

RICH-WALL planning (update)

M. Alexeev & colleagues

Università di Torino & INFN Torino



Revised plans (February 2021)

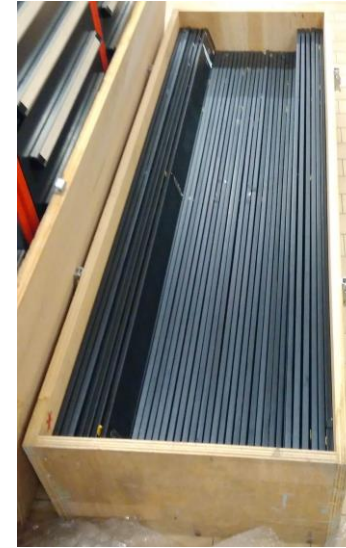
After numerous delays accumulated during the 2020 due to travel restrictions a new planning was proposed:

Short MDTs:	144
Long MDTs :	360
Total	: 504

- There will be no storage structures, all the tests will happen on individual MDTs
- The test will be simplified and reduced to the main goal of leaks repair
- The short MDTs will be moved to Turin to allow for the simple repairs
- In Turin the concept of repair will be tested
- No wire tension test will be performed (in Turin)
- Long MDTs will be tested at CERN with the validated method in a second moment
- We will receive consistent support from Dubna colleagues that would come to CERN
- We target is to be ready to move the RW in Run position by the end of 05.21/beginning 06.21

Test in Turin (March 2021) arrived

- ✓ The short MDTs did arrive to Turin on 04.03.21
- ✓ We prepared the minimal test infrastructure to perform the leaks test



Test and classification of all the available MDTs was concluded on 25.03.21:



8 short



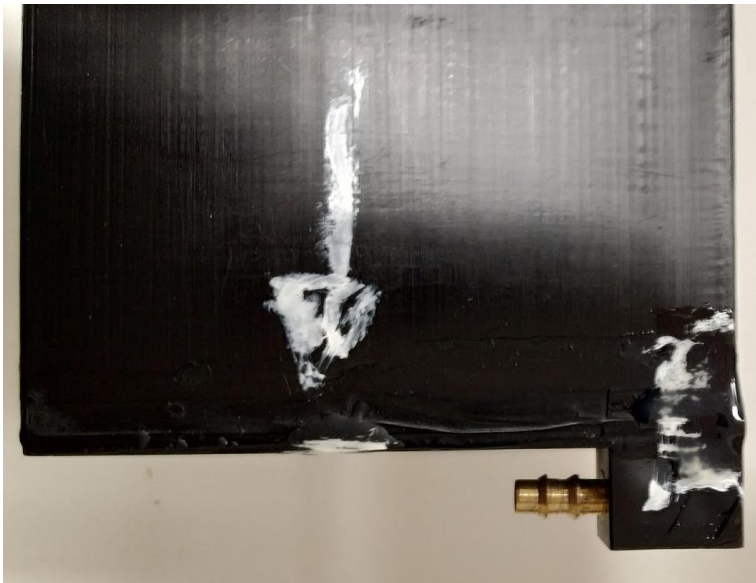
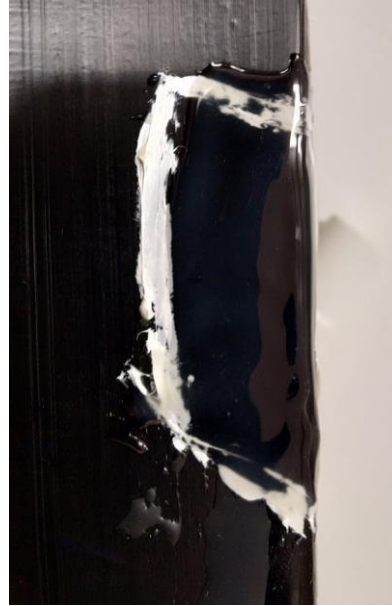
33 long (short)



6 badly leaking

Test in Turin (March 2021) repairs

- It was decided based on previous experience to use Araldite 2011 glue to seal the leaking areas



On 11.04.21 the last MDTs had been glued

04/05/2021

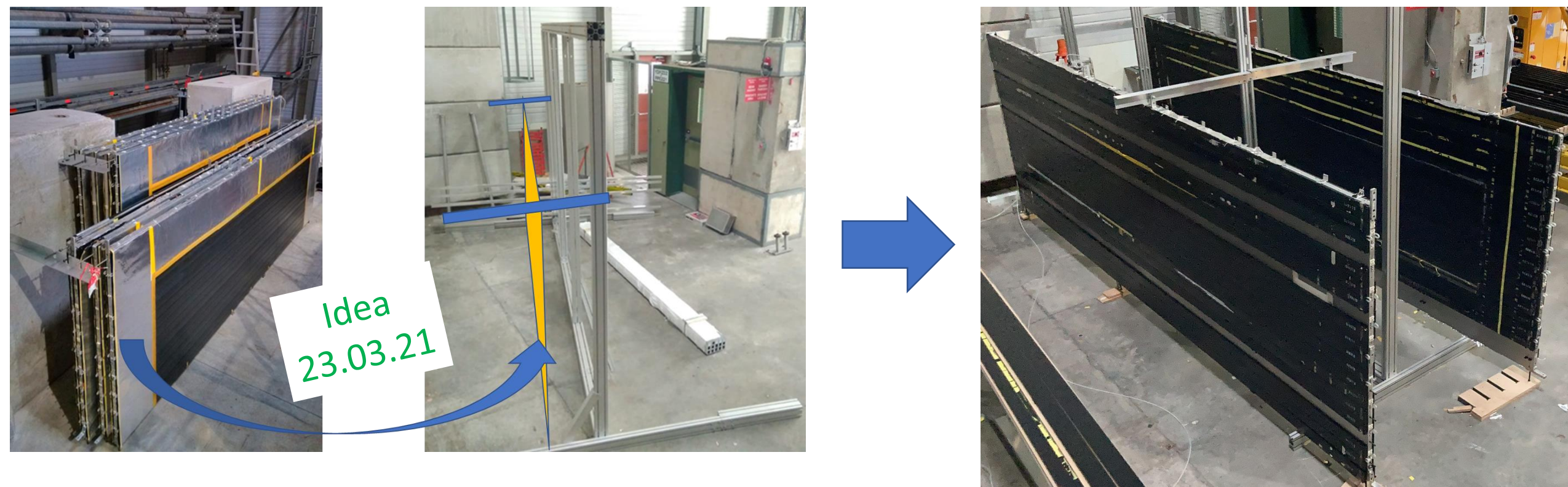
Test in Turin (March 2021) conclusions

- ✓ All the problematic MDTs were tested after the repairs with no leaks
- ✓ The material was prepared to be transported to CERN (The effective transport due to Covid limitation took place on [28.04.21](#))

On [21.04.21](#) our colleagues Chiara and Davide who mastered the repair operations at Turin travelled to CERN to start the test of the Long MDTs

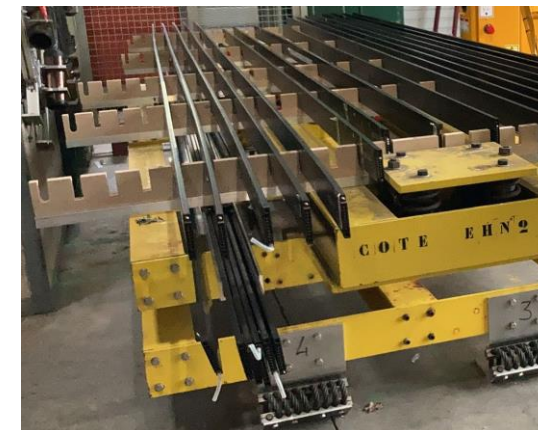


Test at CERN (April 2021) preparation



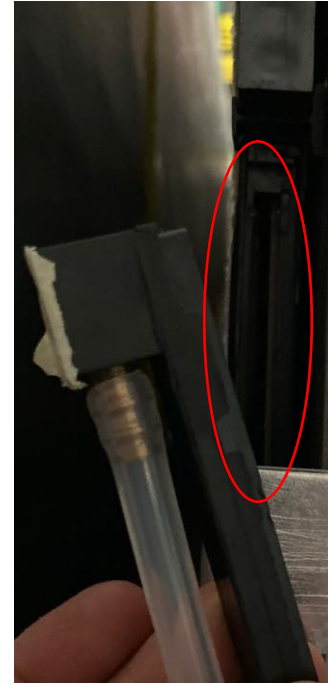
➤ We did receive great help from the COMPASS Technical coordinator and COMPASS technician.

✓ The support structure and the working table were remounted before our arrival at CERN letting for an immediate start of the work



Test at CERN (April 2021) testing

- ✓ The gas tightness test was performed on all the MDTs and concluded on 26.04.21
- We can see that some MDTs did report significant damage with broken end caps as seen in the red circles
- We also did find out that it is relatively easy to extract the MDTs from the panels. An extracted MDT is seen in the green circle



Result of the first inspection:

	Long long MDTs	Long short MDTs
Total tested	160	200
Failed the 4 min test	17	11
Damaged	9	2

Test at CERN (April-May 2021) intermediate conclusions

✓ On 02.05.21 the last “simply” leaking MDT was repaired

• Presently the we need to repair the 11 badly damaged and 4 with broken wires

• On 29.04.21 the colleagues from Dubna did arrive and will take care of those more problematic MDTs

• Additionally the wire tension test is planned on the most problematic MDTs and on sample of the remounted on the panel



Broken wires



Remaining MDTs



Broken end caps

Test at CERN plans

- We plan that by 10-20.05 all the problematic MDTs will be repaired and tested
- On 09.05 will arrive Aleksandr Samartsev who will overview the reassembly of the Richwall
- We plan to start on 17.05.21 the reassembly of the panels
- Around 20.05.21 we could be ready for the RW reassembly
- We would try to conclude this operation by 29.05.21
- ~1 more week would be needed to make a preliminary test of the MDTs after the assembly, to remount the gas and HV infrastructure and to mount the analog FEs



We could imagine to move the RW in beam position starting 07.06.21