

The background of the page features a dark, textured green-grey color. On the right side, there is a large, abstract graphic composed of numerous thin, white, concentric lines that spiral outwards from a central point, creating a sense of depth and movement. The Breglobal logo is positioned on the left side of the page.

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**Prevent Systems AS  
residential sidewall  
water mist fire tests**

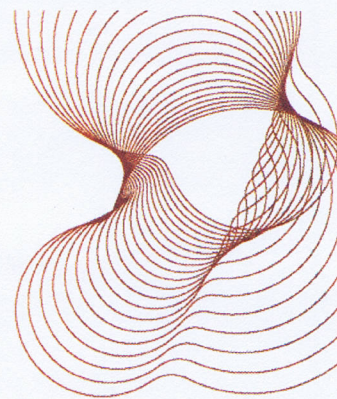
Prepared for:  
Prevent Systems AS  
Faberggaten 126,  
N-2615 Lillehammer,  
Norway

23 August 2011

Client report number 269754

Protecting People, Property and the Planet





**Prepared on behalf of BRE Fire and Security by**

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Name Kelvin Annable

Position Senior Consultant, Fire Suppression

Signature

**Approved on behalf of BRE Fire and Security by**

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Name Sarah Colwell

Position Principal Consultant

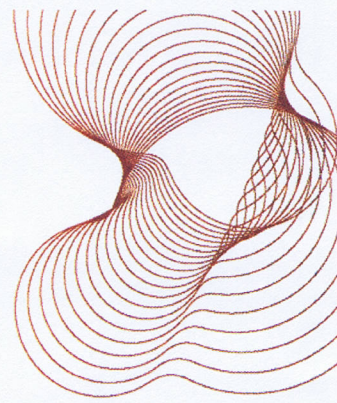
Date 7<sup>th</sup> September 2011

Signature

BRE Fire and Security  
BRE Global  
Bucknalls Lane  
Watford  
Herts  
WD25 9XX  
T + 44 (0) 1923 664100  
F + 44 (0) 1923 664994  
E enquiries@breglobal.com  
www.breglobal.com

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## Executive Summary

Prevent Systems AS (Prevent), Faberggaten 126, N-2615 Lillehammer, Norway, commissioned BRE Global to conduct fire testing to assess the effectiveness of their residential sidewall water mist nozzle. Testing was undertaken using a methodology based on the fuel loading described in DD 8458-1<sup>[1]</sup>, British Standard Draft for Development, 'Fixed fire protection systems – Residential and domestic watermist systems - Part 1: Code of practice for design and installation' and with fire test performance criteria as detailed in British Standard BS 9252<sup>[2]</sup> 'Components for residential sprinkler systems – Specification and test methods for residential sprinklers'.

Sidewall water mist nozzles are not included within the scope of the DD 8458-1 standard and therefore no specifically applicable fire test scenario was available. However, a sidewall fire test scenario has been included in BS 9252 which specifies a corner fire test scenario for sidewall heads with a similar room configuration to that used for pendent heads in DD 8458-1 with the following differences:

- The material specification for the ceiling lining material;
- The doorway sizing;
- The location of the 'third' nozzle.

The corner fire load configuration is the same in both standards. The tests were therefore conducted using the corner fire scenario described in BS 9252 (and DD 8458-1) and also with the sidewall water mist nozzles positioned as required in BS 9252.

A full assessment to BS 9252 for residential sprinklers requires specific testing for thermal response (specifications are included in Annex N, which is one of 18 appendices for testing of the construction and performance of residential sprinklers heads) but the work carried out under this programme of work was solely related to the fire test requirements; hence the thermal response of the nozzles was not evaluated as part of this project.

Two fire tests were conducted with Prevent's low pressure automatic water mist system operating at 8 bar pressure. The findings from the tests were as follows:

- Sidewall Test 1: Although the temperature requirements as detailed in Annex S of BS 9252 were exceeded before the water mist system had activated (and for around 10 seconds after water discharge was activated), the system demonstrated effective fire suppression.
- Sidewall Test 2: The water mist system demonstrated effective fire suppression and the fire test temperature requirements contained in Annex S of BS 9252 were met.

This work was undertaken by BRE Global as a consultancy project and this report does not therefore constitute an approval, certification or endorsement of the Prevent residential sidewall water mist system tested.