Status of the National Standard for Hearing Protection in China

Hufen Yang, Yufei Liu, Hongjuan Liu, Xiangming Fang, Mar. 15, 2014
Historical Review of Chinese Standards for Hearing Protection Devices (HPDs)

- **GB 5893.1 – 86**
  - Ear Protector – Earplugs
  - Performance requirement and physical test method
  - Referred to

- **GB 5893.2 – 86**
  - Ear Protector – Earmuffs
  - Performance requirement and physical test method
  - Referred to

- **GB 5893.3 – 86**
  - Subjective measuring method of HPDs
  - Identical to: ISO 4869 – 1981
  - Referred to

- **GB 5893.4 – 86**
  - Method of insertion loss measurement of earmuff

- **GB 7584 – 87**
  - Acoustics – measurement of sound attenuation of hearing protectors – Subjective method
  - Written by acoustic standard committee
Historical Review of Chinese Standards for Hearing Protection Devices (Hearing Protectors)
Reported NIHL and Occupational Disease Cases

- More than 80% of reported cases are pneumoconiosis;
- Hearing loss number cannot be tracked before 2009 from government reports;
- Even though the level of NIHL is small, the increase of NIHL has been noticed by occupational health professionals.

Of data: National Health and Family Planning Commission of P.R. China Ministry of Health
# China Personal Protective Equipment (PPE) Approval

<table>
<thead>
<tr>
<th>Special PPE</th>
<th>QS Mark</th>
<th>LA Mark</th>
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</thead>
<tbody>
<tr>
<td>The license is required for many product categories if they are</td>
<td>Test products against applicable GB standard in local certified testing houses is required. Annual test required.</td>
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<tr>
<td>manufactured and sold in China.</td>
<td>Hearing protection devices do not require this mark</td>
<td>Hearing protection devices do not require this mark</td>
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Examples of Imported Products in the China Market

Honeywell

3M

SNR

NRR

DELTA PLUS

NRSa

ELVEX

MSA

UVEX

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Locally made products in the China market
Updates of Chinese Standards for Hearing Protection Devices (HPDs)

GB/T XXXX, estimated to be published in 2014
Personal Protective Equipment-General Requirements for Hearing Protectors

GB/T 23466 – 2009
Guideline for selection of hearing protectors
Reference: EN 458: 2004 CAN/CSA-Z94.2-02

GB/T 7584.2 – 1999
Acoustics – Hearing protectors - Part 2: Estimation of effective A-weighted sound pressure levels when hearing protectors are worn
Identical to: ISO 4869-2: 1990

GB/T 7584.1 – 2004
Acoustics – Hearing Protectors – Part 1: Subjective method for the measurement of sound attenuation
Identical to: ISO 4869-1: 1990
Replaced GB/T 5893.3 – 1986, GB/T 7854 – 1987

GB/T 7584.3 – 2004
Acoustics - Hearing protectors - Part 3: Measurement of insert loss of earmuff type protectors using an acoustic test fixture
Identical to: ISO 4869-3: 1990

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GB/T XXXXX – 201X, Personal Protective Equipment-General Requirements for Hearing Protectors

Technical requirement

Earplugs
Ref: EN 352-2:2002

Earmuffs
Ref: EN352-1:2002
EN352:3:2002

Physical
Ref: EN13819-1: 2002

Test method

Acoustic
Ref: EN 13819-2:2002
Calls up: GB/T 7584.1-2004
GB/T 7584.3-2011
Overview of GB/T XXXXX – 201X

### Earmuffs
- General
- Adjustability
- Cup rotation
- Headband force
- Cushion pressure
- Resistance to damage when dropped
- Resistance to damage when dropped at low temperature
- Headband flexing
- Stand-by mechanism durability
- Change in headband force
- Resistance to leakage (fluid filled cushions only)
- Ignitability
- Insertion loss
- Sound attenuation
  - Minimum attenuation

### Earplugs
- General
- Adjustability
- Resistance to damage when dropped
- Resistance to damage when dropped at low temperature
- Ignitability
- Sound attenuation
  - Minimum attenuation
Discussion – Implementation of the New Standard

Regulation Requirement

Implementation

Market demand  Test Capability
Occupational hearing loss cases on the rise

Updated: 2013-03-01 22:21
By He Na (chinadaily.com.cn)

Reported cases of occupational hearing loss in China increased sharply in recent years and experts warned that more measures should be taken to protect workers' hearing, or else the consequences will be disastrous.

"Many workers who are exposed to hazardous noise levels for a long time do not know that it will lead to permanent hearing loss. And once the hearing is impaired, it is hard to recover. Prevention is more important than treatment in protecting workers' hearing," said Zhang Baoming, director of the China Occupational Safety and Health Association during the Workplace Noise Hazards and Hearing Protection Forum that was held in Beijing on Friday.

The forum is co-sponsored by COSHA and the Minnesota Mining and Manufacturing Corp (China), known as 3M China.

More than 100 experts in occupational disease prevention and research, owners of...
Summary

- HPD Standard development in China has not been very active over the past decades with poor implementation, but it has become more active in the recent five years due to increased attention from the government and public;
- The upcoming Chinese standard “Personal Protective Equipment – General Requirement Hearing Protectors” fills a gap that has prevented HPDs from being included in the China national PPE approval system (LA & QS Mark);
- The development & implementation of a Chinese HPD performance standard is important. The new GB/T standard is a good start of this work;
- Implementation of this standard will require support from all elements of society, intensive education in the market is needed in order to finally protect people’s hearing and their quality of life.