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Building Integrati	on of Solar Therm	al Systems -	- TU1205 – BISTS		
Dacia	+horm		omicc		
DdSIC	, thermo	Juyn	diffics		
	kJ/L kJ/kg comment				
sensible heat					
granite	50	17	∆T=20°C		
water	84	84	∆T=20°C		
latent heat					
ice	300	330	0°C		
paraffin	180	200	5°C to 130°C		
salthydrate	300	200	5°C to 130°C		
salt	600 - 1500	300 - 700	300°C to 800°C		
chemical energy					
H gas	11	120000	300K, 1bar		
H gas	2160	120000	300K, 200bar		
H liquid	8400	120000	20K, 1bar		
gas (petroleum)	33000	44600			
electrical energy					
battery		200	zinc/manganeseoxide		
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European Cooperation in the field of Scientific and Technical Research Building Integration of Solar Thermal Systems – TU1205 – BISTS							
 Passive building applications Brick envelope with macroencapsulated PCM 							
 Alveolar brick: – Alveolar: No insulation – SP25+Alveolar: CSM – papels (SD 25 A9) inside 							
Hydrated salt SP-25 A8 Parties (SP-25 A6) Inside							
Melting point (°C)	26	the cudicle					
Congealing point (°C)	25						
Heat Storage Capacity (kJ/kg)	180						
Heat conductivity $(W/m \cdot K)$	0.6	_					
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	ding Integration	the field of Scientific and Tec	chnical Research ystems – TU12	O5 – BISTS	www.cost.esf.org			
Passive building applications								
 Brick envelope with macroencapsulated PCM. Controlled temperature experiments 								
Energy		Energy Consumption ¹ (Wh)	Energy Savings ² (Wh)	Energy Savings ² (%)	Improvemen t ³ (%)			
Set point @	Reference	9376	0	0	-			
24 °C	PU	4583	4793	51.12	0			
	RT27+PU	3907	5469	58.33	14.75			
	Alveolar	5053	4323	46.11	0			
	SP25+Alveolar	4188	5188	55.33	17.12			
	¹ Set point of 24 °C during 5 days							
	² Referred to the Reference cubicle							
³ Referred to the cubicle with analogue constructive solution and without PCM								
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051	Building	an Cooperation in the g Integration o	field of Science f Solar T	entific and Technical Research	J1205 – BISTS	www.cost.esf.org		
DHW solar energy with PCM								
• University of Lleida								
	N ^o modules	PCM mass (kg)	IPF (%)	Energy density increase (%) $(\Delta T = 1 \text{ K})$	Energy density increase (%) (ΔT = 8 K)			
	2	2.1	2.05	40	6			
	4	4.2	4.1	57.2	12			
	6	6.3	6.16	66.7	16.4			
IPF: PCM volume/tank volume								
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