HAWKE CABLE GLANDS LIMITED

Title : DelugeTest on ATEX EExe II Enclosures
to ERA Technology Test - DTS01 : 1991

Author : Louise Jones Date : 25 - 26th April 2001 Report No : 542

TEST CARRIED OUT AT :

Hawke Cable Glands Limited
Oxford Street West
Ashton-under-Lyne
Lancashire
OL7 0NA

1.0 REASON FOR TEST :

To test the integrity of 8 off Hawke EExe Enclosures under Deluge conditions to DTS01 : 1991.

2.0 EQUIPMENT USED :

- **TEST SAMPLES :**

ENCLOSURE	EECS SAMPLE No.	WATTAGE (T6 40°C)	GASKET TYPE	TEST DATE
PL612	s99/0836/26	4.1	Clear Moulded Silicone (Burnett)	25/04/01
PL630	s99/0836/30	20.8	Clear Moulded Silicone (Burnett)	25/04/01
PL712	s99/0836/31	3.352	Clear Moulded Silicone (Burnett)	25/04/01
SIZE 9	s99/0836/28	79.35	White Silicone Sponge (RFI)	25/04/01
SIZE 1	s99/0836/29c	13.95	White Silicone Sponge (RFI)	26/04/01
SIZE 3	s99/0836/29d	23.7	White Silicone Sponge (RFI)	26/04/01
SIZE 7	s99/0836/29a	52	White Silicone Sponge (RFI)	26/04/01
SJB120	s99/0836/03	4	Black Neoprene Sponge (RFI)	26/04/01

- **DELUGE CHAMBER :**
  - 2 type K80 deluge nozzles (Wormald)
  - Tank
  - Deluge Medium : water at 5 to 10 °C containing 35g/litre of sodium chloride NaCl.
  - Rate of flow : 130 litres per minute from each nozzle (minimum recommended flow rated for K80 nozzle, 80 litres per minute).
  - Portable water pump - to circulate the cooling water prior to Deluge test.

- **HEAT SOURCE INSIDE ENCLOSURES TO PRODUCE SPECIFIED WATTAGE :**
  - 3 x heater pads (Heat source for small enclosures)
  - 1 x light bulb (100W) (Heat source for large enclosure)
  - 2 x dual power supplies : Thurlby 30V 2A PL320 QMD & Thurlby 35V 10A TSX3510P
  - 1 x Variac : LE 627759
  - 1 x Multi meter : Fluke - Ser. No. 77200821, Cert. No. 80759, Calibrated 07/02/2001

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3.0 METHOD :

Prior to the Deluge test the water solution in the chamber was reduced to 5°C using the chambers integral cooling system.

The wattage inside the enclosures was set using the power supplies & variac (Watts = Volts x Amps), and the readings were checked using the calibrated Fluke Multimeter, by a qualified person.

The heaters were switched on ONE hour prior to the deluge test. After one hour the heaters were switched off and the Deluge Chamber pump was turned on for the THREE hour deluge test. After the first hour of the deluge test the heaters were switched back on for the remaining TWO hours.

After the THREE hour deluge test the cooling system, heaters and deluge pump were turned off.

The enclosures were removed from the chamber and inspected for ingress of water.

4.0 RESULTS & CONCLUSION

ENCL.	WATER INGRESS	CONCLUSION
PL612	NONE	**PASSED** DTS01 DELUGE TEST
PL630	NONE	**PASSED** DTS01 DELUGE TEST
PL712	NONE	**PASSED** DTS01 DELUGE TEST
SIZE 9	YES - LESS THAN 5 ml	**PASSED** DTS01 DELUGE TEST
SIZE 1	NONE	**PASSED** DTS01 DELUGE TEST
SIZE 3	NONE	**PASSED** DTS01 DELUGE TEST
SIZE 7	NONE	**PASSED** DTS01 DELUGE TEST
SJB120	YES - GREATER THAN 5%	FAILED DTS01 DELUGE TEST

Tested by : ..... Louise Jones (Technical Dept)

Witnessed by : ..... Mr. Dave Brearley (EECS)