1. Applicability

This specification is applicable to Bonrex battery produced with LR6 zinc-manganese super alkaline battery.

2. General

2.1 Type designation

IEC LR6

JIS AM-3

ANSI AA

2.2 Reference Document

IEC 60086-1:2011---Primary Batteries- Part 1: General

IEC 60086-2:2011---Primary Batteries- Part 2: Physical and electrical specifications

IEC 60086-5:2011---Primary Batteries- Part 5: Safety of Batteries with aqueous electrolyte

2.3 Chemical system

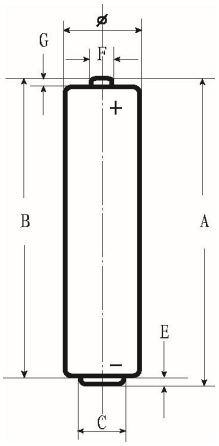
Zn/KOH/MnO_2 (Mercury & Cadmium Free)

2.4 Nominal voltage: 1.5 V

2.5 Weight: approximate 23.1g

2.6 Dimension (mm)

	Min	Max
Φ:.....	13.9	14.3
A:.....	49.4	50.4
B:.....	49.2	50.2
C:.....	9.0	9.4
E:.....	0.1	0.5
F:.....	5.3	5.5
G:.....	1.2	1.8



2.7 Heavy metal contents

Mercury max 1 ppm / battery

Cadmium max 5 ppm / battery

Lead max 10 ppm / battery

2.8 Capacity

Approximate 2700mAh (25mA, 20℃±2°C, 0.8V cut off)

2.9 Operating Temperature: -20℃~70℃

3. Appearance

The products shall be free from dents, scratches, corrosion, contamination, or disfigurations, which affect service and sale ability.

4. Electrical Characteristics (3.9Ω, 0.3S, 20+2°C)

/	OCV(V)	CCV(V)	short-circuit current(A)
Initial	1.61	1.51	13
Storage 1year	1.58	1.47	10

5.Discharge Capacity (20±2°C, RH: 45%-75%)

load	3.9Ω	24Ω	250mA	3.9Ω	1.5w	1000mA	100mA	3.3Ω	43Ω
discharge mode	24h/d	15s/min, 8h/d	1h/d	1h/d	Pulse_A*	Pulse_B*	1h/d	4m/h,8h/d	4h/d
end voltage	0.9V	1.0V	0.9V	0.8V	1.05V	0.9V	0.9V	0.9v	0.9V
Initial	360min	46h	450min	450min	75 times	450 times	22h	320min	93h
storage 1 year	320min	42h	430min	425min	65 times	410 times	19.8h	280min	90h

Pulse_A* :(1500mW2s,650mW28s)10T/h,24h/d

Pulse_B*: 10s/m,1h/d

*Discharge curve see appendix 1

6. Leakage Resistance

6.1 Over discharge leakage test

Test conditions: 20±2℃ & RH 60±15%, 10Ω continuous discharge 48h.

Number of test samples: 9 batteries

Requirement: No visible leakage; No explosion.

6.2 High temperature leakage test

Test conditions: store 40 days under 70±2℃, then store 4~24h under standard environment.

Number of test samples: 24 batteries

Requirement: No visible leakage; No explosion.

7. Security Characteristics

7.1 The delivered batteries stored under normal non-air conditioned environments shall not have electrolyte leakage during the guarantee period.

7.2 Over discharge:

When the batteries are discharged under the conditions of specified load, until the on-load voltage falls to 0.6 V, no leakage or explode shall occur, in accordance with IEC 60086-5:2011 requirement.

7.3 External short circuit:

The terminal of an un-discharged battery is connected by wire. The circuit is completely for 24hours or until the case temperature has return to environment. with the course, the battery will not leakage or explode.

7.4 Incorrect installation:

4 pieces of battery are in series connected and one of them is under incorrect polarity for 24 hours or until the case temperature has return to environment. with the course, the battery will not leakage or explode.

7.5 For further Security acceptance tests are to be agreed between bonrex and purchaser.

8. Expiry Period

5 Years

9. Expiry Date Marking

9.1 Production date marked on the bottom plate of finished cells. for example: 2019-02 means produced on Feb. 2019

Shelf life 5 years marked on bottom of sticker label.

9.2 For private label, can mark according to customer's requirements.

10. Package

The package can be packed according to customer order’s detail requirement.