



# Task 14.4. Review of actions and future outlook

ARIES WP17 Progress Report  
17 – November - 2020

<https://indico.cern.ch/event/975511/>

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On behalf of collimator materials R&D team at CERN

# Actions

## Status of task 14.4 (F. Carra)

- **Actions:**

- New luminescence screen for next year beamtime (avoid graphitization) (GSI/RHP)
- Check remaining budget from RHP (CuCD production target already reached)
  - Define geometry and test CuCD with Hopkinson bar (POLITO/CERN)
  - Simplified collimator block with Mo-cladded CuCD and samples for dynamic test( CERN/RHP)
- Update production summary of RHP (all samples, not only the ones shipped to CERN-GSI) (F. Carra)
- Carbide-Graphite to be manufactured (BREVETTI)
  - 1 MoGr plate with pitch
  - 25 Samples for Hopkinson bar → convert to another material to be defined shortly (Need inputs from WP17.2, CERN)
  - 1 big part to prove industrialization. To be defined shortly. (Need inputs from WP17.2, CERN)



Updates from Michael?



See next slide

# To be manufactured (Brevetti Bizz)

Formally this is the only missing deliverable for task 14.4

- One big part to prove industrialization: Tapering MG-6541Fc
  - 90.1%vol Graphite Asbury 3260
  - 4.4%vol Molybdenum
  - 0.5%vol Titanium
  - 5%vol short carbon fibres Cytek

- MoGr plate with pitch: MG-6671Fc
  - 85.1%vol Graphite Asbury 3260
  - 5%vol pitch Rutgers Carbores P
  - 5%vol short carbon fibres Cytek
  - 4.4%vol Molybdenum
  - 0.5%vol Titanium

BB offer n. 351-CE/18 (16/10/18), DAI 7518253 (WP17 budget)



First test with 20vol.% pitch exploded the mould!  
It happened at ~400°C (decomposition temperature)

- 25 Samples for Hopkinson bar → convert to another material
  - CG-1240B0 2<sup>nd</sup> trial

To be manufactured.  
Updates from  
Stefano?



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**Thank you for your attention!**

# WP14.4: production goals for ARIES

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- The **full scope of the production throughout 4 years** include:

- **Production objectives:**

- 30 samples of MgB<sub>2</sub> on metal substrate (28)
- 50 samples of CuCD (59)
- 40 samples of metal-diamond composite for luminescence studies (31)
- 50 samples of carbide-graphite or metal-graphite composites (61)
- 1 large size block of carbide-graphite or metal-graphite composite with tight mechanical tolerance to proof industrialisation (0% – R&D ongoing)



RHP

BrevettiBizz

- **So far so good!**



F. Carra - 14 July 2020

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