

# TF4 Chinese proposal about “REESS”

# 1. Water immersion

## 1.1 Purpose

Simulates a water immersion which may occur when vehicle is flooded.

## 1.2 Test procedure

Adjust the SOC to the fully charged states.

Immerse the DUT in ambient temperature salt water (5% by weight NaCl in H<sub>2</sub>O) for a minimum of 2 h or until no visible reactions occur. The water depth must be enough to completely submerge the DUT. The DUT may be placed into a tank filled with salted water or may be placed in an empty tank and then salted water pumped into the tank to fully submerge the DUT.

DUT can be tested by vehicle emulated condition (e.g. battery pack with actual part of vehicle).

## 1.3 Requirements

During the test and for a 1 hour post-test observation period, the battery system shall exhibit no evidence of fire or explosion.

NOTE: If a battery is immersed in conductive water, flammable or toxic gases can be produced.

This effect is not unique to lithium ion battery technology.



## 2. Drop Test

### 2.1 Purpose

Simulates a mechanical impact load which may occur at an unintended drop during battery exchange or reparation.

This test is only for removable battery.

### 2.2 Test Procedure

Adjust the SOC to the fully charged states.

Fall down DUT freely from height 1m to the concrete floor, one time for each side. Or, each sample is to be freely dropped from a height of 1 m on a flat surface made of concrete in the position that is most likely to produce the most adverse result. Each sample

### 2.3 Requirements

During the test and for 6 h post-test observation period, the battery system shall exhibit no evidence of leakage, fire or explosion.



## 3. Rotation Test

### 3.1 Purpose

a DUT shall be subjected to a 360° rotation to simulate an overturned vehicle.

### 3.2 test procedure

the sample shall be rotated one complete revolution for one minute in a continuous.

then rotate the DUT in 90° increments for one full revolution. observe the DUT for one hour at each position.

### 3.3 Requirements

during the test and for 1h post-test observation Period, the battery system shall exhibit no evidence of leakage, fire or explosion.



Thank You !