees the stability of the SA values, which are close to those provided by a real metal tube while keeping the cable's flexibility within acceptable limits for easy handling during installation.



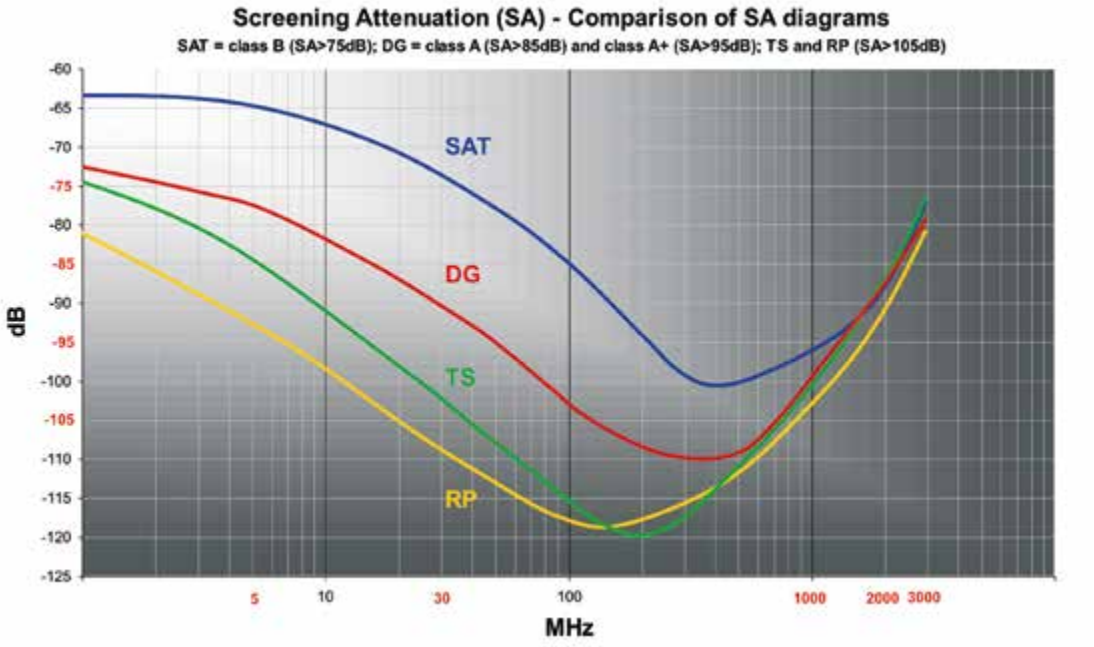
DOUBLE SHIELD BROADBAND COAXIAL CABLES

Application		Broadband CATV Networks; Triple Play Networks; 4K-UltraHD resolution; LTE protection; DOCSIS 3.1 (except Zt B, C)						
Standards	EN50117	2-5	2-4	2-5	2-4	2-4	2-5	2-4
Certification by	dibkom		**Nr.00018**			**Nr. 00023**		
CPR Class acc. to	UE 305/2011	**Dca s2, d2, a1**	**Eca**	**Fca**	**Eca**	**Eca**	**Dca s2, d2, a1**	**Eca**
CAVEL Code		**RP913ZH**	**RP913B**	**RP913PE**	**RP61B**	**RP80B**	**RP705ZHB**	**RP705B**
RG Ref.		RG6+			RG6EU	RG59EU	RG6+	
CONSTRUCTION DATA								
Inner Conductor	Ø mm	1,13			1,00	0,80	1,13	
	material	Cu			Cu	Cu	Cu	
Dielectric	Ø mm	4,80			4,80	3,50	4,80	
	material	PEG			PEG	PEG	PEG	
Screen								
1. Film Foil Laminate	material	AP			APS	AP	AP	
2. Braid	material	CuSn			CuSn	CuSn	Al	
Braid Optical Coverage	%	72			52	79	43	
	Ø mm	5,30			5,37	4,05	5,38	
Outer Sheath	Ø mm	6,60			6,60	5,20	6,80	
	material	LSZH	PVC	PE	PVC	PVC	LSZH	PVC
PHYSICAL DATA								
Copper Contents	kg/km	19,1			13,7	13,7	8,9	
Cable Weight	kg/km	46,0	43,6	41,0	41,4	33,2	40,1	37,8
Min. Bending Radius 1/n	mm	35 / 70			35 / 70	25 / 50	35 / 70	
Max. Tensile Strength	N	150			150	90	150	
ELECTRICAL DATA								
Impedance	Ohm	75±3			75±3	75±3	75±3	
Capacitance	pF/m	52±2			52±2	52±2	52±2	
Velocity Ratio	%	85			82	85	85	
Attenuation (at 20°C)								
@ 5 MHz	dB/100m	1,4			1,7	1,9	1,5	
@ 10 MHz	dB/100m	1,9			2,3	2,6	2,0	
@ 30 MHz	dB/100m	3,0			3,5	4,2	3,1	
@ 50 MHz	dB/100m	4,0			4,5	5,5	4,0	
@ 200 MHz	dB/100m	8,1			8,7	11,2	8,1	
@ 300 MHz	dB/100m	9,9			10,7	13,9	10,0	
@ 470 MHz	dB/100m	12,6			13,6	17,5	12,6	
@ 862 MHz	dB/100m	17,3			18,8	24,2	17,3	
@ 1000 MHz	dB/100m	18,7			20,3	26,2	18,7	
@ 1750 MHz	dB/100m	25,7			27,6	35,3	25,7	
@ 2150 MHz	dB/100m	28,8			30,9	39,6	28,9	
@ 2400 MHz	dB/100m	30,6			32,8	42,2	30,6	
@ 3000 MHz	dB/100m	34,1			37,2	48,0	35,0	
Structural Return Loss (SRL)								
@ 5 - 470 MHz	dB	> 30			> 30	> 30	> 30	
@ 470 - 1000 MHz	dB	> 28			> 28	> 28	> 28	
@ 1000 - 2000 MHz	dB	> 26			> 26	> 26	> 26	
@ 2000 - 3000 MHz	dB	> 22			> 22	> 22	> 22	
Transfer Impedance (Zt)	Class	A+			A	A++	B	
@ 5 - 30 MHz	mΩ/m	< 2,5			< 5	< 0,9	< 15	
Screening Attenuation (SA)	Class	A++			A+	A++	A+	
Typical Value	dB	> 120			> 105	> 120	> 105	
DC Resistance inner/outer	Ohm/km	18 / 10,7			22,5 / 13,2	35 / 11,8	18 / 22	
Loop Resistance	Ohm/km	28,7			35,7	46,8	40,0	
Sheath Insulation Voltage	kV	3			3	2,5	3	
Max. Curret (I eff)	A	8			6	4	8	
Standard Packing								
Put-up	mode	coil	reel		coil	coil reel	coil	reel
Unit Length	m	100-250-500	100-250		100	150 150	100-250-500	100-250
Unit Packing Content	m	500	600-500		500	750 900	500	600-500
Packing Pattern	mod.	R100M-R250L-R500XL	S100M-S250L		R100M	R150M S150M	R100M-R250L-R500XL	S100M-S250L
Fits CABLEBOX	item	DS100-250 none	DS100-DS250		DS100	DS100 DS100	DS100-250 none	DS100-DS250



COAXIALS FOR TRIPLE PLAY DIGITAL NETWORKS
DOUBLE SHIELD COAXES - RP Series

The RP Series includes Double Shielded coaxials performing as well the highest possible screening efficiency along Return Path frequencies. This is due to the use of a thicker Al foil film over the dielectric.



	RP705P	RP65B
	2-5	2-4
	Fca	Eca
		RG6EU
	1,00	1,00
	Cu	Cu
	4,80	4,80
	PEG	PEG
	AP	AP
	Al	Al
	43	43
	5,38	5,38
	6,60	6,60
	PE	PVC
	7,0	7,0
	32,4	36
		35 / 70
		150
		75±3
		54±2
		82
		1,5
		2,1
		3,3
		4,3
		8,7
		11,1
		13,6
		18,8
		20,4
		27,7
		31,1
		33,1
		37,7
		> 30
		> 28
		> 26
		> 22
		C
		< 20
		A+
		> 105
		22,5 /22
		44,5
		3
		8
		coil reel
		100-500 100
		500 600
		R100M-R500XL S100M
		DS100 none DS100

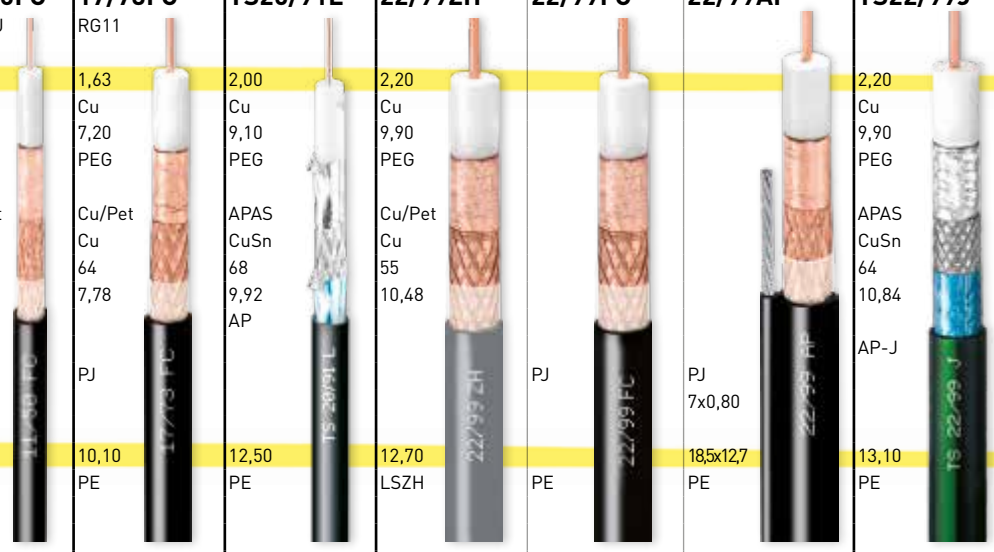
DOUBLE SHIELD DROP AND DISTRIBUTION COAXIAL CABLES

Application		Satellite and Digital Terrestial reception and distribution; 4K-UltraHD resolution; LTE protection; DOCSIS 3.1 (except Zt B)						
Standards	EN50117	2-4	2-4	2-5	2-4	2-4	2-5	2-4
CPR Class acc. to	UE 305/2011	**Eca**	**Eca**	**Dca s2, d2, a1**	**Eca**	**Eca**	**Dca s2, d2, a1**	**Eca**
CAVEL Code		**CW41S**	**DG70-C**	**DG80ZH**	**DG80-C**	**2xDG80**	**DG113ZH**	**DG113**
RG Ref.		mini RG59		RG59EU			RG6EU	
CONSTRUCTION DATA								
Inner Conductor	Ø mm	0,41	0,70	0,80			1,13	
	material	FeCu	Cu	Cu			Cu	
Dielectric	Ø mm	1,90	2,90	3,50			4,80	
	material	PEG	PEG	PEG			PEG	
Screen								
1. Film Foil Laminate	material	APAS	APA	APA			APA	
2. Braid	material	CuSn	CuSn	CuSn			CuSn	
Braid Optical Coverage	%	70	73	65			72	
	Ø mm	2,47	3,40	4,00			5,30	
FeZn Messenger	Ø mm							
Outer Sheath	Ø mm	3,60	4,30	5,00		11,0x5,0	6,60	6,60
	material	PVC	PVC	ZH	PVC	PVC	LSZH	PVC
stripes colours								
PHYSICAL DATA								
Copper Contents	kg/km	4,3	10,0	11,1		22,3	19,2	
Cable Weight	kg/km	14,7	20,8	26,6	25,7	55,9	45,2	43,4
Min. Bending Radius 1/n	mm	15 / 30	20 / 40	25 / 50			35 / 70	
Max. Tensile Strength	N	120	80	90			150	
ELECTRICAL DATA								
Impedance	Ohm	75±3	75±3	75±3			75±3	
Capacitance	pF/m	55±3	52±2	52±2			52±2	
Velocity Ratio	%	82	85	85			85	
Attenuation (at 20°C)								
@ 5 MHz	dB/100m	3,8	2,5	2,1			1,6	
@ 10 MHz	dB/100m	5,4	3,5	3,0			2,3	
@ 30 MHz	dB/100m	8,6	5,2	4,4			3,2	
@ 50 MHz	dB/100m	10,6	6,7	5,7			4,1	
@ 200 MHz	dB/100m	21,2	13,0	11,0			8,0	
@ 300 MHz	dB/100m	26,2	15,9	13,5			9,8	
@ 470 MHz	dB/100m	33,0	20,2	16,8			12,4	
@ 862 MHz	dB/100m	45,1	27,8	23,0			17,1	
@ 1000 MHz	dB/100m	48,7	29,9	24,9			18,5	
@ 1750 MHz	dB/100m	65,4	40,3	33,5			24,9	
@ 2150 MHz	dB/100m	73,0	45,0	37,4			27,9	
@ 2400 MHz	dB/100m	77,4	47,9	39,6			29,6	
@ 3000 MHz	dB/100m	87,4	53,7	44,8			33,4	
Structural Return Loss (SRL)								
@ 5 - 470 MHz	dB	> 29	> 30	> 30			> 30	
@ 470 - 1000 MHz	dB	> 27	> 28	> 28			> 28	
@ 1000 - 2000 MHz	dB	> 22	> 26	> 26			> 26	
@ 2000 - 3000 MHz	dB	> 18	> 22	> 22			> 22	
Transfer Impedance (Zt)	Class	B	B	B			A	
@ 5 - 30 MHz	mΩ/m	< 10	< 7	< 9			< 5	
Screening Attenuation (SA)	Class	A	A	A			A+	
Typical Value	dB	> 105	> 105	> 105			> 105	
DC Resistance inner/outer	Ohm/km	310 / 30	45,5 / 19,6	35 / 18,6			18 / 13,9	
Loop Resistance	Ohm/km	340,0	65,1	53,6			31,9	
Sheath Insulation Voltage	kV	2,5	2,5	2,5			3,0	
Max. Curret (I eff)	A	n.a.	3	4			8	
Standard Packing								
Put-up	mode	reel	coil	coil			reel	
Unit Length	m	100	200	150			100-250	
Unit Packing Content	m	500	1200	900			600-500	
Packing Pattern	mod.	R100S	S200M	S150M			S100M-R250L	
Fits CABLEBOX	item	-	DS100	DS100			DS100-DS250	

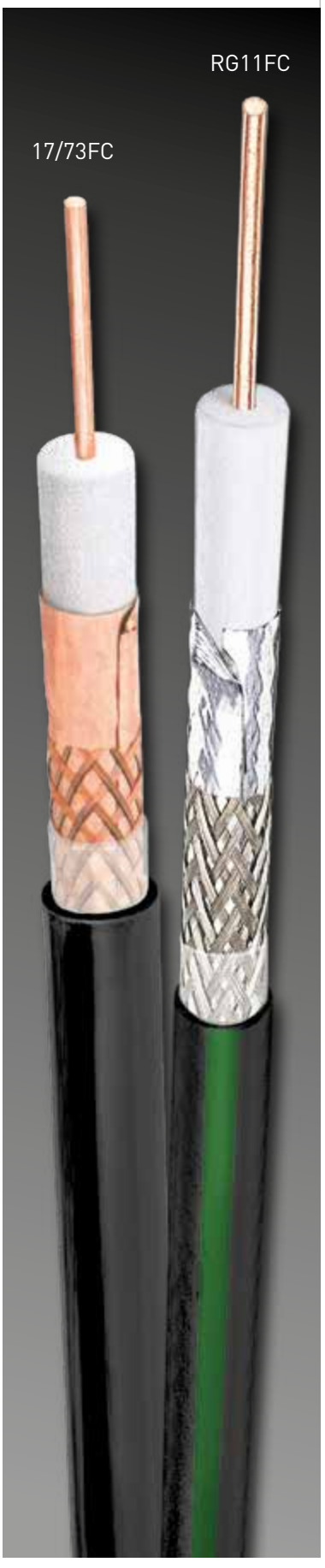
2-3	2-4	2-5	2-3	2-3	2-3	2-3
Fca	Eca	Dca s2, d2, a1	Fca	Fca	Fca	Fca
DG113PEM	**SAT752F**	**DG163ZH**	**DG163**	**CATV11**	**CATV11AP**	**RG11FC**
	RG6EU	RG11		RG11		RG11
	1,13	1,63		1,63		1,63
	Cu	Cu		Cu		FeCu
	4,80	7,20		7,20		7,20
	PEG	PEG		PEG		PEG
	Cu/Pet	APAS		APAS		APAS
	Cu	CuSn		CuSn		Al
	72	78		63		65
	5,30	7,85		7,85		8,01
1x1,25					7x0,80	
11,2x6,8	6,60	10,10		10,10		10,10
PE	PVC	LSZH	PE	PE		PE
	22,8	39,6		34,6	123,8	none
60,3	45,9	105,4	91,7	85,7		73,7
	35 / 70	100		100		100
	150	300		300		800
	75±3	75±2		75±2		75±2
	52±2	52±2		52±2		53±2
	85	85		85		85
	1,4	1,1		1,1		1,1
	2,0	1,5		1,5		1,5
	2,9	2,2		2,2		2,2
	3,8	2,8		2,8		2,8
	7,7	5,6		5,6		5,6
	9,4	6,9		6,9		6,9
	12,1	8,8		8,8		8,8
	16,7	11,9		11,9		12,3
	18,0	12,8		12,8		13,2
	24,5	17,9		17,9		18,5
	27,5	19,8		19,8		20,8
	29,0	21,0		21,0		22,2
	33,0	24,0		24,0		25,3
	> 30	> 30		> 30		> 30
	> 28	> 28		> 28		> 28
	> 26	> 23		> 23		> 23
	> 22	> 20		> 20		> 20
	A	A		B		B
	< 5	< 5		< 8		< 15
	A+	A+		A		A
	> 110	> 115		> 105		> 95
	18 / 12,5	8,5 / 7,5		8,5 / 10		37,5 / 11,5
	30,5	16,0		18,5		49,0
	3,0	8,0		8,0		8,0
	8	16		16		8
	coil	drum		drum		drum
	100	500		500		500
	600	500		500		500
	S100M	PD500		PD500		PD500
	DS100	-		-		-

DISTRIBUTION AND TRUNK COAXES Indoor-Outdoor, Underground and Hung-Up Installations

Application		Broadband CATV Networks; Triple Play Networks; 4K-UltraHD resolution; LTE protection; DOCSIS 3.1 (except Zt B)						
Standards	EN50117	2-5	2-3	2-3	2-3			2-3
CPR Class acc. to	UE 305/2011	**Fca**	**Fca**	**Fca**	**Dca s2, d2, a1**	**Fca**	**Fca**	**Fca**
CAVEL code		**11/50FC**	**17/73FC**	**TS20/91L**	**22/99ZH**	**22/99FC**	**22/99AP**	**TS22/99J**
		RG6EU	RG11					
CONSTRUCTION DATA								
Inner Conductor	Ø mm	1,13	1,63	2,00	2,20			2,20
	material	Cu	Cu	Cu	Cu			Cu
Dielectric	Ø mm	4,80	7,20	9,10	9,90			9,90
	material	PEG	PEG	PEG	PEG			PEG
Screen								
1. Film Foil Laminate	material	Cu/Pet	Cu/Pet	APAS	Cu/Pet			APAS
2. Braid	material	Cu	Cu	CuSn	Cu			CuSn
Braid Optical Coverage	%	60	64	68	55			64
	Ø mm	5,38	7,78	9,92	10,48			10,84
3. Overlapped Film Foil	material			AP				
3. Shorting Fold Film Foil -J	material							AP-J
Flooding Compound Filling	material	PJ	PJ			PJ	PJ	
FeZn Messenger	size mm						7x0,80	
Outer Sheath	size mm	7,30	10,10	12,50	12,70		18,5x12,7	13,10
	material	PE	PE	PE	LSZH	PE	PE	PE
PHYSICAL DATA								
Copper Content	kg/km	22,4	40	54,9	59,6			61,9
Cable Weight	kg/km	49,5	88,2	133,7	149,3	130,4	174,3	135,4
Min. Bending Radius	mm	50	100	125	150			150
Max. Tensile Strength	N	200	300	600	600			600
Messenger Max. Tensile Strength	N				5.000			
ELECTRICAL DATA								
Impedance	Ohm	75±2	75±2	75±2	75±2			75±2
Capacitance	pF/m	52±2	52±2	52±2	52±2			52±2
Velocity ratio	%	85	85	85	85			85
Attenuation (at 20°C)								
at 5 MHz	dB/100m	1,5	1,1	1,0	0,8			0,8
at 10 MHz	dB/100m	2,1	1,5	1,3	1,1			1,1
at 30 MHz	dB/100m	2,9	1,9	1,8	1,5			1,5
at 50 MHz	dB/100m	3,8	2,5	2,3	2,0			2,0
at 200 MHz	dB/100m	7,9	5,3	4,6	4,0			4,0
at 300 MHz	dB/100m	9,7	6,5	5,7	4,9			4,9
at 470 MHz	dB/100m	12,0	8,3	7,1	6,4			6,4
at 862 MHz	dB/100m	16,8	11,5	10	9,1			9,1
at 1000 MHz	dB/100m	17,9	12,4	10,9	9,8			9,8
at 1750 MHz	dB/100m	24,8	17,1	14,8	13,3			13,3
at 2150 MHz	dB/100m	27,3	19,2	16,5	14,9			14,9
at 2400 MHz	dB/100m	29,1	20,4	17,6	15,7			15,7
at 3000 MHz	dB/100m	33,0	23,3	19,8	18,3			18,3
Structural Return Loss (SRL)								
at 5 - 470 MHz	dB	> 30	> 30	> 26	> 30			> 30
at 470 - 1000 MHz	dB	> 28	> 28	> 22	> 28			> 28
at 1000 - 2000 MHz	dB	> 26	> 23	> 22	> 23			> 23
at 2000 - 3000 MHz	dB	> 20	> 20	> 20	> 20			> 20
Transfer Impedance (Zt)	Class	B	B	A++	B			A+
at 5 - 30 MHz (TI)	mΩ/m	< 11	< 7	< 0,9	<8			< 2,5
Screening Attenuation (SA)	class	A	A	A++	A			A++
Typical Value	dB	> 100	> 95	> 135	> 105			> 120
DC Resistance: inner / outer	Ohm/km	18 / 13,5	8,5 / 9,5	5,5 / 4	5 / 8,5			5 / 4,5
Loop Resistance	Ohm/km	31,5	18,0	9,5	13,5			9,5
Sheath Insulation Voltage	kV	8	8	8	8			8
Max. Current (I eff)	A	8	16	21	21			21
Standard Packing								
Put-up	mode	drum	drum	drum	drum			drum
Unit Length	m	500	500	500	500			500
Unit Packing Content	m	500	500	500	500			500
Packing Pattern	mod.	PD500	PD500	PD500	PD500		WD500	WD500

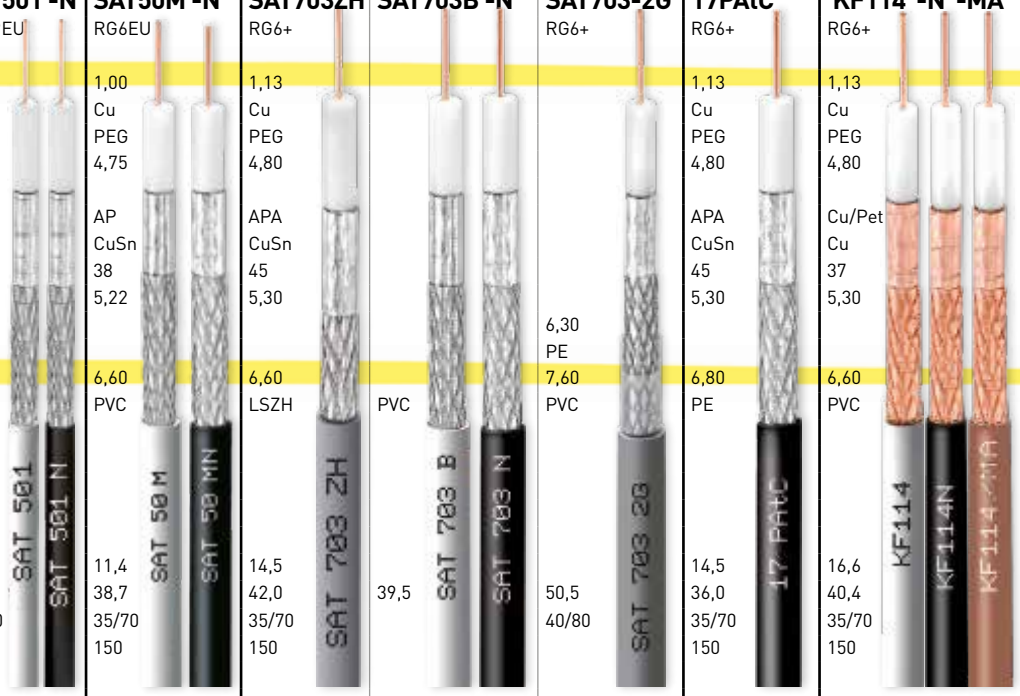


2-3			2-3	2-3			
Dca s2, d2, a1	**Fca**	**Fca**	**Fca**	**Dca s2, d2, a1**	**Fca**	**Fca**	
27/115ZH	**27/115FC**	**27/115AP**	**TS27/115J**	**34/145ZH**	**34/145FC**	**34/145AP**	
2,70			2,70	3,40			
Cu			Cu	Cu			
11,50			11,50	14,50			
PEG			PEG	PEG			
Cu/Pet			APAS	Cu			
Cu			CuSn	Cu			
52			64	61			
12,2			12,32	15,26			
	PJ	PJ 7x0,80	AP-J		PJ	PJ 7x0,80	
15,00		22,5X15	15,30	19,80		25,5x19,8	
LSZH	PE	PE	PE	LSZH	PE	PE	
83,9			83,5	153,5			
208,3	179,9	222,1	182,7	387,8	329,7	350,6	
200				250			
800				1.200			
5.000				5.000			
75±2			75±2	75±2			
52±2			52±2	53±2			
85			85	85			
0,8			0,8	0,5			
1,1			1,1	0,7			
1,3			1,3	1,1			
1,7			1,7	1,4			
3,4			3,4	2,9			
4,2			4,2	3,6			
5,5			5,5	4,6			
7,7			7,7	6,4			
8,4			8,4	6,9			
11,4			11,4	9,4			
12,8			12,8	10,6			
13,6			13,6	11,5			
15,4			15,4	13,3			
> 25			> 25	> 25			
> 24			> 24	> 24			
> 23			> 23	> 21			
> 22			> 22	> 20			
A			A+	A+			
< 5			< 2,5	< 2,5			
A+			A++	A+			
> 115			> 120	> 110			
3,4 / 5,8			3,4 / 3,5	2,1 / 2,6			
9,2			6,9	4,7			
8			8	12			
25			25	34			
drum			drum	drum			
500			500	700			
500			500	700			
WD500			WD500	WD700			



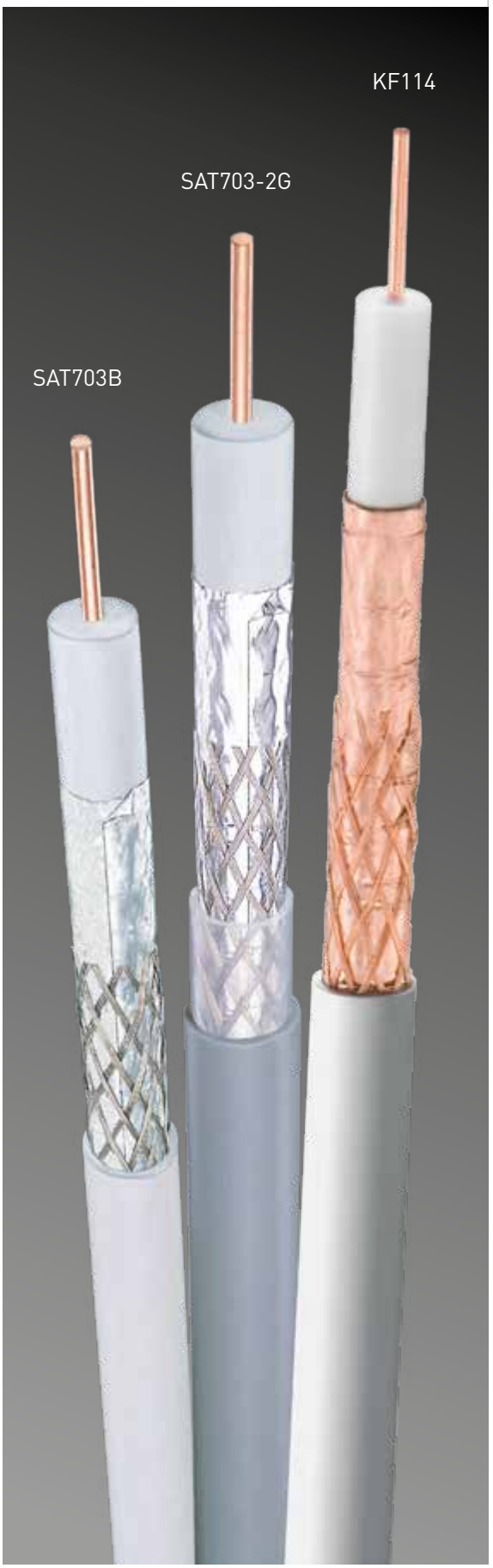
STANDARD DROP COAXES - SA Class B

Application		Satellite and Digital Terrestial reception and distribution						
Standards	EN50117	2-4	2-4	2-4		2-5	2-5	2-4
CPR Class acc. to	UE 305/2011	**Eca**	**Eca**	**Dca s2, d2, a1**	**Eca**	**Fca**	**Fca**	**Eca**
CAVEL Code		**SAT501 -N**	**SAT50M -N**	**SAT703ZH**	**SAT703B -N**	**SAT703-2G**	**17PAtC**	**KF114 -N -MA**
RG Ref.		RG59EU	RG6EU	RG6+		RG6+	RG6+	RG6+
CONSTRUCTION DATA								
Inner Conductor	Ø mm	0,80	1,00	1,13			1,13	1,13
	material	Cu	Cu	Cu			Cu	Cu
Dielectric	Ø mm	PEG	PEG	PEG			PEG	PEG
	material	3,50	4,75	4,80			4,80	4,80
Screen								
1. Film Foil Laminate	material	APA	AP	APA			APA	Cu/Pet
2. Braid	material	CuSn	CuSn	CuSn			CuSn	Cu
Braid Optical Coverage	%	47	38	45			45	37
	Ø mm	4,00	5,22	5,30			5,30	5,30
Protection Jacket	Ø mm					6,30		
	material					PE		
Outer Sheath	Ø mm	5,00	6,60	6,60		7,60	6,80	6,60
	material	PVC	PVC	LSZH	PVC	PVC	PE	PVC
Non Migrating film	material							
External Sheath	Ø mm							
	material							
PHYSICAL DATA								
Copper Contents	kg/km	8,9	11,4	14,5			14,5	16,6
Cable Weight	kg/km	24,2	38,7	42,0	39,5	50,5	36,0	40,4
Min. Bending Radius 1/n	mm	25/50	35/70	35/70		40/80	35/70	35/70
Max. Tensile Strength	N	90	150	150			150	150
ELECTRICAL DATA								
Impedance	Ohm	75±3	75±3	75±3			75±3	75±3
Capacitance	pF/m	52±2	54±2	52±2			52±2	52±2
Velocity Ratio	%	85	82	85			85	85
Attenuation (at 20°C)								
@ 5 MHz	dB/100m	2,3	2,0	1,6			1,6	1,4
@ 10 MHz	dB/100m	2,8	2,8	2,1			2,1	2,0
@ 30 MHz	dB/100m	4,6	3,8	3,2			3,2	3,0
@ 50 MHz	dB/100m	5,6	4,6	4,1			4,1	3,7
@ 200 MHz	dB/100m	10,9	8,6	7,9			7,9	7,8
@ 300 MHz	dB/100m	13,7	10,5	9,8			9,8	9,6
@ 470 MHz	dB/100m	17,4	13,6	12,4			12,4	11,9
@ 862 MHz	dB/100m	23,3	18,8	17,1			17,1	16,5
@ 1000 MHz	dB/100m	25,2	20,4	18,5			18,5	17,8
@ 1750 MHz	dB/100m	34,0	27,8	24,9			24,9	24,2
@ 2150 MHz	dB/100m	38,2	31,1	27,9			27,9	27,1
@ 2400 MHz	dB/100m	40,4	33,3	29,6			29,6	28,8
@ 3000 MHz	dB/100m	44,2	37,7	33,4			33,4	32,6
Structural Return Loss (SRL)								
@ 5 - 470 MHz	dB	> 30	> 30	> 30			> 30	> 30
@ 470 - 1000 MHz	dB	> 28	> 28	> 28			> 28	> 28
@ 1000 - 2000 MHz	dB	> 26	> 26	> 26			> 26	> 26
@ 2000 - 3000 MHz	dB	> 22	> 22	> 22			> 22	> 22
Transfer Impedance (Zt)	Class	C	n.c.	C			C	C
@ 5 - 30 MHz	mΩ/m	< 23	< 85	< 23			< 27	< 22
Screening Attenuation (SA)	Class	B	B	B			B	B
Typical Value	dB	> 100	> 85	> 100			> 105	> 105
DC Resistance inner/outer	Ohm/km	35 / 26	22,5 / 33	18 / 22			18 / 22	18 / 22
Loop Resistance	Ohm/km	61	55,5	40			40	40
Sheath Insulation Voltage	kV	2,5	3	3			5	3
Max. Curret (I eff)	A	4	6	8			8	8
Standard Packing								
Put-up	mode	coil	coil coil	coil coil		reel	coil coil	coil coil
Unit Length	m	150	100 250	100 250		200	100 250	100 250
Unit Packing Content	m	900	600 500	600 500		400	600 500	600 500
Packing Pattern	mod.	S150M	S100M S250L	S100M S250L		R200L	S100M S250L	S100M S250L
Fits CABLEBOX	item	DS100	DS100 DS250	DS100 DS250		DS250	DS100 DS250	DS100 DS250

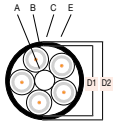
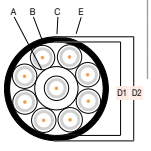
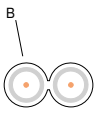
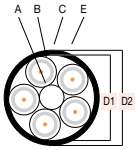
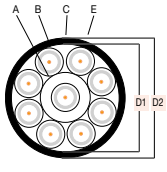


HYBRID COAXES - For special applications

2-4	2-4	2-5
Eca	Eca	Fca
SAT501 AWG	**SAT50M DF2N**	**11/48LO PIPE**
RG59EU	RG6EU	RG6+
0,8	1	1,13
Cu	Cu	Cu
PEG	PEG	PEG
3,50	4,75	4,80
APA	AP	Cu/Pet
CuSn	CuSn	Cu
47	38	53
4,0	5,22	5,3
Twisted Pair 1x2x24AWG Ø 0,51Cu Ø 1,10PE	Twisted Pair 1x2x24AWG Ø 0,51Cu Ø 1,10PE + Electrical Leads 2x0,5 sq.mm	Empty Tube HDPE inner Ø 5,5 outer Ø 7,2
5,00	6,60	7,30
PVC	PVC	PE
Pet	Pet	-
6,0x8,2	9,8x11,5	8,1x15,3
PVC	PVC	PE
12,4	23,2	20,4
44,7	92	76,6
25/50	35/70	50,0
90	150	200
75±3	75±3	75±3
52±2	54±2	52±2
85	82	85
2,3	2	1,5
2,8	2,8	2,1
4,6	3,8	2,9
5,6	4,6	3,8
10,9	8,6	7,9
13,7	10,5	9,7
17,4	13,6	12,0
23,3	18,8	16,8
25,2	20,4	17,9
34,0	27,8	24,8
38,2	31,1	27,3
40,4	33,3	29,1
44,2	37,7	33,0
> 30	> 30	> 30
> 28	> 28	> 28
> 26	> 26	> 26
> 22	> 22	> 22
C	n.c.	B
< 23	< 85	< 11
B	B	A
> 100	> 85	> 100
35 / 26	22,5 / 33	18 / 14,8
61	55,5	32,8
2,5	3	8
4	6	8
reel	reel	drum
200	100	400
400	200	400
R200L	R100L	PD400
DS250	DS250	-



SMATV MULTICORE COAXES - Multiswitch 1st IF Distribution

Application			SMATV Multiswitch 1st IF Distribution of Satellite and Digital Terrestial reception and distribution; 4K-UltraHD resolution; LTE protection								
Standards		EN50117	2-4	2-4; 2-5		2-4; 2-5		2-4	2-4; 2-5		2-4; 2-5
CPR Class acc. to		UE 305/2011	**Eca**	**Eca**		**Eca**		**Eca**	**Eca**		**Eca**
Construction			2x	5x		9x		2x	5x		9x
											
CAVEL code			**2xDG80**	**5xDG80M**		**9xDG80M**		**2x17VAtC**	**5x17VAtCM**		**9x17VAtCM**
CONSTRUCTION DATA											
Central Filler	A	material	-	white PVC				-	white PVC		
		dia. mm	-	3,50		8,50		-	4,80		11,40
Single cable	B	code	DG80 (1)	DG80 (1)				17VAtC (2)	17VAtC (2)		
Single Cable's Sheath		material	-	white PVC with coloured stripes				-	white PVC with coloured stripes		
		dia. mm	-	5,00				-	6,80		
Spirally Wrapped Film	C	material	-	Pet				-	Pet		
Outer Sheath	E	material	white PVC	black LSZH				white PVC	black LSZH		
Inner Diameter	D1	mm	-	13,60		18,55		-	18,45		24,85
Outer Diameter	D2	mm	5x11,00	15,00		19,80		6,8x14,6	20,00		26,20
PHYSICAL DATA											
Copper Content		kg/km	22,3	57,4		101,7		28,9	72,5		133,6
Cable Weight		kg/km	56,3	216,2		364,2		81,7	360,0		670,0
Min. Bending Radius 1/n		mm	25/50	75/150		100/200		35/70	100/200		130/260
Max. Tensile Strength		N	180	800		1.400		300	800		1.400
Standard Packing											
Put-up		mode	reel	drum		drum		reel	drum		drum
Unit Length		m	100	100		100		100	100		50 100
Unit Length Weight		kg	6,3	26,6		36,4		8,8	41,0		40,5 74,7
Unit Packing Content		m	200	100		100		200	100		50 100
Packing Pattern		mod.	R100L	PD 100		PD 100		R100L	PD100		PD50 PD100
Fits CABLEBOX		item	DS250	-		-		DS250	-		-
											

(1) single cable's data at page 12
(2) single cable's data at page 16

Both single and community satellite reception systems are often provided with a dual-feed parabolic antenna, i.e. where the satellite dish is provided with two LNBs, suitable for receiving signals from two different satellites or groups of satellites. In this case the drop line requires two coaxial cables, one for each LNB. Furthermore, the multiswitch distribution system makes it possible to independently distribute, among all users in the same building, a wide range of both satellite and terrestrial TV signals. For this reason the need for the so-called "light cabling system" is fulfilled by the use of multicore coaxials. Due to this technology the signals distribution requires:

- 4 coaxials for the satellite distribution and 1 coaxial for the terrestrial distribution, where the dish is provided with 1 converter.
- 2 groups of 4 coaxials for the satellite distribution and 1 coaxial for the terrestrial if the dish is provided with 2 LNBs.

We designed the twin and multicore coaxials shown here with the aim of offering the easiest solutions to professional installers. The use of these cables allows installers to save a lot of time when laying the distribution network.

cable 2x - 2 coaxials for dual feed parabolic antenna
cable 5x - 4 coaxials for 1 satellite drop line +1 coaxial for the terrestrial drop line
cable 9x - 4+4 coaxials for 2 satellite drop lines +1 coaxials for the terrestrial drop line

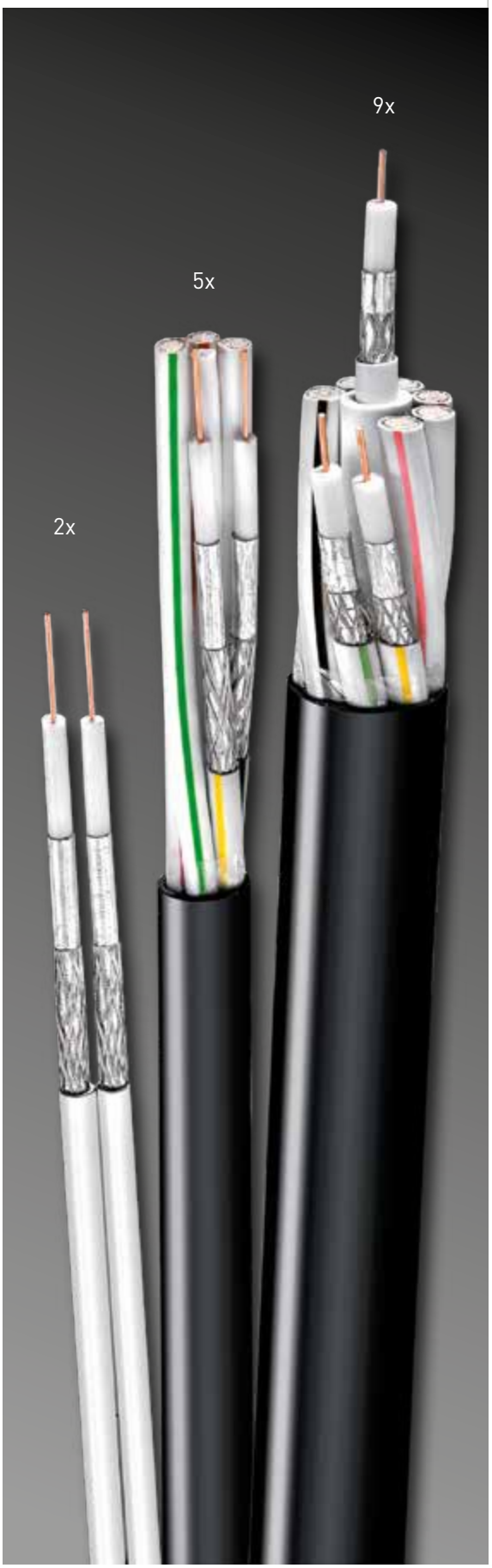
Twin cables
Both 2xDG80 and 2x17VAtC have just one of the cables printed on the outer sheath; this facilitates the connection of remote poles.

Colour Coding of Multicore Coaxial Cables
Each single cable in the bundle has two coloured stripes on the outer sheath, except for the white sheathed cable in the core of the bundle. This makes it easier to identify the cables and insert further remote poles. Furthermore, we have adopted the colour coding system already used by several European manufactures of active and passive components and equipment designed for multiswitch distribution. By convention the following functions have been assigned to this colour coding system.

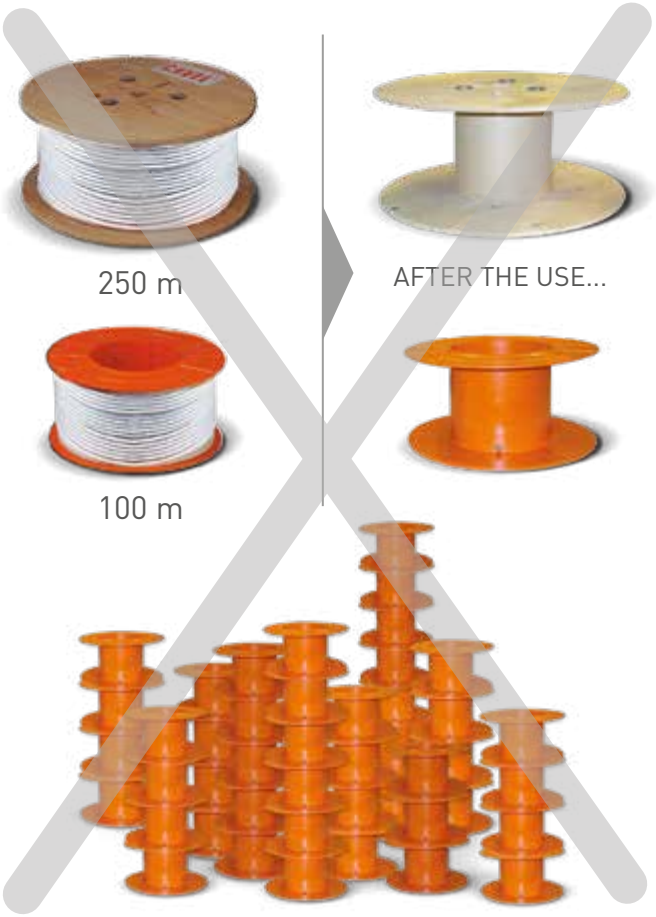
Colour	**Function**
Red	High Band Vertical
Yellow	High Band Horizontal
White	Terrestrial
Green	Low Band Horizontal
Black	Low Band Vertical

Multicore coax with multipurpose outer jacket "M"
Initially, these cables were made with a common hard PE jacket, the stiffness of which made their installation quite difficult, if not impossible.

With the aim of making it easier to install these cables in both outdoor and underground applications, they have been provided with a flexible black EVA based outer sheath compound. The M suffix in the code identifies these versions, which entered in production at the beginning of 2010. This jacket is not only flame retardant but also zero-halogen (halogen-free), therefore it is fire-safe and suitable for indoor applications. Outdoor installations are also possible due to the compound's carbon black content and resistance to UV rays. For underground applications we recommend installation in pipes and ducts.



THE PAST old pack solution



...of just 1 pallet with 12 km of cable, WHAT DO YOU DO WITH:
48 dirty wooden drums or 120 useless plastic reels?
THIS IS A WASTE DISPOSAL PROBLEM!

CABLEBOX
The environmentally friendly standard packing

Until recently, coils in a box or non-returnable cardboard and plastic reels were the most popular means of packaging TV coaxial cables. In spite of some inconveniences, these packages were accepted as the norm.
Today, due to environmental studies and concerns, the concept of recycling has become a paramount issue, prompting CAVEL to develop a total solution in terms of EFFICIENCY, ECONOMY and ECOLOGY.

This has led to the introduction of a revolutionary product - the CABLEBOX dispenser - a design based on the concepts of REDUCTION and REUTILISATION.
The CABLEBOX dispenser is made of a stand containing one reel, which can be easily opened into two parts. These pieces, made of a shock resistant, very strong plastic material, form a cable dispenser with a very long life expectancy. The "refill" is represented by the coil of coaxial cable supplied by CAVEL.
The dispensers are available in two sizes, suitable for either the 100 or 250 metre coil of cable. They can be carried and are also provided with a shoulder strap. This is a safety feature that enables the installer to move with both hands free.
The cable will always unroll perfectly without assuming a "spiral shape", an annoying drawback of box dispensers that makes installation in ducts very difficult. This is most useful when installing a bundle of cables together in a conduit. Rewinding excess cable back into the dispenser is very straightforward due to the access through the centre hole.

The sheath of all CAVEL cables supplied in shrinkpack form is provided with a decreasing meter marking, allowing the installer to check the length of a run or drop against the remaining contents of the dispenser. With the CABLEBOX dispenser packing system, there is no reel disposal to consider, only a small piece of shrinkwrap.

Supplying installers with CABLEBOX dispensers offers the following advantages:

- easier installation
- savings on cost and effort
- opportunity to avoid environmental problems
- improved safety.

Authenticated Packing

THE PRESENT new smart pack solution

100 m
SHRUNK COIL

Re-usable reel + DS100 dispenser
AFTER THE USE...

of 1 pallet with14,4 km cable,
YOU WASTE JUST FEW hg
OF PAPER AND PLASTIC.

THIS IS A TOTAL
SOLUTION!

STANDARD PACKING SYSTEM

mod. S100M
6x100m shrunk coils in box = 600m
mod. S150M
6x150m shrunk coils in box = 900m

mod. S200M
6x200m shrunk coils in box = 1.200m

fit CABLEBOX DS100

M

mod. S100L
2x100m shrunk coils in box = 200m
mod. S150L
2x150m shrunk coils in box = 300m

mod. S250L
2x250m shrunk coils in box = 500m
mod. S400L
2x400m shrunk coils in box = 800m

fit CABLEBOX DS 250

L

mod. R100S
5x100m plastic reels in box = 500m

S

mod. R100M
5x100m plastic reels in box = 500m

fits CABLEBOX DS 100

M

mod. R100L
2x100m plastic reels in box = 200m
mod. R150L
2x150m plastic reels in box = 300m

mod. R200L
2x200m plastic reels in box = 400m
mod. R250L
2x250m plastic reels in box = 500m

fit CABLEBOX DS 250

L

mod. R500XL
1x500m plastic reels in box = 500m

XL

mod. PD
Plywood drums
on pallet

PD

mod. WD
Wooden drums for
bulk lengths on pallet

WD

TOOLS AND CONNECTORS

Coils and Plastic reels Dispensers

CABLEBOX


DS100


DS250

Accessories for Cable's Preparation

ACCESSORIES


FC02


CS00
CS03J
CS17VP
CS41
CS70


CS17 - CS22
CS27 - CS34


MT04


CK11BL


LUB01

Accessories for Cable's Preparation

COMPRESSION & CRIMP TOOLS


COT02BL


COT04BL


COT05BL


CRT03BL
CRT04BL
CRT05BL

F - Crimp Connectors

F
Crimp Connectors


F41
F501
F70


F703
F125A


FR703
fast insertion


F90


F163

F - Twist-On Connectors

F
Twist-On Connectors


FA125


FA501
FA703


FA17


FA17/73

Compression Connectors

F
COMPRESSION


FC501
FC703
FC703C
FC5.0QMS
FCEM5.0C
FC7.0QM
FCEM7.0C
FCP05.1C
FCP03.9C
FC11QM

BNC
COMPRESSION


BNCC 3.3C
BNCC 3.9C
BNCC 5.1C
BNCC 70
BNCC501
BNCC703
BNCC40
BNCCEM3C

IEC
OUTDOOR COMPRESSION


IECMC703
IECFC703

IEC
INDOOR Self Install - No Tool


IECF 3.9C
IECM 3.9C
IECF 5.1C
IECM 5.1C
IECF 905C
IECM 905C
IECM 90C
IECF 90C

C-BOX Display Box for Connector Jars

C-BOX

A large number of CAVEL connectors is supplied by palstic jars
C-Box free of charge available till exhausted.

Adapters for F Connectors (Indoor)

ADAPTERS


F81-HQ


DR01


FM-FF90


MM-F703


MM-FR703
fast insertion

Fittings

FITTINGS


C75-5L


CCFM75GI


TV2VS


SAT2VS

HARD-LINE Connectors for Outdoor and Underrground Installation

HARD-LINE CONNECTORS

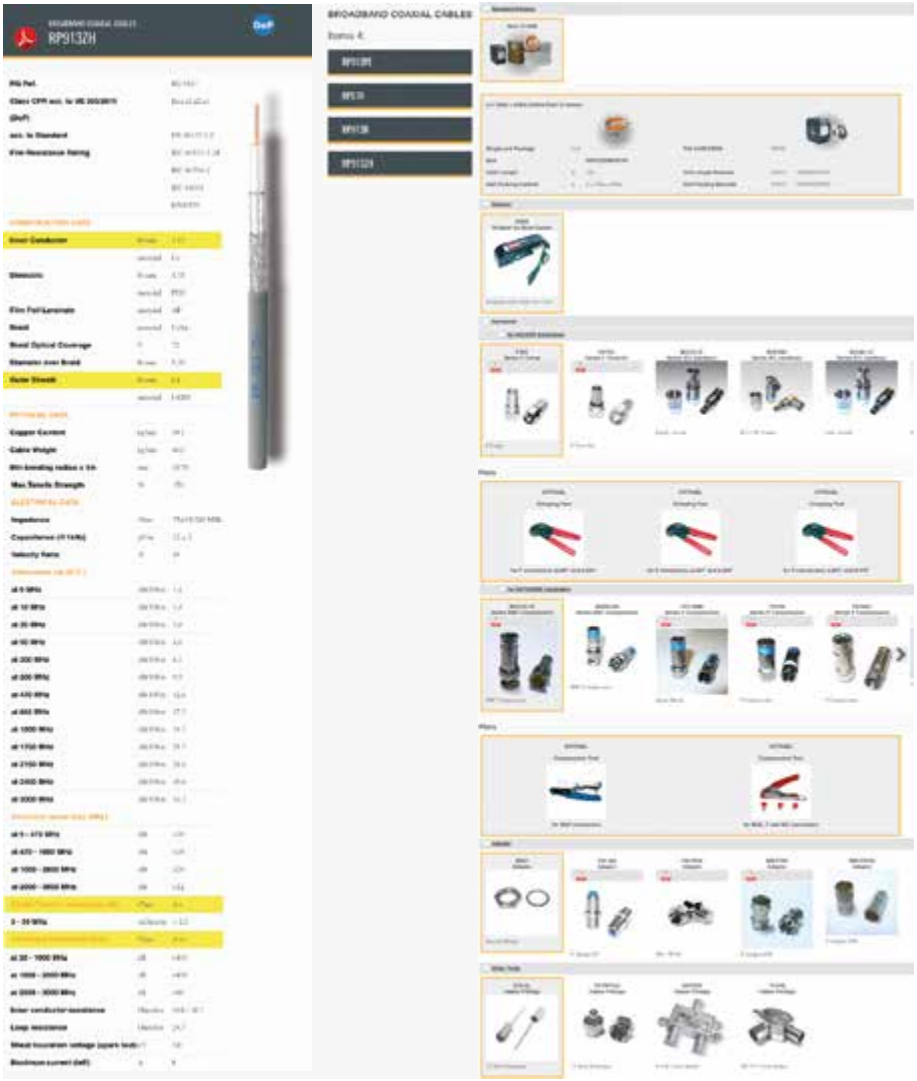

FM
IEC
NM
3,5/12"
5/8"MU

Adapters

HARD-LINE ADAPTERS


SP
SR

CAVEL on the web!



A Special WEB Utility to research Tools and Connectors

The new cavel.com web site is first and foremost realized with a search engine by code, or by type of product. Then, once you have landed on the cable specs. card you are interested in, you can move on to it using a particular configuration of 5 menus under the card, to access many useful details, dedicated to the accessories of the cable in question, such as:

- the standard types of Packing available and the corresponding item number
- the compatible Stripper
- the wide range of Connectors, subdivided into sub-menus for indoor and outdoor installation and both with an automatic link to the appropriate crimp or compression tool (Pliers), just in case it is necessary for the use of the connector in question
- the Adapters
- some other installation accessories (Tools)

LEGEND

Al	Aluminium
AP	Al/Polyester
APA	Al/Polyester/Al
APAS	Al/Polyester/Al/Surline(glue)
AP-J	Al/Polyester - "J folded"
APS	Al/Polyester/Surline(glue)
AWG	American Wire Gauge
CCA	Copper Clad Aluminium
CCS	Copper Clad Steel
Cu	Copper
Cu/Pet	Copper/Polyester
CuSn	Tinned Copper
FeCu	Copper Clad Steel (CCS)
FeZn	Zinc Plated Steel
LSZH	Low Smoke Zero Halogen compound
LSZH-FR	Low Smoke Zero Halogen Flame Retardant compound
LSZH-FR+	Stabilized Low Smoke Zero Halogen Flame Retardant compound
N	Newton (0,1 kg approx.)
n.a. - n.c.	not applicable - not classified
PE	Polyethylene
PEG	Gas Injected Physical Foam PE
Pet	Polyester
PJ	Petrol Jelly filling compound
PVC	Poly-Vinyl-Cloride
PVC II	Non-Migrating PVC Compound
RG11	size 1,63 / 7,20 mm
RG59EU	size 0,80 / 3,50 mm
RG6	size 1,00 / 4,60 mm
RG6EU	size 1,00 / 4,80 mm
RG6+	size 1,13 / 4,80 mm
SA	Screening Attenuation
TI	Tranfer Impedance (Zt)

Communication Cables
CAVEL
since 1968

CSQ
CERTIFIED COMPANY
UNI EN ISO 9001:2015
CERT. NR. 9125.ICON

IQNet

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rame.DESIGN 11/2018