

**From:** Miroslav Georgiev Atanasov  
**To:** [Inigo Lamas Garcia](#); [Wim Weterings](#)  
**Cc:** [Jan Borburgh](#)  
**Subject:** RE: TCDQ jaw info  
**Date:** 19 July 2016 07:22:00  
**Attachments:** [2013-06-12 11.07.33.jpg](#)

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Hello,

To try and answer your questions:

Dear Wim,

Pioneers indeed!, thanks a lot for the info! No doubts regarding the coating process and validity. Perfectly clear, is more or less the same procedure which we used to condition the TDI blocks.

Im very interested on knowing from Miroslav:

- the status of the graphite Cu coated TCDQ 2005 after operation

*NO observable damage, however a couple of blocks have shown some degradation (see attached pic) in the coating due to (we think) incorrectly controlled bakeout, and/or beam induced heating – we don't know for sure. One of these is now with the impedance people for a comparative analysis (together with a good looking old one, another old one that hasn't seen beam, and a brand new CfC one). Results are expected this summer.*

- the status of the upgraded TCDQ 2013 with Cu coated CFC after operation

*It's all working well so far, no perturbations have been observed impedance-wise during operation. Obviously we haven't had to open a tank, and so much the better!*

- the kind of beam impact-graze that they may have seen

*No grazing has been observed*

- the nominal design distance between blocks and beam

*Distance varies between injection (15mm) and top energy (4mm). See with C. Bracco about more details.*

- any test performed to these blocks after dismantling (I know that the fact that they are ionized material restricts this a lot).

*The tests are ongoing, but the crate with the rest of the old blocks is in b. 867, you can come and have a look after coffee, the activation is very low.*

I'll call Miroslav tomorrow with a coffee offer. Thanks and best regards,

Iñigo Lamas García

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Hope this helps,  
Miro

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**De:** Wim Weterings  
**Enviado:** lunes, 18 de julio de 2016 16:43  
**Para:** Inigo Lamas Garcia  
**CC:** Miroslav Georgiev Atanasov; Jan Borburgh  
**Asunto:** RE: TCDQ jaw info

Dear Ingo,

Indeed, the premiere is ours.

In 2005, the first TCDS and TCDQ had Titanium / Copper coated blocks, this was done by the CERN service (Wilhelmus VOLLENBERG) and the details are in document EDMS 544938 - Coating of TCDS and TCDQ absorber blocks.

In 2013 we did an upgrade of the TCDQ and again the block were Titanium / Copper coated, all details of this procedure in document EDMS 1337884 - Cu coating on CfC absorber blocks for TCDQ.

During the 2013 upgrade, I believe some block that have seen beam were removed from the structure, but Miroslav can give you more information since he was in charge of this upgrade.

I hope this information helps,

Greetings, Wim

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**From:** Inigo Lamas Garcia  
**Sent:** Monday, July 18, 2016 16:20  
**To:** Wim Weterings <[Wim.Weterings@cern.ch](mailto:Wim.Weterings@cern.ch)>  
**Subject:** TCDQ jaw info

Dear Wim,

It has come to my knowledge that the TCDQ absorber blocks are actually made of graphite SGL R4550 and that they are copper coated!

We are very much interested on this configuration (we thought that we, the TDI guys, were the first ones on trying this in the machine), would you have any info about the coating (deposition adherence, thickness) and the rugosity of the substart? It was sputtered?

Also, would you know the distance between the block and the beam while operation? Has the TCDQ had any grazing impact? Any info on the status of the coating after operation?

Thanks in advance and sorry for the fouling...best regards,

Iñigo Lamas García

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