



Nutek Systems

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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299A

DESCRIPTION OF SAMPLE : 20mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 20mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	20	20
Face to face dimension	119	120

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	20	20
Outside diameter	105.0	105 ± 4.0
Pitch circle diameter	74.3	75 ± 1.0
Bolt hole diameter	14.0	14 + 1.0 - 0
Number of bolt hole	4	4



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JOB REFERENCE: J 21299A

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	15	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

Date: 20 Apr 2017 Authorized signature: Vincent Lok

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LOK K.W., Vincent
(Mechanical Engineer)



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JOB REFERENCE: J 21299A

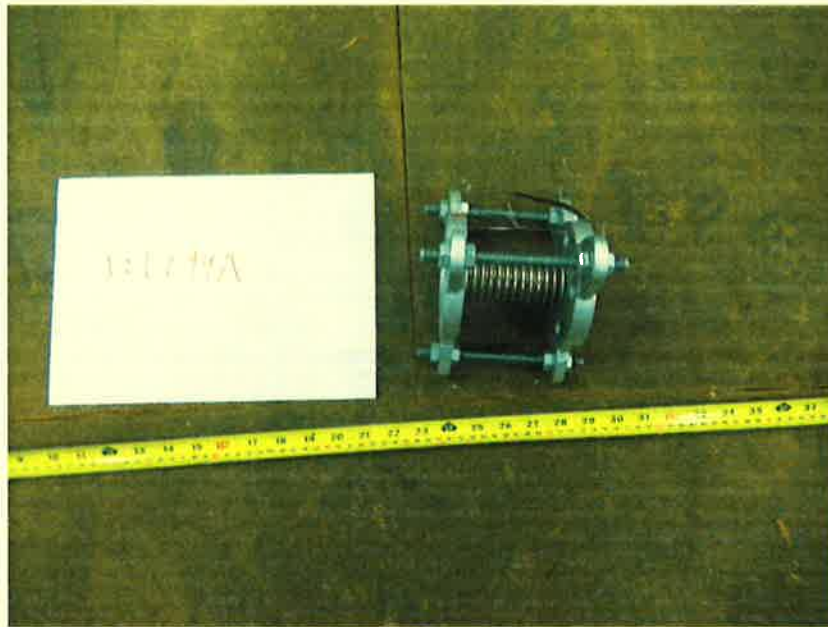


Figure 1 –20mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299B

DESCRIPTION OF SAMPLE : 25mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 25mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	25	25
Face to face dimension	120	120

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	25	25
Outside diameter	115	115 ± 4.0
Pitch circle diameter	85.0	85 ± 1.0
Bolt hole diameter	14.0	14 + 1.0 - 0
Number of bolt hole	4	4



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JOB REFERENCE: J 21299B

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	15	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

Date:

20 Apr 2017

Authorized signature:

Vincent Lok

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JOB REFERENCE: J 21299B

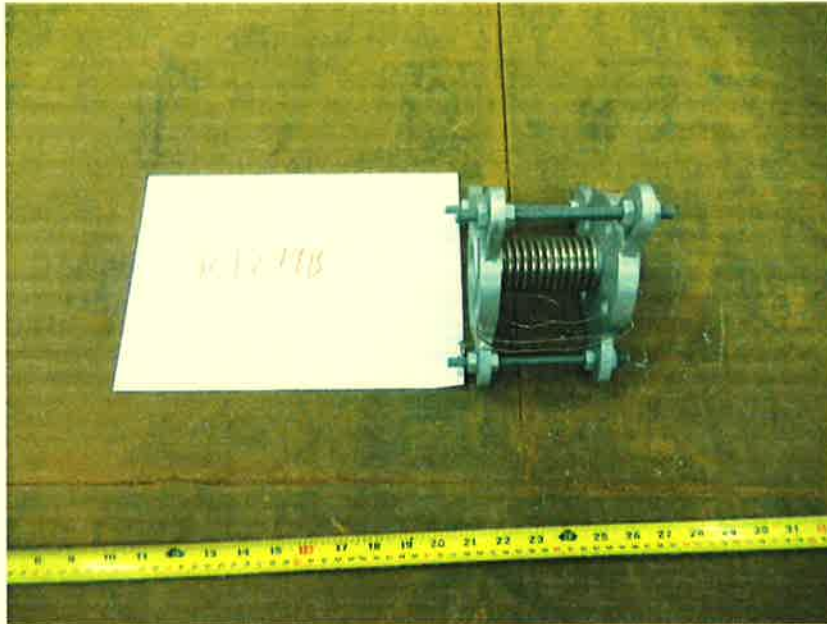


Figure 1 –25mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299C

DESCRIPTION OF SAMPLE : 32mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 32mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	32	32
Face to face dimension	118	120

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	32	32
Outside diameter	140	140 ± 4.0
Pitch circle diameter	100	100 ± 1.0
Bolt hole diameter	18.0	18 + 1.0 - 0
Number of bolt hole	4	4



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JOB REFERENCE: J 21299C

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	15	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory

Hydraulic pressure test - Satisfactory

Chemical composition - Satisfactory

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JOB REFERENCE: J 21299C

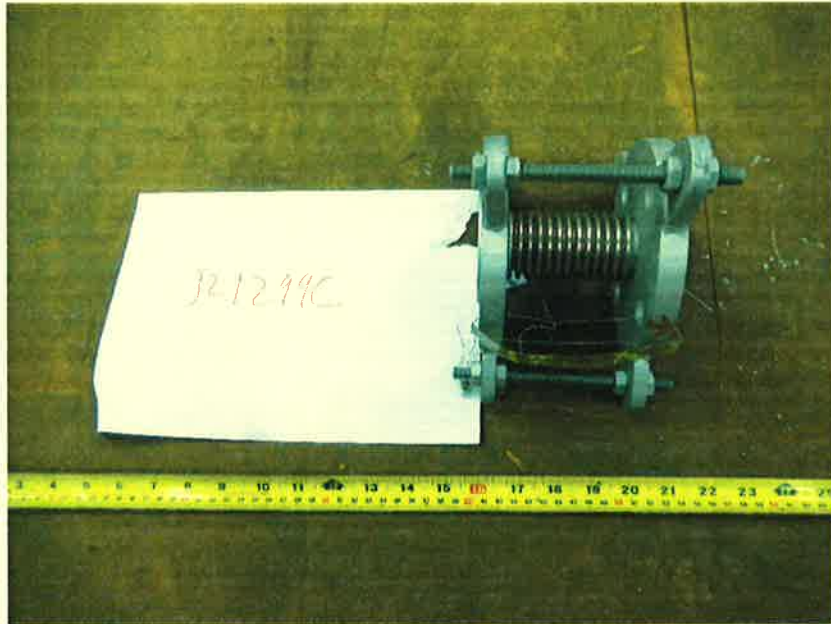


Figure 1 –32mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299D

DESCRIPTION OF SAMPLE : 40mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 40mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	40	40
Face to face dimension	150	150

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	40	40
Outside diameter	150	150 ± 4.0
Pitch circle diameter	110	110 ± 1.0
Bolt hole diameter	18.0	18 + 1.0 - 0
Number of bolt hole	4	4



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JOB REFERENCE: J 21299D

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	15	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

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JOB REFERENCE: J 21299D



Figure 1 –40mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299E

DESCRIPTION OF SAMPLE : 50mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 50mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	50	50
Face to face dimension	147	150

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	50	50
Outside diameter	165	165 ± 4.0
Pitch circle diameter	125	125 ± 1.0
Bolt hole diameter	18.0	18 + 1.0 - 0
Number of bolt hole	4	4



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JOB REFERENCE: J 21299E

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	15	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

Date: _____

20 Apr 2017

Authorized signature: _____

Vincent Lok

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JOB REFERENCE: J 21299E

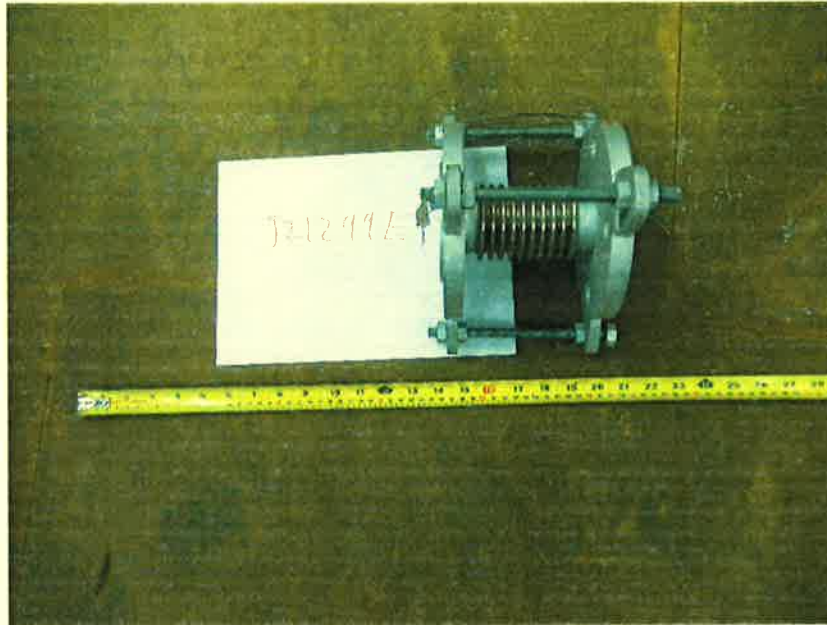


Figure 1 –50mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint
OUR REFERENCE : J 21299F
DESCRIPTION OF SAMPLE : 65mm Stainless steel Expansion joint
SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.
MANUFACTURER : Tozen Corporation
BRAND : Tozen
MODEL : JBF-316
ORIGIN : PRC
BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 65mm SUS 316 SUS 316
TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014
PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	65	65
Face to face dimension	151	150

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	65	65
Outside diameter	185	185 ± 4.0
Pitch circle diameter	145	145 ± 1.0
Bolt hole diameter	18.0	18 + 1.0 - 0
Number of bolt hole	4	4



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JOB REFERENCE: J 21299F

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	60	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition (%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory

Hydraulic pressure test - Satisfactory

Chemical composition - Satisfactory

Date:

20 Apr 2017

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Authorized signature:

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JOB REFERENCE: J 21299F

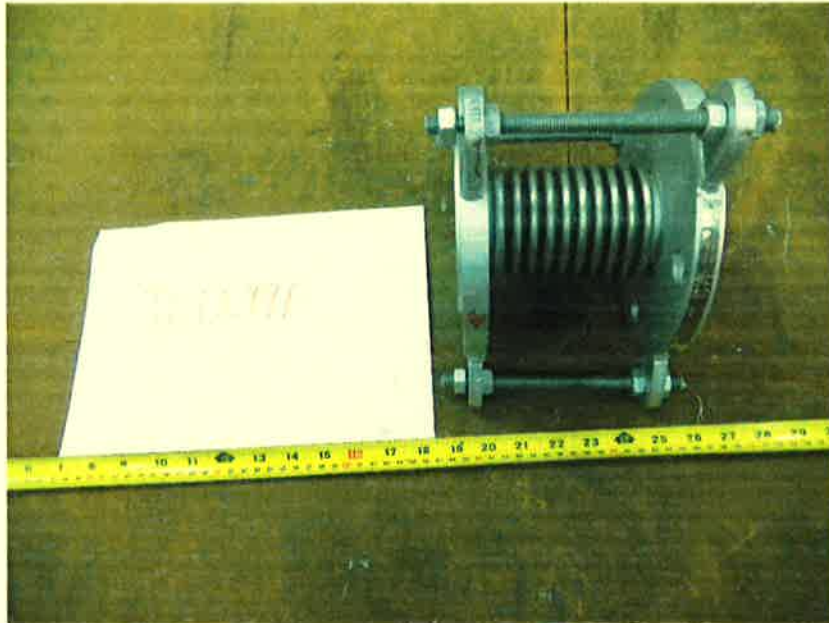


Figure 1 –65mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299G

DESCRIPTION OF SAMPLE : 80mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 80mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	80	80
Face to face dimension	150.5	150

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	80	80
Outside diameter	200	200 ± 4.0
Pitch circle diameter	160	160 ± 1.0
Bolt hole diameter	18.0	18 + 1.0 - 0
Number of bolt hole	8	8



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JOB REFERENCE: J 21299G

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	60	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

Date:

20 Apr 2017

Authorized signature:

Vincent Lok

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JOB REFERENCE: J 21299G

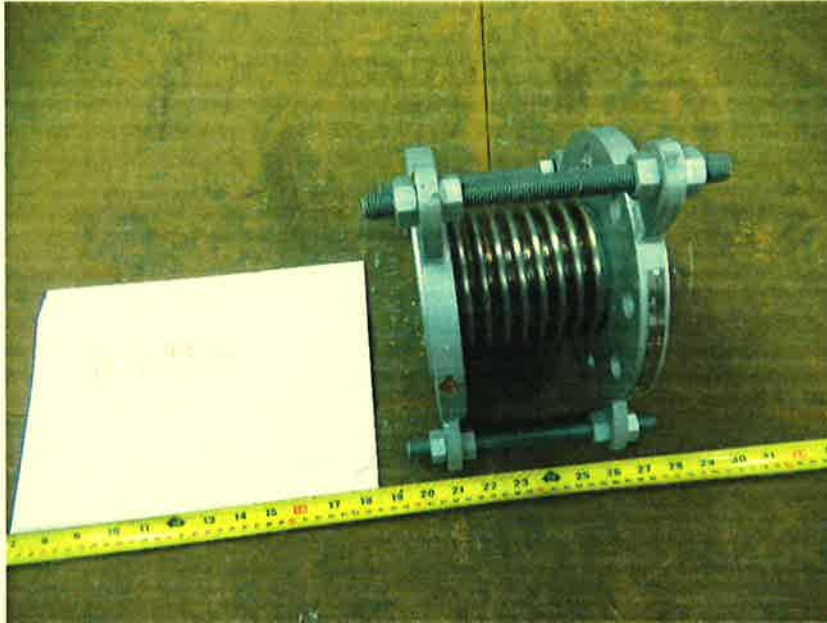


Figure 1 –80mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299H

DESCRIPTION OF SAMPLE : 100mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 100mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	100	100
Face to face dimension	200	200

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	100	100
Outside diameter	220	220 ± 4.0
Pitch circle diameter	180	180 ± 1.0
Bolt hole diameter	18.0	18 + 1.0 - 0
Number of bolt hole	8	8



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JOB REFERENCE: J 21299H

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	60	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory

Hydraulic pressure test - Satisfactory

Chemical composition - Satisfactory

Date: 20 Apr 2017

Authorized signature: _____

Vincent Lok

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LOK K.W., Vincent
(Mechanical Engineer)



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JOB REFERENCE: J 21299H

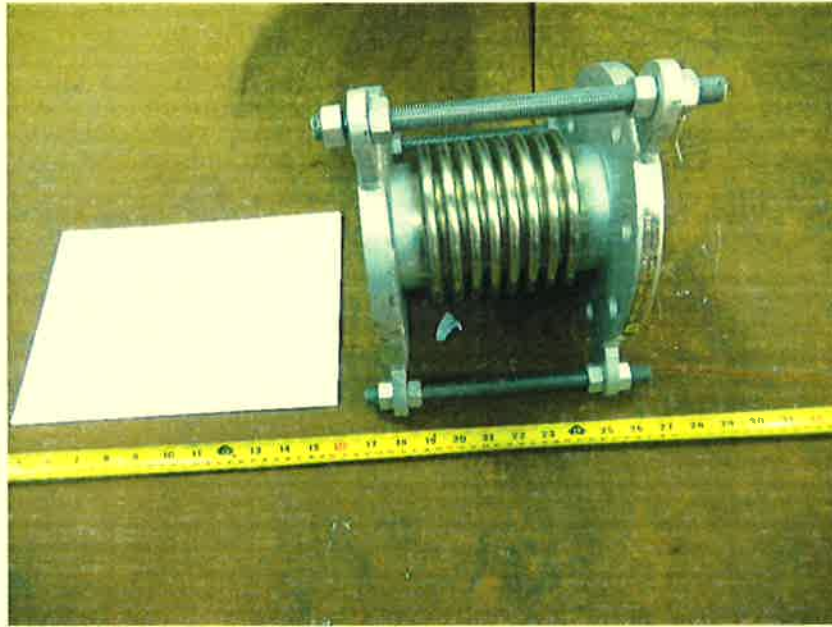


Figure 1 –100mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299I

DESCRIPTION OF SAMPLE : 125mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 125mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	125	125
Face to face dimension	201	200

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	125	125
Outside diameter	250	250 ± 4.0
Pitch circle diameter	210	210 ± 1.0
Bolt hole diameter	18.0	18 + 1.0 - 0
Number of bolt hole	8	8



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JOB REFERENCE: J 21299I

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	60	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory

Hydraulic pressure test - Satisfactory

Chemical composition - Satisfactory

Date: 20 Apr 2017

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JOB REFERENCE: J 21299I

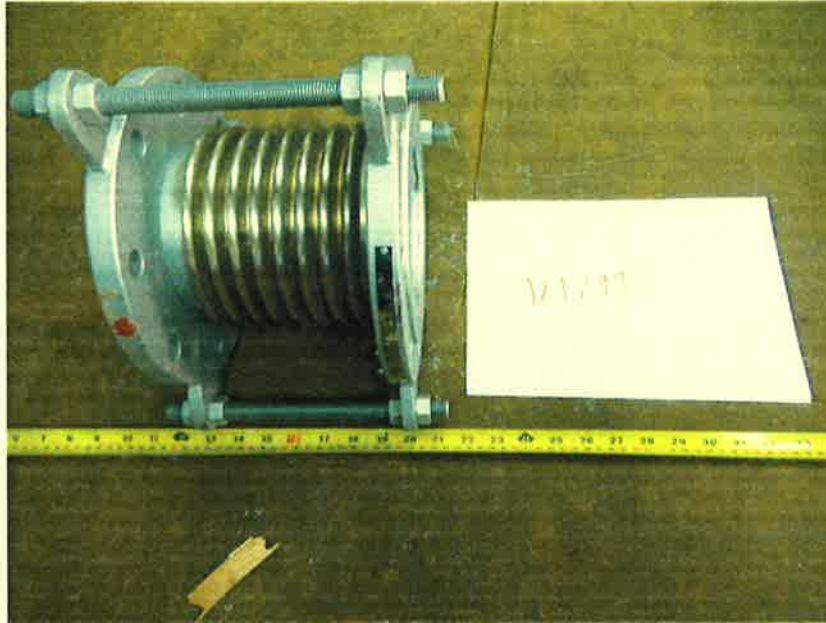


Figure 1 –125mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299J

DESCRIPTION OF SAMPLE : 150mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 150mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	150	150
Face to face dimension	200	200

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	150	150
Outside diameter	285	285 ± 4.0
Pitch circle diameter	240	240 ± 1.0
Bolt hole diameter	22.0	22 + 1.0 - 0
Number of bolt hole	8	8



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JOB REFERENCE: J 21299J

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	60	No	Pass
Test 2	16	40	60	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory

Hydraulic pressure test - Satisfactory

Chemical composition - Satisfactory

Date:

20 Apr 2017

Authorized signature:

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JOB REFERENCE: J 21299J

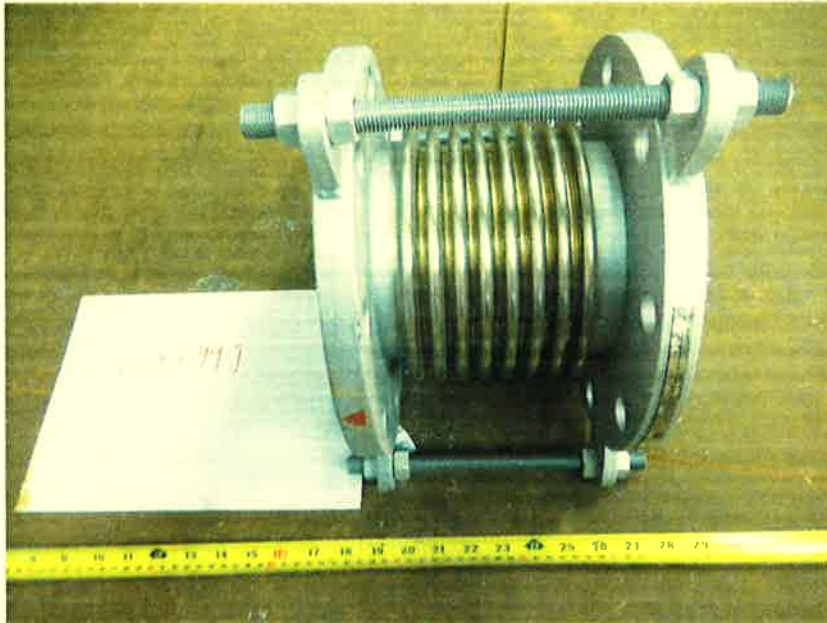


Figure 1 –150mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299K

DESCRIPTION OF SAMPLE : 200mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 200mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	200	200
Face to face dimension	250	250

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	200	200
Outside diameter	340	340 ± 4.0
Pitch circle diameter	295	295 ± 1.0
Bolt hole diameter	22.0	22 + 1.0 - 0
Number of bolt hole	12	12



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JOB REFERENCE: J 21299K

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	120	No	Pass
Test 2	16	40	120	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition (%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.007 5	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

Date: 20 Apr 2017 Authorized signature: _____

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JOB REFERENCE: J 21299K

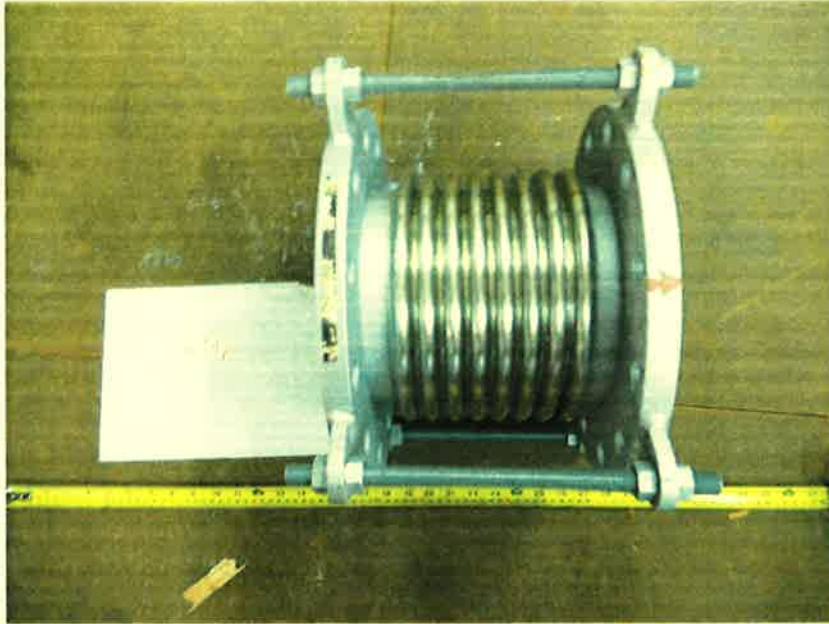


Figure 1 –200mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299L

DESCRIPTION OF SAMPLE : 250mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 250mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	250	250
Face to face dimension	251	250

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	250	250
Outside diameter	405	405 ± 4.0
Pitch circle diameter	355	355 ± 1.0
Bolt hole diameter	26.0	26 + 1.0 - 0
Number of bolt hole	12	12



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JOB REFERENCE: J 21299L

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	120	No	Pass
Test 2	16	40	120	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

Date:

20 Apr 2017

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JOB REFERENCE: J 21299L



Figure 1 –250mm Stainless Steel 316 expansion joints



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TITLE : Testing of Expansion Joint

OUR REFERENCE : J 21299M

DESCRIPTION OF SAMPLE : 300mm Stainless steel Expansion joint

SAMPLE SUBMITTED BY : Tozen (H.K.) Limited
Unit 1607, 16/F, Ho Lik Centre,
66A Sha Tsui Road, Tsuen Wan, N.T.

MANUFACTURER : Tozen Corporation

BRAND : Tozen

MODEL : JBF-316

ORIGIN : PRC

BODY MARKING : Brand TOZEN Type JBF Bellows Sleeve
NO 300mm SUS 316 SUS 316

TEST REQUIRED : BS EN 1092-1: 2007 + A1: 2013 & BS EN 12266-1: 2012 &
BS EN 10088-1:2014

PERIOD OF TESTS : 28th Feb., 2017 to 16th Mar., 2017

RESULTS: (this test report does not make any claims other than the reported results of the tested sample)

1. DIMENSIONS (in millimetres unless otherwise stated)

1.1 Joint

	Sample	Client's requirement
Nominal size	300	300
Face to face dimension	251	250

1.2 Flange (BS EN 1092-1: 2007 + A1: 2013, Table 9)

	Sample	Requirement
Nominal size DN	300	300
Outside diameter	459	460 ± 4.0
Pitch circle diameter	410	410 ± 1.0
Bolt hole diameter	26.0	26 + 1.0 - 0
Number of bolt hole	12	12



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JOB REFERENCE: J 21299M

2. HYDRAULIC PRESSURE TEST (BS EN 12266-1: 2012 Cl. 4)

	Nominal pressure (PN)	Test pressure (bar)	Duration (s)	Leakage (Yes/No)	Remark
Test 1	16	24	120	No	Pass
Test 2	16	40	120	No	Pass
Requirement	/	1.5x PN	15	No	/
Client's requirement	16	40	15	No	/

3. CHEMICAL COMPOSITION TEST

Component: Body

Designation: BS EN 10088-1:2014: 1.4401(SS316)

Composition(%)	C	Si	Mn	Cr	S	Mo	P	Ni
Body	0.022	<0.02	1.39	17.0	<0.005	2.1	<0.0075	10.1
Requirement	max. 0.070	max. 1.00	max. 2.00	16.5 - 18.5	max. 0.015	2.0 - 2.5	max. 0.045	10.0 - 13.0
Remark	C	C	C	C	C	C	C	C

"C" - Comply

4. SUMMARY OF RESULTS

Dimensions - Satisfactory
 Hydraulic pressure test - Satisfactory
 Chemical composition - Satisfactory

Date:

20 Apr 2017

Authorized signature:

Vincent Lok

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JOB REFERENCE: J 21299M

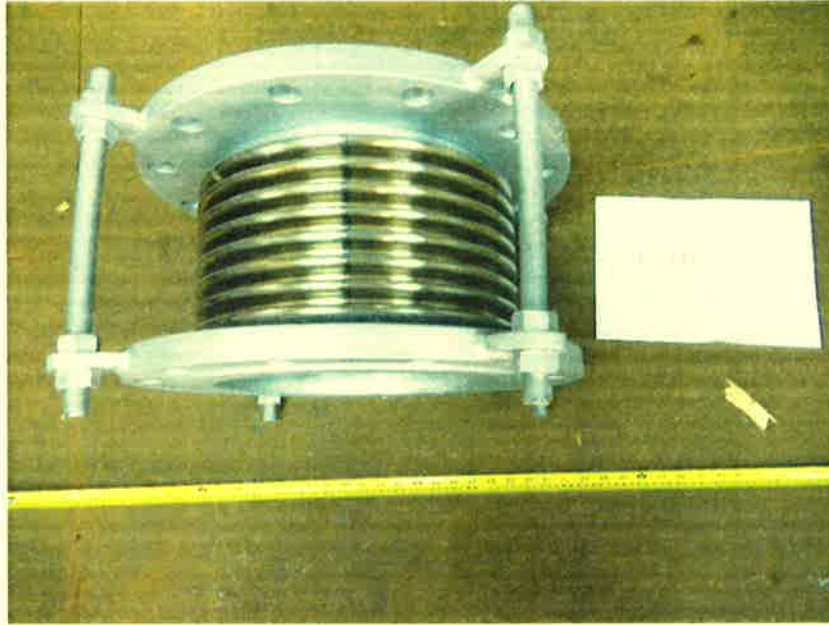


Figure 1 –300mm Stainless Steel 316 expansion joints