



TEST REPORT 2221548/02A-OYC

Date 03 MAR 2022

Singapore Test Lab Pte Ltd, 10B Enterprise Road, Singapore 629828, Tel: +65 6353 6393, Fax: +65 6353 6395

SUBJECT:

Dimensional measurements of flanges submitted by Liang Chew Hardware Pte Ltd.

TESTED FOR:

Liang Chew Hardware Pte Ltd
133 Kitchener Road
Singapore 208517

Attn: QC Department

SAMPLE RECEIVED DATE:

22 Feb 2022

TEST DATE:

22 Feb 2022

METHOD OF TEST:

BS 4504: Section 3.1: 1989 - Circular flanges for pipes, valves & fitting (PN designated) – Section 3.1- specification for steel flanges



The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council – Singapore Laboratory Accreditation Scheme.

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DESCRIPTION OF SAMPLE:

Six pieces of "Norika" brand blank flanges were received, the descriptions are as follow:

Product Code	Descriptions	Markings	Remark
SS304FPN16BF050	2" "NORIKA®" STAINLESS STEEL AISI304 BLANK FLANGE PN16 PCD OF HOLE:125MM 4X19MM NOS OF HOLES	Norika, PN 16 50mm	See photo 1
SS304FPN16BF065	2½" "NORIKA®" STAINLESS STEEL AISI304 BLANK FLANGE PN16 67MM PCD OF HOLE:145MM 4X19MM NOS OF HOLES	Norika, PN 16 67mm	
SS304FPN16BF080	3" "NORIKA®" STAINLESS STEEL AISI304 BLANK FLANGE PN16 80MM PCD OF HOLE:160MM 8X19MM NOS OF HOLES	Norika, PN 16 80mm	
SS304FPN16BF100	4" "NORIKA®" STAINLESS STEEL AISI304 BLANK FLANGE PN16 108MM PCD OF HOLE:180MM 8X19MM NOS OF HOLES	Norika, PN 16 100mm	
SS304FPN16BF150	6" "NORIKA®" STAINLESS STEEL AISI304 BLANK FLANGE PN16 159MM PCD OF HOLE:240MM 8X23MM NOS OF HOLES	Norika, PN 16 150mm	
SS304FPN16BF200	8" "NORIKA®" STAINLESS STEEL AISI304 BLANK FLANGE PN16 295MM PCD OF HOLE:295MM 8X23MM NOS OF HOLES	Norika, PN 16 200mm	

TEST RESULTS:

Table 1 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1: 1989 (PN 16) Table 7 and 11 code 105 Requirements
	DN 50	
Outside diameter, D (mm)	164.5	165 ± 2.0
Diameter of bolt circle, K (mm)	125.1	125 ± 0.9
Diameter of bolt hole, L (mm)	18	18
Bolting number	4	4
Flange thickness, C ₄ (mm)	18.3	18 ± 1.0
Flange face, d ₁ (mm)	101	102 +2.0, -1.0
Flange face, f ₁ (mm)	2.0	3 +0, -2.0

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TEST RESULTS (CONT'D):

Table 2 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1: 1989 (PN 16) Table 7 and 11 code 105 Requirements
	DN 65	
Outside diameter, D (mm)	185.0	185 ± 2.0
Diameter of bolt circle, K (mm)	145.0	145 ± 0.9
Diameter of bolt hole, L (mm)	18	18
Bolting number	4	4
Flange thickness, C ₄ (mm)	17.0	18 ± 1.0
Flange face, d ₁ (mm)	123.5	122 +2.0, -1.0
Flange face, f ₁ (mm)	2.1	3 +0, -2.0

Table 3 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1: 1989 (PN 16) Table 7 and 11 code 105 Requirements
	DN 80	
Outside diameter, D (mm)	200.2	200 ± 2.0
Diameter of bolt circle, K (mm)	160.3	160 ± 0.9
Diameter of bolt hole, L (mm)	18	18
Bolting number	8	8
Flange thickness, C ₄ (mm)	18.5	20 ± 1.5
Flange face, d ₁ (mm)	136.1	138 +2.0, -1.0
Flange face, f ₁ (mm)	1.9	3 +0, -2.0

Table 4 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1: 1989 (PN 16) Table 7 and 11 code 105 Requirements
	DN 100	
Outside diameter, D (mm)	220.0	220 ± 2.0
Diameter of bolt circle, K (mm)	180.3	180 ± 0.9
Diameter of bolt hole, L (mm)	18	18
Bolting number	8	8
Flange thickness, C ₄ (mm)	20.3	20 ± 1.5
Flange face, d ₁ (mm)	159.2	162 +2.0, -1.0
Flange face, f ₁ (mm)	2.0	3 +0, -2.0

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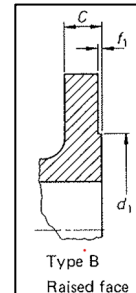
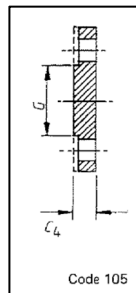
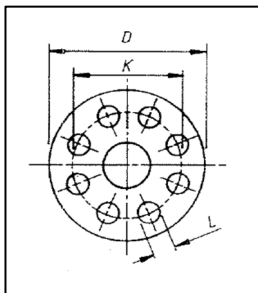
TEST RESULTS (CONT'D):

Table 5 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1: 1989 (PN 16) Table 7 and 11 code 105 Requirements
	DN 150	
Outside diameter, D (mm)	285.0	285 ± 2.0
Diameter of bolt circle, K (mm)	240.2	240 ± 0.9
Diameter of bolt hole, L (mm)	22	22
Bolting number	8	8
Flange thickness, C ₄ (mm)	22.4	22 ± 1.5
Flange face, d ₁ (mm)	211.0	212 +2.0, -1.0
Flange face, f ₁ (mm)	1.8	3 +0, -2.0

Table 6 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1: 1989 (PN 16) Table 7 and 11 code 105 Requirements
	DN 200	
Outside diameter, D (mm)	340.0	340 ± 3.0
Diameter of bolt circle, K (mm)	295.0	295 ± 0.9
Diameter of bolt hole, L (mm)	22	22
Bolting number	12	12
Flange thickness, C ₄ (mm)	22.0	24 ± 1.5
Flange face, d ₁ (mm)	268.0	268 +2.0, -1.0
Flange face, f ₁ (mm)	2.0	3 +0, -2.0




Ong Yeo Chuan
Testing Officer


Chua Peck Cheong
Senior Manager

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APPENDIX:

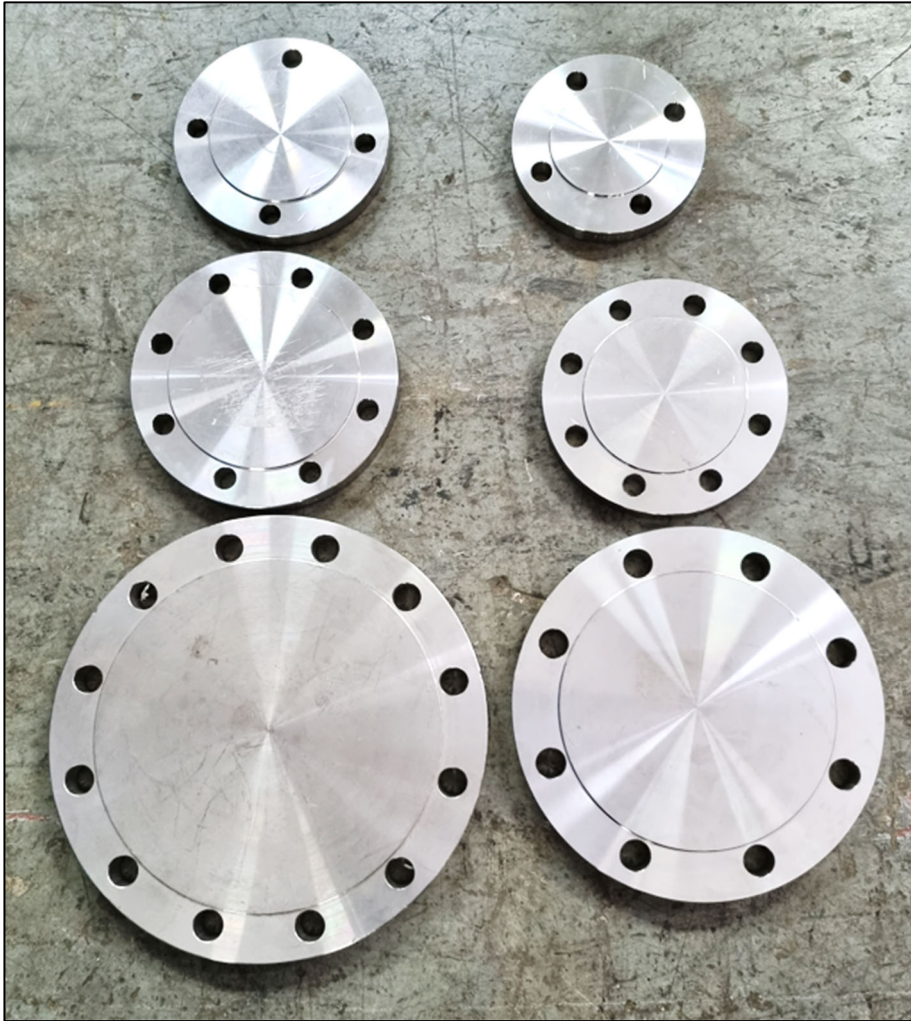


Photo 1 - Submitted samples

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