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AS 7240.2 AND AS 7240.4 EVALUATION FOR CONFORMITY RECOGNITION/REFERENCE TO EN 54-2 AND EN 54-4 EVALUATIONS

1. BACKGROUND

This guide note has been prepared to provide a general background to the process involved when evaluating EN 54 compliant control and indicating equipment to the requirements of AS 7240. These include EN 54 Part 2 (c.i.e.) and EN 54 Part 4 (power supplies).

The AS 7240 standards are a modified version of ISO 7240, which are in turn similar in many respects to EN 54. Compliance to the appropriate parts of EN 54 will provide evidence of conformity to many of the requirements of AS 7240. However, before submission customers should make themselves aware of the differences between the two series of standards, and any implications for their specific products.

This document summarises the differences between standards, and outlines requirements for evaluation.

2. SUMMARY OF MAJOR DIFFERENCES

AS 7240 has a number of differences to the EN 54 Standards. These differences vary depending on the specific issue (amendment) of the standard used as the criteria for evaluation.

The following list summarises some of the major differences. It is not exhaustive, and a detailed list can only be compiled after specific analysis of each test report on a project by project basis.

- Requirement in Clause 4 to read standard in conjunction with AS 3100 (electrical safety).
- Clause 7.12 (Dependency) has additional options and requirements.
- Clause 7.14 adds requirements for the evacuation signal (if fitted).
- Section 8 (Supervisory Signal) is added as an optional function.
- Section 9 (Fault warning). Minor changes to various clauses in this section.
- Additional requirement to assess “Conducted disturbances induced by electromagnetic fields” in accordance with EN50130-4 (not called in earlier versions of EN 54)
- Additional clause 5.2.3 in AS 7240.4 requiring sealed type batteries to be used if mounted with other fire detection and alarm equipment.
- Additional clause 5.2.4 in AS 7240.4 regarding battery damage from over discharge.
- CIE to be labelled with the operating temperature range visible at Access Level 1.

It should also be noted that some testing which is defined as ‘optional’ in earlier versions of EN 54 is a mandatory requirement in AS 7240. The EN 54 test report will indicate whether this optional testing has been performed.

- Impact test,
- Vibration test.

AS 7420.2 has three additional (but optional) requirements covered in appendices ZB to ZD. In deciding whether these options are required, the customer should make themselves aware of these functions and their application through the Building Code of Australia (BCA) and various installation standards.

- Alarm Acknowledgement Facility (AAF)
- Dry Heat environmental test (for c.i.e. intended to operate above 40 °C)
- Ancillary Control Function (ACF).

3. EVALUATION TASKS REQUIRED

The following summarises the evaluation tasks.

- Confirm intellectual property rights for all submitted articles (test reports, product samples, manuals, circuit diagrams, etc).
- Confirm credentials and accreditation of the testing authority providing EN 54 reports (see detail in section 5 below).
- Validation and authentication of EN 54 reports.
- Verification that the submitted product samples and documentation match the product described in the EN 54 reports. This includes the verification of the issues/revisions of individual circuit boards and versions of software.
- Clause by clause evaluation to the requirements of AS 7240 using the submitted EN 54 reports as evidence.
- Evaluation of documentation (including operator and installation manuals) to the requirements of AS 7240.
- Review marking and labelling to the requirements of AS 7240.
- Assess “Fire Brigade Panel” to AS 4428.3 (if submitted)

In addition to the desk based evaluation, a number of physical tests will be carried out.

- Impact testing (if not completed in the EN 54 assessment)
- Vibration testing (if not completed in the EN 54 assessment)
- Assess functions to appropriate clauses in sections 7, 8 and 9 of AS 7240.2
- Assess batteries to clause 5.2.3 of AS 7240.4
- Assess power supply/batteries to clause 5.2.4 of AS 7240.4

4. SAMPLES REQUIRED FOR EVALUATION

The following samples are required for evaluation;

- One sample of the c.i.e. This should be in the form it will be supplied into Australia including labelling and documentation.
- One sample of any optional modules or accessories that will be supplied with the c.i.e.
- One sample of a ‘Fire Brigade Panel’ to AS 4428.3 (if being submitted)
- One each of the actuating devices intended to connect to the CIE.

5. DOCUMENTATION REQUIRED FOR EVALUATION

The following documents are required for evaluation;

- Operators/User Manual
- Installation/Commissioning/Maintenance Manual
- Circuit Schematics
- Certificate from appropriate Australian electrical authority permitting the product to be connected to the mains supply in Australia.
- Appropriately accredited EN 54-2 and EN 54-4 test reports (in English language).

With specific regard to the submitted EN 54 reports, the Building Code of Australia requires that reports are issued by a Registered Testing Authority. This is defined as an authority registered by the National Association of Testing Authorities (NATA) in Australia, or an organisation outside of Australia recognised by NATA through a Mutual Recognition Agreement. For a detailed list of organisations, please visit the NATA website (http://www.nata.com.au).

6. DETECTOR COMPATIBILITY ASSESSMENT

It is a requirement under AS 1670.1 that detectors (actuating devices) are assessed as being compatible with their associated control and indicating equipment. GN-002 details the requirements of this compatibility assessment.

If requested by the customer, the submitted c.i.e. can be assessed for environmental compatibility during the conformity evaluation. This is not a requirement of AS 7240 parts 2 or 4, but removes the requirement for additional compatibility testing at a later date.

7. COMMON OVERSIGHTS AND ERRORS

The evaluation of EN 54 products based on international laboratory reports can often be delayed due to simple oversights or errors in the submission. The following lists some of the common mistakes to avoid;

- Drawing and circuit schematic versions do not match those listed in the supplied compliance report.
- Software versions in the submitted product do not match those reported in the EN 54 compliance report.
- Issue/Version numbers of circuit boards do not match those listed in the compliance report.
- Marking and labelling of the sample does not match the requirements of the AS 7240.
- Product manuals do not reflect the AS 7240 compliant version of the product submitted for evaluation.
- Laboratory reports can be incomplete, or refer to other reports as a basis for compliance. When submitting EN 54 reports, please ensure that copies of any referenced reports are also included.

Please note that AS 1670.1 (Fire detection, warning, control and intercom systems – System design, installation and commissioning. Part 1: Fire), requires that ‘where a CIE complying with AS 7240.2 is connected to the fire brigade dispatch centre, and does not have individual alarm zone indicators, it shall be provided with a fire brigade panel complying with AS 4428.3’. Customers should make themselves aware of how this installation requirement may apply to their products, and ensure that their c.i.e. will be permitted to connect to the fire brigade.

8. SUMMARY

The introduction of the AS 7240 suite of standards is increasing the amount of conformity evaluation based on testing carried out by laboratories outside of Australia.

When based on third-party test evidence, the evaluation includes a combination of desk based research and physical testing. The test laboratory requires submission of detailed documentation along with suitable product samples to fully evaluate the products.

Reports submitted as external evidence of compliance to EN 54 should be in English, and from a suitably accredited testing authority. Additional documentation and technical information is required in order to verify the submitted product relates to the test reports.

For any questions or additional information, please contact CSIRO - Fire Systems Group on 61 (0)3 9252 6000 or visit the CSIRO’s ActivFire web site at http://www.ActivFire.gov.au