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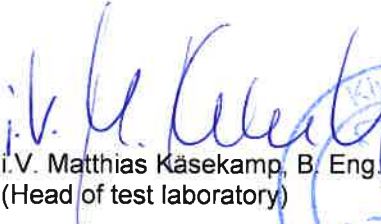
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Project: -  
Factory: -  
Date of order: 21 January 2019  
Test request: Test according to DIN EN 12004 (05.2017)  
Material: PVC-membrane (transparent) with onesided nonwoven (white)  
<sup>a)</sup>DualProof S  
Number of samples: 1 sample  
Sampling: -  
Sample delivery date: 17 October 2016  
Test duration: 17 October 2016 – 21 February 2019

Greven, 21 February 2019

  
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(Head of test laboratory)



  
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(Staff of test laboratory)





**1. Determination of tensile adhesion strength**

| Sample setup<br>(from bottom to top) | Material                                  | Additional information                   |
|--------------------------------------|---|--|
| substrate                            | concrete (C25/30)<br>40 cm x 40 cm x 4 cm | -  |
| sealing membrane                     | DualProof S                               | applied with a load of<br>75 kPa over 4h |

Sample preparation: 30.01.2019 (sample 1)  
31.01.2019 (sample 2)

Sample storage: dry storage at normal climate (23/50)

Test date: 19 February 2019

The test was performed with a device F6D from the company Freundl Series Easy MLC.  
The test area was cutted to the underground.

Table 1: results of the determination of tensile adhesion strength

| Sample No.  | Sample 1                            |          | Sample 2                            |          |
|-------------|-------------------------------------|----------|-------------------------------------|----------|
|             | Tensile adhesion strength<br>in MPa | Fracture | Tensile adhesion strength<br>in MPa | Fracture |
| 1           | 0,146                               | BV       | 0,031                               | BV       |
| 2           | 0,127                               | BV       | 0,078                               | BV       |
| 3           | 0,120                               | BV       | 0,138                               | BV       |
| 4           | 0,101                               | BV       | 0,037                               | BV       |
| 5           | 0,089                               | BV       | 0,093                               | BV       |
| 6           | 0,109                               | BV       | 0,099                               | BV       |
| 7           | 0,134                               | BV       | 0,143                               | BV       |
| 8           | 0,130                               | BV       | 0,090                               | BV       |
| 9           | 0,120                               | BV       | 0,157                               | BV       |
| 10          | 0,170                               | BV       | 0,107                               | BV       |
| <b>Mean</b> | <b>0,125</b>                        | -        | <b>0,097</b>                        | -        |

BV = fracture between nonwoven and concrete



image 1: fracture pattern sample 1



image 2: fracture pattern sample 2