



SETSCO SERVICES PTE LTD

18 Teban Gardens Crescent
Singapore 608925
Tel : (65) 6566 7777
Fax: (65) 6566 7718
Website: www.setsco.com
Business Reg. No. 196900269D

TEST REPORT

(This Report is issued subject to the terms & conditions set out below)

Your Ref: MQ-96492 dated 17 December 2014 Our Ref: MM-44949/TKC/2 Date: 15 January 2015

Page 1 of 5

Subject : Testing of Swivel Couplers submitted by Heiwagiken Co., Ltd on 09 January 2015.

Tested For : **HEIWAGIKEN CO., LTD**
13-21 Chikuchi-Machi,
Yahatanishi-Ku,
Kitakyushu City,
8060001 Japan
Attn: Ms. Li Meilan

Date and Place of Test : 13 January 2015 at Setsco Laboratory

Method of Test : SS 311 : 2005
- Annex D - Slip and Maximum Load Tests

Description of Sample : Six (06) pieces of Swivel couplers (refer photograph 1) with marking "**14**" (refer photograph 2) and three (03) lengths of 500mm scaffold tubes were received.

Results : Slip and Maximum Load Test
The tested samples met the requirements of SS 311: 2005 Table 4 - Annex D specifications.
(Refer table and photographs 3 to 7 attached).


TAN KOK CHUAN
Testing Officer


CHENG KWANG MENG
Manager (Mechanical Testing)
Mechanical Technology Division

Terms & Conditions

- (1) The Report is prepared for the sole use of the Client and is prepared based upon the Item submitted, the services required by the Client and the conditions under which the Services are performed by SETSCO. The Report is not intended to be representative of similar or equivalent Services on similar or equivalent items. The Report does not constitute an endorsement by SETSCO of the item.
- (2) SETSCO agrees to use reasonable diligence in the performance of the Services but no warranties are given and done may be implied directly or indirectly relating to the Services, the Report or the facilities of SETSCO.
- (3) The Report may not be used in any publicity material without the written consent of SETSCO.
- (4) The Report may not be reproduced in part or in full unless approval in writing has been given by SETSCO.
- (5) SETSCO shall under no circumstances be liable to the Client or its agents, servants or representatives, in contract, tort (including negligence or breach of statutory duty) or otherwise for any direct or indirect loss or damage suffered by the Client, its agents, servants or representative howsoever arising or wether connected with the Services provided by SETSCO herein.

Results:**Table: Slip and Maximum Load Test**

Sample Reference		Swivel Coupler Sample Marking: <u>14</u>			SS 311 : 2005 (Table 4 - Annex D) Requirements
		Set 1	Set 2	Set 3	
Weight of sample (g)		671	670	671	-
Slippage Test (mm)	Position A	7	6	5	Shall not exceed 10mm at a tension load of 7.35kN
	Position B	7	7	7	
	Position C	6	6	7	
	Position D	8	9	6	
Maximum Load (kN)		15.9	15.3	19.5	Min. 9.81
Average Maximum Load (kN)		16.9			Min. 10.8

Note: The nuts were tightened by torque wrench to a torque of 44Nm for Maximum load test as recommended in the SS 311 : 2005 Specification.

**Photograph 1: Shows sample submitted****Photograph 2: Shows sample marking on the couplers - Closed-up view**



Photograph 3: Shows failure mode of the tested samples Set 1



Photograph 4: Shows failure mode of tested sample Set 1

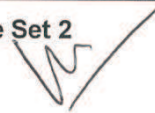




Photograph 5: Shows failure mode of tested sample Set 2



Photograph 6: Shows failure mode of tested sample Set 2





Photograph 7: Shows failure mode of tested sample Set 3

