



# ENGINEERING SAFETY CONSULTANTS

*The Global Provider of Functional Safety Expertise and Technical Consultancy*

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## Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 2

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### ***Functional Safety of Safety-Related Programmable Electronic Systems***

The **Hochiki Europe (UK) Ltd, CHQ and YBO Wall and Base Sounders and Beacons** for use in fire detection and alarm systems has been assessed and is considered capable for use in a low demand Safety Function up to SIL 2, with regard to random failure rates and architectural constraints.

The assessment was based on the assumptions, data provided, and recommendations given in:

- **ESC Ltd Report: D004\_SV001 rev. 4;**
- **Renewal letter from Hochiki Europe (UK) Ltd, signed by Richard Anderson, Approvals & Certification Engineer, dated: 17/08/2020.**

The systems were assessed against the following failure modes:

- CHQ and YBO Sounders: Failure to alarm (sound) on demand;
- CHQ and YBO Sounder & Beacon: Failure to alarm (flash and sound) on demand.

Subject to the following requirements detailed in report D004\_SV001 rev. 4:

- Host system will be configured to detect and alarm on loss of communications to the detector (loss of response to polls);
- Manual function tests are carried out frequently (i.e. weekly) and suitably documented, reviewed and audited.

The following product variants are also covered under this certificate, with the product labels being the only difference:

- CHQ-WS2;
- CHQ-WSB2;
- YBO-BS;
- YBO-BSB2;
- YBO-BSB2/WL;
- YBO-BSB2/RL;
- YBO-BSB2 (WHT)/RL;
- YBO-BSB2 (WHT)/WL;
- CHQ-WS2(WHT);
- CHQ-WS2/SIL;
- CHQ-WSB2/RL;
- CHQ-WSB2/WL;
- YBO-BS(WHT);
- YBO-BS(WHT)/SIL;
- YBO-BSB2(WHT)/RL/SIL;
- YBO-BSB2(WHT)/WL/SIL.

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The assessment was carried out to determine compliance with IEC 61508 with regards to:

- Random Hardware Failures (Predicted PFD <9.0E-04 (assuming a 1-year proof test and average repair time of 168 hrs));
- Architectural Constraint (Type B, SFF >90%).

**IMPORTANT:** It should be noted that this assessment does not include confirmation of the response time of the device. For response times (along with any relevant assumptions) reference should be made to the Safety Manual of each device and the total SIF response time **MUST** be compared against the process safety time for the specific application.

Chairman: Kenneth G L Simpson  
Member of the IEC 61508 committee  
Assessment Date: March 2014  
Renewal Date: October 2020, valid to October 2022  
Certificate: D004\_CT001 rev. 7

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