

Test Report



TESTING &
CERTIFICATION
AUSTRALIA

A DIVISION OF SYDNEY ELECTRICITY

14 Nelson Street, Chatswood, NSW 2067
P O Box 841, Artarmon, NSW, 2064 Australia
Telephone 61 (02) 410 5157
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Report Number 83530

Subject Aerosol Fire Extinguishers

Client Bytenet Holdings Pty Ltd
7/80 Kitchener Parade
Bankstown NSW 2200

Order Number Fax

Attention: Dr Julia Berezovsky

Date of Test 19 August 1995

Location of Test Chatswood

Tests

Test 1. Electrical conductivity of FEAS fire extinguishing aerosol under total flooding conditions

Test 2. Electrical conductivity of aerosol flow during discharge of the extinguisher.

Contents of Report

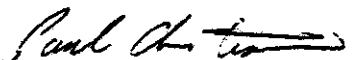
Details of Equipment
Test Methods
Uncertainties in Measurement
Test Results

Conclusions

Test 1. The fire extinguisher aerosol tested between design factors of 60 to 200 g/m³ did not cause any flash overs between electrodes at 250 mm spacing with 70,000 volts 50 Hz applied.

Test 2. The fire extinguisher aerosol when tested at 75,000 volts 50 Hz and using the method described in Section 8 of Australian Standard 1850 - 1994 as a guide, did not cause an increase in leakage current during discharge to either the ambient temperature target or the target which had been heated to 400°C.

For further information please contact: Peter Clarke 410 5157



Authorised Signatory



Date Issued

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Details of Equipment

Six (6) "FEAS" Aerosol Fire Extinguisher Canisters,
five (5) 60g type MAG - 1 and one (1) 200g type MAG - 3.
Both types were designed for fixed mounting and remote electrical activation.

Test Methods as requested by customer

Test 1. Electrical conductivity of FEAS fire extinguishing aerosol under total flooding conditions.

This test was designed to establish the upper limit of voltage at which aerosol becomes conductive after uniform distribution of an aerosol released from the extinguisher had been achieved.

The test was conducted in a sealed, cube-shaped, chamber with a volume of 1 cubic metre. The chamber as supplied by the customer, was constructed with clear plastic sheets on a metal frame. Holes had been made for cable entry and a pressure relief vent. A metal plate electrode was positioned on the bottom of the chamber and connected to the earth circuit. A high voltage cable, terminated with a connecting lug as the second electrode, was installed through the center of the roof of the chamber down toward the metal plate. The distance between the plate and the bottom of the lug was set to 250 mm.

A continuously increasing 50 Hz voltage was applied to the electrodes until flashover occurred, and that voltage was recorded.

Test 2. Electrical conductivity of aerosol flow during discharge of the extinguisher.

This test was designed to establish the 50 Hz voltage at which the flow of aerosol becomes conductive during discharge. The value established in Test 1 was taken as a guide. The test procedure was generally in accordance with Section 8 of Australian Standard 1850 - 1994. The distance between the extinguisher cannister and the metal target was 250 mm, and the final applied voltage was 75 kV.

Several different voltages starting from 50 kV were applied between the extinguisher cannister and the target plate, and the leakage current was measured before, during and after the period aerosol was being discharged towards the target plate

Uncertainties in Measurement

Applied Voltage:	±3%
Leakage Current:	±3%
Target Temperature:	±20°C
Length:	±5 mm

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Test Results

Test 1

Extinguisher Type	Serial Number	Aerosol Concentration	Flashover Voltage
(Electrode test)	N A	Nil	91 000 V ac
MAG - 1	218	60g / m ³	70 000 V ac
MAG - 3	3 0148	200g / m ³	78 000 V ac

Test 2

Extinguisher Type	Serial Number	Target Plate Temperature	Air Gap (mm)	Test Voltage (V)	Leakage Current (µA)		
					Before Discharge	During Discharge	After Discharge
MAG - 1	226	Ambient	250	50 000	65	55	85
MAG - 1	228	Ambient	250	66 000	95	80	120
MAG - 1	227	Ambient	250	75 000	105	92	140
MAG - 1	230	400°C	250	75 000	115	100	145

Test 2 Notes:

1. The specification (clause 8.2.1) does not allow any increase in electrical conductivity (leakage current) during the application of a 100 kV Peak/√2 50-Hz voltage.
2. At the end of each discharge, the canisters were found to have part of their metal - foil seal bent toward the target, reducing the gap by 20 - 30 mm.

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APPENDIX TEST DIAGRAMS

The drawings form an Appendix to this Document.
They are as were submitted to Sydney Electricity and include
minor modifications by Sydney Electricity.

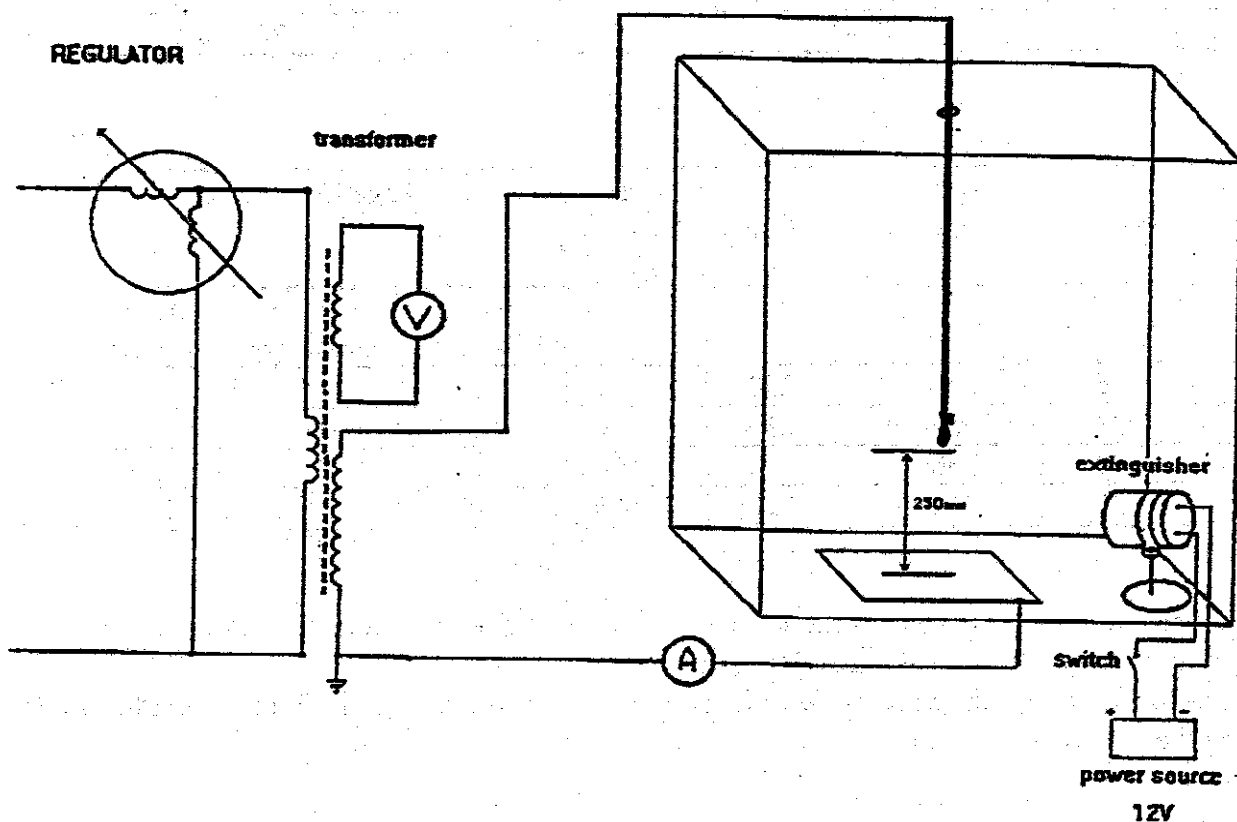


FIGURE 1. Test diagram for test 1: Electrical conductivity of FEAS fire extinguishing aerosol under total flooding conditions

REGULATOR

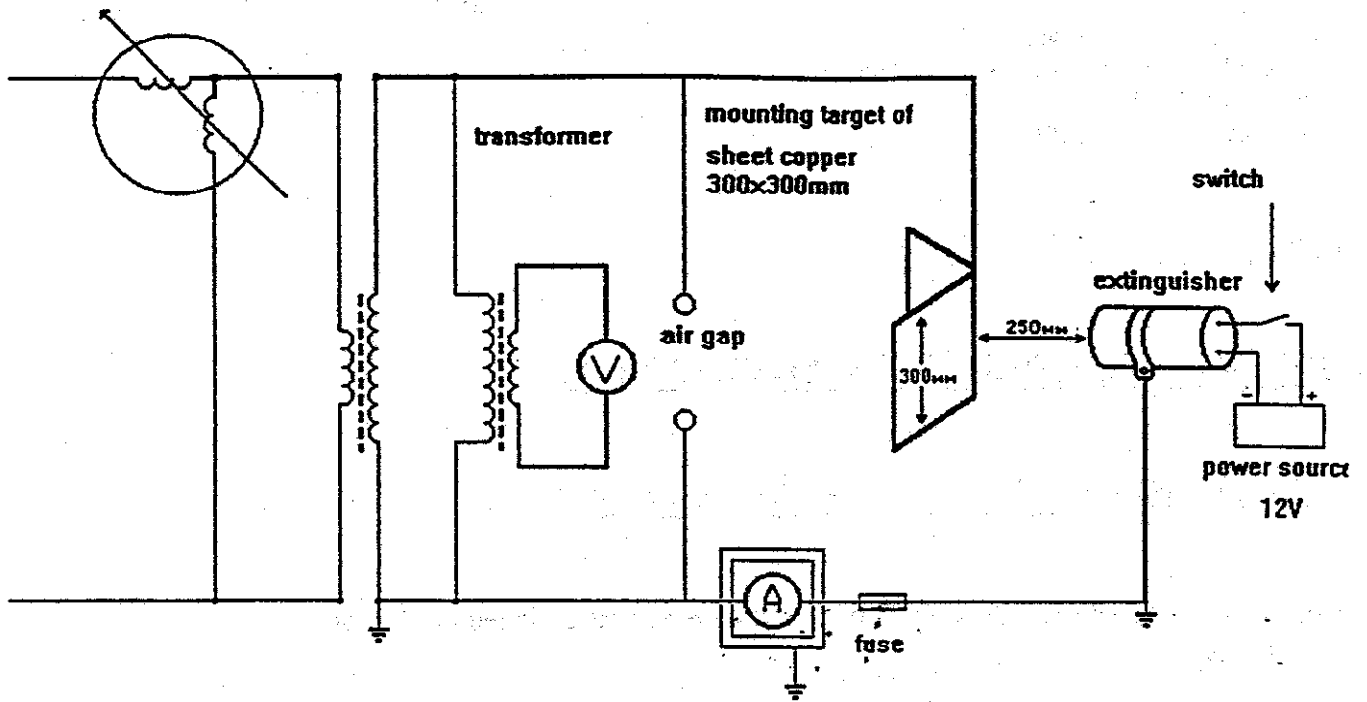


FIGURE 2. Test diagram for test 2: Electrical conductivity of FEAS fire extinguishing aerosol flow at the moment of discharge of the extinguisher.



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Date : 1 SEP 95

SYSTEM TEST DELIVERY ADVICE NOTE

ATTENTION : DR. JULIA BAREZOVSKY

Please find enclosed the following Test Report covering tests carried out to your instructions.

Test Report No.: 83530

Your Order No: FAX 14 AUG 95

Details of the equipment tested are included in the reports.

- An account for outstanding fees is enclosed; please pass it on to your Accounts Department for payment.
- An account for outstanding fees will be forwarded separately.
- Full payment for this work has been received.
- A pre-payment which exceeds the actual fee has been made. A credit for excess payment will be forwarded separately.
- Please arrange for collection or authorise disposal of the equipment tested with contact person below, if not already done, within two weeks.

If you have any queries, please contact Mr. PETER J CLARKE

Telephone: 61 (02) 410 5157
Fax: 61 (02) 415 1567