



TEST REPORT 2221548/02B-OYC

Date 12 JUL 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:

06 Jul 2022

TEST DATE:

07 Jul 2022

METHOD OF TEST:

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

Five pieces of "Norika" brand AISI 304 PN16 with BSP threaded flange were received, the descriptions are as follow:

Product Code	Descriptions	Markings	Remark
SS304FPN1605050	2"X2" "NORIKA®" STAINLESS STEEL AISI304 COMPANION FLANGE PN16 54MM PCD OF HOLE:125MM 4X19MM NOS OF HOLES	Norika, EN1092, PN 16 54 2", SS304, 04 2022	See photo 1
SS304FPN1608080	3"X3" "NORIKA®" STAINLESS STEEL AISI304 COMPANION FLANGE PN16 76MM PCD OF HOLE:160MM 8X19MM NOS OF HOLES	Norika, EN1092, PN 16 76 3", SS304, 04 2022	
SS304FPN16100100	4"X4" "NORIKA®" STAINLESS STEEL AISI304 COMPANION FLANGE PN16 108MM PCD OF HOLE:180MM 8X19MM NOS OF HOLES	Norika, EN1092, PN 16 108 4", SS304, 04 2022	
SS304FPN16150150	6"X6" "NORIKA®" STAINLESS STEEL AISI304 COMPANION FLANGE PN16 159MM PCD OF HOLE:240MM 8X23MM NOS OF HOLES	Norika, EN1092, PN 16 159 6", SS304, 04 2022	
SS304FPN16200200	8"X8" "NORIKA®" STAINLESS STEEL AISI304 COMPANION FLANGE PN16 200MM PCD OF HOLE:295MM 8X23MM NOS OF HOLES	Norika, EN1092, PN 16 200 8", SS304, 04 2022	

TEST RESULTS:

Table 1 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1 : 1989 (PN 16) Table 11 code 113 Requirements
	DN 50	
Outside diameter, D (mm)	164.8	165 ± 2.0
Diameter of bolt circle, K (mm)	125.0	125 ± 0.9
Diameter of bolt hole, L (mm)	18.2	18
Bolting number	4	4
Flange thickness, C ₂ (mm)	18.2	18 ± 1.0
Length through hub, H ₁ (mm)	28.6	28 ± 1.5
Neck diameter N ₂ (mm)	84.1	84 +1.0, -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 11 code 113 Requirements
	DN 80	
Outside diameter, D (mm)	200.0	200 ± 2.0
Diameter of bolt circle, K (mm)	160.1	160 ± 0.9
Diameter of bolt hole, L (mm)	18.1	18
Bolting number	8	8
Flange thickness, C ₂ (mm)	20.7	20 ± 1.5
Length through hub, H ₁ (mm)	35.2	34 ± 1.5
Neck diameter N ₂ (mm)	118.5	118 +2, -0

Table 3 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1 : 1989 (PN 16) Table 11 code 113 Requirements
	DN 100	
Outside diameter, D (mm)	220.1	220 ± 2.0
Diameter of bolt circle, K (mm)	180.0	180 ± 0.9
Diameter of bolt hole, L (mm)	18.1	18
Bolting number	8	8
Flange thickness, C ₂ (mm)	20.4	20 ± 1.5
Length through hub, H ₁ (mm)	40.1	40 ± 2.0
Neck diameter N ₂ (mm)	140.2	140 +2.0, -0

Table 4 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1 : 1989 (PN 16) Table 11 code 113 Requirements
	DN 150	
Outside diameter, D (mm)	284.0	285 ± 2.0
Diameter of bolt circle, K (mm)	240.0	240 ± 0.9
Diameter of bolt hole, L (mm)	22.1	22
Bolting number	8	8
Flange thickness, C ₂ (mm)	22.0	22 ± 1.5
Length through hub, H ₁ (mm)	45.1	44 ± 2.0
Neck diameter N ₂ (mm)	195.2	195 +2.0, -0

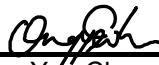
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TEST RESULTS (CONT'D):

Table 5 - Dimensional measurements

Sample Reference & Size	Results	BS 4504 Section 3.1 : 1989 (PN 16) Table 11 code 113 Requirements
	DN 200	
Outside diameter, D (mm)	340.0	340 ± 3.0
Diameter of bolt circle, K (mm)	295.1	295 ± 0.9
Diameter of bolt hole, L (mm)	22	22
Bolting number	12	12
Flange thickness, C ₂ (mm)	24.2	24 ± 1.5
Lengths H ₁ (mm)	44.0	44 ± 2.0
Neck diameter N ₂ (mm)	246.1	246 +2.0, -0


 Ong Yeo Chuan
 Testing Officer


 Chua Peck Cheong
 Senior Manager

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APPENDIX:

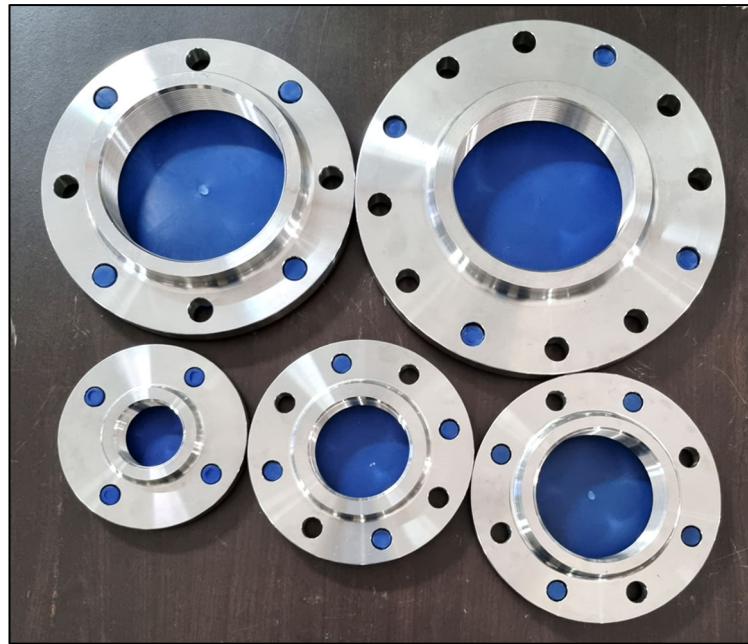
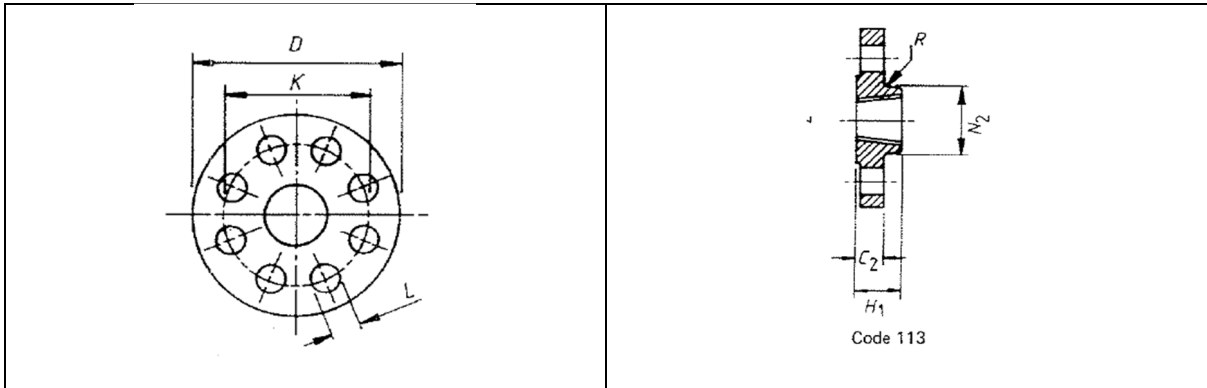


Photo 1 - Submitted samples

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