

REPORT ON THE DISCUSSIONS OF THE FNAL MAGNET ACCEPTANCE COMMITTEE W/RESPECT TO LQXB08

The Fermilab magnet acceptance committee has reviewed the magnet assembly LQXB08 with respect to the acceptance criteria. A summary of the comparison between the results and the criteria are presented in the summary table.

The magnet acceptance committee concludes the magnet is ready to ship.

LQXB08 (MQXB03, MQXB13) ACCEPTANCE CRITERIA SUMMARY

Criteria	Description	Status	Resp. Party	Reported by
2.1.1	MQXB MECHANICAL TWIST AND STRAIGHTNESS	ok	rb	rb
2.1.2	MQXB COIL RINGING	done	sf	ah
2.1.3	THERMOMETER AND WARM UP HEATER INSTALLATION	ok	rb	rb
2.1.4	BUS WORK CHECKOUT	ok	rb	rb
2.1.5	ROOM TEMPERATURE HIPOT	ok	ml	ah
2.1.6	ROOM TEMPERATURE ELECTRICAL CHECKOUT	ok	ml	ah
2.1.7	PRESSURE TEST DOCUMENTATION	done	tn/tp	tp
2.1.8	LEAK CHECK DOCUMENTATION	done	tn/tp	tp
2.1.9	CRYOSTAT SAFETY DOCUMENTATION	done	tn/tp	tp
2.1.10	PIPE ASSEMBLY DOCUMENTATION	done	tn/tp	tn
2.1.11	WARM CRYOSTAT TO MAGNETIC AXIS REFERENCE	done	ps	ps
2.2.1	COLD INSTRUMENTATION CHECK OUT	ok	ml	ah
2.2.2	COLD HEATER CHECKOUT	ok	ml	ah
2.2.3	COLD ELECTRICAL HIPOT	ok	ml	ah
2.2.4	NO QUENCHING UP TO AND INCLUDING OPERATING GRADIENT (AFTER TRAINING)	done	ps	ps
2.2.5	NO TRAINING DEGRADATION AFTER FULL ENERGY DEPOSITION TRIP (SEE ABOVE)	dropped from test plan	ps	ps
2.2.6	TRANSFER FUNCTION	pass*	ps	ps
2.2.7	INTEGRATED COLD HARMONICS	pass	ps	ps
2.2.8	COLD ALIGNMENT	accept*	ps	ps

* see comments below

COMMENTS:

LQXB08 includes quadruples MQXB03 (Q2a), MQXB13 (Q2b) and corrector HCMCBX_001-SI000019.

2.1.10: For all the lines that are out of tolerance, neither the assembly of the interconnect flanges on the neighboring magnet assembly (including the interconnect pipe section which spans the ~1m gap between the two), nor the allowable motion due to the desired alignment of the magnets in the tunnel, nor the lifetime of the bellows associated with each individual tube are expected to be limited.

2.2.6 Integral field strength is 1.5σ low.

2.2.7 Harmonics between the 2 and 3 sigma acceptance bands at collision: none; greater than 3 sigma: none.

2.2.8

as measured

relative x, y average axes (2.5, 2.9 mm > 0.5); pitch, yaw (-0.73, -0.25 mrad > 0.1)

expected "as installed"

relative x, y average axes (1.6, -0.8 mm > 0.5); pitch (0.41 mrad > 0.1); a1 corrector roll (-6 mrad > 5)