

BESS COMMISSIONING

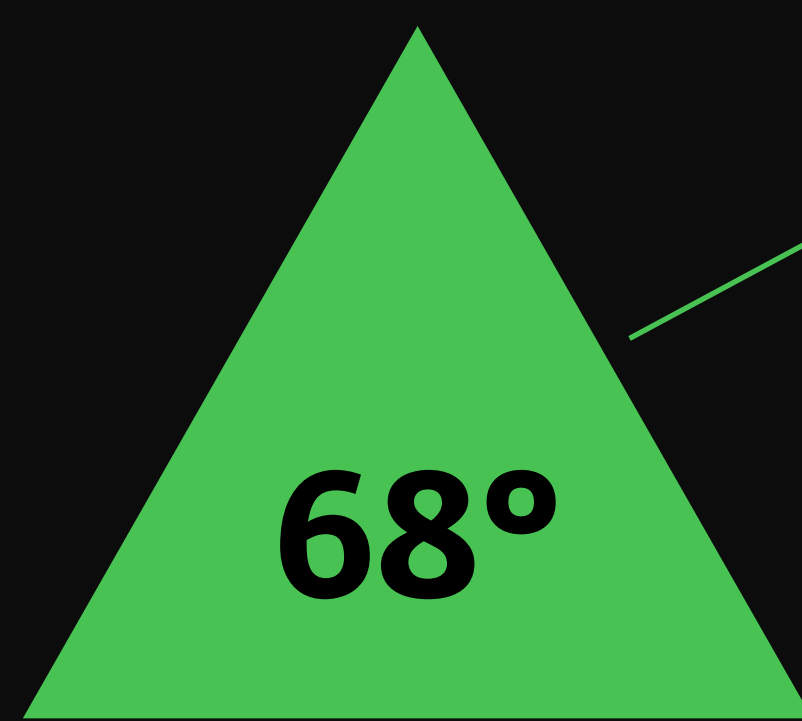
Via AIR LEAKAGE TESTING

This is the size of the combined air leakage openings in your BESS container*

*9" x 9" is the average combined air leakage openings of containers tested for air leakage by author.

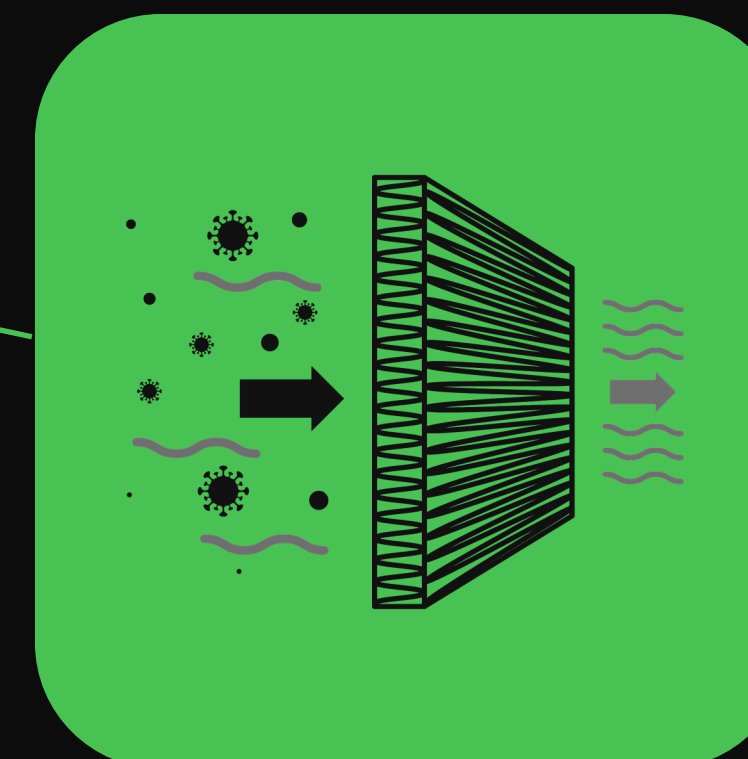
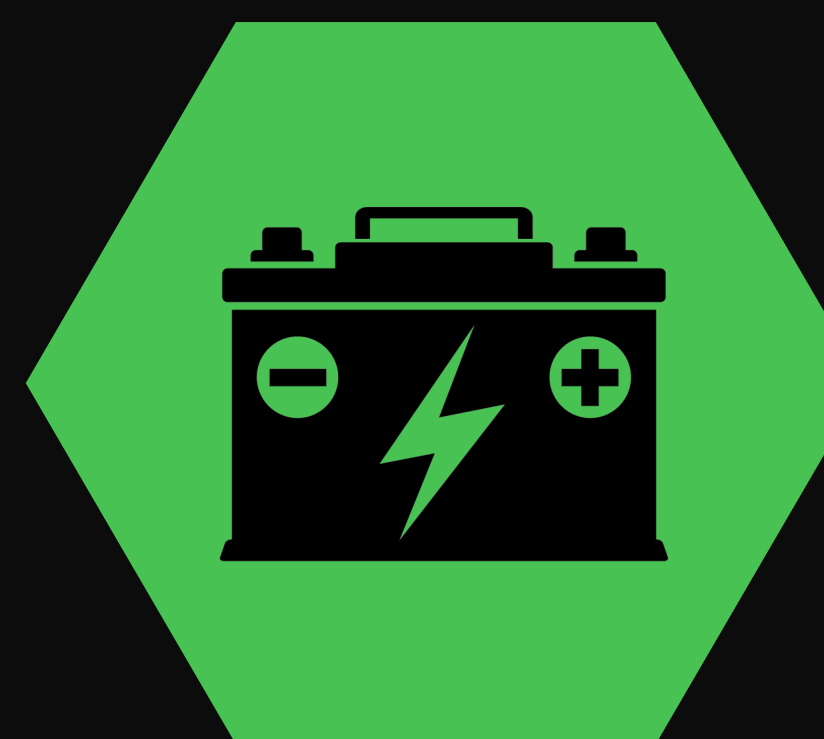
It should be 34% less leaving only the necessary openings for design ventilation

The Great Pyramid of Giza was built 4,600 years ago and holds a constant year-round temperature of 68 degrees Fahrenheit; Does your BESS container do the same In 2022?



The Great Pyramid of Giza was built with limestone which has a Thermal conductivity of 1.3 W/(m·K). BESS containers are made of in steel which has a thermal conductivity of 50.2 W/(m·K).

Stationary battery life expectancy in number of discharge/charge cycles is dependent on effective thermal control. An airtight container maintains a constant 68 degrees at a lower HVAC system cost. BESS containers that are sealed to meet or exceed the USACE airtightness standard of 0.25 CFM75/sq ft can reduce their typical openings by 34%.



Unintentional openings in BESS containers feed dust and moisture particles directly into the BESS container while bypassing the HVAC filtration system.

The Department of Energy (DOE) study* predicted that the potential for annual heating and cooling energy-cost savings in structures with an effective air barrier will reduce energy expenses by as much as 1/3rd.

*Emmerich, S., McDowell, T. and Anis, W. (2005). Investigation of the Impact of Commercial Building Envelope Airtightness on HVAC Energy Use, NIST Interagency/Internal Report (NISTIR), National Institute of Standards and Technology, Gaithersburg, MD, [online], https://tsapps.nist.gov/publication/get_pdf.cfm?pub_id=860985 (Accessed June 9, 2022)



Fire control requires preemptive action to reduce unnecessary openings to the minimum. Fresh air accelerates as it passes through small opening which can turn a small fire into a conflagration, negating the benefits of a closed container.

Associated electrical components and connections require a low moisture and dust count.

Air leakage testing of a typical BESS container will reveal that if the air leakage sites were combined into a single opening, the hole in the container would equal a 9" x 9" unintentional opening. In technical terms, that container would have a 9" x 9" Equivalent Leakage Area (EQLA). Commission each BESS project to verify units are meeting or exceeding the USACE standard of 0.25 CFM75/sq ft after delivery and prior to project turnover.

What's your EQLA?



The business of battery storage depends on thermal management, plus moisture and dust control for the longevity of batteries and their associated components while simultaneously being proactive in responsible fire control.

BESS Commissioning keeps the outside out and the inside in