EGT Test Certificate

Thai-German Institute
สถาบันไทย-เยอรมัน
สถาบันไทย – เยอรมัน 700/1 หมู่ที่ 1 นิคมอุตสาหกรรมอมตะนคร ถนนบางนา-ตราด กม 57. ตำบลคลองตำหรุ อำเภอเมืองจังหวัดชลบุรี 20000
Thai-German Institute 700/1 Moo 1 Amatanakron Industrial Estate Bangna-Trad KM.57 Tambol Klong Tamru Amphur Muang Chonburi 20000
Tel. 038-215033-44 Fax. 038743705 http://www.tgi..or.th

TEST REPORT

Received No. : 67-03-116
Report No.:TGI-TT-002
Rev.: 00

Customer's company name : **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address: **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Test Product:	-	Material Characterization:	-
Part Name:	SW80	Test Method:	Torque Wrench
Part No.:	-	Standard of Test:	-
Material Specification:	-	Type of Test:	Torque Test
Dimension:	-	Equipment / Serial No.:	Tohnichi/CTA50N2X12D-G
Received Date:	02 / May / 2024	Equipment's Capacity:	Torque Max. 50 N·m
Tested Date:	17 / May / 2024	Ambient Temp.:	23.4°C, 59% RH





Result of Torque Test

Test No.	Max. Torque (N.m)	Result
1	27.65	Thread Fail

Thai-German Institute
สถาบันไทย-เยอรมัน

Operated by: ..... **Reviewed by:** ..... **Approved by:** .....

Operated by	Reviewed by	Approved by
Testing Operator	Mr.Kriangkrai Kaewko	Mr.Weerasak Thaotho
Technical Team	Technical Manager	Quality Manager
(17 / May / 2024)	(17 / May / 2024)	(17 / May / 2024)

Commentary:

1. Our division and institute not allow to change, add or subtract anywhere on this report, except only in case of already accepted by writing from our division.
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TEST REPORT

Received No. : 67-03-116
Report No.:TGI-TT-001
Rev.: 00

Customer's company name : **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address: **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Test Product:	-	Material Characterization:	-
Part Name:	SW50	Test Method:	Torque Wrench
Part No.:	-	Standard of Test:	-
Material Specification:	-	Type of Test:	Torque Test
Dimension:	-	Equipment / Serial No.:	Tohnichi/CTA50N2X12D-G
Received Date:	02 / May / 2024	Equipment's Capacity:	Torque Max. 50 N·m
Tested Date:	17 / May / 2024	Ambient Temp.:	23.4°C, 59% RH





Result of Torque Test

Test No.	Max. Torque (N.m)	Result
1	20.35	Thread Fail

Thai-German Institute
สถาบันไทย-เยอรมัน

Operated by: Sunapit ..... **Reviewed by:** ..... **Approved by:** .....

Operated by	Reviewed by	Approved by
Testing Operator	Mr.Kriangkrai Kaewko	Mr.Weerasak Thaotho
Technical Team	Technical Manager	Quality Manager
(17 / May / 2024)	(17 / May / 2024)	(17 / May / 2024)

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Tel. 038-215033-44 Fax. 038743705 http://www.tgi.or.th

TEST REPORT

Received No. : 67-03-116
Report No.:TGI-TS-004
Rev.: 00

Customer's company name : **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address: **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Test Product:	-	Material Characterization:	-
Part Name:	SW80	Test Method:	Tensile Test
Part No.:	-	Standard of Test:	As Customer Request
Material Specification:	-	Type of Test:	Pull Out Test
Dimension:	-	Equipment / Serial No.:	Universal Testing Machine
Received Date:	02 / May / 2024	Equipment's Capacity:	10 Tons
Tested Date:	17 / May / 2024	Ambient Temp.:	23.4°C, 59% RH





Result of Tensile Test

Test No.	Max Load. (N)	Max Load. (kgf)
1	13,630.487	1,389.448

Thai-German Institute
สถาบันไทย-เยอรมัน

Operated by: Sunapit ..... **Reviewed by:** ..... **Approved by:** .....

Operated by	Reviewed by	Approved by
Testing Operator	Mr.Kriangkrai Kaewko	Mr.Weerasak Thaotho
Technical Team	Technical Manager	Quality Manager
(17 / May / 2024)	(17 / May / 2024)	(17 / May / 2024)

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TEST REPORT

Received No. : 67-03-116
Report No.:TGI-TS-003
Rev.: 00

Customer's company name : **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address: **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Test Product:	-	Material Characterization:	-
Part Name:	SW50	Test Method:	Tensile Test
Part No.:	-	Standard of Test:	As Customer Request
Material Specification:	-	Type of Test:	Pull Out Test
Dimension:	-	Equipment / Serial No.:	Universal Testing Machine
Received Date:	02 / May / 2024	Equipment's Capacity:	10 Tons
Tested Date:	17 / May / 2024	Ambient Temp.:	23.4°C, 59% RH





Result of Tensile Test

Test No.	Max Load. (N)	Max Load. (kgf)
1	39,819.643	4,059.086

Thai-German Institute
สถาบันไทย-เยอรมัน

Operated by:	Reviewed by:	Approved by:
Testing Operator	Mr.Kriangkrai Kaewko	Mr.Weerasak Thaotho
Technical Team	Technical Manager	Quality Manager
(17 / May / 2024)	(17 / May / 2024)	(17 / May / 2024)

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TEST REPORT

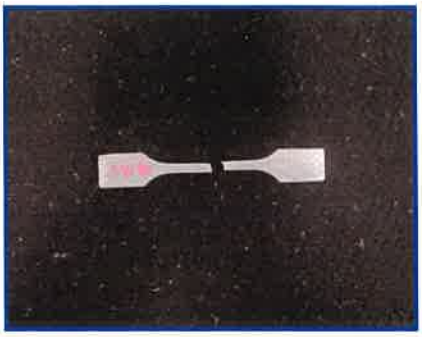
Received No. : 67-03-116
Report No.:TGI-TS-002
Rev.: 00

Customer's company name : **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address : **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Test Product:	-
Part Name :	SW80
Lot No. :	-
Material Specification:	Raw Material
Dimension:	-
Received Date:	02 / May / 2024
Tested Date:	17 / May / 2024

Material Characterization:	-
Standard of Test:	JIS Z2241 : 2022
Type of Test:	Tensile Test
Equipment / Serial No.:	Universal Testing Machine
Equipment's Capacity:	10 Tons
Ambient Temp.:	23.4 °C, 59 % RH





Result of Tensile Test

Sample Name	Thickness (mm)	Width (mm)	Area (mm^2)	Proof Load 0.2% (N)	Max Load (N)	Proof Strength 0.2% (N/mm^2)	Tensile Strength (N/mm^2)	Elongation GL= 20mm (%)
1	3.03	4.00	12.12	2,103.364	3,220.762	173.545	265.739	15.70

Thai-German Institute
สถาบันไทย-เยอรมัน

Operated by: Sunapit ..... **Reviewed by:** ..... **Approved by:** .....

Testing Operator
Technical Team
(17 / May / 2024)

Mr. Kriangkrai Kaewko
Technical Manager
(17 / May / 2024)

Mr. Weerasak Thaotho
Quality Manager
(17 / May / 2024)

Commentary:

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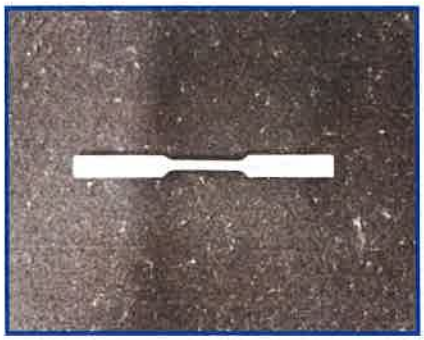
TEST REPORT

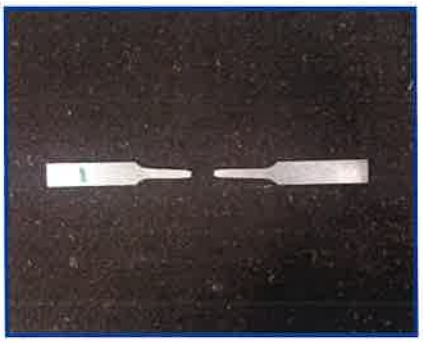
Received No.: 67-03-116
Report No.: TGI-TS-001
Rev.: 00

Customer's company name: **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address : **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Test Product:	-
Part Name :	SW50
Lot No. :	-
Material Specification:	Raw Material
Dimension:	-
Received Date:	02 / May / 2024
Tested Date:	17 / May / 2024

Material Characterization:	-
Standard of Test:	JIS Z2241: 2022
Type of Test:	Tensile Test
Equipment / Serial No.:	Universal Testing Machine
Equipment's Capacity:	10 Tons
Ambient Temp.:	23.4 °C, 59 % RH





Result of Tensile Test

Sample Name	Thickness (mm)	Width (mm)	Area (mm^2)	Proof Load 0.2% (N)	Max Load (N)	Proof Strength 0.2% (N/mm^2)	Tensile Strength (N/mm^2)	Elongation GL= 17mm (%)
1	3.01	3.03	9.12	1,680.301	1,985.650	184.237	217.718	15.71

Thai-German Institute
สถาบันไทย-เยอรมัน

Operated by: Surapit ..... **Reviewed by:** ..... **Approved by:** .....

Operated by	Reviewed by	Approved by
Testing Operator	Mr. Kriangkrai Kaewko	Mr. Weerasak Thaotho
Technical Team	Technical Manager	Quality Manager
(17 / May / 2024)	(17 / May / 2024)	(17 / May / 2024)

Commentary:

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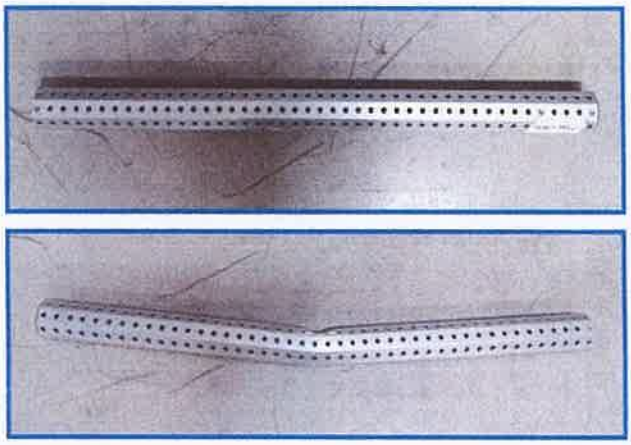
TEST REPORT

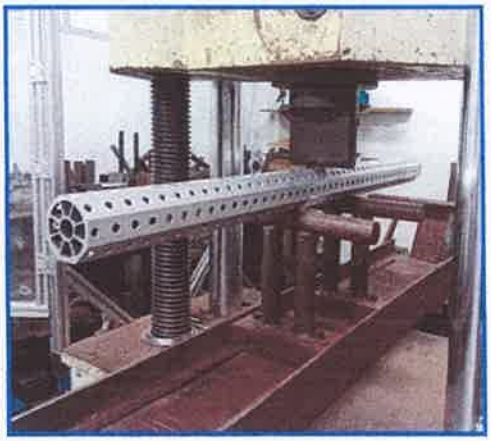
Received No. :67-03-116
Report No.:TGI-BT-002
Rev.: 00

Customer's company name : **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address: **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Part Name:	SW80
Part No.:	-
Lot No. :	-
Material Specification:	Raw Material
Dimension:	-
Received Date:	18 / Jun. / 2024
Tested Date:	20 / Jun. / 2024

Material Characterization:	-
Standard of Test:	3 Point Bending test
Type of Test:	Bending Testing
Equipment / Serial No.:	Universal Testing Machine
Equipment's Capacity:	100 Tons
Ambient Temp.:	23.2 °C, 60 % RH





Results of Bend Test

Test No.	Former Diameter (mm)	Distance Between Rollers (mm)	Max. Load (kN)	Max. Load (kgf)
1	40.0	280.0	97.461	9,938.313

Operated by: Sunopit ..... Testing Operator, Technical Team, (20 / Jun. / 2024)

Reviewed by: ..... Mr.Kriangkrai Kaewko, Technical Manager, (20 / Jun. / 2024)

Approved by: ..... Mr.Weerasak Thaotho, Quality Manager, (20 / Jun. / 2024)

Commentary:

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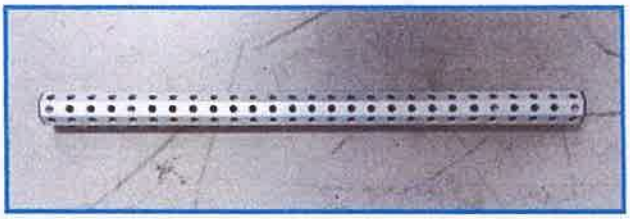
TEST REPORT

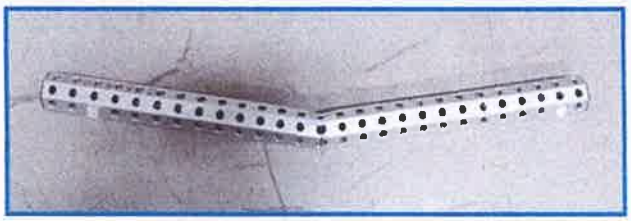
Received No. :67-03-116
Report No.:TGI-BT-001
Rev.: 00

Customer's company name : **APA ENGINEERING AND DEVELOPMENT CO., LTD.**
Address: **573 Phatthanakan Rd, Suan Luang Bangkok 10250**

Part Name:	SW50
Part No.:	-
Lot No. :	-
Material Specification:	Raw Material
Dimension:	-
Received Date:	18 / Jun. / 2024
Tested Date:	20 / Jun. / 2024

Material Characterization:	-
Standard of Test:	3 Point Bending test
Type of Test:	Bending Testing
Equipment / Serial No.:	Universal Testing Machine
Equipment's Capacity:	100 Tons
Ambient Temp.:	23.2 °C, 60 % RH







Results of Bend Test

Test No.	Former Diameter (mm)	Distance Between Rollers (mm)	Max. Load (kN)	Max. Load (kgf)
1	40.0	190.0	32.260	3,289.590

Thai-German Institute
สถาบันไทย-เยอรมัน

Operated by: ..... Testing Operator, Technical Team, (20 / Jun. / 2024)

Reviewed by: ..... Mr.Kriangkrai Kaewko, Technical Manager, (20 / Jun. / 2024)

Approved by: ..... Mr.Weerasak Thaotho, Quality Manager, (20 / Jun. / 2024)

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