



Sample production report

Version : 01

Date : 16/04/2024

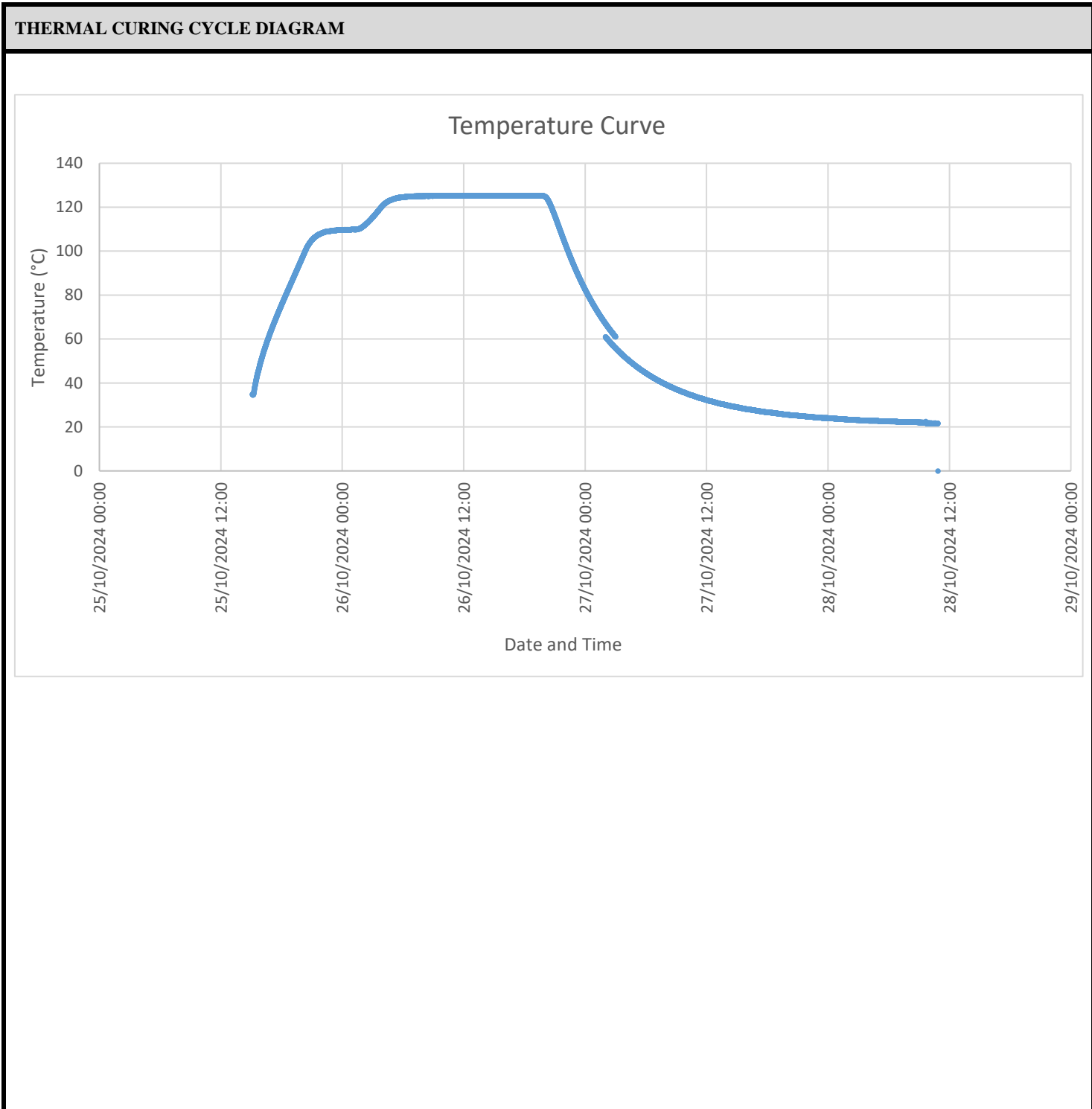
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**CTD 101K reinforced with S2 glass 636 (thermal desizing at 420 °C during reaction cycle)  
Curing 5h @110°C + 16h @125°C  
0.5 mm plate**

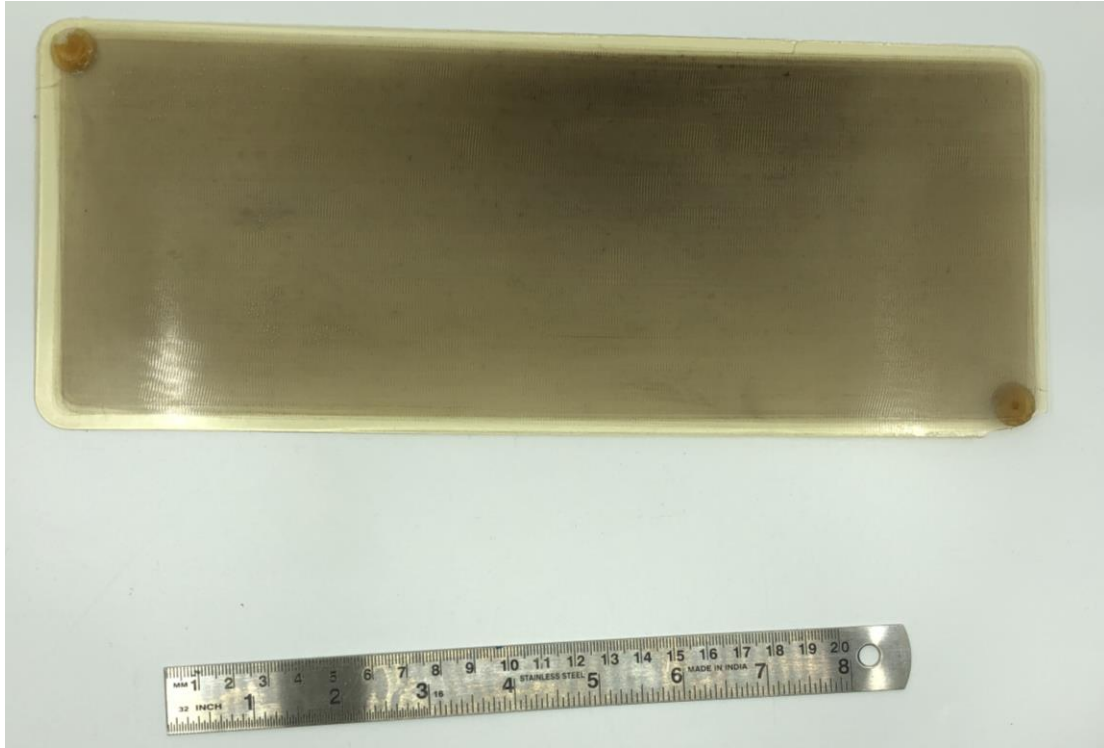
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**Controlled by:** Roland Piccin, TE-MS-C-SMT

PHYSICAL PARAMETERS			
SAMPLE MATERIAL		CTD 101K epoxy resin	
NOMINAL SAMPLE DIMENSIONS		120 mm x 300 mm x 0.5 mm	
SAMPLE FABRICATION METHOD		Vacuum impregnation	
RESIN CONSTITUENTS			
NAME	AMOUNT (g)	BATCH N° / LOT N°	START TIME OF MIXING
CTD 101K part A	200.0	7451-059 / B2307010	25/10/24 09:18
CTD 101K part B	180.0	7451-059 / B2309001	25/10/24 09:18
CTD 101K part C	3.0	7447-109 / B2010014	25/10/24 09:18
COMMENTS    Quantity for this plate and for a 10-stack			
OTHER CHEMICALS USED IN PROCESS			
NAME	BATCH N°		
Chemlease 2298	P00172790001		
FIBER REINFORCEMENT		BINDER	
FIBRE NATURE (TYPE, THICKNESS, LAYERS)	AGY S2-Glass, 11 Tex 0.05mm, 10 layers	BINDER TYPE	
BATCH N°		BATCH N°	
SIZING	636 (Starch-oil)	QUANTITY OF BINDER PREPARED / APPLIED (σ)	
HEAT-TREATMENT (TEMPERATURE, STEPS, GAS)	2h@420°C in Air (50°C/h ramp), then 48h @650°C in Argon (50°C/h ramp)	CURING CYCLE	
COMMENT	Thermal desizing during heat treatment		
DEGASSING			
TEMPERATURE (°C)	MIN. PRESSURE (mbar)	START TIME	DURATION
60	0.22	09:24	20 minutes
DEGAS CHAMBER	B771 Degassing Chamber (Produced at CERN)		
COMMENTS			
VACUUM IMPREGNATION			
TARGET TEMPERATURE (°C)	MIN. PRESSURE (mbar)	START TIME	DURATION
60	2.1 x 10 <sup>-2</sup>	09:45	4h30
VACUUM CHAMBER	B771 Bell Vacuum Chamber (Produced at CERN) MFHX 72-028		
COMMENTS	Using silicon tubes (PVC tubes max working temperature is 60deg). 2 minutes for resin to traverse plate and arrive to reservoir. Vacuum cut at 11:25 for milking and resumed at 11:30 .		

THERMAL CURING CYCLE			
NOMINAL THERMAL CURING CYCLE	RECORDING INSTRUMENT	START TIME	MAX. TEMPERATURE (°C)
5h @110deg + 16h @125deg	Testo 176T4	28/10/24, 15h00	125
FURNACE	Mettert UF260+ [MFHX72-084]		
COMMENTS			
SPECIAL OBSERVATIONS / ADDITIONAL COMMENTS			
Autumn hour change occurred during thermal cycle; clocks were turned back 1 hour at 3am on 27 October.			



PHOTOGRAPH OF PRODUCT



PHOTOGRAPHS OF EQUIPMENT AND CHEMICALS



Figure 1: accelerator, hardener, resin



Figure 2: degasser



Figure 3: vacuum chamber



Figure 4: Furnace

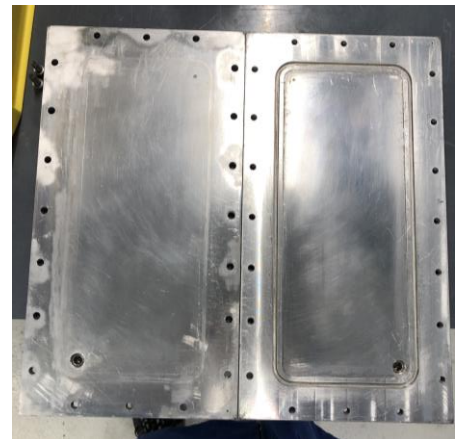


Figure 5: Mould