ActivFire® Advisory Note AN-003

Evaluation and certification of steel pipes to AS 1074:1989 (R2018)

This advisory note provides an explanation, timeline and important information regarding the pathway of new and existing certification of steel pipes to AS 1074:1989 (R2018) ("the Standard") by CSIRO's Fire Systems Laboratory and ActivFire® Scheme.

Background

CSIRO's ActivFire® Scheme had received requests in 2022 and 2023 to evaluate the evidence of conformity for steel / stainless steel tubes, pipes, and fittings for fire protection to several Australian and International standards. As demand for the certification of steel pipes to the Standard by CSIRO's ActivFire® scheme has increased over the years, CSIRO's ActivFire® Scheme has updated its certification criteria and processes to further align with the requirements of the Standard during (re)certification and revalidation of new and existing ActivFire® certified AS 1074 steel pipes.

Changes to Certification Provided by CSIRO

New certification of AS 1074 steel pipes

From 1 March 2024, CSIRO ActivFire® Scheme requires that new certifications of AS 1074 steel pipes are evaluated for conformity by CSIRO's Fire Systems Laboratory to the relevant requirements of Section 2 of the Standard. Evaluation of the steel pipes manufactured to the Standard by CSIRO's Fire Systems Laboratory will involve the following activities:

1. Inspection of dimensions of selected samples.
2. Review of test reports for the material properties and mechanical properties.
3. Review of manufacturer's declarations.
4. Review of markings.
5. Preparation of report.

CSIRO's Fire Systems Laboratory require the applicant to submit the following information and samples:

1. Test report(s) from an accredited laboratory not more than 12 months from date of issue confirming that the steel used to manufacture the steel tubes are not more than 0.045% of sulphur and not more than 0.045% of phosphorus. The carbon equivalent calculated using the following equation shall not exceed 0.4, where:
   Carbon equivalent = $C + \frac{Mn}{6}$

2. Test report(s) from a laboratory accredited to AS 1391[1] (within the ILAC recognition framework) not more than 12 months from date of issue demonstrating that the following properties of the steel used:
    a. Minimum yield strength of 195 MPa.
    b. A tensile strength of between 320 MPa and 460 MPa.
    c. An elongation of not less than 20% on a gauge length of $^{5.65}\sqrt{S_o}$ where S_o is the original cross-sectional area of the test piece.
3. Manufacturer's declaration stating the following:
    a. That the steel tubes are either welded or seamless.
    b. That the steel tubes meet the requirements of Clause 2.5, 2.6, 2.7 (if applicable), 2.8, 2.9, 2.10, and 2.12 of the Standard. The declaration shall include the following information if it is applicable:
        i. The screw threads comply with AS 1722.1 except for Light tubes.
        ii. The steel tubes are threaded with taper pipe threads.
        iii. The tubes are supplied in standard lengths of 6.50 m ± 0.08 m.
        iv. The galvanizing of steel tubes complies with AS 16502 and are galvanized before threading.
        v. All steel tubes are subjected to either one of the leak tightness test methods listed in Clause 2.8 of the Standard at the manufacturer's work.
        vi. Steel tubes DN50 or smaller have been subjected to a bending test as described in Clause 2.9.1 without showing any signs of fracture and failure.
        vii. Steel tubes larger than DN50 have met the requirement of Clause 2.9.2 of the Standard.
        viii. The workmanship of the steel tubes has met the requirements of Clause 2.12 of the Standard.
        ix. The threads of all steel tubes are protected against corrosion.
        x. Tubes larger than DN 80 have a protecting ring affixed to the screwed end.
4. Selected samples of steel tubes in 300 mm lengths clearly marked and identified as per the requirements of Clause 2.11 of the Standard.
5. Photographic evidence of all steel tubes within the series nominated for certification clearly demonstrating markings as per the requirements of Clause 2.11 of the Standard.
6. Information as required by Appendix A of the Standard: Product Conformity Sample of information supplied to purchaser.
7. Any other information reasonably required by CSIRO.

Applications for new evaluation and certification of steel pipes to AS 1074 shall be submitted to CSIRO's ActivFire® Scheme at certification@csiro.au along with the completed project registration form AF-F001.

Please note that CSIRO's ActivFire® Scheme no longer certifies steel pipes to design and installation standards including AS 2118.1, AS 4118.2.1 or AS 2419.1.

Certification of AS 1074 steel pipes currently in progress

Projects currently (in 2024) in progress with CSIRO's ActivFire® Scheme for the certification of AS 1074 steel pipes will be required to meet the requirements included in this Advisory Note and be evaluated by CSIRO's Fire Systems Laboratory. An email will be sent to the applicant with notification of the changes and a quote will be issued once the applicant has confirmed that they would like to proceed. The approximate additional cost is AUD $1,000.00 + GST is estimated, depending on the products.

Revalidation of currently ActivFire® certified steel pipes

From 30 April 2025, ActivFire® will no recertify steel pipes to AS 2118.1, AS 4118.2.1 or AS 2419.1.

From 30 April 2026, recertification of steel pipes to AS 1074 will include the requirements detailed in this Advisory Note.

[1] AS 1391:2020 was adopted from ISO 6892-1:2019, therefore CSIRO will accept test reports that are not more than 12 months old to ISO 6892-1:2019 from an accredited laboratory within the ILAC recognition framework.
[2] AS 1650 has been superseded by AS/NZS 4792:2006 and AS/NZS 4680:2006. CSIRO will accept a manufacturer's declaration to AS/NZS 4792:2006 and/or AS/NZS 4680:2006 instead of AS 1650.

Stainless steel tubes, pipes, and fittings

Stainless steel tubes, pipes and fittings cannot be certified to AS 1074. Certification of these types of products by ActivFire® may be possible through recognition of ActivFire® recognised body approval classification whereby Certificates of Conformity from the WaterMark Certifcation Scheme to AS 5200.053-2008 or AS 3688:2016, as relevant to the product type, may be considered suitable evidence of conformity.

Timeline of changes

March 2024

- New certifications of AS 1074 steel pipes are required to be evaluated for conformity by CSIRO's Fire Systems Laboratory to the relevant requirements of Section 2 of AS 1074:1989 (R2018).

April 2024

- AN-003 (this document) published.
- Applicants of current projects for the certification of AS 1074 steel pipes advised of the changes.
- Changes and updates to currently certified AS 1074 steel pipes will need to meet the new requirements.

April 2025

- Existing ActivFire® certified AS 1074 steel pipes will continue to be revalidated, however conformance criteria to AS 2118.1, AS 4118.2.1 or AS 2419.1 are removed from current certification.

2026

- All new certifications and exiting ActivFire® certification of AS 1074 steel pipes shall be in accordance with the requirements of this Advisory Note.

Issuing Authorities

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For further information

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