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| <b>SGS Korea Co., Ltd.</b>  | <b>Issue No.</b> : CMT2020-1138R1 |
| <b>Construction Materials Testing Center</b>  |                                   |
| Address : 20,Dongtansandan 10-gil,Dongtan-myeon, Hwaseong-si, Gyeonggi-do, Korea, 18487<br>t +82(0)31 669-0600 Fax +82(0)31 646 0888<br>https://www.sgsgroup.kr |                                   |

## 1. Applicant

- Company : HANIL CEMENT Co., Ltd.
- Address : 330, Gangnam-daero, Gangnam-gu, Seoul, Korea
- Receipt Date: December 09, 2019

## 2. Test Purpose : Maintenance of quality

## 3. Sample Description : REMIGUARD RHD

## 4. Date of Test : December 16, 2019 ~ February 10, 2020

## 5. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

(address : Concrete / Mortar Laboratory, SGS Korea Co., Ltd, 20 ,Dongtansandan 10-gil, Dongtan-myeon, Hwaseong-si, Gyeonggi-do)

## 6. Test Results :

| No. | Test Items                                | Units                       | Test Methods     | Results |
|-----|---|-----------------------------|------------------|---------|
| 1   | Solid content of cement admixture polymer | %                           | KS F 4042 : 2012 | 99.7    |
| 2   | Flexural strength                         | 3 days                      |                  | 7.8     |
|     |   | 7 days                      |                  | 8.8     |
|     |   | 28days                      |                  | 10.3    |
| 3   | Compressive strength                      | 3 days                      |                  | 27.2    |
|     |   | 7 days                      |                  | 38.6    |
|     |   | 28days                      |                  | 49.7    |
| 4   | Bond strength                             | Standard conditions         |                  | 2.1     |
|     |   | After repeated hot and cold |                  | 1.9     |
| 5   | Alkali Resistance                         | N/mm <sup>2</sup>           |                  | 47.6    |
| 6   | Carbonation resistivity                   | mm                          |                  | 1.8     |
| 7   | Seepage quantity                          | g                           |                  | 2.2     |

※ Mix Proportion = powder : water = 100 : 15.0(weight ratio)

※ Bond Strength Test Conditions : After coating RG-Primer(A) to the base plate on the test specimens produced.

※ This test report supersedes the Report No. CMT2020-1138

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Tester : Moon, SeungKwon  
Tel : 031-646-0811

Technical Manager : Kim, DongHoon  
Tel : 031-646-0812

- Remarks :
- The results shown in this report refer only to the sample(s) submitted by applicant. This test report can not be reproduced or used other than the test purpose stated in above.
  - The authenticity of the test report can be confirmed on the SGS website. (<http://e-checking.kr.sgs.com/construction/>)

May 20, 2020

**SGS Korea Co., Ltd.**  
**Construction Materials Testing Center**



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| No. | Test Items                                       | Units                               | Test Methods     | Results |
|-----|--|-------------------------------------|------------------|---------|
| 8   | Water absorption coefficient                     | kg/m <sup>2</sup> ·h <sup>0.5</sup> | KS F 4042 : 2012 | 0.16    |
| 9   | Moisture penetration resistance(S <sub>d</sub> ) | m                                   |                  | 1.0     |
| 10  | Chloride ion penetration resistance              | Coulombs                            |                  | 781     |
| 11  | Length change                                    | %                                   |                  | -0.011  |

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