

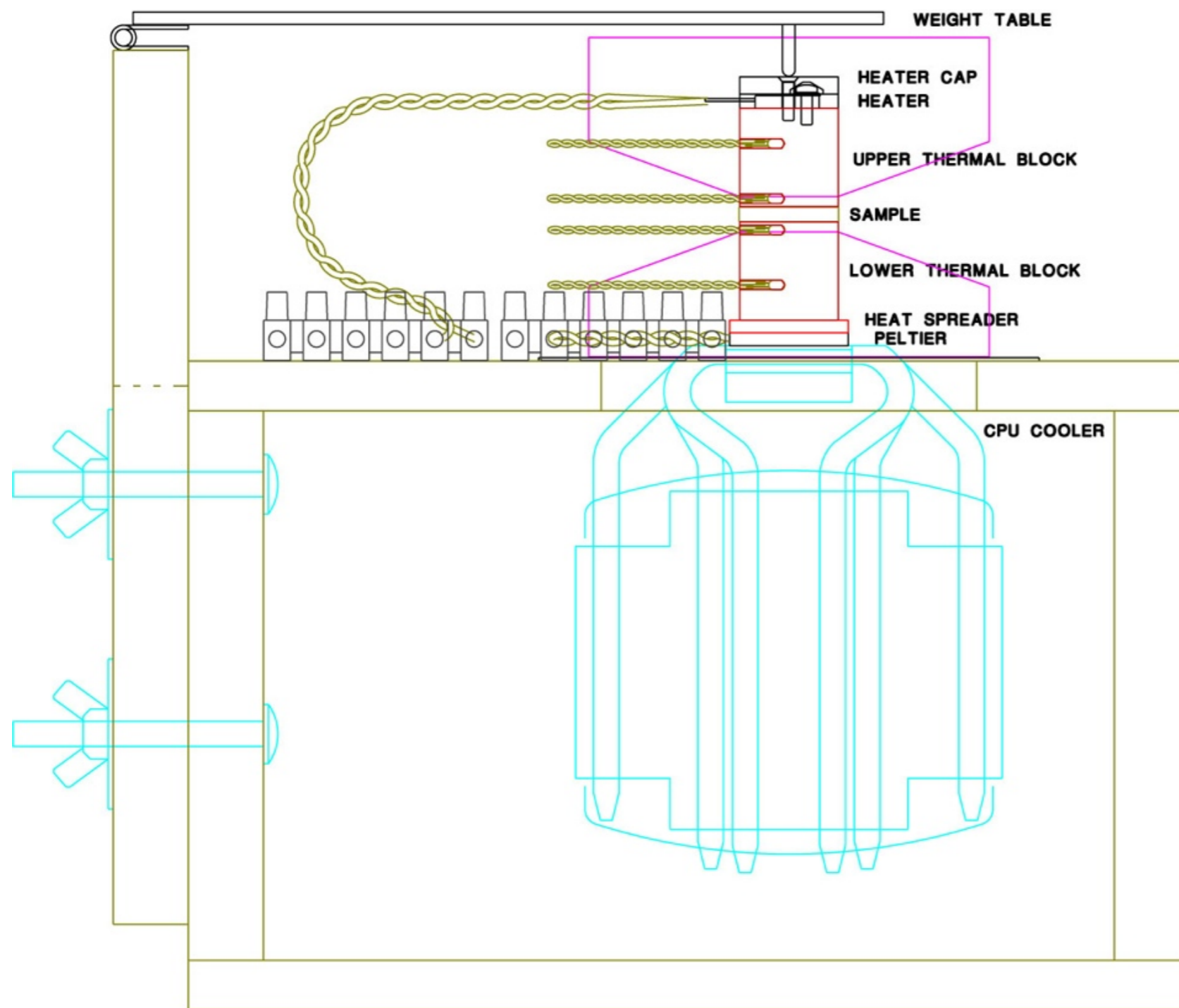
Thermal testing

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Apparatus under construction



3 sets of thermal blocks:
AL, SS, Ti

THERMAL TESTER
BH 07/23/14
SCALE 1:1.5

Glue dispensing examples



Air bubbles



Question:

CF thickness

Parameters:

Nozzle size

Line spacing

Dispenser speed

Appropriate cure
pressure

Expected thermal conductances

Material	L, thickness [m]	A, Cross Section [m ²]	k, expected thermal conductivity [W/(m-K)]	Expected Thermal Conductance, k*A/L	comment
Al (pure)	0.003	0.000625	205	42.71	
Al (alloy)	0.003	0.000625	167	34.79	
Carbon Foam	0.003	0.000625	26	5.42	
Carbon Fiber (low k)	0.0005	0.000625	21	26.25	
Carbon Fiber (high k)	0.0005	0.000625	180	225.00	
Epoxy 50 um	0.00005	0.000625	0.2	2.50	std. value for calculations
Epoxy 100 um	0.0001	0.000625	0.2	1.25	double thickness
G10	0.0015	0.000625	0.25	0.10	
Stacks					
Al-Epoxy50-Al (Alloy)				2.19	
G10-Epoxy50-G10				0.05	
Cfoam-Epoxy50-Cfoam				1.30	
Cfiber-Epoxy50-Cfiber				2.45	high k Cfiber
Cfiber-Epoxy50-Cfiber				2.10	low k Cfiber