1. Scope

This Technical Specification defines the evaluation and recognition requirements for smoke alarm products that operate using scattered light, transmitted light, or ionization intended for household or residential used and smoke alarm products that have been evaluated to EN 14604:2005, ISO 12239:2010 or ISO 12239:2021 for the purpose of seeking certification by CSIRO's ActivFire® Scheme ("the Scheme").

The current smoke alarm standard in Australia is AS 3786:2023. This standard specifies the requirements, test methods, performance criteria and manufacturers' instruction for smoke alarms that operate using scattered light, transmitted light, or ionization intended for household or similar residential applications. This standard defines a smoke alarm as a '*device containing within one housing all the components, with or without an internal power source, necessary for detecting smoke and generating an alarm condition and which can comprise one or more parts such as a base (socket) and head (body).'*

2. Referenced Documents

Details of the documents referenced by this Technical Specification are in Table 1.

Table 1 List of documents referenced by this Technical Specification

AS 3786:2023	Smoke alarms using scattered light, transmitted light, or ionization (ISO 12239:2021, MOD)
AS 3786:2014 + A1:2015 + A2:2018	Smoke alarms using scattered light, transmitted light, or ionization
EN 14604:2005/AC:2008	Smoke alarm devices
ISO 12239:2021	Smoke alarms using scattered light, transmitted light or ionization
ISO 12239:2010	Smoke alarms using scattered light, transmitted light or ionization
AS ISO / IEC 17025:2018	General requirements for the competence of testing and calibration laboratories

3. Pre-evaluation requirements

In addition to the application requirements of CSIRO's ActivFire Scheme document AF-D001, the Applicant wishing to have their product evaluated and certified by CSIRO shall provide the following information and documentation:

1. A completed AF-F004 form for each smoke alarm model.
2. The initial bill of materials.
3. Documentation explaining the difference between the smoke alarms models in a series (if applicable).
4. Photographs or drawings of both the interior and exterior of the smoke alarms covering all angles.
5. Evidence of conformity reports from an accredited laboratory[1] .

[1] An accredited facility is a testing laboratory that holds accreditation to ISO 17025 and the test standard from an organisation recognised by an International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC-MRA) signatory.

4. Differences between International Standards

AS 3786:2023 differs from both EN 14604 and ISO 12239 in several areas, as outlined in Table 2. Evidence of conformity to the specified requirements identified in Table 2 must be sourced from an accredited facility[1] as agreed by CSIRO or CSIRO's Fire System Laboratory.

Table 2 Key difference in requirements of international standards related to residential smoke alarms

Clauses	Title	AS 3786:2023	ISO 12239:2021	ISO 12239:2010	EN 14604:2005
4.2	Optional and additional functions	New requirement		Not required	Not required
4.3	Smoke alarm type	New requirement		Not required	Not required
4.4	Response threshold value of detectors using scattered or transmitted light	New requirement		Not required	Not required
4.5	Alarm condition	New requirements including some optional requirements			Not required
4.8	Visual indicator visibility	Required			Not required
4.9	Smoke alarm signals	Additional requirements for audible fault condition signal and fault conditions associated with features			No requirement for audible fault condition signal and fault conditions associated with features
4.10	Test facility	Test facility is allowed to be remote from the smoke alarm with the same functions and be labelled accordingly		No requirement or allowance for remote test facility	
4.13	Mains power source	Enhance requirements for internal and external power source			Less stringent requirements
4.15	External power supply equipment	New requirement		Not required	Not required
4.19	Battery - disconnect facility	New requirement		Not required	Not required
4.22	Protection against the ingress of foreign bodies	Additional requirement to prevent rectangular probes from passing into the smoke chamber		Only requires the smoke alarm to prevent a sphere of diameter 1.3 mm ± 0.05 mm from entering	
4.23	Interconnectable smoke alarms - Optional function	Additional requirement for smoke alarms provided with an alarm-silence facility		No requirement for smoke alarms provided with an alarm-silence facility	
4.24	Alarm-silence facility - Optional function	Optional requirement			Not required
4.25	Temporary disablement - Optional function	Optional requirement		Not required	Not required
4.26	Radioactive material in type B smoke alarms	Yes, if claimed			Not required
4.27	Smoke alarm with voice - Optional function	Optional requirement			Not required
4.28	Smoke alarms using radio frequency links - Optional function	New optional requirement		Not required	Not required

Clauses	Title	AS 3786:2023	ISO 12239:2021	ISO 12239:2010	EN 14604:2005
4.29	Response to slowly developing fires (drift compensation) - Optional function	New optional requirement		Not required	Not required
4.30	Marking	Varied			
4.31	Packaging	Varied			
4.32	Hardware documentation	Varied			
5.4	Repeatability	m_{min} is to be not less than 0.05 dB/m for band 1 smoke alarms or 0.2 dB/m. m_{max} shall be the value reached prior to end test condition		Only requires that the lower response threshold value y_{min} to not be less than 0.2 or m_{min} to be not less than 0.05 dB/m	
5.5	Air movement	Different formulas to be used for ionized smoke alarm and smoke alarms using scattered or transmitted light			Options to use either formula not dependent on the type of smoke alarm
5.7	Dry heat (operational)	Maximum temperature measured at 40 °C ± 2 °C			Maximum temperature measured at 55 °C ± 2 °C
5.10	Sulphur dioxide (SO_2) corrosion, 21 days	21 days		4 days	4 days[2]
5.13	Vibration, sinusoidal (endurance)	No fault signal attributable to the endurance conditioning shall be given on reconnection of the specimen		No requirements for no fault condition after test	
5.15	EMC Immunity test	Testing to the IEC 62599-2		EN 50130-4[3]	Testing to EN 50130-4:1995
5.16	Fire sensitivity	Samples 17, 18, 19 and 20[4]		Samples 1,2, 19 and 20[5]	Samples 1, 2, 19 and 20[5]
5.18	85 dBA sound output – Optional function	Varying requirements			Varying requirements
5.19	75 dBA sound output – Optional function	Not permitted.	Optional function	Was 70 dBA sound output	Not included
5.20	Sounder durability	Samples 3, 4, 5, 6 and 7			One alarm sample tested without prior environmental exposure
5.22	Smoke alarms using radio frequency links	New requirement		Not required	Not required
5.24	Temporary disablement facility	New optional requirement		Not required	Not required

[2] The additional requirements to EN 14604 specified in VdS 3131 include a SO_2, corrosion (endurance) test of 21 days duration. Evaluation smoke alarms in Germany by VdS may therefore include or have included some or all of the noted variations between AS 3786 and EN 14604 and ISO 12239, depending on the date(s) of prior testing. However, the variation between AS 3786, ISO 12239 and EN 14604 related to the Sounder durability test is likely to mandate a 21-day corrosion test during evaluation to AS 3786.

[3] Undated reference, where the latest edition applies. Depending on the date of evaluation, either the 1995 or 2010 revision of EN50130-4 may have applied.

[4] Test samples are ordered following Initial sensitivity (Clause 5.3) from most to least sensitive. Samples 17, 18, 19 and 20 are therefore the least sensitive of all the (twenty) alarm samples required to be tested.

[5] Two most (1, 2) and two least (19, 20) sensitivity alarm samples following Initial Sensitivity ranking.

Clauses	Title	AS 3786:2023	ISO 12239:2021	ISO 12239:2010	EN 14604:2005
5.25	Variation in supply voltage	m_{min} is to be not less than 0.05 dB/m for band 1 smoke alarms or 0.2 dB/m. m_{max} shall be the value reached prior to end test condition		Only requires that the lower response threshold value y_{min} to not be less than 0.2 or m_{min} to be not less than 0.05 dB/m	
5.26	Polarity reversal	Includes provision for DC. externally powered smoke alarms		Does not allow for DC. externally powered smoke alarms	
5.27	Standby power source	Different test procedure and requirements			Different test procedure and requirements
5.28	Electrical safety	IEC 60065:2001[6] IEC 60950-1:2005 (various clauses)			EN 60065:2002 EN 60950-1:2001 (various clauses)
5.29	Sequence timing for smoke alarms with voice	New optional requirement		Not required	Not required

5. Evaluation

5.1. Evaluation activities

Evaluation of conformity of the smoke alarms, for the purposes of CSIRO's ActivFire® Scheme, requires the activities detailed in Table 3.

Table 3 Activities required by this Technical Specification to evaluate the conformity of the smoke alarms for the purposes of CSIRO's ActivFire® Scheme.

Activity	Description
1	Evaluation selection protocol
2	Review of design drawings, bill of materials and data sheets.
3	Testing and assessment of the smoke alarms in accordance with evaluation schedule.
4	Verification of all relevant marketing material.
5	Identification of any product limitations.

5.2. Activity 1

For this activity, CSIRO's ActivFire® Scheme shall develop an evaluation schedule that is suitable for the smoke alarm being evaluated in accordance with AS 3786:2023 and Table 4. ActivFire shall modify the testing and assessment requirements detailed in Table 4 according to the smoke alarm type, its optional function and prior evaluation to EN 14604 and ISO 12239, and if the smoke alarm is a private label of an ActivFire certified smoke alarm.

[6] The reference test standards in AS 3786:2023 are IEC 60065:2005 and IEC 60950-1:2005 compared to AS 3786:2014 which refers to the more recent revisions AS/NZS 60065:2012 and AS/NZS 60950.1:2011. CSIRO's ActivFire® Scheme regards AS/NZS 60065:2012 and AS/NZS 60950.1:2011 or AS 62368.1:2022 as the latest and current revisions of these standards and will therefore continue to accept reports of tests conducted in accordance with AS/NZS 60065:2012 and AS/NZS 60950.1:2011 or AS 62368.1:2022 as suitable evidence. CSIRO's ActivFire® Scheme will therefore require testing of electrical safety of smoke alarms to AS 3786:2023 to be the relevant clauses of AS/NZS 60065:2012 and AS/NZS 60950.1:2011 or AS 62368.1:2022 in place of IEC 60065:2005 and IEC 60950-1:2005.

Table 4 Evaluation schedule for a smoke alarm.

Standard	Clause	Title	Notes
AS 3786:2023	4	General requirements	-
	4.1	Conformity	-
	4.2	Optional and additional functions	• Applicable if the smoke alarm has optional and additional functions such as interconnection. • Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.3	Smoke alarm type	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.4	Response threshold value of detectors using scattered or transmitted light	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.5	Alarm condition	-
	4.5.1	Aural indication	-
	4.5.1.1	Signal temporal pattern	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.5.1.2	Signal sound pressure level - Optional function	• AS 3786:2023 does not allow for 75 dBA sound pressure level. • Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.5.1.3	Signal frequency characteristics – Optional function	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.5.2	Visual indicators	-
	4.5.2.1	Interconnectable smoke alarms – Optional function	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.5.2.2	Non-interconnectable smoke alarms	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.6	External main power source-on visual indicator.	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.7	Fault condition visual indicator – Optional function	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.8	Visual indicator visibility	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.9	Smoke alarm signals	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.10	Test facility	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.11	Means of calibration	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.12	User-replaceable components	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.13	Main power source	• The smoke alarm shall either have an internal or external power source or in some cases both.
	4.13.1	General	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.

Standard	Clause	Title	Notes
	4.13.2	Internal	• If the internal main power source is provided with different models / types of batteries, each model / type of battery shall be evaluated to this clause. • Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.13.3	External	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.14	Standby power source	• If the main power source of the smoke alarm is external, the smoke alarm shall have a standby power source. • If the standby power source is provided with different models / types of batteries, each model / type of battery shall be evaluated to this clause
	4.14.1	General	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.14.2	Monitoring of standby power source	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.14.3	Standby power source low condition silence – Optional function	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.15	External power supply equipment	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.16	Battery connections	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.17	User-replaceable battery	• If the smoke alarm is provided with a user-replaceable battery, this clause shall apply.
	4.17.1	General	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.17.2	Indication	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.18	Electrical safety	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.19	Battery – disconnect facility	• Only applicable if the smoke alarm has an internal non-replaceable power source. • A physical button or switch must be provided to initiate the power down of the smoke alarm. Software may be used to complete the power down process (additional cost will apply) • If software is used to complete the power down of the smoke alarm, the procedure to power up the smoke alarm must follow CSIRO recommendations for indirect activation. An example of indirect activation is instead of allowing a single action to restore power, the user may be required to perform a multi-step process or provide a confirmation. This ensures that power up is not accidental and complies with relevant safety standards. • Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.

Standard	Clause	Title	Notes
	4.20	Connection of external connectable devices	• The applicant shall inform CSIRO if the smoke alarm can connect to external connectable devices such as remotes, external auxiliary devices etc. • External connectable devices that are to be listed with the smoke alarm shall undergo evaluation by CSIRO. See CSIRO Technical Specification TS-023 for Residential Control and Indicating Equipment and TS-024 for external auxiliary devices. • Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.21	Terminals for external conductors	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.22	Protection against the ingress of foreign bodies	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.23	Interconnectable smoke alarms – Optional function	• If the smoke alarm has interconnectable capabilities, this clause will apply.
	4.23.1	General	• AS 3786:2023 does not allow for 75 dBA sound pressure level. • Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.24	Alarm-silence facility – Optional function	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.25	Temporary disablement – Optional function	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.26	Radioactive material in type B smoke alarms	• Type A smoke alarms are not required to meet the requirement of this clause. • Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.27	Smoke alarms with voice – Optional function	• If the smoke alarm has voice messaging capabilities, this clause will apply.
	4.27.1	General	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.27.2	Voice messages	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	4.28	Smoke alarms using radio frequency links – Optional function	• If the smoke alarm has interconnectable capabilities using radio frequency links, this clause will apply.
	4.28.1	General	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.28.2	Response time	• Details of the response time shall be provided by the Applicant and verified by the RACE. • Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.28.3	Radio frequency link range	• Details of the radio frequency range shall be provided by the Applicant and verified by the RACE.
	4.28.4	Identification code verification	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.28.5	Environmental requirements for radio frequency interconnected smoke alarms	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	4.29	Response to slowly developing fires (drift compensation) – Optional function	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.

Standard	Clause	Title	Notes
	4.30	Marking	• Required for private-labelled smoke alarms.
	4.30.1	General	• Required for private-labelled smoke alarms.
	4.30.2	Smoke alarm	• Required for private-labelled smoke alarms.
	4.31	Packaging	• Required for private-labelled smoke alarms.
	4.32	Hardware documentation	• Required for private-labelled smoke alarms.
	4.33	Additional requirements for software-controlled smoke alarms	• If the smoke alarm is software-controlled, this clause shall apply. • The applicant shall provide detailed documented information of the software. • Required for private-labelled smoke alarms.
	4.33.1	General	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.33.2	Software documentation	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.33.3	Software design	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	4.33.4	Storage of programs and data	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5	Tests	-
	5.1	General	-
	5.1.1	Optional functions	• AS 3786:2023 does not allow for 75 dBA sound pressure level.
	5.1.2	Atmospheric conditions for tests	-
	5.1.3	Operating conditions for tests	-
	5.1.4	Mounting arrangements	-
	5.1.5	Tolerances	-
	5.1.6	Measurement of response threshold value	-
	5.1.7	Provision for tests	-
	5.1.8	Test schedule	• It is noted that certain tests may need to be performed before proceeding with others.
	5.1.9	Test report	-
	5.2	Directional dependence	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.3	Initial sensitivity	• This test is required for ActivFire® Scheme verification purposes and numbering of the test samples required for the other test.
	5.4	Repeatability	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted, if the smoke alarm is a band 1 smoke alarm and the m_{max} is reported.
	5.5	Air movement	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted, if the correct formulas were used.
	5.6	Dazzling	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.7	Dry heat (operational)	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.

Standard	Clause	Title	Notes
	5.8	Cold (operational)	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.9	Damp heat (operational)	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.10	Sulphur dioxide (SO_2) corrosion	-
	5.11	Impact (operational)	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.12	Vibration, sinusoidal (operational)	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.13	Vibration, sinusoidal (endurance)	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted if the fault signals are reported in the reports.
	5.14	Extended temperature (operational) – optional function	• Appliable if extended temperature is claimed. • Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	5.15	Electromagnetic compatibility (EMC) immunity tests (operational)	• CSIRO will sub-contract this test to an accredited facility. • Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted if the EMC test was to EN 50130-4:2011.
	5.16	Fire sensitivity	• The applicant must inform CSIRO about the smoke alarm's mounting capability. • Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.17	Battery-low condition	• If the internal main power source is provided with different models / types of batteries, each model / type of battery shall be evaluated to this clause. • Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.18	85 dBA Sound output – Optional function	• If the internal main power source is provided with different models / types of batteries, each model / type of battery shall be evaluated to this clause. • If the standby power source is provided with different models / types of batteries, each model / type of battery shall be evaluated to this clause. • Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	5.19	75 dBA Sound output – Optional function	• AS 3786:2023 does not allow for 75 dBA sound pressure level.
	5.20	Sounder durability	• If the internal main power source is provided with different models / types of batteries, each model / type of battery shall be evaluated to this clause. • Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	5.21	Interconnectable smoke alarms	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.22	Smoke alarms using radio frequency links	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	5.23	Alarm-silence facility	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted.
	5.24	Temporary disablement facility	• Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.

Standard	Clause	Title	Notes
	5.25	Variation in supply voltage	• Prior evaluation by an accredited facility to ISO 12239 and/or EN 14604:2005 may be accepted, if the smoke alarm is a band 1 smoke alarm and the m_{max} is reported.
	5.26	Polarity reversal	• Applicable if the smoke alarm is battery powered or supplied with a DC external power supply. • Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.
	5.27	Standby power source	• Prior evaluation by an accredited facility to ISO 12239 may be accepted.
	5.28	Electrical safety	• CSIRO will sub-contract this test to an accredited facility. • AS 3786:2023 references IEC 60065:2005 and IEC 60950-1:2005 as the test standards. CSIRO's ActivFire® Scheme regards AS/NZS 60065:2012 and AS/NZS 60950.1:2011 as the later version of the standard, with AS/NZS 62368.1:2022 being the latest version these standards. • This Technical Specification will therefore require testing to AS/NZS 60065:2012 and AS/NZS 60950.1:2011 or AS/NZS 62368.1:2022.
	5.29	Sequence timing for smoke alarms with voice	• Applicable if the smoke alarm has voice function. • Prior evaluation by an accredited facility to ISO 12239:2021 may be accepted.

5.3. Activity 2

For this activity, the Test Applicant ("Applicant") of the smoke alarm is required to submit the following documents:

1. Design Drawings: All design drawings of the product.
2. Bill of Materials: A complete bill of materials for the product.
3. Data Sheets: Relevant data sheets including information about the radio frequency link (response time, range and ID code), software/firmware version, battery models, external connectable devices, if applicable.

Each document must be:

- Identifiable
- In English

Mandatory Details:

1. A unique document ID (document name and/or number).
2. Version number.
3. Document issue date

5.4. Activity 3

To meet the requirements of Activity 3 of this Technical Specification, the smoke alarm shall undergo testing and assessment to the evaluation schedule provided by ActivFire as part of Activity 1 by CSIRO's Fire Systems Laboratory.

5.5. Activity 4

To meet the requirements of Activity 4of this Technical Specification, the smoke alarm shall undergo the assessment requirements detailed in Table 4 by CSIRO.

Table 5 Assessment requirements for the valve monitor.

Title	Notes
Marketing material	• The CSIRO shall assess any marketing material that intends to have the ActivFire® mark (including websites), ensuring that the marketing material contains accurate information of the product.

5.6. Activity 5

CSIRO shall identify any product limitation from their evaluation activities.

5.7. Suitability of external evidence

Assessment of the suitability of evidence from external agencies (laboratories) shall be conducted in accordance with the CSIRO Recognition Framework.

Evidence of conformity, in the form of endorsed test reports written in English, are required to be submitted in full and shall be provided by a National Association of Testing Authorities (NATA) ISO 17025 accredited laboratory and the relevant test standard, or as agreed with CSIRO.

Where test reports were originally produced in a language other than English, suitable translations may be supplied in addition. Submitted external test reports shall provide sufficient detail to describe the product being evaluated in full and in detail and establish that an evaluation schedule was designed and applied to each component submitted to the external agency.

External evidence can only be accepted where verification between the product submitted for evaluation and the specimens in the endorsed test report is considered a critical requirement. Where external reports do not provide sufficient product identification, additional evaluation to specified requirements may be required.

5.8. Reporting

The evaluation of conformity report shall include the following information:

a. A statement of conformity with reference to AS 3786:2023, CSIRO Technical Specification TS-007 and unambiguous designation that the product has been evaluated in accordance with this technical specification.

b. A description of the product including photographs of the product.
c. Limitation of the product, if applicable.
d. List of documentation used for the evaluation of conformity including the document ID, version number, and issue date.
e. Software and firmware version, if applicable.
f. All other information in accordance with the reporting requirements of AS ISO/IEC 17025:2018.

6. Ongoing Verification of Conformity

6.1. Ongoing verification of conformity activities

To maintain ongoing certification with CSIRO's ActivFire® Scheme, the smoke alarms shall be subject to a post-certification surveillance activity described in AF-D008 and Table 5.

Table 6 Activities required to demonstrate ongoing conformity of the smoke alarm.

Activity	Description	Notes
1.	Audit of the Primary Manufacturing Unit (PMU) within the first 6 months of the first issue date of the Certificate of Conformity and every 24 months after.	• Details of the audit activities are described in CSIRO ActivFire® Scheme document AF-D008. • If the Registrant has multiple Certified smoke alarm products with the Scheme that are manufactured at the same PMU, the Scheme shall work with the Registrant to conduct the PMU audit and sensitivity testing within the same period for the Certified smoke alarm products.
2.	Sensitivity testing of up to 30 smoke alarm samples selected from the second PMU audit onwards every 24 months after by a RACE.	• Each smoke alarm model shall be selected during the PMU audit after the initial audit. • All 30 smoke samples are required to have a satisfactory result from the sensitivity test conducted by a RACE. A test report by a RACE shall be provided to the Scheme.
3.	Market sampling of smoke alarms.	• At CSIRO's discretion, upon the Scheme being notified of product non-conformance, smoke alarms may be purchased directly from the market and be subjected to evaluation in accordance with AS 3786:2023 and the requirements of AF-D009. • If market sampling for a smoke alarm model occurs, CSIRO shall inform the Registrant that CSIRO has purchased the smoke alarm model from the market and is scheduled to undergo re-evaluation. • A quote will be issued to the registrant detailing the relevant requirements of the re-evaluation and the cost of the market sampling activity. • If the registrant does not agree to the quote and terms, the product will be deemed non-conforming.

6.2. Reporting

An ongoing verification of conformity report shall be provided by CSIRO's ActivFire® Scheme upon completion of the relevant ongoing verification of conformity activities. If the results of Activity 1 and 2 are successful, the Certificate of Conformity of the smoke alarm shall be revalidated.

Document Review

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Document version no:	Issued date:	Change description:
1	6-Mar-15	• Initial issue
2	27-Jul-15	• N/A
3	15-Sep-18	• N/A
4	2-Sep-25	• Updated to AS 3786:2023 version • Updated to include complete evaluation to AS 3786. • Format updates
5	22-Sep-25	• Typographical amendments.