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Subject: Anode Wire Problem Summary and Conclusion  
Posted by [Clemens Adler](#) on Fri, 11 Feb 2005 14:54:51 GMT  
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Dear Chamberbuilders,

After the discussion last week and with the information from Electron microscope pictures, we have some rolls of Anode wire, which were identified as unusable after the beginning of the roll was identified as 'good' at GSI.

Statistics are not yet really available, so far I know about 2 rolls in Dubna, where the wire is definitely missing gold plating. The REM images sent by Mihai show that there are some little pieces sticking out of the surface under very high magnification, at lower magnification the wire looks fine however, about the other rolls there is no information yet. GSI and Heidelberg has not seen bad anode wire yet (at least not a roll which was good at the beginning and became bad in the middle).

The quality of the anode wire that we buy (for everybody) is already the highest quality that Luma provides and that Herbert Stelzer knows of. This means that there is no option to invest money to buy better (or more quality controlled) wire.

This means that we have to live with the wire we have, which in turn means that some (additional) quality control step has to be taken:

The anode wire of every chamber has to be examined with an electron microscope.

The optimal procedure would be to look at the wire just after the winding finished, before gluing the wire onto the chamber. This might cause some delay in the production. I believe that it will not happen very often that the wire goes bad in the middle of a roll, so I think it might be justified to even glue the anode wire onto the chamber, before looking at the wire, if this is necessary. As long as the distance frame is not glued, an exchange of an anode wire grid is possible without too much effort (Oleg and we have some experience in this).

There are some indications like gold dust development during winding, which might be an indication for bad wire. However we had gold dust at Heidelberg for 2 rolls of anode wire, which were OK (under REM and under HV and in the test beam). This means that the fact that gold dust is developing is not necessarily an indication for bad wire.

When looking at some rolls of 'Bad' anode wire at GSI last week, it seemed that the bad wire was slightly duller compare to good wire. This is however also only a very weak indication (and only visible in comparison to good wire and not based on any significant statistics).

I would like to urge everybody to keep having an eye on the problem and to report anything they notice concerning the anode wire. I would also like to have all relevant information (e.g. dust development, different optical appearance etc.) with the roll number of the wire to finally get some idea of the severity of the problem.

Sorry for the long mail, but please read it carefully, so we can manage this problem.

To make sure that the relevant people have read this message I would like to ask Joerg Hehner, Mihai and Oleg or Yuri to send me a short notice that they got the message.

thanks and best regards,  
Clemens