



# Smoke Alarms

## A Brief History

“Australia’s acknowledgement of flawed Standards testing exposes the global ionization smoke alarm scandal and is the key to saving thousands of lives.”

Adrian Butler, Chairman, The World Fire Safety Foundation - page 3



‘Smoke Alarms - A Brief History’ is a ‘living document’ and may be updated as new information emerges. All internet links (underlined blue text) may be accessed via the electronic version of this document - make sure you have the latest version, which is designed to be read in conjunction with the film by the same name at:

[www.TheWorldFireSafetyFoundation.org/history](http://www.TheWorldFireSafetyFoundation.org/history)

SmokeAlarmsABriefHistory.pdf | Version 1.6 | Last Updated: 30 October, 2010

## **Smoke Alarms A Brief History: Australia-New Zealand - The Film**

First Produced: April, 2004 - Updated: 02 March, 2010

### **April, 2004 - Australian Standard for Commercial Buildings**

Australian Standard 1670.1, is adopted into the Building Code of Australia by the [Australian Building Codes Board](#). This standard mandates *photoelectric* smoke alarms in all bedrooms and exit paths in all new commercial buildings to which it applies.

### **September, 2004 - WFSF on Australian TV**

The World Fire Safety Foundation's film, [Stop the Children Burning](#) (STCB), is aired on National Australian TV program, 'A Current Affair'. The film warns about dangerous limitations of ionization smoke alarms. After watching STCB, the Australasian Fire & Emergency Services Authority Council (AFAC) commissions the Victorian University of Technology to examine world wide research regarding ionization and photoelectric smoke alarms.

### **December, 2004 - Queensland Government Warned**

The WFSF writes to the Queensland Fire & Rescue Service & the Minister of Emergency Services about a flaw in the 'Review of Fire Safety Arrangements in Queensland' (RFSAQ). This discussion document, about the pending mandatory Queensland smoke alarms legislation, not only fails to take the ionization/photoelectric smoke alarms issue into consideration - it buries it!

### **January, 2005 - WFSF on NZ TV**

The World Fire Safety Foundation appears on TV New Zealand's, national, Close Up' Current Affairs program. warning about ionization smoke alarms. The New Zealand Fire Service claimed that ionization alarms were fine and that they did not want to confuse the public.

### **February, 2006 - Standards Australia Become Aware of Full Extent of Problem**

Standards Australia discover that research by the Victorian University of Technology, the Australasian Fire & Emergency Services Authority Council (AFAC), the peak representative body of all Australasian Fire Brigades releases its '[Position on Smoke Alarms in Residential Accommodation](#)' document. The document states, "That all Residential Accommodation be fitted with photoelectric smoke alarms." The document further states, "Ionization smoke alarms may not operate in time to alert occupants early enough to escape from smouldering fires."

### **01 June, 2006 - Australasian Fire Brigades (AFAC) Official Position**

After over 12 months research by the Victorian University of Technology, the Australasian Fire & Emergency Services Authority Council (AFAC), the peak representative body of all Australasian Fire Brigades releases its '[Position on Smoke Alarms in Residential Accommodation](#)' document. The document states, "That all Residential Accommodation be fitted with photoelectric smoke alarms." The document further states, "Ionization smoke alarms may not operate in time to alert occupants early enough to escape from smouldering fires."

### **06 June, 2006 - WFSF on Australian TV re AFAC Position**

The World Fire Safety Foundation appear on 'A Current Affair' (ACA) story following up to the newly released AFAC position statement showing the Foundation's '[Aquarium Test](#)'. Tracy Grimshaw, ACA presenter states, "It turns out the vast majority of us have the wrong type of smoke alarms fitted in our homes." ([The Key Report](#) page 9).

### **February, 2007 - CAN Report Published**

The World Fire Safety Foundation publishes its report, 'Recommending Selling or Installing Ionization Smoke Alarms, A Criminal Act of Negligence?' ([The CAN Report](#)) and distributes hard copies by registered mail to 88 organisations throughout Australia, New Zealand, Canada and the USA. The primary purpose of this report is to support Standards Australia's effort to have the Australian Building Codes Board ([ABCB](#)) adopt the critical amendment to the Australian Standard to eliminate the flawed testing of ionization smoke alarms.

### **01 July, 2007 - Queensland Mandatory Smoke Alarm Legislation**

Queensland legislation comes into force mandating that all homes must be fitted with smoke alarms. The public at large are NOT warned about the serious life-threatening defects inherent in ionization smoke alarms. Most members of the Queensland public install ionization alarms and are unaware that photoelectric smoke alarms exist.

### **August, 2008 - Standards Australia Acknowledge Flawed Smoke Alarm Standard**

Standard Australia published a draft (corrected) Australian Smoke Alarm Standard, thereby formally acknowledging the testing under the existing Australian Smoke Alarm Standard (AS3786) is flawed (see page 3).

### **October, 2010 - Why are the Public (and our Fire Fighters) STILL Not Being Told the Truth about Smoke Alarms?**

This World Fire Safety Foundation's latest report asks why the public is still not being told the truth about ionization smoke alarms despite Australian authorities being made aware of Australia's flawed smoke alarm Standard and an increasing number of US States and Cities mandating photoelectric smoke alarms. The report is at: [www.theWFSF.org/saro](http://www.theWFSF.org/saro)

# Australia's Flawed Smoke Alarm Standard

## The Key to Exposing the Global Ionization Smoke Alarm Scandal

Discover how:

- a) Standards Australia's FP-002 committee formally acknowledged Australia's existing Smoke Alarm Standard (AS3786 - 1993) is flawed because the existing testing allowing them to pass has now been deemed invalid.
- b) Standards Australia rewrote AS3786 and eliminated the flawed (MIC 'X') testing.
- c) CSIRO test data since 1993 shows that under the corrected, draft smoke alarm standard ionization smoke alarms will fail the existing, valid smoke test.

### Existing Flawed Standard

Currently in Force

Table 3.1

#### SENSITIVITY LEVELS FOR SMOKE DETECTORS

Sensitivity		
Smoke Alarm Type	Average sensitivity	Individual Sensitivity
Photoelectric Percent obscuration per metre (% Obs/m)	3 to 15	3 to 30
Ionization MIC 'X' value	0.1 to 0.5	0.1 to 0.6

### Corrected Draft Standard

Awaiting Adoption into the Building Code of Australia by the Australian Building Codes Board

Table 3.1

#### SENSITIVITY LEVELS FOR SMOKE DETECTORS

Sensitivity			
Value	Nominal (S)	Individual minimum	Individual maximum
(a) % Obs/m	3 to 15	1.5S or S+2	0.5S or S-2

The 'MIC X' testing **has been eliminated** from corrected, draft standard. Under the draft Standard ionization (particle of combustion) alarms would have to pass the same valid test for visible smoke that photoelectric smoke alarms have been required to pass since 1993.

#### So Why Do Ionization Smoke Alarms Activate When Cooking but Fail so Frequently in Smouldering Fires?

Because they detect the sub-micron particles given off by the red hot heating elements of the toaster or griller.

Tragically sub-micron particles are not given off in sufficient quantity in most smouldering fires (which are low-heat) so your ionization alarms may remain silent until AFTER the fire finally bursts into flames when it is often too late. See 'The Aquarium Test' at: [www.theWFSF.org](http://www.theWFSF.org)

**NOTE:** Clause 2.1 of Australia's Smoke Alarm Standard (AS3786) requires that smoke alarms **must respond reliably to the presence of smoke**, NOT the presence of invisible (sub-micron) particles of combustion which is what ionization 'smoke' alarms detect.

"Australia's acknowledgement of flawed Standards testing exposes the global ionization smoke alarm scandal and is the key to saving thousands of lives."

Adrian Butler, Chairman, The World Fire Safety Foundation, Queensland, Australia, October, 2010

[www.theWFSF.org/sa](http://www.theWFSF.org/sa)

### Why the Existing Standard is Flawed

Testing under the existing (flawed) Standard requires:

- (a) a valid test for visible smoke for **photoelectric smoke alarms**, and,
- (b) a separate, test for invisible, sub-micron, particles of combustion for **ionization alarms**. (see table 3.1)

#### Note:

1. Several of the worlds largest ionization smoke alarm manufacturers are defendants in a proposed class action law suit which states, "Ionization smoke alarms . . . are slow to warn, if they warn at all of smouldering fires, which typically occur while occupants are sleeping."

[www.theWFSF.org/classaction](http://www.theWFSF.org/classaction)

2. Standards Australia has acknowledged Australia's existing Smoke Alarm Standard is flawed and have corrected the flawed standard. In the corrected, draft Standard, ionization alarms will have to pass a *valid* test for smoke, the same test photoelectric alarms have had pass since 1993.

#### Quote by Mr David Isaac, Standards Australia Committee Member FP-002:

"The credibility of the procedures for smoke alarm testing has been challenged for over thirty years. In 2006, the Australian Standards FP2 committee investigated the testing requirements for smoke alarms alarms in Australia.



David Isaac  
Standards Australia Committee FP-002

**They discovered that if ionization alarms were required to pass the same Australian Standards smoke sensitivity criteria as photoelectric smoke alarms they would fail."**

[www.theWFSF.org/can](http://www.theWFSF.org/can)

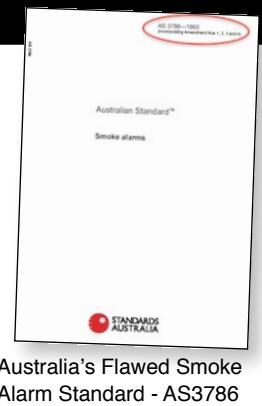
## Australia's Flawed Smoke Alarm Standard - AS3786-1993

### The following are represented on Committee FP-002:

Australian Assembly of Fire Authorities  
Australian Association of Rural Fire Authorities  
Australian Chamber of Commerce and Industry  
Australian Chamber of Manufactures  
Australian Electrical and Electronic Manufacturers Association  
Australian Fire Protection Association  
Australian Uniform Building Regulations Coordinating Council  
Civil Aviation Authority

Commonwealth Fire Board  
CSIRO, Division of Building, Construction and Engineering  
Department of Administrative Services  
Federal Bureau of Consumer Affairs  
Fire Brigades, New South Wales  
Fire Protection Industry Association of Australia  
Insurance Council of Australia  
Telecom Australia

**Note:** This listing of Standards Australia's FP-002 committee members has been extracted from page 2 of the Australian Smoke Alarm Standard. Access to a six page sample and the complete Australian Smoke Alarm Standard (AS3786-1993) is, [Here >>](#)



Australia's Flawed Smoke Alarm Standard - AS3786

For Further Information:



[Here >>](#)

The image shows the cover of the CAN report. It features a vertical black bar on the left with the word "report" written vertically. The main area has a large graphic of the World Fire Safety Foundation logo, which is circular with a figure holding a torch. Below the logo is the URL "www.WorldFireSafetyFoundation.org". To the left of the logo, the text "Recommend, selling or installing ionization smoke alarms, a" is written vertically. To the right of the logo, the text "Criminal Act of Negligence?" is written vertically. At the bottom, there is a small box containing the text "theCANreport Version 1.9 - Last Updated: 10Mar07" and some fine print about the document being a "living document".

[Here >>](#)