



ENERGY MASS™ WALL SYSTEMS

Cold Storage bullet points

Structural finite element modeling and physical testing at the University of California, Berkeley predicts the highest code level (category IV) earthquake performance for the Energy Mass™ wall. This level is required for fire stations and hospitals which must remain operational after an earthquake. Advanced energy modeling, based on ASHRAE heat transfer functions and one year of energy data from a beta-site predicts that the Energy Mass™ system will save 60% of the energy costs over standard cooler construction.

Structural and energy performance occurs because:

1. The Energy Mass™ concrete structural wall uses only 6 inches of reinforced concrete but its precise geometry is 30 times more resistant to seismic forces than a standard 6" concrete bearing wall.
2. The Energy Mass™ wall has an inherent insulation R-Value of 100, which is 3 ½ times California's title 24 requirements for a refrigerated warehouse.
3. The Energy Mass™ exterior concrete thickness is sized to capture the daytime heat and solar energy, delay its entry into the building, and re-radiate to the cooler night environment. A low mass insulated panel cannot do this.
4. The interior concrete element of the Energy Mass™ wall is "charged" below room temperature by the refrigeration system using non-peak utility electrical energy
5. Using proprietary technology, the stored refrigeration energy is harvested to maintain the room temperature during utility peak hours each day.
6. This technology allows the refrigeration system to operate during the cooler portions of each day, improving overall energy efficiency.
7. The heat transfer fluid is an extremely efficient natural substance with low viscosity, high mass and high specific heat. This results in heat transfer parasitic losses one tenth that of standard systems.
8. Newly developed fan blade profiles and ECM motors reduce the air moving energy of the room coolers by 50% compared to code standard.
9. Proprietary control algorithms minimize system energy use while maintaining product storage temperature parameters.

The Energy Mass™ wall system qualifies for (1) PG&E "savings by design" at the highest level of funding, (2) PG&E's annually distributed rebate for thermal load shifting -- "demand response" program, (3) the Federal USDA - Rural Energy for America Program, and (4) Federal tax credits.

For more information contact:

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