Battery Abuse and Pressure Kit (BAP)

THT product code = ARCSYS-BAP

The Battery Abuse and Pressure Kit comprises:

- External pressure battery tank + associated internal and external fittings
- 2 x bomb thermocouples with associated fixings
- Internal pressure fittings: 4 x performed tubes, internal associated tubing, external associated connections, High temperature epoxy adhesive
- Nail Penetration test fittings: Calorimeter base mount + associated fittings, Nail rod and spare tips, feed through tubes and associated connections.
- Interchangeable tips and support brackets for penetration/crush tests
- Note: A dry box is required (not supplied) for internal pressure cell set-up

The Battery Abuse and Pressure Kit (BAP) is an additional pack which provides the necessary tools for carrying out a wide variety of abuse tests.

A battery canister (Figure 2) is provided to allow external pressure measurements to be collected while thermal measurements are made directly on the battery rather than on the external holder. This therefore allows for good thermal data to be obtained along with battery external pressure. Collection of gas from the canister is also possible.

Internal pressure measurements can also be made using this kit (see example below).

Please note this requires use of a dry box (not provided).
Manual nail penetration tests are also performed using this pack (Figure 1). Nail penetration test set-up is simple. The battery is strapped to the base holder which in turn connects to the bottom of the calorimeter. The Nail Penetration hardware is then connected through the lid of the calorimeter.

The test is then set-up. Ideally an isothermal test is used. The cell is heated to the required temperature of penetration. Once the temperature is stable the user can hammer the nail penetration shaft externally. Upon completion of this the user will shut the blast door and allow the test to proceed. Caution is advised.

**Example: Internal Pressure Measurement**

A standard HWS test was carried out with the internal pressure line connected (Figure 4).

Figure 3 shows the test data from a standard HWS protocol. Interesting data is obtained as, compared with external pressure measurements, the pressure builds from test start and internal pressures at varying temperatures can be observed.