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IEC 61508 Functional Safety Capability Statement

Hochiki Europe (UK) Ltd DCD-1E-IS Heat Detector

Manufacturer:	Hochiki Europe (UK) Ltd Gillingham Business Park, Grosvenor Rd, Gillingham ME8 0SA
Product:	Heat Detector
Model:	DCD-1E-IS, DCD-1E-IS(WHT), DCD-1E-IS/SIL

Application:	Low Demand Mode Safety Instrumented Function
Safety Function:	Upon detection of fire condition, alarm is initiated via the Heat Detector (Logic and final element subsystems not part of this analysis)
Applied standard:	IEC 61508 Ed2 2010 Parts 1-3
Systematic Capability:	Not Assessed
Applicable report:	Environmental Resources Management Ltd Report: D004_SV003 rev. 6

Assessment Route:	1_H
Hardware Fault Tolerance:	0
Type:	A
Application restrictions:	Manual test considered a diagnostic function Manual function tests are carried out frequently (i.e. weekly) and suitably documented, reviewed and audited

Model No.	λ (/hr)	λDU (/hr)	λDD (/hr)	λS (/hr)	SFF
DCD-1E-IS Heat Detector (Without Manual Test)	1.3E-07	8.5E-08	0.0E+00	4.9E-08	36%

Model No.	λ (/hr)	λDU (/hr)	λDD Manual Test (/hr)	λS (/hr)	SFF
DCD-1E-IS Heat Detector (With Manual Test)	1.3E-07	3.4E-08	5.1E-08	4.9E-08	75%

IMPORTANT: It should be noted that this assessment considers only the Hochiki Europe (UK) Ltd, DCD-1E-IS Heat Detector. It does not cover opening and closing time requirements and a random hardware failures assessment must be conducted for the entire safety function for each application as per the appropriate Safety Requirements Specification.

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The Hochiki Europe (UK) Ltd, DCD-1E-IS Heat Detector has been assessed and is considered capable for use in a low demand mode safety function up to (and including) SIL 1/2 with regards to random hardware failures and architectural constraints.

Note 1: The SIL of a complete SIF (sensor, logic solver and final element subsystems) must be verified to calculate the required Probability of Failure on Demand (PFD) / Probability of Failure per Hour (PFH), considering any redundancy, Proof Test Interval (PTI), Proof Test Coverage (PTC), Mission Time and Mean Time To Restoration (MTTR) for all elements included in the SIF. Each subsystem should be verified to ensure compliance with the minimum HFT requirements.

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