Testing Laboratory 0119

Material & Engineering Laboratory-Kaohsiung

Test Report

Report No. : KK-16-02774ZA
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Date of Report : Apr. 08, 2016

Project Name	Taiwan Provincial Highway 9 South-Link Tunnel Project C2
Owner	West Coast Expressway Southern Region Engineering Office, Directorate General of Highways, Taiwan
Construction Supervisor	CECI Engineering Consultants, Inc., Taiwan
Contractor	Futsu Construction Co., Ltd.
Applicant	CECI Engineering Consultants, Inc., Taiwan
Supplier	WECAND ENTERPRISE Co., Ltd.
Sample Name	Self-drilling Rock Bolt & accessories
Structural Position	Main Tunnel Support
Sampling Location	Stack Yard of North Portal
Sample Taken By	CECI Engineering Consultants, Inc., Taiwan(Pan, Zhong-Bao); Futsu Construction Co., Ltd.(Yang, Shi-Chang)
Sample Submitted By	CECI Engineering Consultants, Inc., Taiwan(Pan, Zhong-Bao); Futsu Construction Co., Ltd.(Yang, Shi-Chang)
Date of Sampling	Mar. 23, 2016
Date of Sample Received	Mar. 24, 2016
Date of Testing	Mar. 24, 2016~Apr. 07, 2016
Testing Method	CNS 2111(1996), Scales, Calipers and A measuring tape
Remark	1.The information mentioned in the above section is provided by Client(Exclude Date of Sample Received and Date of Testing) 2.The sample was transferred by SGS M&E Laboratory-Provincial Highway 9 South Round Road Widened to Improve Project A2-1 & A2-2 & A3 & B1 & B2 & C1 & C2, and Provincial Highway 9 Torrential Rain Disaster Repair and Other Projects Site Laboratory (Application No. XS-16-00012W C-16-00419. Received date: Mar. 23, 2016) for the testing item(s) as below to be performed in SGS M&E-Laboratory-Kaohsiung.

Test Results :

Specimen No.	Outside Diameter mm	Nominal Weight kg/m	Cross section Area (Remark 1) mm^2
Rock Bolt	31.17	2.86	364.77

Specimen No.	Yield Strength (0.2% offset) N/mm^2	Tensile Strength N/mm^2
Rock Bolt	795	832
Client Requirements	>440	>690

Specimen No.	Tensile Loads ton	Location of the Fracture
Rock Bolt + Coupler	31	11.8 cm away from the coupler
Client Requirements	>15	---

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

Signed for and on behalf of
SGS Taiwan Ltd.

The required specification(s) offered in this test report is/are for reference only.
The conformity judgment is at the Applicant's final verdict.

Authorized Signature(s)

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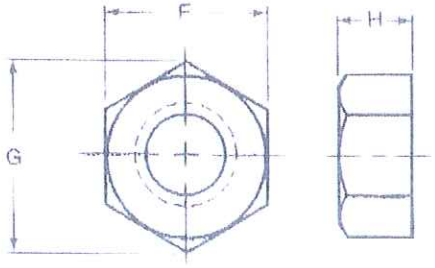
Testing Method Calipers, CNS 2114(2011)

Test Results :

Specimen No.	Maximum Diameter mm	Hardness HRC
Drill	50.41	60
Client Requirements	---	≧50



Specimen No.	Hardness HRBW	Dimension mm		
		G	F	H
Hexagon Nut	96	51.68	46.00	47.16
Client Requirements	≧68	---	---	---

Remark: 1. The calculation of cross section area refer to nominal weight of CNS 4435.
2. The accredited items of tensile test and hardness in this report belong to TAF Testing Laboratory Accreditation.
3. This Test Report is an additional original report of KK-16-02774Z. Issued date: Oct. 13, 2016.

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For and on behalf of
WECAND ENTERPRISE CO., LTD.
Jason Tsai
Authorized Signature(s)

Signed for and on behalf of
SGS Taiwan Ltd.

The required specification(s) offered in this test report is/are for reference only.
The conformity judgment is at the Applicant's final verdict.

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