



# MQXFA07 Structure & Shims Review

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## US HL-LHC Accelerator Upgrade Project

### MQXFA07 Structure & Shims Review



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## 1. Goal & scope

The HL-LHC AUP project is starting the assembly of MQXFA07 magnet. This is the fifth and last pre-series magnet of the MQXFA low beta quadrupoles to be used in Q1 and Q3 for the High Luminosity LHC. If MQXFA07 meets MQXFA requirements [1] it will be used in a Q1/Q3 cryo-assembly to be installed in the HL-LHC.

MQXFA07 coils were reviewed on December 17, 2020 [2].

MQXFA pre-load targets and pre-loading sequence for MQXFA03 and following magnets were approved by AUP Technical Board on July 5, 2019 [3].

The goal of this review is to evaluate the MQXFA07 structure and shim plan. The reviewers are requested to assess that discrepancies and non-conformities of the magnet structure have been adequately processed, and that the shims will allow MQXFA07 to meet MQXFA requirements [1].

## 2. Charges

The committee is requested to answer the following questions:

1. Have discrepancies and non-conformities been adequately documented and processed?
2. If there are major non-conformities, have they been adequately documented and processed?
3. Are the proposed shims adequate for allowing MQXFA07 to meet MQXFA requirements [1]?
4. Is there anything that could prevent MQXFA07 to meet the MQXFA Interface Specification [4]?
5. Have all recommendations from previous reviews [5] been adequately addressed?
6. Do you have any other comment or recommendation to assure MQXFA07 is going to meet requirements?



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## 3. Technical information

### Committee

Peter Wanderer, chairperson (BNL)  
Mike Anerella (BNL)  
Rodger Bossert (FNAL)  
Susana Izquierdo Bermudez (CERN)  
Helene Felice, observer (CERN)

### Date and Time

January 21, 2021. Start time is 7/9/10/16 (LBNL/FNAL/BNL/CERN)

### Location/Connection

Video-link by Zoom, info by email.

### Link to agenda with talks and other documents

<https://indico.fnal.gov/event/47119/>

## 4. References

- 1) *MQXFA Functional Requirements Specification*, US-HiLumi-doc-36.
- 2) *MQXFA07 Coils Acceptance Review*, US-HiLumi-doc-3984.
- 3) *MQXFA03 pre-load targets and pre-loading sequence*, US-HiLumi-doc-2496.
- 4) *MQXFA Magnet Interface Specification*, US-HiLumi-doc-1674.
- 5) *MQXFA06 Structure & Shims Review*, US-HiLumi-doc-3719.