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REPORT

BOLIGBRANN

DET NORSKE VERITAS AS

REPORT NO./DNV REG No.: / 13XKQRR-1  
REV , 2012-01-05



MANAGING RISK

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Summary:  
 This report covers testing of a hose to be used in case of house fire. The hose was supplied by Gowens engros.

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Reference to part of this report which may lead to misinterpretation is not permissible.



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## 1 SUMMARY

This report covers testing of a hose to be used in case of house fire. The hose was supplied by Gowens engros.

## 2 INTRODUCTION

DNV has been requested by Gowens engros to test a hose named RedBox. The aim is to test if the hose will maintain its function when being exposed to a number of bends.

“The directorate for civil protection and emergency planning” (DSB) in Norway states that “a fire hose should maintain necessary qualities for supplying enough amount of liquid such that the fire hose maintains its function during fire extinguishing”. There are no national or european rules for testing of this type of hoses. The testplan has therefore been designed by Gowens engros. The hose is 15m long.

## 3 PERFORMED TEST

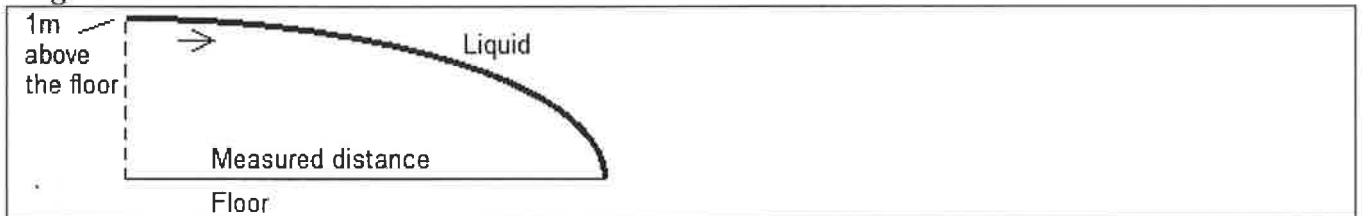
### Testplan

The testplan is based on the minimal water pressure and flow (liter/min) that can be expected in a house. This was decided to be 2 bara static pressure and 10 liter/min.

Two types of tests were performed.

The “length of thrust” test included measuring the length from the hose outlet to hitting the floor. The hose was held as normal when standing trying to reach a goal as far away as possible. The test was performed with six 90 degree bends.

**Figure 3-1:** Measured distance from hose outlet. The hose outlet was 1m above the floor.



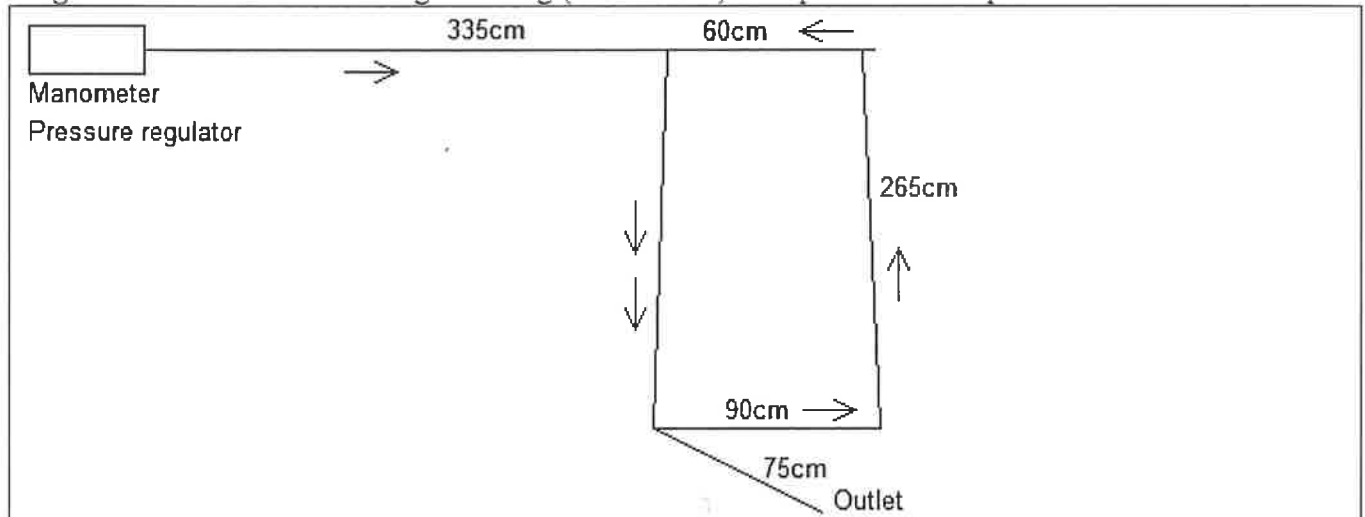
The “flow” test included a measurement of the volume of liquid passing through the hose in one minute. A bucket was filled during one minute. The test should be performed with six 90 degree bends.

### Testrig

The tests should be performed when the hose had six 90 degree “bends”. The bends should be of a type that would normally occur. That means not too twisted and not too little.

The water system in the house gave 5 bara. Thus, a pressure regulator was used to take it down to approximately 2 bara. Before the pressure regulator, there was a valve to control the flow volume. After the pressure regulator, there was a manometer to record pressure.

**Figure 3-2:** Schematic drawing of testrig (from above). See pictures in chapter 5.



### Result

The result was a “length of thrust” of approximately 7m. This was regarded as sufficient for the use of the hose.

## 4 LIMITATIONS

This report is a documentation of the performed tests and results. DNV has not been involved in the development of the test procedure or evaluation of test criteria. Any interpretation of the results is the responsibility of the customer.



## 5 LOGBOOK OF TESTS

### Logbook of tests

Test01. Length of thrust.  
Upstream pressure 1.4 bara.  
Distance 6.8m.

Test02. Flow test.  
Upstream pressure 1.4 bara.  
Result 2.2 liter/ min.

Note: Flow test without the RedBox hose.

Upstream pressure 1.4 bara.  
Result 18.4 liter/min.

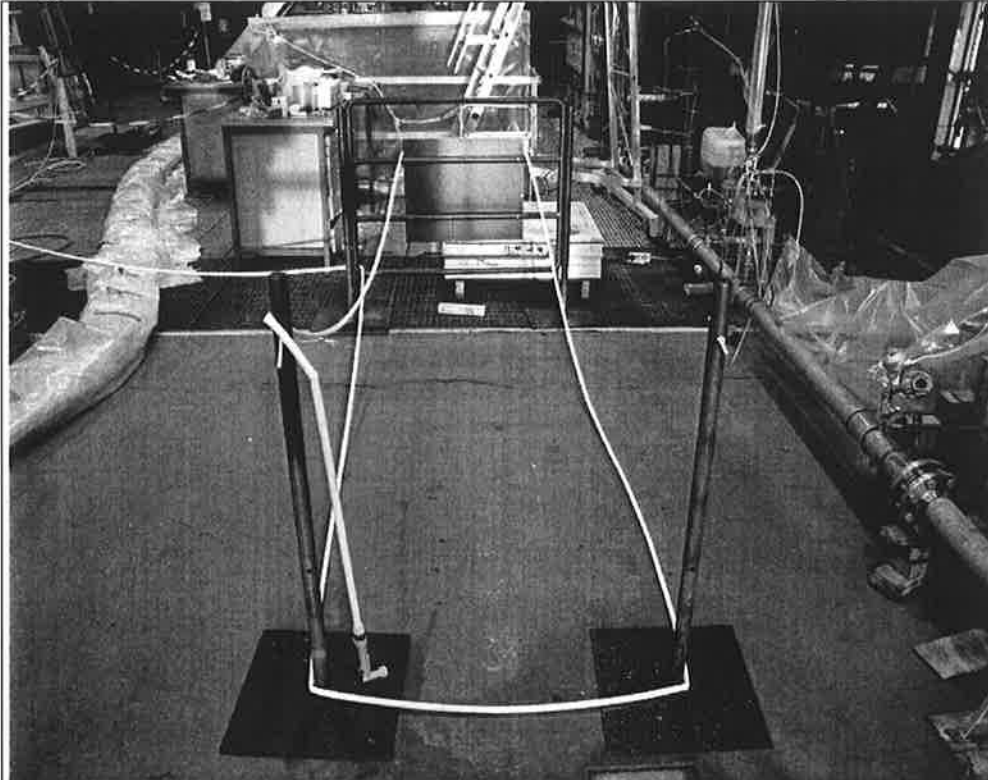
Note: Adjust valves above manometer to give 10 liter/min without the RedBox hose.

Test03. Length of thrust.  
Upstream pressure 1.2 bara.  
Distance 6.8m.

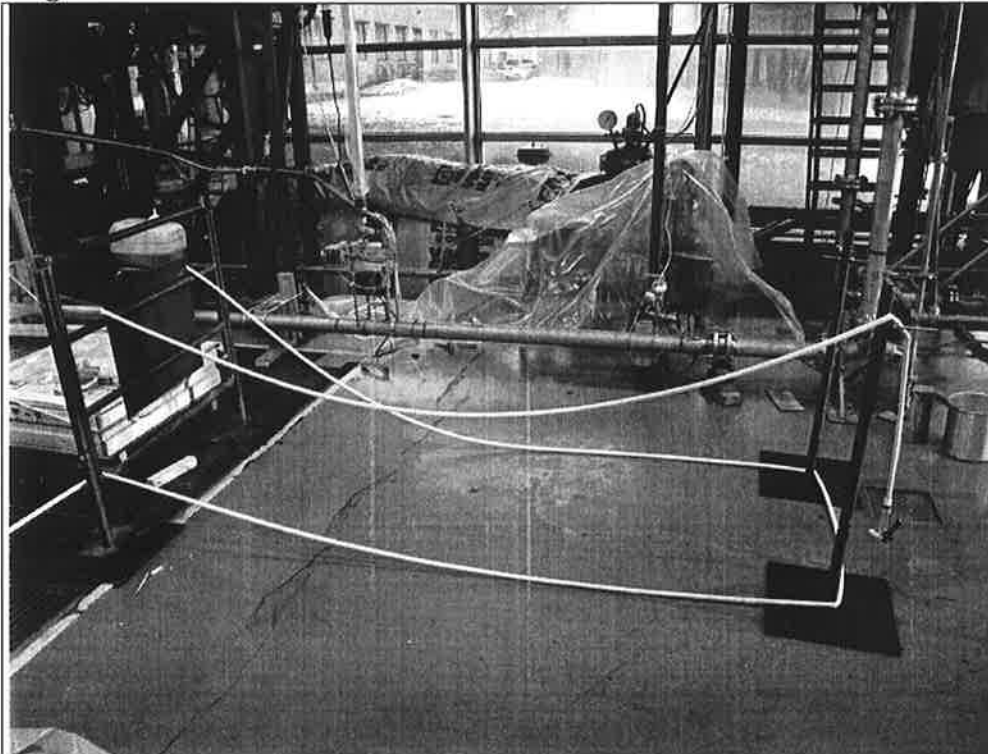
Test04. Flow test.  
Upstream pressure 1.2 bara.  
Result 2.4 liter/ min.

## 6 PHOTOS

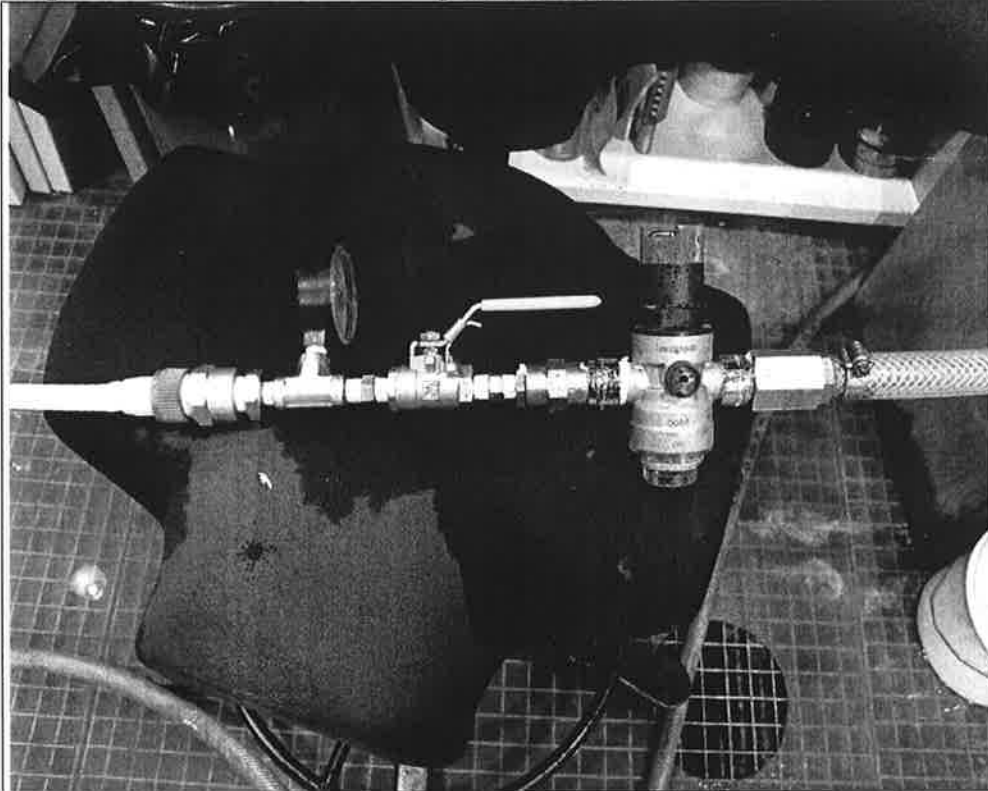
**Figure 6-1:** The hose with six bends.



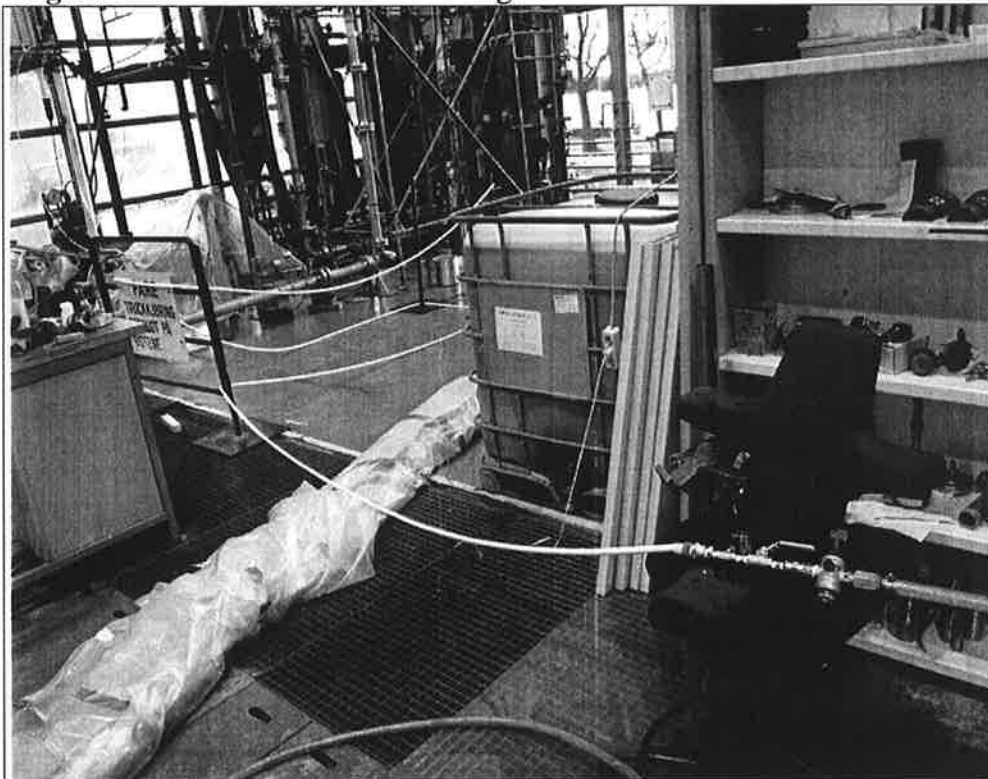
**Figure 6-2:** The hose with six bends. Side view.



**Figure 6-3:** The manometer and pressure regulator.



**Figure 6-4:** The hose above the testrig.





**Figure 6-5:** Second bend (counted from upstream).



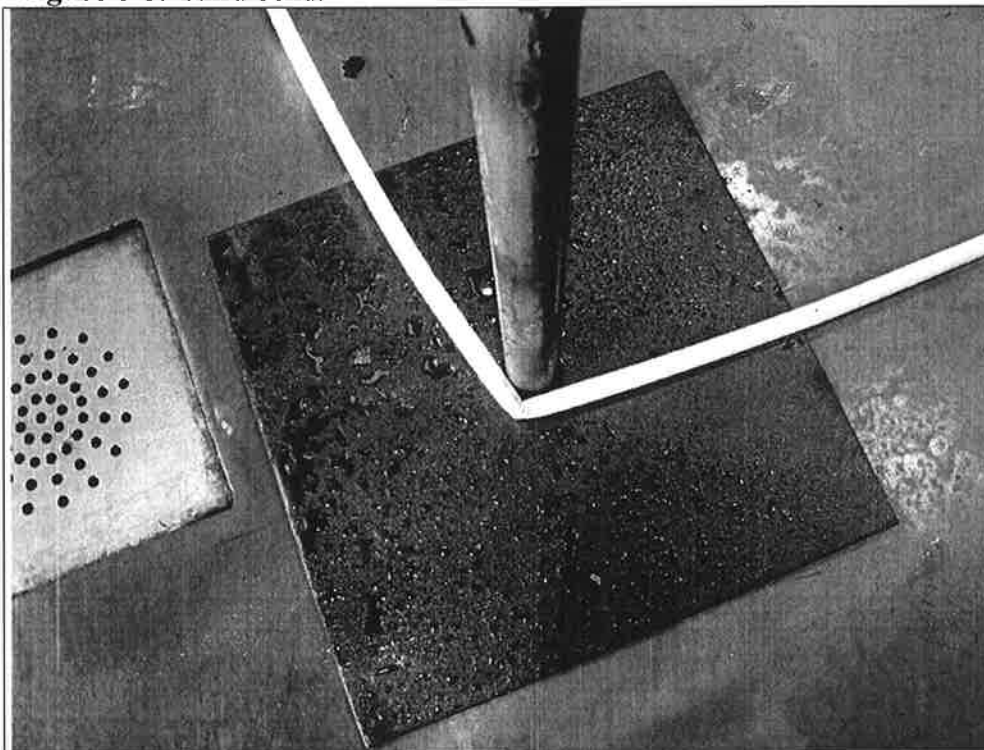
**Figure 6-6:** 1:st and 5:th bend.



Figure 6-7: 4:th bend.



Figure 6-8: Third bend.



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