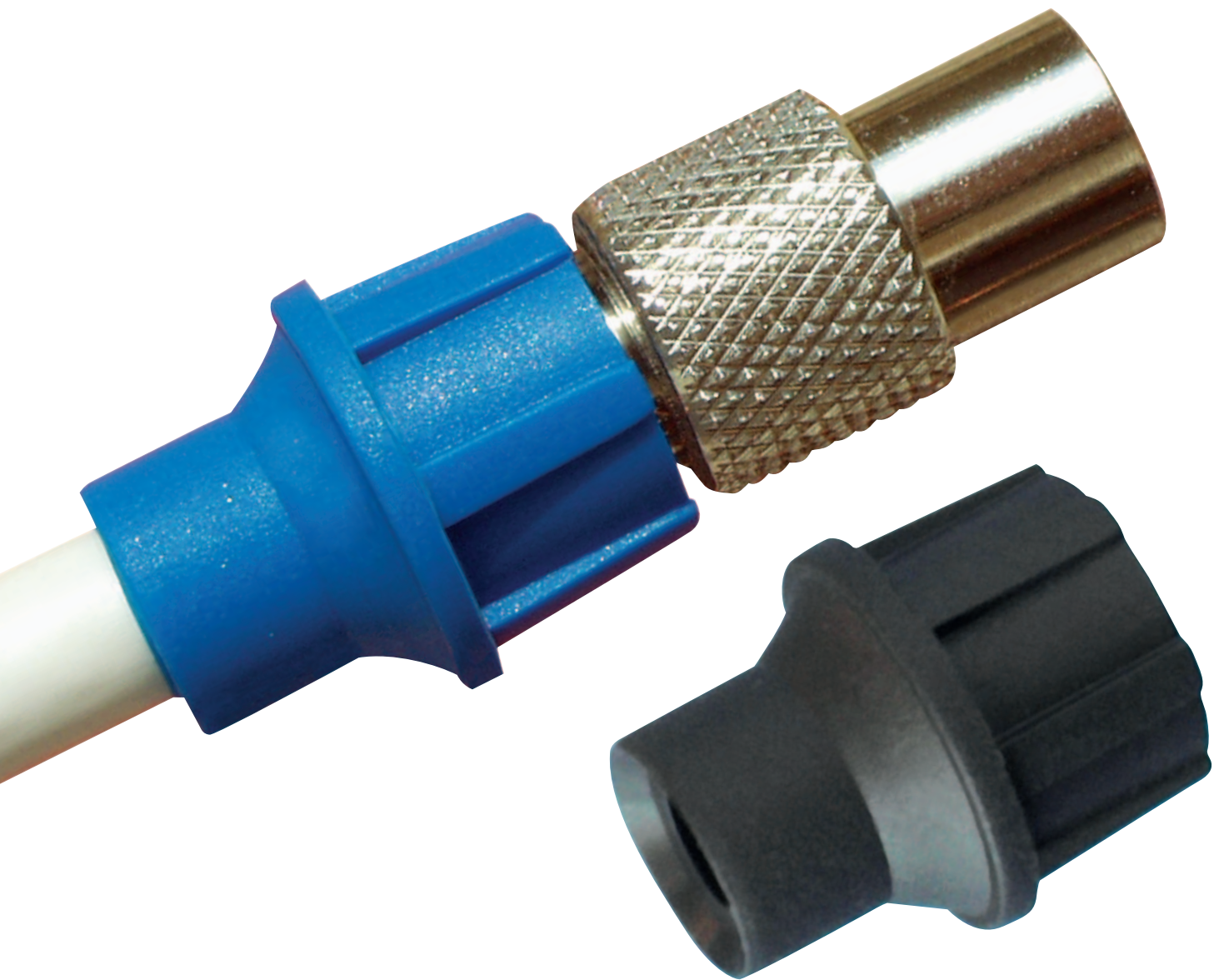
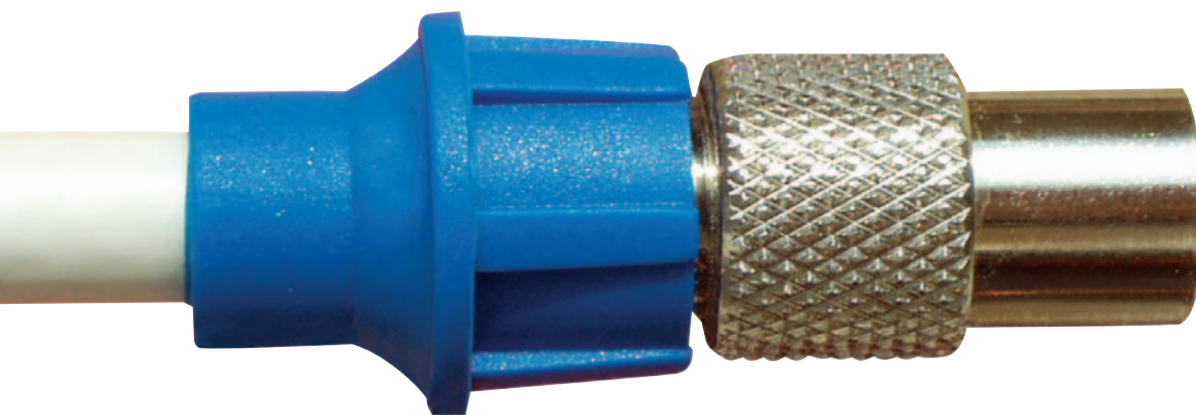


V-CaP System

The revolution in connection for security and telecom



Introduction



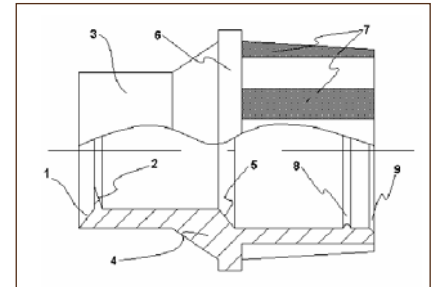
The V-CaP – Push-on Connect, is an innovative, fast and economical connection system for coaxial cables. It substitutes traditional connectors. It is simple to use and does not require any specific tools. Thanks to its carefully studied geometry and dimensions, a very stable mechanical connection can be obtained even when using inferior coaxial cables. It exhibits high elasticity while maintaining a high resistance to fatigue and offers a high tear strength over time. It is highly resistant to attack from chemical agents, ozone, UV rays and water.

- The V-CaP is completely recyclable.
- The V-CaP has optimal electrical properties and no impedance of its own. Thus, it can be used with any coaxial cables of any given impedance (50, 75, 92 Ohm, etc.).
- The V-CaP is universal. It can be used with any coaxial cable of less than 7mm in diameter.
- The V-CaP is water-tight when used with cables of 5mm or more in diameter.
- The V-CaP connection method is extremely economical and delivers drastically reduced installation time.
- The V-CaP system offers speed, reliability and high performances in demanding applications.
- The V-CaP eliminates the need for specialized tools and skills.
- The V-CaP is the system of choice for critical installations.



A closer look at the V-CaP

1. Sloped edge to make it easier to insert the V-CaP on the terminal of the coaxial cable
2. Thin deformable ring to prevent, with different types of coaxial cables, moisture coming inside the connection zone from the cable side
3. Flexible sleeve to hold the cable in proper position
4. Special patented material highly resistant and elastic
5. Sloped wall to optimize the electrical and mechanical contact between the braid and the female connector
6. External ridge to make it easier to insert/remove the V-CaP from the female connector
7. Ribs designed to exert an optimal pression over the braid and the female connector
8. Projection to prevent moisture coming inside the connection zone from the female connector side
9. Bevelled edge to make it easier to insert the V-CaP on the female connector



Main Features

V-CaP, Push-on Connector, is a new quick plastic connector for coaxial cables which substitutes the classic F-type metallic male connector, crimp-on or twist-on type. It is very simple to use; it does not require any specific tool; it allows for a fast and economical connection. Thanks to its carefully studied geometry, a very stable mechanical connection can be obtained even when using coaxial cables with very low braid coverage percentage.

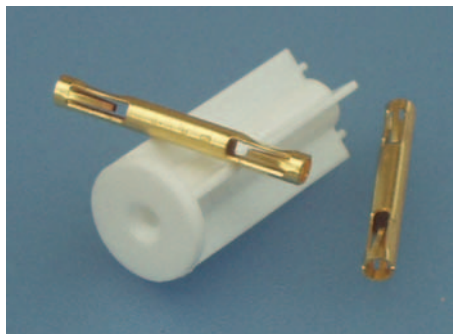
It has optimal electrical features:

In the frequency bandwidth between 0 and 2300 MHz insertion loss lesser than 0.08dB and structural return loss greater than 20dB have been measured; being made of plastic, it has no impedance of its own and thus it can be used with coaxial cables having any impedance (...50, 75, ... Ohm).

It has optimal mechanical features:

It presents high elasticity properties, physical-mechanical properties constant in the course of time; it is resistant to different types of chemical agents, such as bases, acids, polar solvents, organic fats, detergents and others; it is resistant to ozone, UV rays, atmospheric ageing, water; it features a high level of thermal/electrical insulation, a very good resistance to "fatigue" and tear strength; its service temperature may vary from -40°C up to over +120°C; it is completely recyclable.

It is universal; only one model can be used with any coaxial cable having a diameter less than 7mm; with cables having a diameter greater than 4.2mm, the connection is perfectly water-proof. It conforms with the European EMC Directive EN50083-2 (Cabled Distribution Systems for Television and Sounds Signals – Part 2: electromagnetic compatibility for equipment).



Ordering Information

Part No.	Description
VC-BK	V-CaP Black
VC-RD	V-CaP Red
VC-WH	V-CaP White
VC-BL	V-CaP Blue
VC-GR	V-CaP Green

Technical Information

Our connector V-CaP is at first sight just a very simple way to connect a coaxial cable to any F female connector. This is certainly true but any skilled installer will soon realize that the connection made with the V-CaP, if it has been made in the proper way following our suggestions and drawings, will perform much better than a connection made with the great majority of standard F metallic male connectors. This is because by using the V-CaP there is no metallic interface between the cable and the female connector and therefore there is an optimal matching between the two parts of the connection: in all other cases the F metallic male connector, however good it can be, is always present in the connection and can add some mismatching and/or losses.

The V-CaP is a mechanical mean to keep the cable firmly attached to the F female (or to any similar coaxial) connector. The important point is that, when using the V-CaP, **the cable will remain, in the course of time, firmly attached to the female connector**: we can assure this thanks to the very special material which we have chosen to manufacture the V-CaP. We want to underline this by enclosing in our technical leaflet also all initial properties and all sorts of ageing tests made to this material, which is normally used in avionic and in automobile industries. To use the V-CaP and all our products at their best, read carefully all information which you can find in our printed leaflets: below you will find some more information useful for a better understanding of what we call the "V-CaP System".

When and how the V-CaP should be used

The V-CaP, as it is today (new versions for bigger cables are under design), can be used to connect any coaxial cable having an external diameter up to 7mm to any F-type female connector.

The V-CaP can be connected as shown in all our drawings (we will now call it "normal way") in the great majority of cases, namely when the coaxial cable has a good percentage of braid coverage, when the connection is made in protected environments (like distribution boxes,...) or in places not normally reachable by non-technical end-users (like outdoor LNB's,...).

There are some cases where a stronger retaining force is needed in the coaxial connection, like for instance when using coaxial cables with low-braid coverage (<40%), when the connection is normally used by non-technical end-users (like when connecting inside houses TV sets, SAT receivers,...) or when the connection is supposed not to be normally removed. In such cases we advise to use the V-CaP in an "alternative way", as described below.

Use of V-CaP in the "normal way" (1a)

How to prepare the cable and connect the V-CaP

Follow strictly the instructions and drawings written in our leaflets when making a connection.

The coaxial cable can be prepared with a normal scissor: a better and quicker way to prepare the cable can be obtained by using our cable cutter tool (our code: VT-200) enclosed with the samples.



step 1

step 2

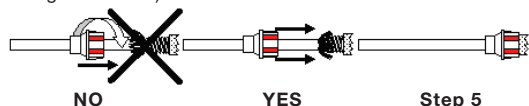
Take particular care in step 3: cut the dielectric as near as possible to the braid so that the same braid, in step 4, will get in contact with the mouth of the F female immediately after having left the external sheath of the coax cable.



step 3

step 4

In step 5 insert the V-CaP over the F female ONLY BY PUSHING IT OVER THE F FEMALE AND NOT BY ROTATING THE CaP WHILE PUSHING IT (the rotation could damage the braid).



NO

YES

Step 5

Enclosed you can find three samples with cables prepared in the normal way for connection with the V-CaP: sample 1a is a cable Ø7mm +40% braid coverage; samples 2a and 6a are cables Ø7mm +80% braid coverage.

How to disconnect the V-CaP

DO NOT DISCONNECT THE V-CaP BY PULLING THE CABLE AWAY FROM THE F FEMALE (this action would normally damage part of the braid). USE ONLY VT-100 TOOLS FOR DISCONNECTION.

Use of V-CaP in the "alternative way" (2a)

How to prepare the cable and connect the V-CaP

When a stronger retaining force between the cable and the F Female connector is needed, follow the instructions below.

In step 1 insert the V-CaP onto the cable and cut the external sheath longitudinally in two parts without removing it, for a length of approximately 10mm. The preparation of the cable in step 1 can be easily obtained by using the lateral cable input of our cable cutter tool enclosed with the samples.

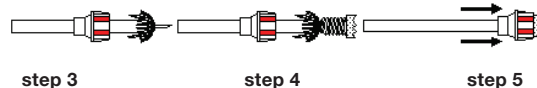
In step 2 widen the sheath and the braid and bend both of them backwards.



step 1

step 2

Repeat step 3, 4 and 5: in the last step a greater force has to be used to slide the V-CaP over both braid and sheath. As in the normal way, when pushing the V-CaP over the F female DO NOT ROTATE THE V-CaP.



step 3

step 4

step 5

Enclosed you can find many samples with different cable sizes prepared in the alternative way for connection with the V-CaP: samples 1b, 3 and 4 are cables Ø7mm +40% braid coverage; sample 2b is a cable Ø7mm +80% braid coverage, samples 5 and 6b are cables Ø5mm +40% braid coverage.

How to disconnect the V-CaP

DO NOT DISCONNECT THE V-CaP BY PULLING THE CABLE AWAY FROM THE F FEMALE (this action would damage the cable). USE ONLY VT-100 TOOLS FOR DISCONNECTION.

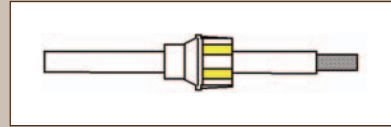
VT Instructions

VT-100 INSTRUCTIONS

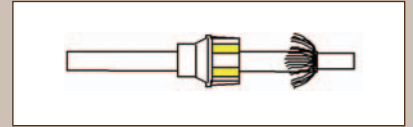
The coaxial cable can be prepared with normal scissors: a better and quicker way to prepare the cable can be obtained using our cable cutter tool (our part no. VT-200).

Take particular care in Step 3: Cut the dielectric as near as possible to the braid so that the same braid, in Step 4, will get in contact with the mouth of the F female immediately after having left the external sheath of the coax cable.

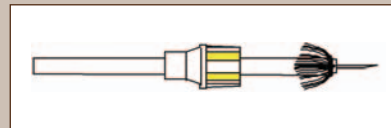
In Step 5, insert the V-cap over the F female ONLY BY USING V-CaP pliers (VT-100) OVER THE F FEMALE as shown in Fig. 1



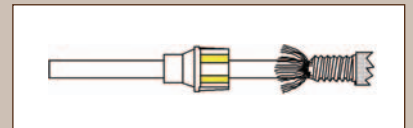
step 1



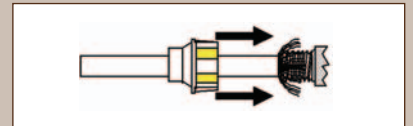
step 2



step 3



step 4



step 5

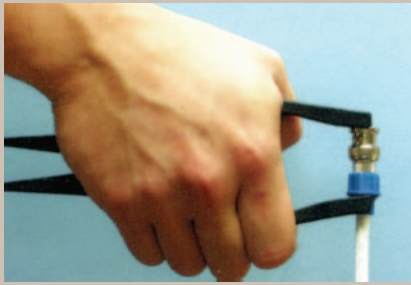
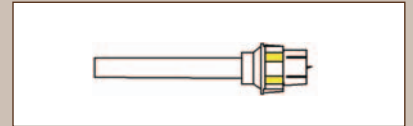


Fig. 1

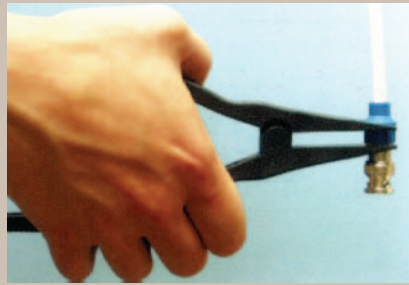


Fig. 2

How to disconnect the V-CaP

DO NOT DISCONNECT THE V-CaP BY PULLING THE CABLE AWAY FROM THE F FEMALE (this action would normally damage the part of the braid). USE ONLY VT-100 TOOLS FOR DISCONNECTION as shown in Fig. 2.

VT-200 INSTRUCTIONS

The coaxial cable can be prepared by using our cable cutter tool (our part no. VT-200).

In Step 1, cut the external sheath longitudinally in two parts without removing it, for a length of approximately 10 mm. The preparation of the cable in Step 1 can be easily obtained by using the lateral cable input of our cable cutter tool (as shown in Fig. 1).

In Step 2, widen the sheath and the braid and bend both of them backwards.

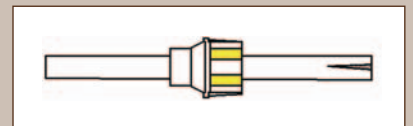
In Step 3, use the VT-200 to remove the dielectric as near as possible to the braid as (shown in Fig. 2)



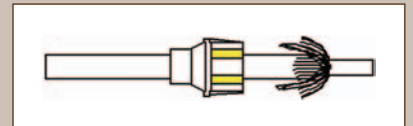
Fig. 1



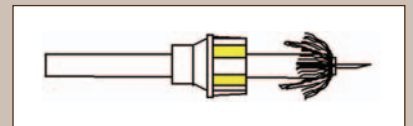
Fig. 2



step 1



step 2

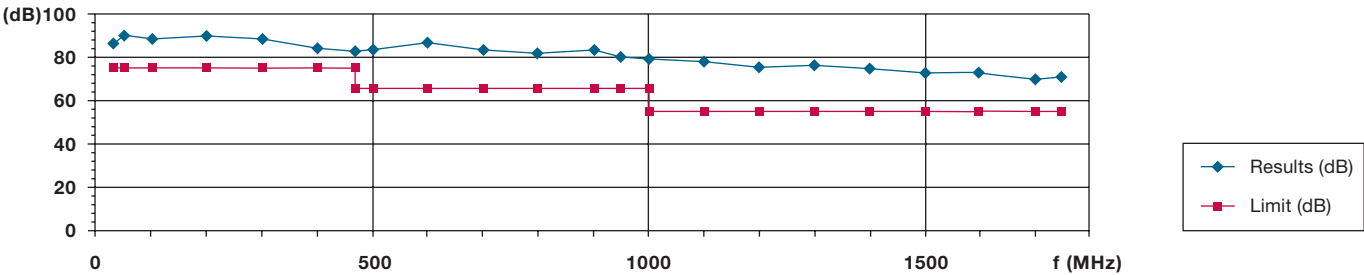


step 3

Ordering Information

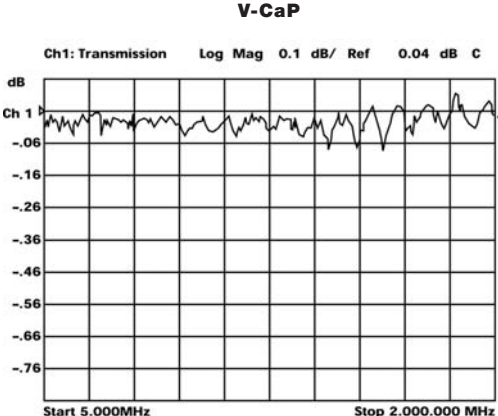
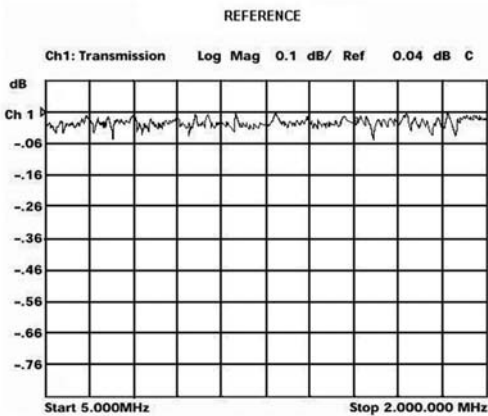
Part No.	Description
VT-100	V-CaP Plier
VT-200	Cable Stripper

Electrical Characteristics

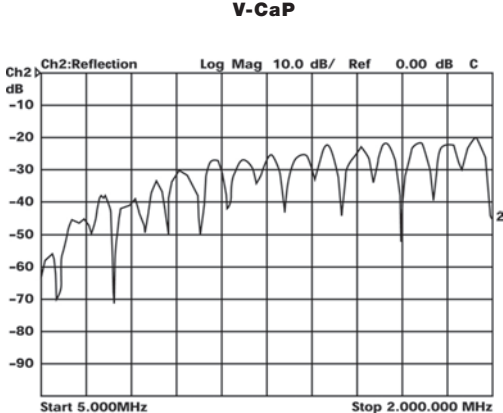
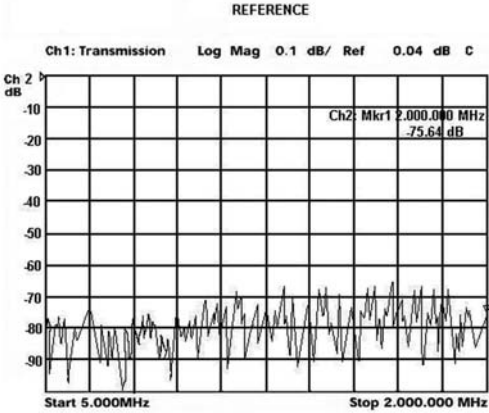


Freq (MHz)	31	50	100	200	300	400	470	500	600	700	800	900	950	1000	1100	1200	1300	1400	1500	1600	1700	1750
Limit values (dB)	75	75	75	75	75	75	75	65	65	65	65	65	65	55	55	55	55	55	55	55	55	55
Results (dB)	86	90	89	90	89	85	83	84	87	84	82	84	81	80	78	76	77	75	73	73	70	71

Insertion Loss



Structural Return Loss



Material Properties

Initial Properties

Properties	Units	Method	Values
Service Temperature	°C	-	From: -40 to: +120
Hardness (immediately)	Shore D	ASTM D 2240	47
Hardness (after 15")	Shore D	ASTM D 2240	45
Tensile Strength	Mpa	ASTM D 412C	17
Elongation at Break	%	ASTM D 412C	650
Modulus 100%	Mpa	ASTM D 412C	8.5
Modulus 300%	Mpa	ASTM D 412C	10
Tear Strength	N/mm	ASTM D 624C	80
Density	Kg/dm ³	ASTM D 792	0.97

Ageing in Oil – Solution – Air – UVCON

Properties	Units	Method	Different Ageing Trials (*)								
			#1	#2	#3	#4	#5	#6	#7	#8	#9
Δ Hardness (after 15")	Points	ASTM D 2240	-2	-6	-4	-15	-1	-7	-1	+1	+2
Δ Tensile Strength	%	ASTM D 412C	-2	-7	-7	-18	-2	-7	+1	-4	+3
Δ Elongation at break	%	ASTM D 412C	-6	-12	-10	-24	-8	-16	+1	-14	-3
Δ Modulus 100%	%	ASTM D 412C								+12	+6
Δ Weight	%		+1	+8	+7	+31	+1	+11	+0.1		

- (*) #1 ASTM D 471 Ageing in Oil ASTM 1 (7 days @ 23°C)
 #2 ASTM D 471 Ageing in Oil ASTM 1 (7 days @ 100°C)
 #3 ASTM D 471 Ageing in Oil ASTM 3 (7 days @ 23°C)
 #4 ASTM D 471 Ageing in Oil ASTM 3 (7 days @ 100°C)
 #5 ASTM D 471 Ageing in Hydraulic Oil Hydrus 68 (7 days @ 23°C)
 #6 ASTM D 471 Ageing in Hydraulic Oil Hydrus 68 (7 days @ 100°C)
 #7 ASTM D 471 Ageing in Aqueous Solution – 2.5% Detergent neutral ph (7 days @23°C)
 #8 ASTM D 573 Heat Ageing in Air (7 days @ 125°C)
 #9 ASTM D 4329 UVCON Resistance for 7 days, alternate circle: UV 4h @ 60°C; Condensation 4h @ 40°C

Data of this bulletin are average values of laboratory tests, provided only for general guidance and without any liability.

V-CaP System

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