Subject: HV cable problem
Posted by Clemens Adler on Tue, 19 Oct 2004 12:40:26 GMT
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Hello everybody,
we're having problems with one roll of the HTC 50-1-1 HV cable (CERN stock) that was distributed to also the other production sites.
Recently we had more and more problems that chambers would not be stable in the first HV test (in air before HV cables and wires solder joints are covered with glue). At first we thought that the preparation of the cable (i.e. removing isolation etc.) was not done good enough. Now we have a couple of cables that where tested without being connected to anything (e.g. a chamber), and they break down early: already at ~1,2kV very strongly fluctuating currents appear (jumping up to several microampere then going down again to some 10-100 nA). With a different roll of this cable this is not the case (and it was not with the beginning of the 'bad' roll).

Question: has anybody seens such a behviour before with this type of cable?

and a recommendation to all production sites: please check with just a piece of this cable that it actually holds HV. If other rolls are also bad, we'll have to ship new ones (we still have some rolls at Heidelberg).

cheers,
Clemens

Subject: Re: HV cable problem
Posted by Joerg Hehner on Fri, 12 Nov 2004 14:04:14 GMT
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Hello everybody,

we also used this HTC 50-1-1 HV cable to connect the ALICE TPC
Anode Plane to HV.
In all Cases we have no Problems with this Cable, all Anode Plane are Working stable.
I think the problem is how to handle and prepare this Cable before connect it to the Anode.
At first you peel off this red Skin, than remoce the AL-Textil Band and the Cu-Mesh.
The next Step is to remove this black higly resistive plastic Tube arround the Insulation from the electrical conductor.
It must be done very carefully (without knife), because when you get a  Knife, it is possible  to cut in this last Insulator.
In this Case the HV can break down and you can see some fluctuations in the current.
Another Point it that this black highly resistive Tube must be removed in minimum 1 cm, from the soldered connection.

With best Regards
Joerg

Subject: Re: HV cable problem

Posted by Herbert Stelzer on Mon, 29 Nov 2004 12:58:39 GMT
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Dear all,
we did some tests with the HV-cables we got from Heidelberg. The one labeled 'Bad' is really bad, the one 'Good' is much better, but I would not use it. The sample we used for the TPC behaves perfectly.
Regards
Herbert Stelzer

Subject: Re: HV cable problem
Posted by Clemens Adler on Fri, 14 Jan 2005 09:01:12 GMT
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Hello Chamber builders,
As reported at the last status meeting I got some 300m of HV cable from CERN in December, which behaved nicely: only at 6kV the cable started to draw some 10 nA. This cable was produced in week 42 of 2002, so it was rather old. (the cable we used so far was produced in 2003).
Now I got 700m more, unfortunately not the same production date as the good one from December but produced in 2004. I tested it and it seems to be OK up to 3kV at least, above it starts to draw some currents.
Again I would like to emphasize that it seems that those currents are not spraks trough the isolator but rather surface currents over the isolator at the ends of the cables. Therfore great care should be taken that the surface of the isolator is keep clean, possibly untouched during prepareing the cables. The manufacturer recommended clean the isolation with Alcohol, or benzin, but this never helped in our case.

cheers,
Clemens

Subject: Re: HV cable problem
Posted by Clemens Adler on Wed, 16 Mar 2005 13:41:46 GMT
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Hello everybody,
a little update on where we stand with the HV cable. I got 2 more 1000m rolls of the cable from CERN stock (production date week 5 of 2005). under HV it behaves well: 0 nA up to 4500V, then rising (40nA at 5000V). Therfore I consider this cable to be safe. We will keep the 2000m at Heidelberg for now, please ask me soon enough if you need more HV cable so we can ship some.

cheers
Clemens