



SANDBERG CONSULTING ENGINEERS

INVESTIGATION INSPECTION
MATERIALS TESTING

Sandberg LLP
40 Grosvenor Gardens
London SW1W 0EB

Tel: 020 7565 7000
Fax: 020 7565 7100
email: ho@sandberg.co.uk
web: www.sandberg.co.uk

SLIPPING FORCE TEST CERTIFICATE FOR CLASS B DROP FORGED SWIVEL (SW) COUPLER

Certificate:	40993/M/1	Samples Received:	1 September 2009	Test Date:	10 September 2009
Reference:	P0518.ar	Tested by:	AR	Test Procedure:	M-29
Client Details:	ARI Limited, Hurriyet Mah Ulus Cad Erler Sok Demkar Sitesi 5 A/1 PK-34876 Kartal, Istanbul, Turkiye				

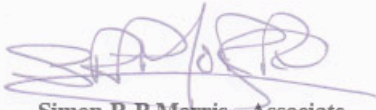
Determination of Slipping Force ($F_{s,c}$) with Reference to BS EN 74 - 1 : 2005 Cl. 7.2.1

Sample Identification	Coupler Markings	Tightening Torque Nm	Tube Type	Slipping Force (F_s) kN	Comments
MP 367/A	48	50	3.2mm	19.3	Acceptable
Specification: Class B		50 Nm	3.2mm W.T	> 15.0 kN	

Remarks: The above coupler complied with the acceptance requirements of BS EN 74 - 1 : 2005 cl. 7.2.1.5, ie not less than $F_{s,c}$ for coupler class B.

Scaff-03

For Sandberg LLP



Simon R P Morris - Associate

Date: 22 September 2009

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



SANDBERG CONSULTING ENGINEERS

INVESTIGATION INSPECTION
MATERIALS TESTING

Sandberg LLP
40 Grosvenor Gardens
London SW1W 0EB

Tel: 020 7565 7000
Fax: 020 7565 7100
email: ho@sandberg.co.uk
web: www.sandberg.co.uk

FAILURE FORCE TEST CERTIFICATE FOR CLASS B DROP FORGED SWIVEL (SW) COUPLER

Certificate:	40993/M/2	Samples Received:	1 September 2009	Test Date:	8 September 2009
Reference:	P0518.ar	Tested by:	AR	Test Procedure:	M-29
Client Details:	ARI Limited, Hurriyet Mah Ulus Cad Erler Sok Demkar Sitesi 5 A/1 PK-34876 Kartal, Istanbul, Turkiye				

DETERMINATION OF FAILURE FORCE (Ff,c), WITH REFERENCE TO BS EN 74 - 1 : 2005 cl.7.2.2

Sample Identification	Coupler Markings	Maximum Applied Test Force kN	Minimum Required Test Force (Ff,c) kN	Comments
MP 367/B	48	33.5	25.0	Acceptable

Remarks: The above coupler complied with the acceptance requirements of BS EN 74 - 1 : 2005 cl. 7.2.2.4, ie not less than Ff,c for coupler class B. Maximum applied test force required to include a partial safety factor of 1.25.

Scaff-02

For Sandberg LLP



Simon R P Morris - Associate

Date: 22 September 2009

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



SANDBERG CONSULTING ENGINEERS

INVESTIGATION INSPECTION
MATERIALS TESTING

Sandberg LLP
40 Grosvenor Gardens
London SW1W 0EB

Tel: 020 7565 7000
Fax: 020 7565 7100
email: ho@sandberg.co.uk
web: www.sandberg.co.uk

PULL APART TEST CERTIFICATE FOR CLASS B DROP FORGED SWIVEL (SW) COUPLER

Certificate:	40993/M/3	Samples Received:	1 September 2009	Test Date:	10 September 2009
Reference:	P0518.ar	Tested by:	AR	Test Procedure:	M-29
Client Details:	ARI Limited, Hurriyet Mah Ulus Cad Erlen Sok Demkar Sitesi 5 A/1 PK-34876 Kartal, Istanbul, Turkiye				

Determination of Pull Apart Force ($F_{p,c}$) with Reference to the Test methods for RA Couplers Described in BS EN 74 - : 2005 cl. 7.3

Sample Identification	Coupler Markings	Maximum Applied Test Force kN	Minimum Required Test Force ($F_{f,c}$) kN	Comments
MP 367/C	48	35	25.0	Acceptable

Remarks: The above coupler complied with the acceptance requirements of BS EN 74 - 1 : 2005 for SW failure force $F_{f,c}$ specified values for coupler class B. Maximum applied test force required to include a partial safety factor of 1.25.

Scaff-04

For Sandberg LLP



Simon R P Morris - Associate

Date: 22 September 2009

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



SANDBERG CONSULTING ENGINEERS

INVESTIGATION INSPECTION
MATERIALS TESTING

Sandberg LLP
40 Grosvenor Gardens
London SW1W 0EB

Tel: 020 7565 7000
Fax: 020 7565 7100
email: ho@sandberg.co.uk
web: www.sandberg.co.uk

SLIPPING FORCE TEST CERTIFICATE FOR CLASS B DROP FORGED RIGHT-ANGLE (RA) COUPLER

Certificate:	40993/M/4	Samples Received:	1 September 2009	Test Date:	8 September 2009
Reference:	P0518.ar	Tested by:	AR	Test Procedure:	M-29
Client Details:	ARI Limited, Hurriyet Mah Ulus Cad Erler Sok Demkar Sitesi 5 A/1 PK-34876 Kartal, Istanbul, Turkiye				


Determination of Slipping Force ($F_{s,c}$) with Reference to BS EN 74 - 1 : 2005 Cl. 7.2.1

Sample Identification	Coupler Markings	Tightening Torque Nm	Tube Type	Slipping Force (F_s) kN	Comments
MP 368/A	Nr 47	50	3.2mm	17.6	Acceptable
Specification: Class B		50 Nm	3.2mm W.T	> 15.0 kN	

Remarks: The above coupler complied with the acceptance requirements of BS EN 74 - 1 : 2005 cl. 7.2.1.5, ie not less than $F_{s,c}$ for coupler class B.

Scaff-03

For Sandberg LLP



Simon R P Morris - Associate

Date: 22 September 2009

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



SANDBERG CONSULTING ENGINEERS

INVESTIGATION INSPECTION
MATERIALS TESTING

Sandberg LLP
40 Grosvenor Gardens
London SW1W 0EB

Tel: 020 7565 7000
Fax: 020 7565 7100
email: ho@sandberg.co.uk
web: www.sandberg.co.uk

FAILURE FORCE TEST CERTIFICATE FOR CLASS B DROP FORGED RIGHT-ANGLE (RA) COUPLER

Certificate:	40993/M/5	Samples Received:	1 September 2009	Test Date:	8 September 2009
Reference:	P0518.ar	Tested by:	AR	Test Procedure:	M-29
Client Details:	ARI Limited, Hurriyet Mah Ulus Cad Erler Sok Demkar Sitesi 5 A/1 PK-34876 Kartal, Istanbul, Turkiye				

DETERMINATION OF FAILURE FORCE (Ff,c), WITH REFERENCE TO BS EN 74 - 1 : 2005 cl.7.2.2

Sample Identification	Coupler Markings	Maximum Applied Test Force kN	Minimum Required Test Force (Ff,c) kN	Comments
MP 368/B	Nr 47	50	37.5	Acceptable

Remarks: The above coupler complied with the acceptance requirements of BS EN 74 - 1 : 2005 cl. 7.2.2.4, ie not less than Ff,c for coupler class B. Maximum applied test force required to include a partial safety factor of 1.25.

Scaff-02

For Sandberg LLP



Simon R P Morris - Associate

Date: 22 September 2009

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



SANDBERG CONSULTING ENGINEERS

INVESTIGATION INSPECTION
MATERIALS TESTING

Sandberg LLP
40 Grosvenor Gardens
London SW1W 0EB

Tel: 020 7565 7000
Fax: 020 7565 7100
email: ho@sandberg.co.uk
web: www.sandberg.co.uk

PULL APART FORCE TEST CERTIFICATE FOR CLASS B DROP FORGED RIGHT-ANGLE (RA) COUPLER

Certificate:	40993/M/6	Samples Received:	1 September 2009	Test Date:	10 September 2009
Reference:	P0518.ar	Tested by:	AR	Test Procedure:	M-29
Client Details:	ARI Limited, Hurriyet Mah Ulus Cad Erler Sok Demkar Sitesi 5 A/1 PK-34876 Kartal, Istanbul, Turkiye				

Determination of Pull Apart Force (Fp,c) with Reference to BS EN 74 - 1 : 2005 Cl. 7.3

Sample Identification	Coupler Markings	Maximum Applied Test Force kN	Minimum Required Test Force (FP,c) kN	Comments
MP 368/C	Nr 47	49.7	37.5	Acceptable

Remarks: The above coupler complied with the acceptance requirements of BS EN 74 - 1 : 2005 cl.7.3.4, ie not less than Fp,c for coupler class B. Maximum applied test force required to include a partial safety factor of 1.25.

Scalf-01

For Sandberg LLP



Simon R P Morris - Associate

Date: 22 September 2009

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.