



GSL LABORATORY CORPORATION TAIWAN BRANCH

Taipei Laboratory

TEST REPORT

Report No. : PO-14-00416XA-1

Date : May 6, 2014

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Project Name	: Taiwan Provincial Highway 9 Suhua Section Guan-Yin Tunnel Project
Owner	: Suhua Improvement Engineering Office, Directorate General of Highways
Construction Supervisor	: CECI Engineering Consultants, Inc., Taiwan
Contractor	: KSECO
Supplier	: WECAND Enterprise Co., Ltd.
Sample Name	: NSR(PWF-1X)
Structural Position	: Tunnel Grouting Use
Sample Taken By	: CECI Engineering Consultants, Inc., Taiwan (Tsai, Yu-Zheng) 、 KSECO (Lin, Bo-Wen)
Sample Submitted By	: CECI Engineering Consultants, Inc., Taiwan (Tsai, Yu-Zheng) 、 KSECO (Lin, Bo-Wen)
Date of Sampling	: Apr. 26, 2014
Applicant	: KSECO
Date of Sample Received	: Apr. 28, 2014
Date of Testing	: Apr. 28, 2014 ~ May 5, 2014
Remark	: This report substituted PO-14-00416X testing report, original report declared invalid, modify the reporting date on May 27, 2014. The name of "Sample Taken By" and "Sample Submitted By" type error.

TEST RESULT:

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Unless otherwise the results stated in this report relate only to the sample(s) submitted for testing.
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Laboratory Address: No.65, Xingfu E., Rd., Xinzhuang Dist., New Taipei City 242, Taiwan (R.O.C)
Tel: (886-2)22773996 Fax: (886-2)22773596

APPROVED SIGNATORY

Chris Wang

For and on behalf of
WECAND ENTERPRISE CO., LTD.

Authorized Signature(s)



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TEST RESULT:

Test item		Unit	Test Result
Reaction time(20°C)		second	30
Foaming expansion ratio		-	about 1.1 times
Viscosity(25°C)	Agent A	cP	112
	Agent B	cP	235
Proportion(20°C)	Agent A	-	1.03
	Agent B	-	1.21
Compressive strength		MPa	>38.4
Density		g/cm ³	1.08

Note : 1.Ratio : NSR(PWF-1X) Agent A : Agent B= 1 : 1 (Volume ratio)

2.Reaction time : After uniform mixing by the ratio designated by the applicant, record time from the beginning of foaming to the complete of foaming.

3.Foaming expansion ratio : After uniform mixing by the ratio designated by the applicant, record the height of foaming and calculation foaming expansion ratio.

4.Viscosity : turn needle S61.

5.Proportion : test by gravity cup.

6.Compressive strength : specimen 5cm×5cm×5cm ; compression rate 2.5mm/min.

7.Density : specimen 5cm×5cm×5cm ; measure length 、 width and height to calculate the volume,and weighed quality 、 compute density.

-----END -----

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Chris Wang

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