

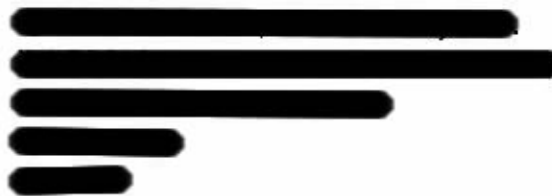
TEST CERTIFICATE

SHEFFIELD
TESTING LABORATORIES LTD

56 Nursery Road, Sheffield S18 1JF, UK
Telephone: (0114) 272 3248
e-mail: info@sheffield-test.co.uk

This report details the results of prototype tests carried out on right angle couplers used for connecting steel tubes of 48.3mm outside diameter and of at least 3.2mm nominal wall thickness at a minimum in the construction of working scaffolds and falsework required for the construction, maintenance, repair and demolition of buildings and structures.

Submitted for test by :-



Description and Marks on couplings.

A zinc plated, drop forged, steel right angle coupler, manufactured to drawings F 992A, and F992C

Marks :- EN 74B QS99

Basis of Tests.

The couplings have been tested in accordance with the requirements of BS 1139 : Section 2.1 : 1991 - BS EN 74 : 1988.

The couplings submitted for test were selected at random, by the submitter from a batch of at least 500.

Manufacturers data for assessment purposes is detailed in appendix 2.

RESULTS

1. The design of the coupling complied with the requirements of the relevant items in clause 5 of the standard. From tests the recommended tightening torque was found to produce a stress equivalent to 43% of the Yield Stress of the screw
2. The measured dimensions, mass and material characteristics, of the couplings, were all within the tolerances as specified by the manufacturer.

Certified

B.R. Ancliff

Authorised Signatory
B.R. Ancliff



MATERIAL SERVICES
Certified to AS/NZS ISO 9001

Amdel Limited
A.C.N. 008 127 802

PO Box 338
TORRENSVILLE PLAZA SA 5031

Telephone (08) 8416 5200
Facsimile (08) 8234 2760

5 September 2002

[Redacted]

[Redacted]

REPORT 2AM1429 Pt2

CLIENT REFERENCE

O/No. Ver 526

TITLE

48mm and 50mm Right Angle Coupler

SAMPLE IDENTIFICATION

Mobile 48mm and 50mm Right Angle Coupler

WORK REQUESTED

Carry out testing in accordance with
AS 1576.2-1991 Appendix A and B

Investigating Officer:

Damien Lynch

Monty Luke
Group Leader
Material Services

Amdel Limited shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person, or company, resulting from the use of any information or interpretation given in this report. In no case shall Amdel Limited be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Page 1 of 5

1. INTRODUCTION

A request was received from [REDACTED] of [REDACTED] to carry out testing on the 48mm and 50mm mobile right angle coupler in accordance with AS 1576.2-1991 Appendix A (Slip Test) and Appendix B (Distortion Test).

2. PROCEDURE

2.1 Appendix A-Slip Test

Testing of the Mobile 48mm and 50mm Right Angle Coupler was carried out on the MTS Universal testing machine (Calibration No. SAC-K-23-8) using a similar apparatus as that shown in Appendix A Figure A1. The right angle coupler was fixed to two scaffold tubes at right angles and the coupler was tightened to the specified torque load of 54 N.m. Testing of the mobile right angle coupler was carried out in accordance with Appendix A A4 Procedure.

2.2 Appendix B-Distortion Test

Testing of the 48mm and 50mm Mobile Right Angle Coupler was carried out on the MTS Universal testing machine (Calibration No. SAC-K-23-8) using a similar apparatus as that shown in Appendix B Figure B1. The right angle coupler was fixed to two scaffold tubes at right angles and the coupler was tightened to the specified torque load of 54 N.m. Testing of the mobile right angle coupler was carried out in accordance with Appendix B B5 Procedure. Testing was carried out on the same coupler as that used for Appendix A.

As requested the testing was repeated using a specified torque load of 100 N.m for both tests.

3. RESULTS

For the results of the testing using the specified torque load of 54 N.m see the attached certificate on page 3 of 5.

For the results of the testing using the client specified torque load of 100 N.m see the attached certificate on page 4 of 5.

MATERIAL SERVICES
Certified to AS/NZS ISO 9001

Amdel Limited
A.C.N. 008 127 802

PO Box 338
TORRENSVILLE PLAZA SA 5031

Telephone (08) 8416 8200
Facsimile (08) 8234 2760

Test Certificate

CLIENT:
CLIENT REF: O/No. Ver 526

REPORT: 2AM1429 PL2
TEST DATE: 5 September 2002
PAGE NO. 3 of 5

TEST SPECIFICATION: AS 1575.2-1991 Appendix A and Appendix B.

DESCRIPTION: Mobile 48mm and 50mm right angle coupler

TEST RESULTS-Appendix A-Slip Test

Position	Torque N.m	Pre-Load (kN)	Load Applied (kN)	Slippage (mm)	Rotation (mm)	Result
A	54	6	12.5	0	6	PASS
B	54	6	12.5	1	6	PASS
C	54	6	12.5	1	7	PASS
D	54	6	12.5	1	7	PASS

TEST RESULTS-Appendix B-Distortion Test

Position	Torque N.m	Pre-Load (kN)	Load Applied (kN)	Distortion (mm)	Result
A	54	6	30	20mm	PASS
B	54	6	30	25mm	PASS
C	54	6	30	30mm	PASS
D	54	6	30	28mm	PASS

Remarks: The 48mm and 50mm Mobile Right Angle Coupler conforms to the test requirements of AS 1575.2-1991 Appendices A and B.

For each test at each position the sample was held at the specified pre-load and final load for one minute.

- Position A: Indicates the Coupler was fixed to the vertical tube (48mm side) with clamping nut being in the uppermost position.
- Position B: Indicates the Coupler was fixed to the vertical tube (48mm side) with clamping nut being in the lowest position.
- Position C: Indicates that the part of the coupler, which was previously attached to the horizontal tube, is now in the vertical direction (50mm side) with clamping nut being in the uppermost position.
- Position D: Indicates that the part of the coupler, which was previously attached to the horizontal tube, is now in the vertical direction (50mm side) with clamping nut being in the lowest position.

TESTING OFFICER: Damien Lynch
Mechanical Testing Officer

TESTING OFFICER: *Damien Lynch*



MATERIAL SERVICES
Certified to AS/NZS ISO 9001

PO Box 338
TORRENSVILLE PLAZA SA 5031

Amdel Limited
A.C.N. 008 127 802

Telephone (08) 8416 5200
Facsimile (08) 8234 2760

Test Certificate

CLIENT:
CLIENT REF.: O/No. Ver 526

REPORT: 2AM1428 Pt2
TEST DATE: 5 September 2002
PAGE NO. 4 of 5

TEST SPECIFICATION: AS 1576.2-1991 Appendix A and Appendix B.

DESCRIPTION: Mobile 48mm and 50mm right angle coupler

TEST RESULTS-Appendix A-Slip Test

Position	Torque N.m	Pre-Load (kN)	Load Applied (kN)	Slippage (mm)	Rotation (mm)	Result
A	100	6	12.5	0	6	PASS
B	100	6	12.5	0	7	PASS
C	100	6	12.5	0	6	PASS
D	100	6	12.5	0	8	PASS

TEST RESULTS-Appendix B-Distortion Test

Position	Torque N.m	Pre-Load (kN)	Load Applied (kN)	Distortion (mm)	Result
A	100	6	30	20	PASS
B	100	6	30	25	PASS
C	100	6	30	30	PASS
D	100	6	30	25	PASS

Remarks: The 48mm and 50mm Mobile Right angle coupler conforms to the test requirements of AS 1576.2-1991 Appendices A and B.

For each test at each position the sample was held at the specified pre-load and final load for one minute.

- Position A: Indicates the Coupler was fixed to the vertical tube (48mm side) with clamping nut being in the uppermost position.
- Position B: Indicates the Coupler was fixed to the vertical tube (48mm side) with clamping nut being in the lowest position.
- Position C: Indicates that the part of the coupler, which was previously attached to the horizontal tube, is now in the vertical direction (50mm side) with clamping nut being in the uppermost position.
- Position D: Indicates that the part of the coupler, which was previously attached to the horizontal tube, is now in the vertical direction (50mm side) with clamping nut being in the lowest position.

TESTING OFFICER: Damien Lynch
Mechanical Testing Officer

TESTING OFFICER: *Damien Lynch*

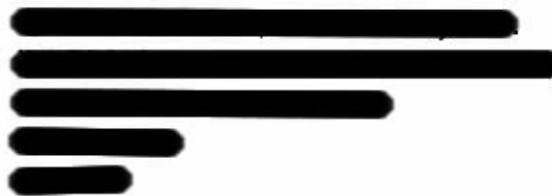
TEST CERTIFICATE


SHEFFIELD
TESTING LABORATORIES LTD

56 Nursery Road, Sheffield S18 1JF, UK
Telephone: (0114) 272 3248
e-mail: info@stl.co.uk

This report details the results of prototype tests carried out on right angle couplers used for connecting steel tubes of 48.3mm outside diameter and of at least 3.2mm nominal wall thickness at a minimum in the construction of working scaffolds and falsework required for the construction, maintenance, repair and demolition of buildings and structures.

Submitted for test by :-



Description and Marks on couplings.

A zinc plated, drop forged, steel right angle coupler, manufactured to drawings F 992A, and F992C

Marks :- EN 74B QS99

Basis of Tests.

The couplings have been tested in accordance with the requirements of BS 1139 : Section 2.1 : 1991 - BS EN 74 : 1988.

The couplings submitted for test were selected at random, by the submitter from a batch of at least 500.

Manufacturers data for assessment purposes is detailed in appendix 2.

RESULTS

1. The design of the coupling complied with the requirements of the relevant items in clause 5 of the standard. From tests the recommended tightening torque was found to produce a stress equivalent to 43% of the Yield Stress of the screw
2. The measured dimensions, mass and material characteristics, of the couplings, were all within the tolerances as specified by the manufacturer.

Certified



Authorised Signatory
B.R. Ancliff