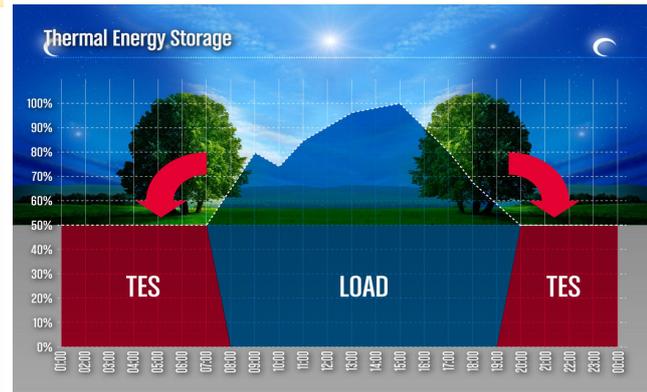


Thermal Energy Storage (TES) is the temporary storage of high or low temperature energy for later use. It bridges the gap between energy requirement and energy use. A thermal storage application may involve a 24 hour or alternatively a weekly or seasonal storage cycle depending on the system design requirements. Whilst the output is always thermal, the input energy may be either thermal or electrical.



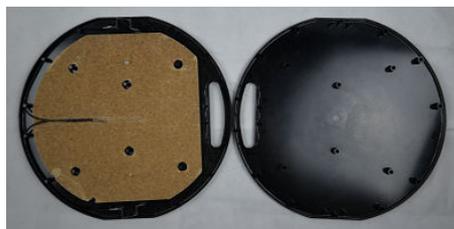
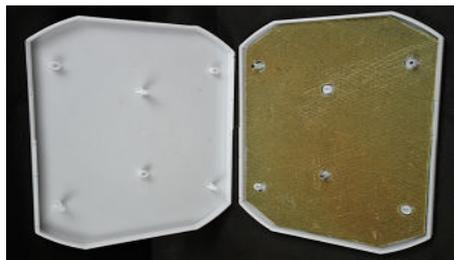
Phase Change Materials (PCMs) are products that store and release thermal energy during the process of melting & freezing (changing from one phase to another). When such a material freezes, it releases large amounts of energy in the form of latent heat of fusion, or energy of crystallisation. Conversely, when the material is melted, an equal amount of energy is absorbed from the immediate environment as it changes from solid to liquid.

## BoardICE

In a majority of the applications, PCM solutions have to be encapsulated in sealed containers. PCM Products Ltd. have developed many different standard as well as custom-made containers over two decades for special applications. The latest addition to this range is our revolutionary BoardICE product. This new technology utilises a natural fibre board as the encapsulation material, which is then infused with our A range organic PCM solutions. Once the infusion process has taken place the natural fibre board is then compressed into a solid board, whereby the final product can be loaded with as much as 70% PCM solution. The compression ensures optimum PCM coverage within the board, thus improving the thermal storage capacity.



Once the PCM has been completely absorbed within the BoardICE sheets they can be cut and shaped to suit any applications. As the boards are loaded with non-water based organic solutions they tend to be waterproof. In principal, the boards can be manufactured as large as 1.22m (4') x 2.44m (8') dimensions and the standard thickness would be 12mm (1/2") and the relevant capacity, weight and cost details are attached in BoardICE table on the next page.





## BoardICE Table

PCM Type	Loading		Weight		Cost	
	kWh/m <sup>2</sup>	MBtu/ft <sup>2</sup>	kg/m <sup>2</sup>	lbs/ft <sup>2</sup>	£/m <sup>2</sup>	US\$/ft <sup>2</sup>
A95	1,256	4,284	27	60.5	161.05	24.69
A82	897	3,059	26	57.8	110.83	16.99
A70	1,048	3,575	27	60.0	107.00	16.40
A62	898	3,064	28	61.1	109.26	16.75
A60H	1,154	3,938	25	55.1	130.18	19.96
A60	898	3,064	28	61.1	109.26	16.75
A58H	1,356	4,627	25	56.2	133.27	20.43
A58	817	2,789	28	61.1	109.26	16.75
A55	831	2,837	28	60.8	108.69	16.66
A53H	915	3,122	25	55.7	131.72	20.19
A53	805	2,747	28	61.1	109.26	16.75
A52	1,224	4,176	25	55.7	131.72	20.19
A50	1,202	4,100	25	55.7	131.72	20.19
A48	1,290	4,401	25	55.7	131.72	20.19
A46	960	3,275	28	61.1	109.26	16.75
A44	1,326	4,524	25	55.4	130.95	20.07
A43	876	2,988	25	54.0	127.09	19.48
A42	647	2,207	28	60.8	161.91	24.82
A40	1,268	4,326	25	55.7	111.88	17.15
A39	643	2,194	27	60.5	161.05	24.69
A37	1,295	4,420	25	55.7	86.08	13.20
A36	1,167	3,981	25	54.6	128.64	19.72
A32	748	2,551	26	57.6	151.62	23.24
A29	1,246	4,251	25	55.7	115.85	17.76
A28	832	2,840	25	54.5	128.48	19.69
A26	806	2,752	25	54.6	128.64	19.72
A25H	1,246	4,251	25	55.7	131.72	20.19
A25	801	2,734	25	54.3	141.33	21.66
A24	780	2,660	25	54.6	161.54	24.76
A23	775	2,643	25	54.3	160.56	24.61
A22H	1,205	4,113	25	56.2	87.06	13.35
A22	775	2,643	25	54.3	160.56	24.61
A17	801	2,734	25	54.3	160.56	24.61
A16	1,102	3,759	24	53.0	124.01	19.01
A15	699	2,385	25	54.6	161.54	24.76
A9	738	2,519	24	53.8	126.32	19.36
A8	789	2,692	24	53.7	126.01	19.32
A6	786	2,682	24	53.5	125.55	19.25
A4	1,043	3,557	24	53.3	124.93	19.15
A3	1,041	3,553	24	53.2	124.78	19.13
A2	1,041	3,553	24	53.2	124.78	19.13

PCM Products has a policy of continues product and product data improvement and reserves the right to change design and specifications without notice

### TECHNICAL SUPPORT

PCM Products offer full system design support to assist in proper selection and integration into existing or new installations as part of our customer commitment.

We offer full consultancy on product development on a strict confidentiality basis and the possibility of Licensee options for local manufacturing. Please consult our technical sales team at [sales@pcmproducts.net](mailto:sales@pcmproducts.net) for your specific application or visit our web site [www.pcmproducts.net](http://www.pcmproducts.net)

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