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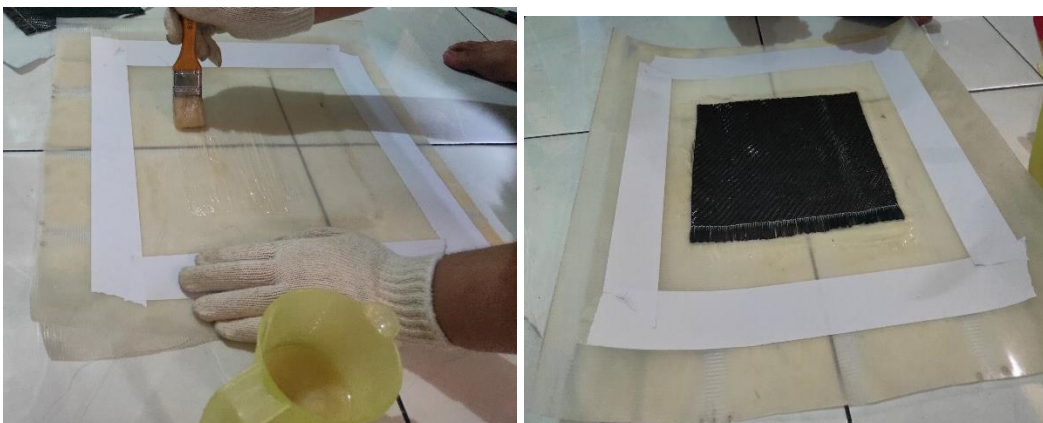
LAMPIRAN I
Proses Pembuatan FML dan Pengujian Spesimen

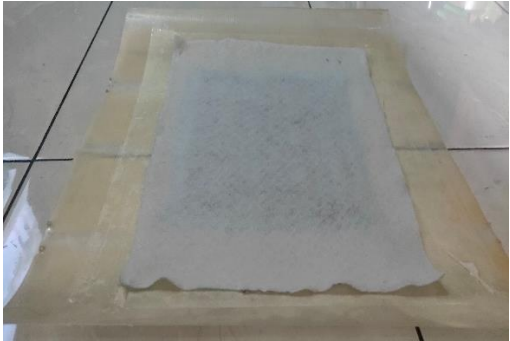
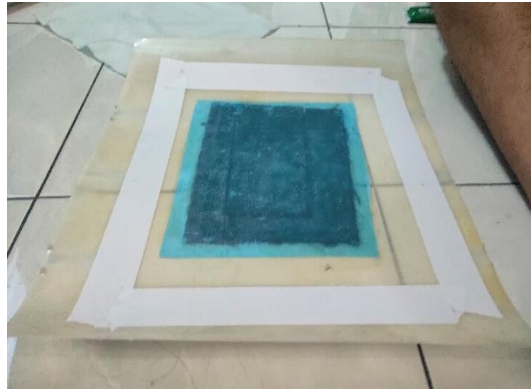
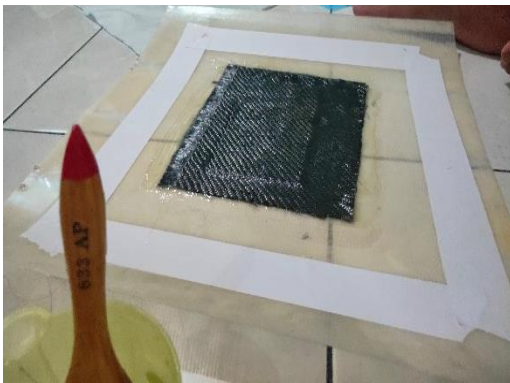
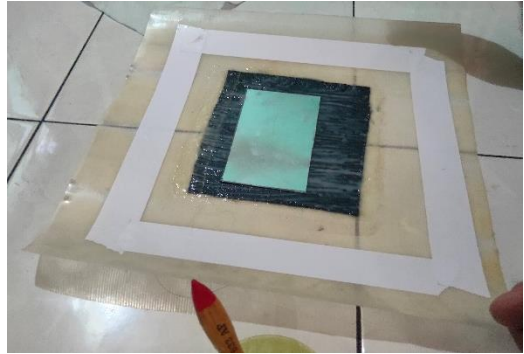
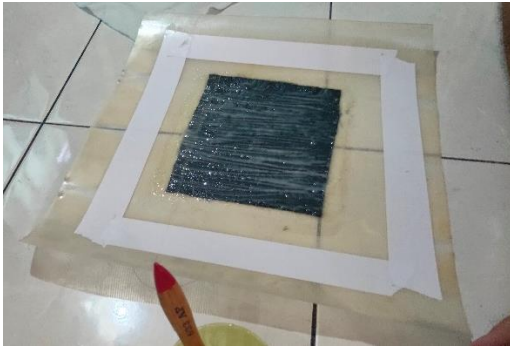


Persiapan cetakan



Pencampuran Resin



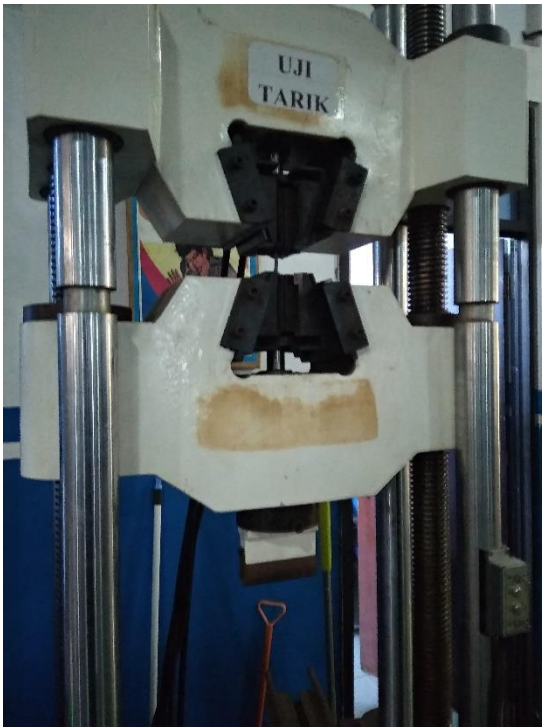




Pembuatan FML



Spesimen siap uji



Spesimen pada saat di uji



Spesimen setelah pengujian

LAMPIRAN II
Tabel Pengujian dan Data Pengujian
Pengujian Tarik

<i>nama</i>	<i>Ao (mm²)</i>	<i>AL (mm)</i>	<i>F (MPa)</i>	<i>F max (MPa)</i>	<i>F elastis (MPa)</i>	<i>Kekuatan tarik max (MPa)</i>	<i>Kekuatan tarik elastis (MPa)</i>	<i>Regangan (%)</i>	<i>Modulus elastitas (MPa)</i>
<i>CFRP(1)</i>	6,875	3,2	3,2	3200	2350	465,455	341,818	5,614%	6088,636
<i>CFRP(2)</i>	3,75	2,984	0,6	600	10	160,000	2,667	5,235%	50,938
<i>CFRP(3)</i>	5,625	2,43	2,5	2500	2300	444,444	408,889	4,263%	9591,221
<i>AI 0,5 (1)</i>	7,5	2,51	0,85	850	198	113,333	26,400	4,404%	599,522
<i>AI 0,5 (2)</i>	7,5	2,23	0,85	850	850	113,333	113,333	3,912%	2896,861
<i>AI 0,5 (3)</i>	7,5	1,748	0,55	550	495	73,333	66,000	3,067%	2152,174
<i>AI 1 (1)</i>	13,75	2,382	1,5	1500	1400	109,091	101,818	4,179%	2436,455
<i>AI 1 (2)</i>	13,75	2,354	1,4	1400	1300	101,818	94,545	4,130%	2289,333
<i>AI 1 (3)</i>	13,75	2,254	1,4	1400	1150	101,818	83,636	3,954%	2115,028
<i>AI 1,5 (1)</i>	18,75	10,25	2,5	2500	2350	133,333	125,333	17,982%	696,976
<i>AI 1,5 (2)</i>	18,75	9,41	2,5	2500	2300	133,333	122,667	16,509%	743,039
<i>AI 1,5 (3)</i>	18,75	9,71	2,45	2450	2300	130,667	122,667	17,035%	720,082
<i>FML 0,5 (1)</i>	14,1875	2,599	1,9	1900	500	133,921	35,242	4,560%	772,917
<i>FML 0,5 (2)</i>	12,25	2,2	1,85	1850	1850	151,020	151,020	3,860%	3912,801
<i>FML 0,5 (3)</i>	11,6	2,94	2,45	2450	2450	211,207	211,207	5,158%	4094,828
<i>FML 1 (1)</i>	19,25	2,907	2,9	2900	2900	150,649	150,649	5,100%	2953,909
<i>FML 1 (2)</i>	19	2,452	3,15	3150	3150	165,789	165,789	4,302%	3853,997
<i>FML 1 (3)</i>	18,5	2,574	2,85	2850	920	154,054	49,730	4,516%	1101,241
<i>FML 1,5 (1)</i>	26,375	5,96	3,4	3400	2950	128,910	111,848	10,456%	1069,691
<i>FML 1,5 (2)</i>	24,375	5,88	3,75	3750	2950	153,846	121,026	10,316%	1173,208
<i>FML 1,5 (3)</i>	24,5	6	4,25	4250	2600	173,469	106,122	10,526%	1008,163

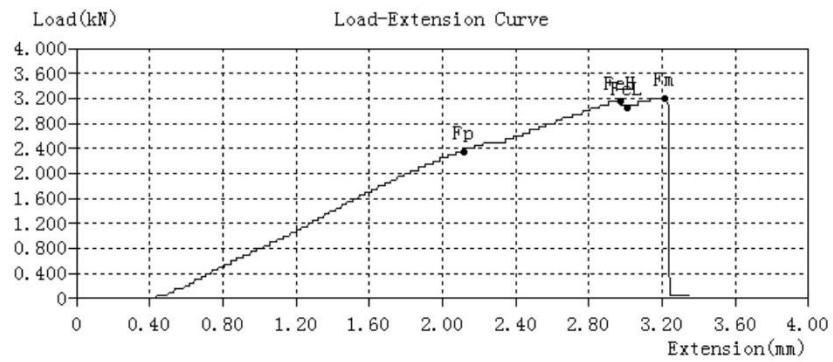
Pengujian Bending

<i>nama spesimen</i>	<i>P (N)</i>	<i>L (mm)</i>	<i>b (mm)</i>	<i>d (mm)</i>	<i>m (mm)</i>	<i>bending (MPa)</i>	<i>modulus elastis (MPa)</i>
<i>CFRP(1)</i>	16,7	40	12,5	0,48	1,3375	347,917	15480,32
<i>CFRP(2)</i>	17,2	40	12,5	0,5	1,455	330,240	14899,20
<i>CFRP(3)</i>	17	40	12,5	0,45	1,568	402,963	22025,13
<i>Al 0,5 (1)</i>	18	40	12,5	0,6	3,477	240,000	20604,44
<i>Al 0,5 (2)</i>	20,1	40	12,5	0,6	8,3494	268,000	49477,93
<i>Al 0,5 (3)</i>	16,5	40	12,5	0,6	7,453	220,000	44165,93
<i>Al 1 (1)</i>	45,5	40	12,5	1	34,388	218,400	44016,64
<i>Al 1 (2)</i>	49,2	40	12,5	1	48,816	236,160	62484,48
<i>Al 1 (3)</i>	50	40	12,5	1	36,226	240,000	46369,28
<i>Al 1,5 (1)</i>	113,6	40	12,5	1,5	215,96	242,347	81904,83
<i>Al 1,5 (2)</i>	123,1	40	12,5	1,5	226,05	262,613	85731,56
<i>Al 1,5 (3)</i>	110	40	12,5	1,5	220,65	234,667	83683,56
<i>FML 0,5 (1)</i>	70,6	40	12,5	1,13	18,409	265,393	16330,70
<i>FML 0,5 (2)</i>	65,2	40	12,5	0,94	16,287	354,187	25099,64
<i>FML 0,5 (3)</i>	50	40	12,5	0,94	17,568	271,616	27073,77
<i>FML 1 (1)</i>	127,4	40	12,5	1,45	57,181	290,854	24008,10
<i>FML 1 (2)</i>	118,5	40	12,5	1,5	57,656	252,800	21866,57
<i>FML 1 (3)</i>	100	40	12,5	1,47	56,824	222,130	22897,59
<i>FML 1,5 (1)</i>	165,6	40	12,5	1,96	187,25	206,914	31831,97
<i>FML 1,5 (2)</i>	167,6	40	12,5	2,11	112,64	180,697	15348,12
<i>FML 1,5 (3)</i>	160	40	12,5	1,94	125,54	204,060	22008,321

1. Uji Tarik

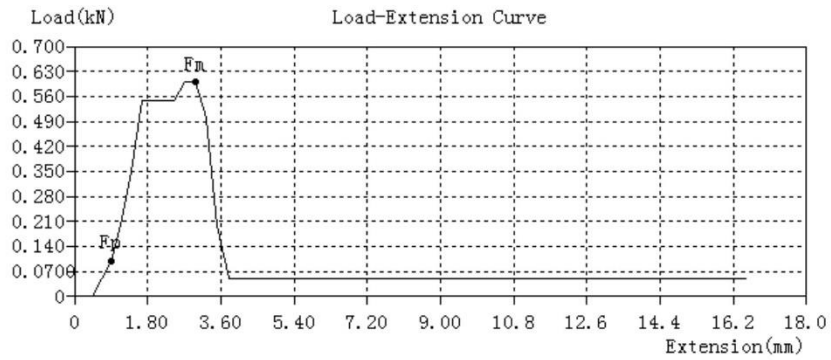
CFRP 01

Customer	CFRP 01	TestDate	3/9/2020
Coil No/Package No		Type	Flat
Size(mm)	0.5*12.5	So(mm ²)	6.25
Lo(mm)	57	Lu(mm)	
A(%)	/	Su(mm ²)	/
Z(%)	/	Fm(kN)	3.200
Rm(MPa)	/	FeH(kN)	3.150
ReH(MPa)	/	FeL(kN)	3.050
ReL(MPa)	/	Fp(kN)	2.350
Rp(MPa)	/	Ft(kN)	/
Rt(MPa)	/	E(GPa)	/



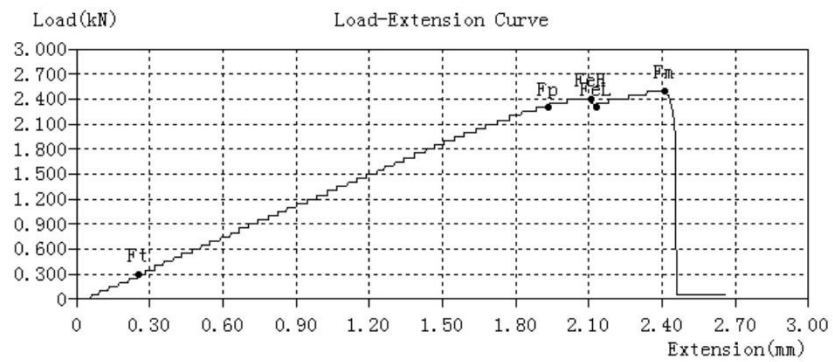
CFRP 02

Customer	CFRP 02	TestDate	3/9/2020
Coil No/Package No		Type	Flat
Size(mm)	0.5*12.5	So(mm ²)	6.25
Lo(mm)	57	Lu(mm)	
A(%)	/	Su(mm ²)	/
Z(%)	/	Fm(kN)	/
Rm(MPa)	/	FeH(kN)	/
ReH(MPa)	/	FeL(kN)	/
ReL(MPa)	/	Fp(kN)	/
Rp(MPa)	/	Ft(kN)	/
Rt(MPa)	/	E(GPa)	/



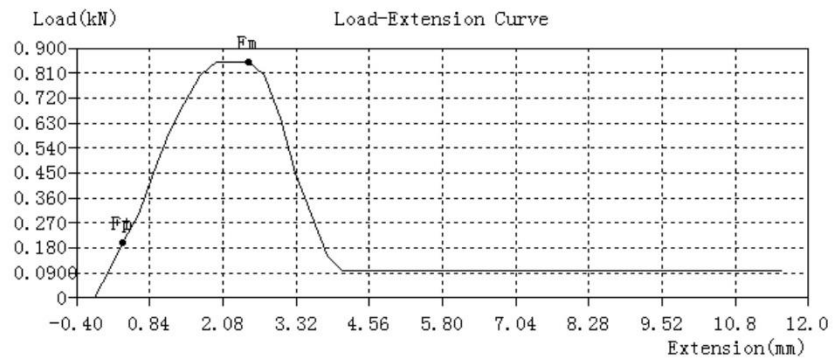
CFRP 03

Customer	CFRP 03	TestDate	3/9/2020
Coil No/Package No		Type	Flat
Size(mm)	0.5*12.5	So(mm ²)	6.25
Lo(mm)	57	Lu(mm)	
A(%)	/	Su(mm ²)	/
Z(%)	/	Fm(kN)	2.500
Rm(MPa)	/	FeH(kN)	2.400
ReH(MPa)	/	FeL(kN)	2.300
ReL(MPa)	/	Fp(kN)	2.300
Rp(MPa)	/	Ft(kN)	/
Rt(MPa)	/	E(GPa)	/



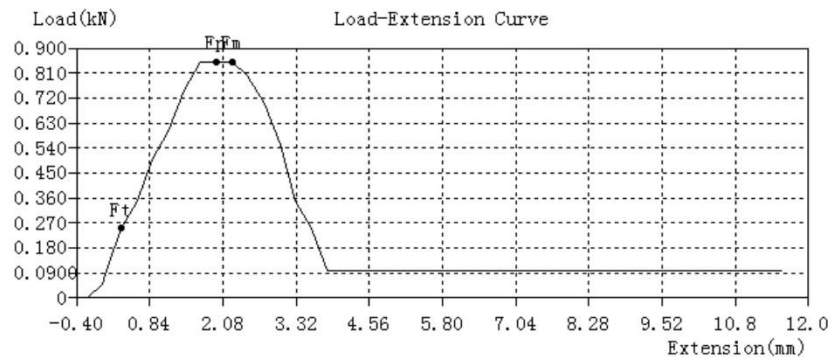
Aluminium 0.5mm (1)

SampleID	Aluminium 0.5mm (1)	TestDate	13/9/2020
Operator	1)	Type	Flat
Size (mm)	12.5±0.5	Ao (mm ²)	12.50
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	/
Rm (MPa)	/	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	/
Rp (MPa)	/	Ft (kN)	/
Rt (MPa)	/	E (GPa)	/



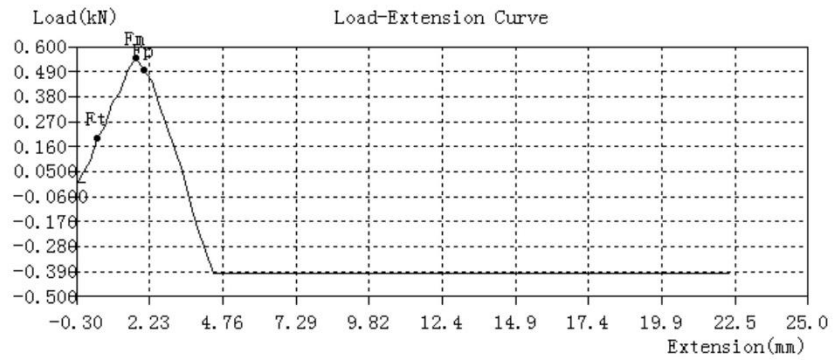
Aluminium 0.5mm (2)

SampleID	Aluminium 0.5mm (2)	TestDate	13/9/2020
Operator	2)	Type	Flat
Size (mm)	12.5±0.5	Ao (mm ²)	12.50
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	/
Rm (MPa)	/	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	/
Rp (MPa)	/	Ft (kN)	/
Rt (MPa)	/	E (GPa)	1.52



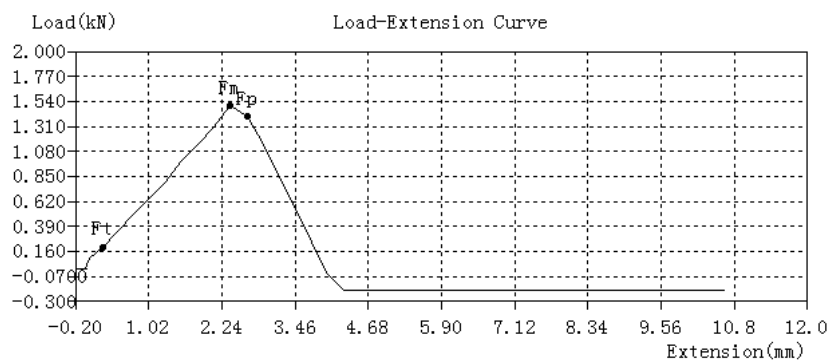
Aluminium 0.5mm (3)

SampleID	Aluminium 0.5mm (3)	TestDate	13/9/2020
Operator		Type	Flat
Size (mm)	12.5*0.5	Ao (mm ²)	12.50
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	/
Rm (MPa)	/	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	/
Rp (MPa)	/	Ft (kN)	/
Rt (MPa)	/	E (GPa)	0.76



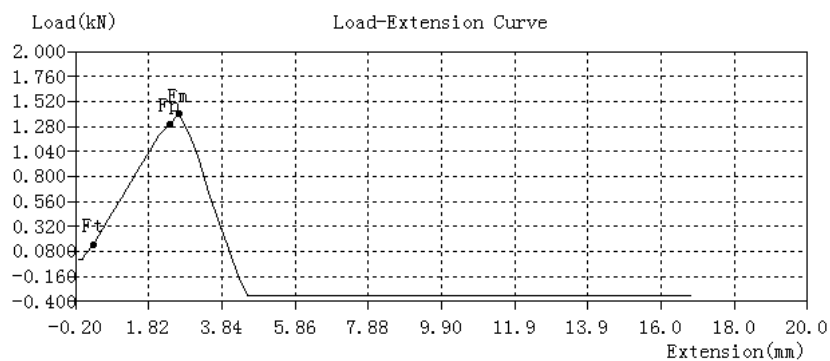
Aluminium 1mm (1)

SampleID	Aluminium 1mm (1)	TestDate	13/9/2020
Operator		Type	Flat
Size (mm)	12.5*1	Ao (mm ²)	12.50
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	1.50
Rm (MPa)	120	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	1.40
Rp (MPa)	110	Ft (kN)	/
Rt (MPa)	/	E (GPa)	2.28



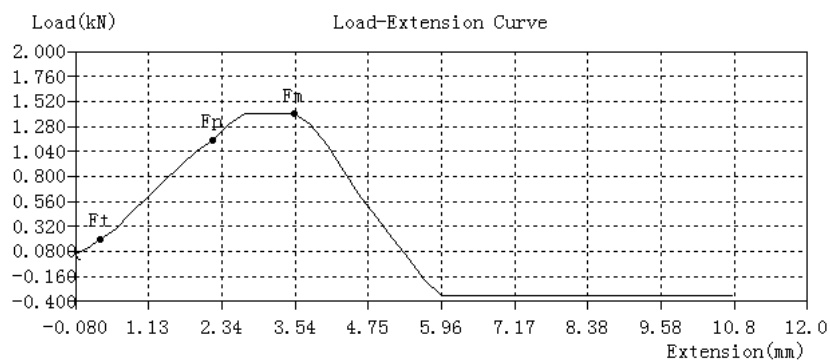
Aluminium 1mm (2)

SampleID	Aluminium 1mm (2)	TestDate	13/9/2020
Operator		Type	Flat
Size (mm)	12.5*1	Ao (mm ²)	12.50
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	1.40
Rm (MPa)	110	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	1.30
Rp (MPa)	105	Ft (kN)	/
Rt (MPa)	/	E (GPa)	2.32



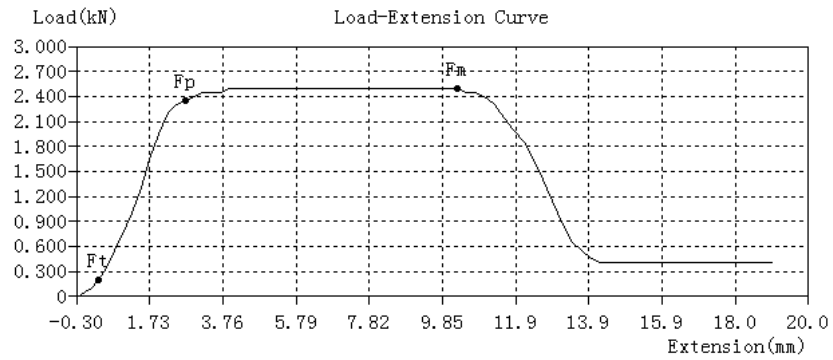
Aluminium 1mm (3)

SampleID	Aluminium 1mm (3)	TestDate	13/9/2020
Operator		Type	Flat
Size (mm)	12.5*1	Ao (mm ²)	12.50
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	1.40
Rm (MPa)	110	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	1.15
Rp (MPa)	90	Ft (kN)	/
Rt (MPa)	/	E (GPa)	2.28



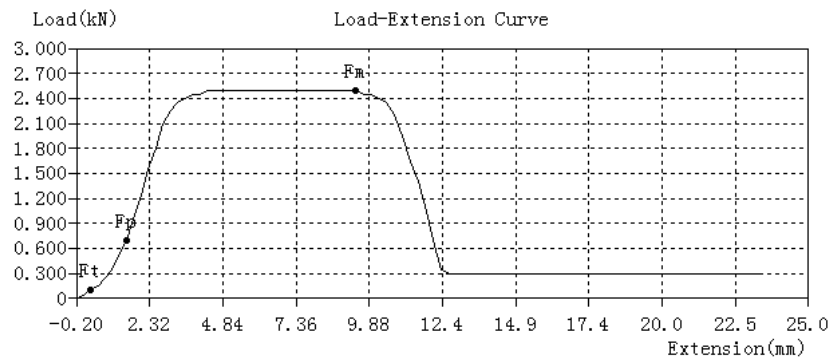
Aluminium 1.5mm (1)

SampleID	Aluminium 1.5mm (1)	TestDate	13/9/2020
Operator	1)	Type	Flat
Size (mm)	12.5*1.5	Ao (mm ²)	18.75
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	2.50
Rm (MPa)	135	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	2.35
Rp (MPa)	125	Ft (kN)	/
Rt (MPa)	/	E (GPa)	2.77



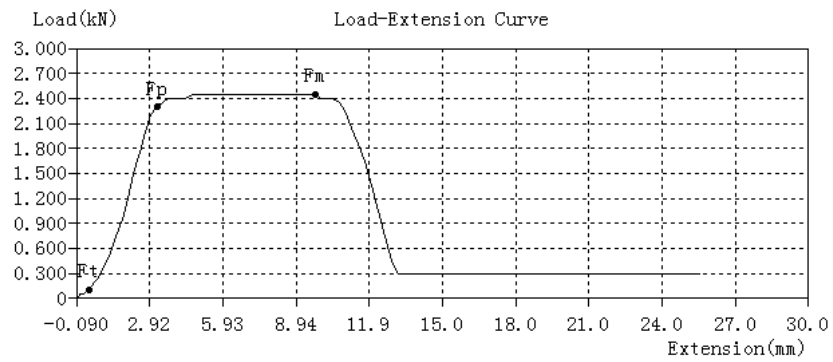
Aluminium 1.5mm (2)

SampleID	Aluminium 1.5mm (2)	TestDate	13/9/2020
Operator	2)	Type	Flat
Size (mm)	12.5*1.5	Ao (mm ²)	18.75
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	2.50
Rm (MPa)	135	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	/
Rp (MPa)	/	Ft (kN)	/
Rt (MPa)	/	E (GPa)	/



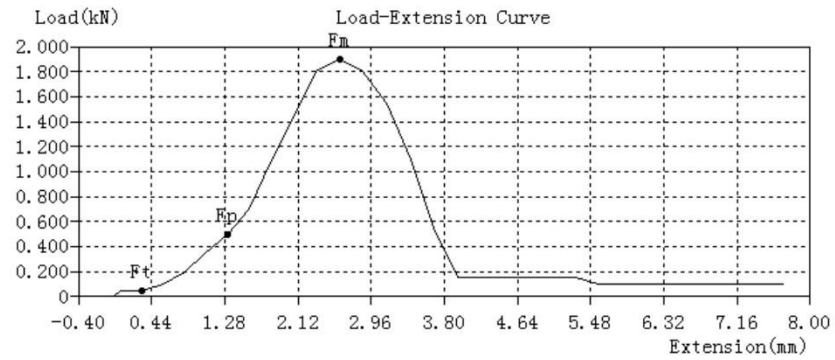
Aluminium 1.5mm (3)

SampleID	Aluminium 1.5mm (3)	TestDate	13/9/2020
Operator	3)	Type	Flat
Size (mm)	12.5*1.5	Ao (mm ²)	18.75
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	2.45
Rm (MPa)	130	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	2.30
Rp (MPa)	125	Ft (kN)	/
Rt (MPa)	/	E (GPa)	2.77



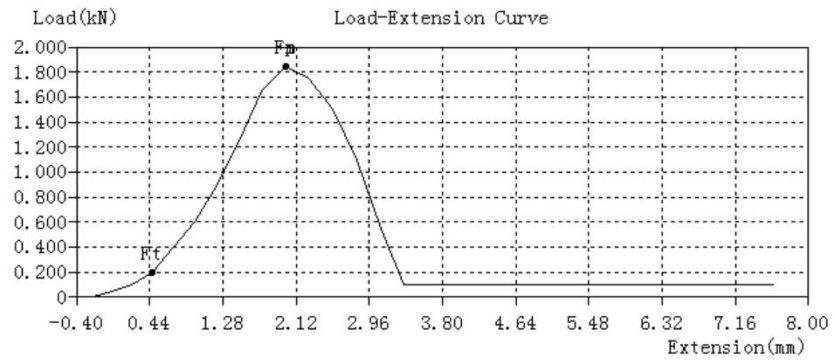
FML (1)

SampleID	FML (1)	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*1	Ao(mm ²)	12.50
Lo(mm)	57	Lu(mm)	
A(%)	/	Au(mm ²)	
Z(%)	/	Fm(kN)	1.90
Rm(MPa)	/	FeH(kN)	/
UYS(MPa)	/	FeL(kN)	/
LYS(MPa)	/	Fp(kN)	/
Rp(MPa)	/	Ft(kN)	/
Rt(MPa)	/	E(GPa)	/



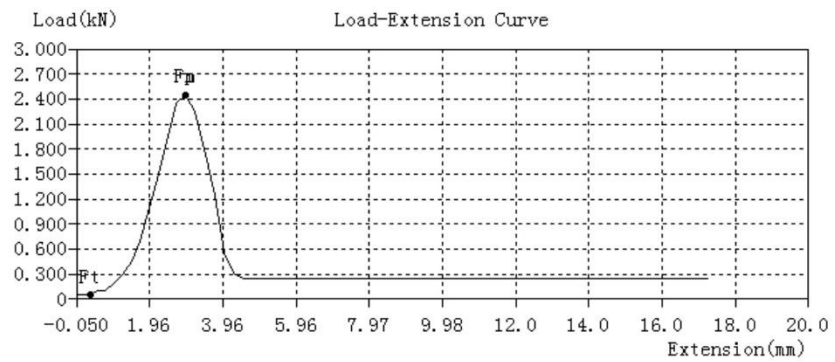
FML (2)

SampleID	FML (2)	TestDate	13/9/2020
Operator		Type	Flat
Size (mm)	12.5*1	Ao (mm ²)	12.50
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	1.85
Rm (MPa)	/	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	1.85
Rp (MPa)	/	Ft (kN)	/
Rt (MPa)	/	E (GPa)	/



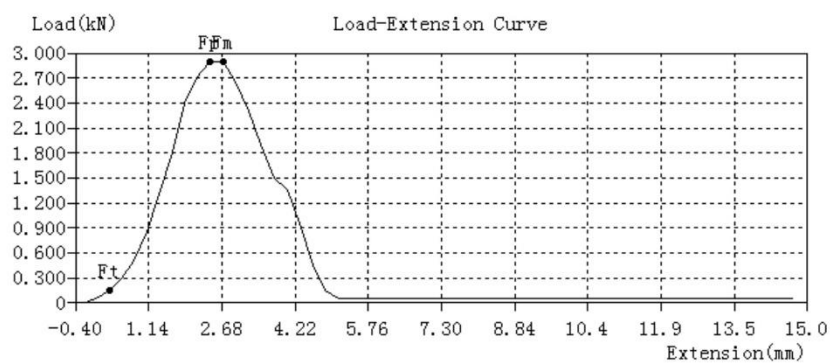
FML (3)

SampleID	FML (3)	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*1	Ao(mm ²)	12.50
Lo(mm)	57	Lu(mm)	
A(%)	/	Au(mm ²)	
Z(%)	/	Fm(kN)	2.45
Rm(MPa)	100	FeH(kN)	/
UYS(MPa)	/	FeL(kN)	/
LYS(MPa)	/	Fp(kN)	2.45
Rp(MPa)	100	Ft(kN)	/
Rt(MPa)	/	E(GPa)	/



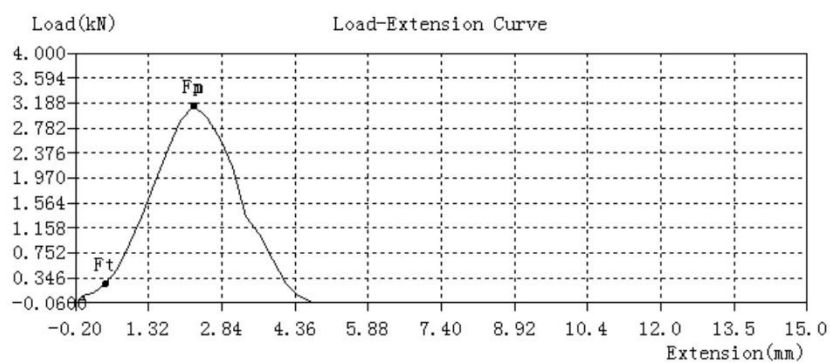
FML 1mm (1)

SampleID	FML 1mm (1)	TestDate	17/10/2020
Operator		Type	Flat
Size (mm)	12.5*1.5	Ao (mm ²)	18.75
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	2.90
Rm (MPa)	155	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	2.90
Rp (MPa)	155	Ft (kN)	/
Rt (MPa)	/	E (GPa)	/



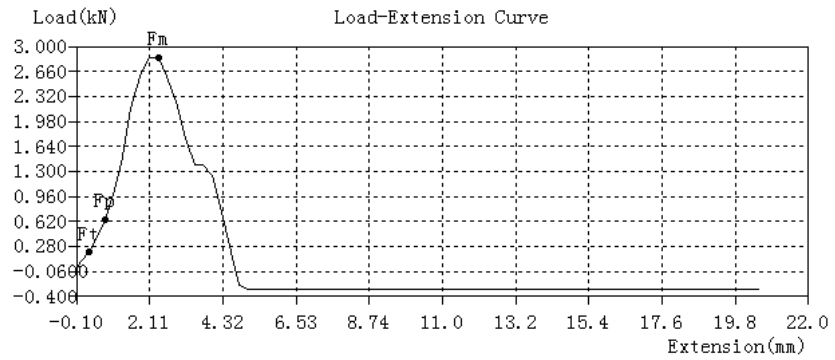
FML 1mm 2

SampleID	FML 1mm 2	TestDate	17/10/2020
Operator		Type	Flat
Size (mm)	12.5*1.5	Ao (mm ²)	18.75
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	3.15
Rm (MPa)	170	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	3.15
Rp (MPa)	170	Ft (kN)	/
Rt (MPa)	/	E (GPa)	/



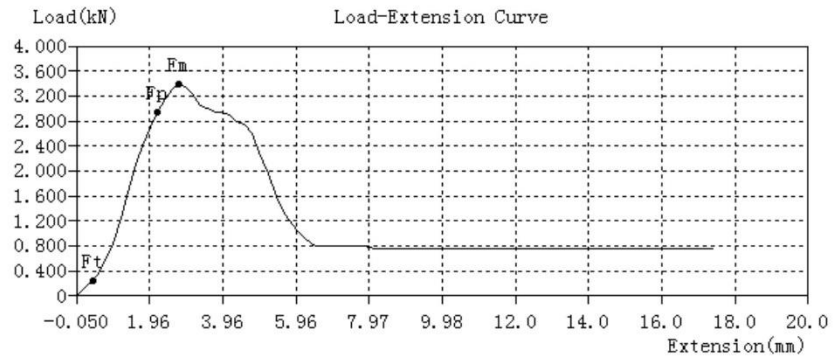
FML 1mm 3

SampleID	FML 1mm 3	TestDate	17/10/2020
Operator		Type	Flat
Size (mm)	12.5*1.5	Ao (mm ²)	18.75
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	2.85
Rm (MPa)	150	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	/
Rp (MPa)	/	Ft (kN)	/
Rt (MPa)	/	E (GPa)	/



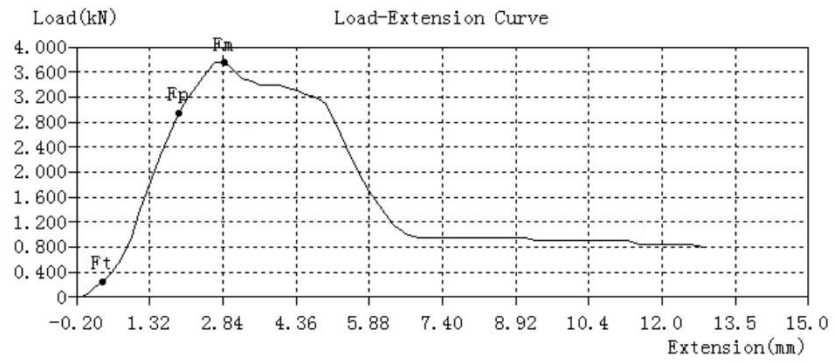
FML 1.5mm (1)

SampleID	FML 1.5mm (1)	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*2	Ao(mm ²)	25
Lo(mm)	57	Lu(mm)	
A(%)	/	Au(mm ²)	
Z(%)	/	Fm(kN)	3.40
Rm(MPa)	/	FeH(kN)	/
UYS(MPa)	/	FeL(kN)	/
LYS(MPa)	/	Fp(kN)	2.95
Rp(MPa)	/	Ft(kN)	/
Rt(MPa)	/	E(GPa)	/



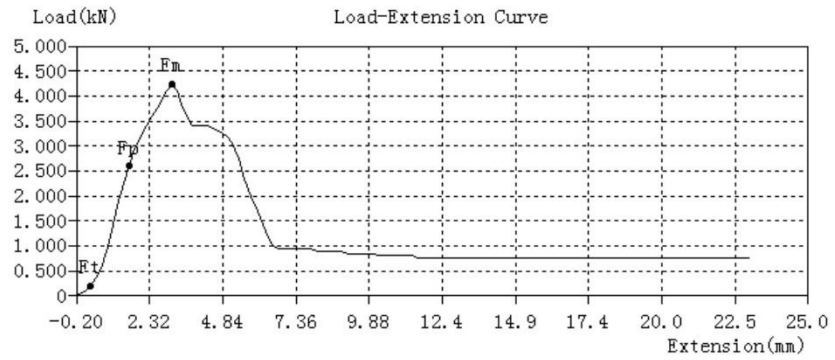
FML 1.5mm (2)

SampleID	FML 1.5mm (2)	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*2	Ao(mm ²)	25
Lo(mm)	57	Lu(mm)	
A(%)	/	Au(mm ²)	
Z(%)	/	Fm(kN)	3.75
Rm(MPa)	/	FeH(kN)	/
UYS(MPa)	/	FeL(kN)	/
LYS(MPa)	/	Fp(kN)	2.95
Rp(MPa)	/	Ft(kN)	/
Rt(MPa)	/	E(GPa)	/

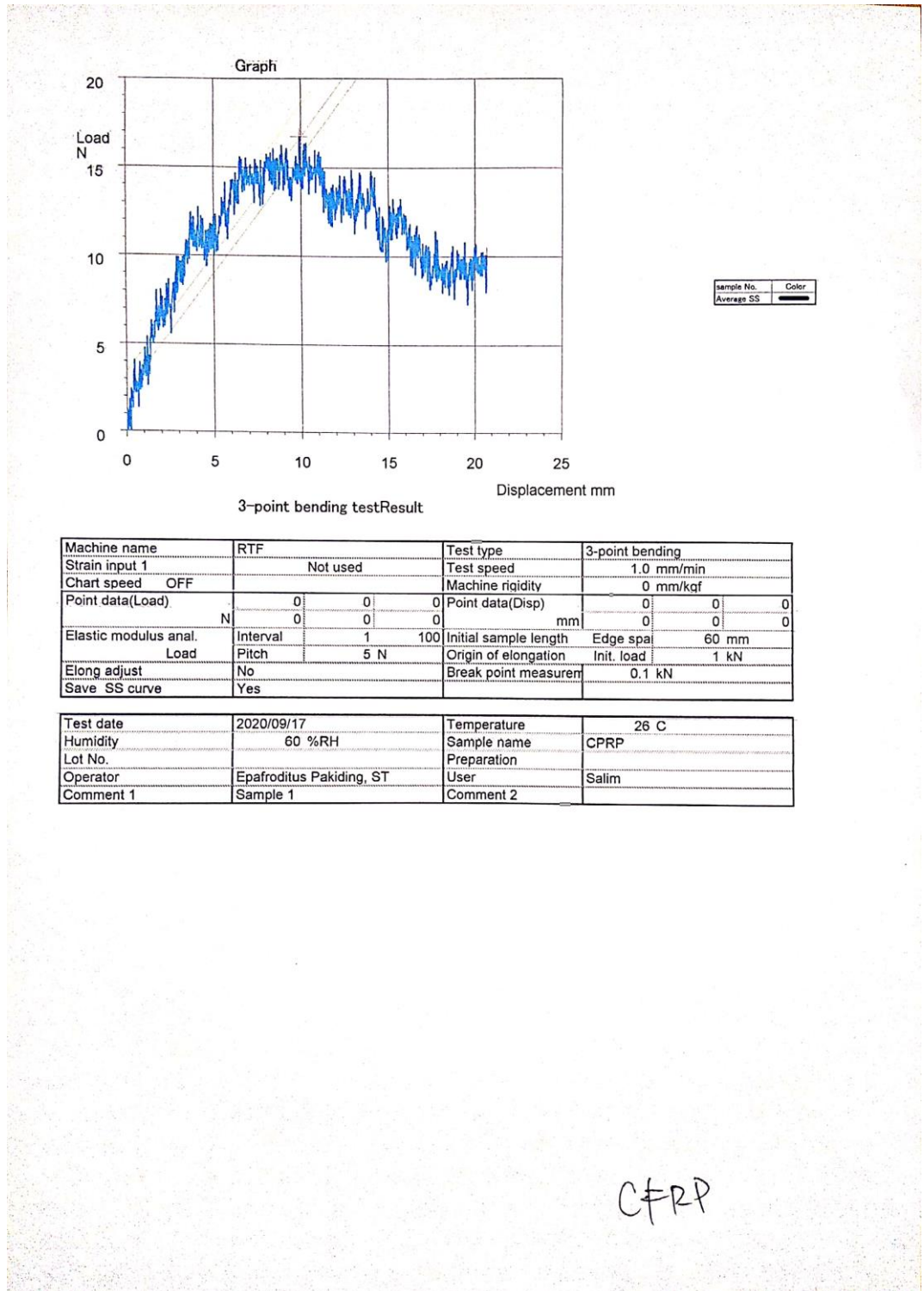


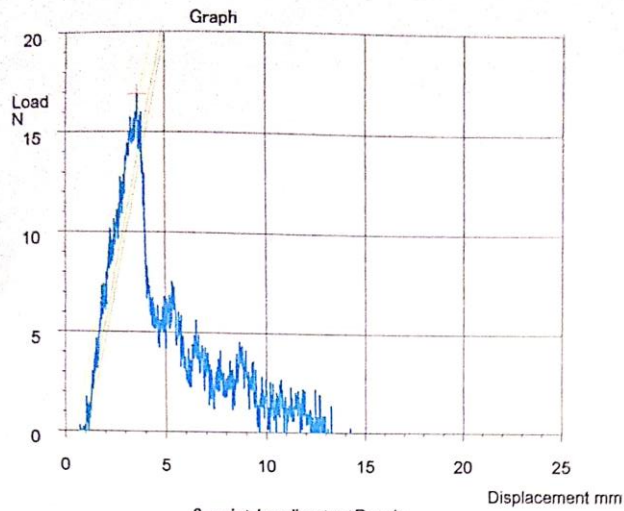
FML 1.5mm (3)

SampleID	FML 1.5mm (3)	TestDate	13/9/2020
Operator		Type	Flat
Size (mm)	12.5*2	Ao (mm ²)	25
Lo (mm)	57	Lu (mm)	
A (%)	/	Au (mm ²)	
Z (%)	/	Fm (kN)	4.25
Rm (MPa)	/	FeH (kN)	/
UYS (MPa)	/	FeL (kN)	/
LYS (MPa)	/	Fp (kN)	2.60
Rp (MPa)	/	Ft (kN)	/
Rt (MPa)	/	E (GPa)	/



2. Uji Bending





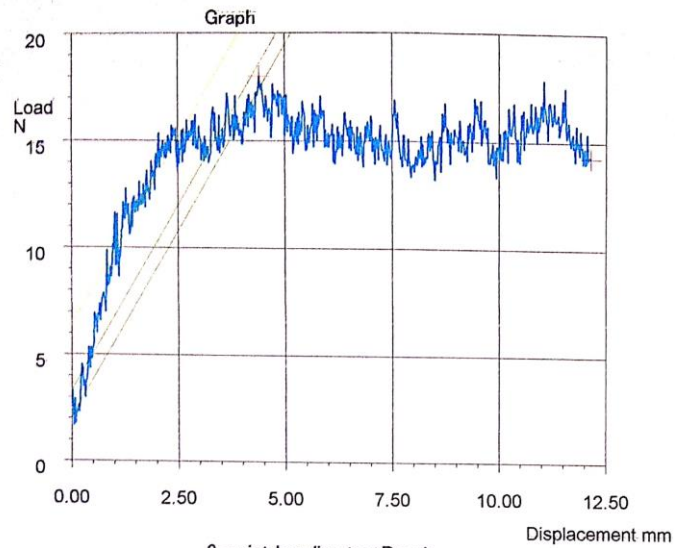
3-point bending testResult

Machine name	RTF		Test type	3-point bending	
Strain input 1	Not used		Test speed	1.0 mm/min	
Chart speed	OFF		Machine rigidity	0 mm/kgf	
Point data(Load)	0	0	0	0	0
	N	0	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spar
Load	Pitch	5 N		Origin of elongation	Init. load
Elong adjust	No		Break point measurem	0.1 kN	
Save SS curve	Yes				

Test date	2020/09/17	Temperature	26 C
Humidity	60 %RH	Sample name	CFRP
Lot No.		Preparation	
Operator	Epafroditus Pakiding, ST	User	Salim
Comment 1	Sample 1	Comment 2	

CFRP

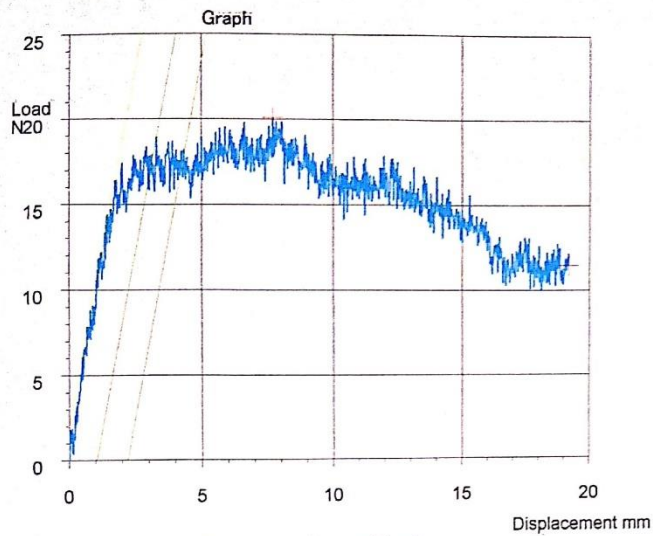
Al 0,5



3-point bending testResult

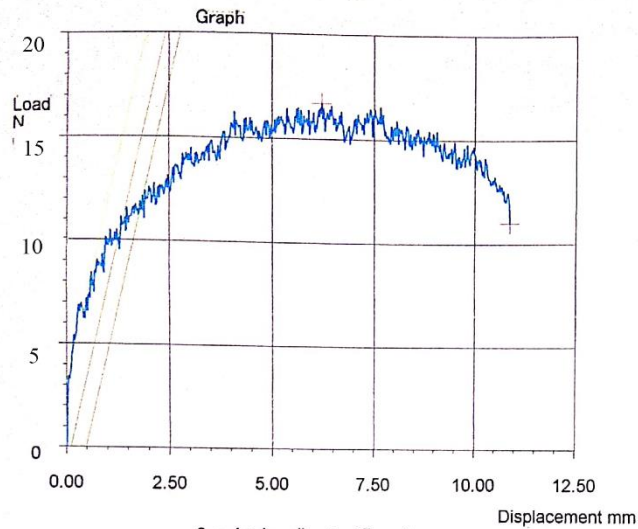
Machine name	RTF		Test type	3-point bending		
Strain input 1	Not used		Test speed	1.0 mm/min		
Chart speed	OFF		Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	Point data(Disp)	0	0	0
	N	0	mm	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spai	40 mm
Load	Pitch	5 N		Origin of elongation	Init. load	1000 N
Elong adjust	No		Break point measurment	0.1 kN		
Save SS curve	Yes					

Test date	2020/09/18	Temperature	26 C
Humidity	60 %RH	Sample name	aLMUNIU
Lot No.		Preparation	
Operator	Epafroditus Pakiding, ST	User	Salim
Comment 1	Sample 2	Comment 2	



Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	1.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kqf		
Point data(Load)	N	0	0	Point data(Disp)	0	0	0
		0	0		mm	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spai	60 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	1 kN	
Elong adjust	No			Break point measurem	0.1 kN		
Save SS curve	Yes						

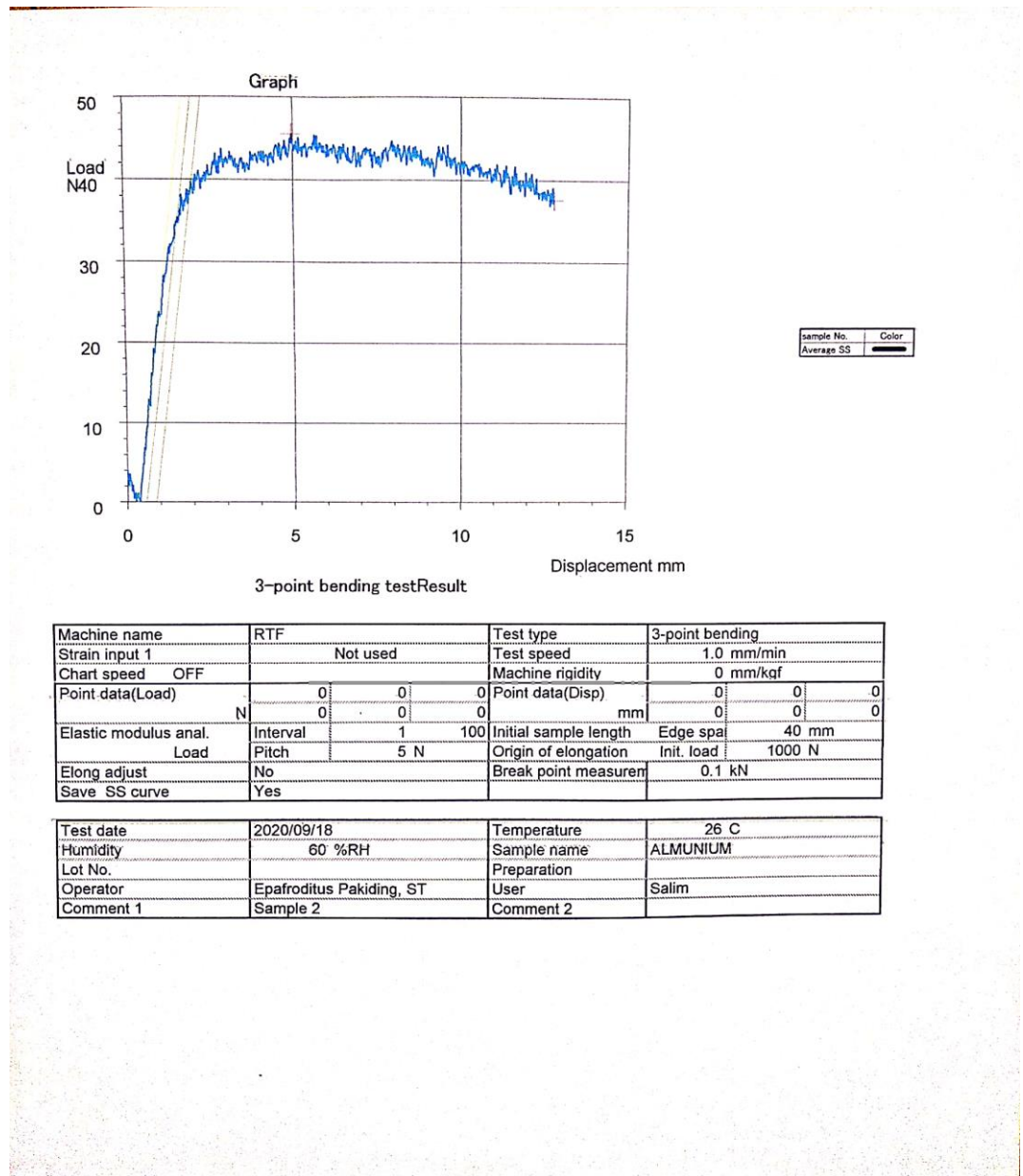
Test date	2020/09/17	Temperature	26 C
Humidity	60 %RH	Sample name	Almunium
Lot No.		Preparation	
Operator	Epafroditus Pakiding, ST	User	Salim
Comment 1	Sample 1	Comment 2	

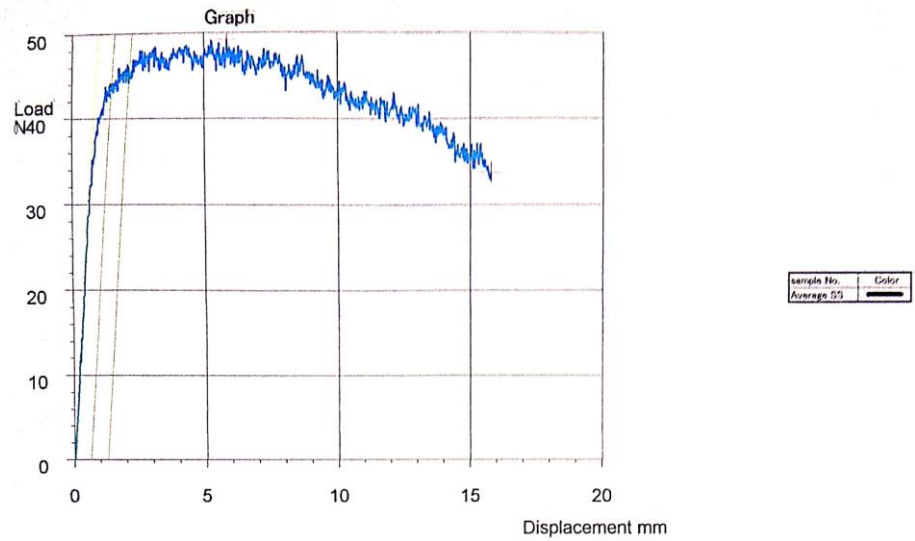


Machine name	RTF		Test type	3-point bending	
Strain input 1	Not used		Test speed	1.0 mm/min	
Chart speed	OFF		Machine rigidity	0 mm/kgf	
Point data(Load)	0	0	0	Point data(Disp)	0
N	0	0	0	mm	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa
Load	Pitch	5 N		Origin of elongation	Init. load
Elong adjust	No		Break point measurem	0.1 kN	
Save SS curve	Yes				

Test date	2020/09/17	Temperature	26 C
Humidity	60 %RH	Sample name	Almunium
Lot No.		Preparation	
Operator	Epafroditus Pakiding, ST	User	Salim
Comment 1	Sample 1	Comment 2	

Al 1mm



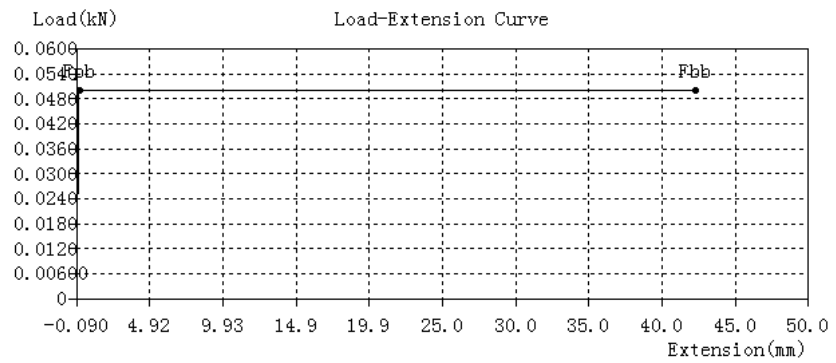


Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	1.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kgf		
Point data(Load)		0	0	0	Point data(Disp)	0	0
	N	0	0	0	mm	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	60 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	1 kN	
Elong adjust	No			Break point measuren	0.1 kN		
Save SS curve	Yes						

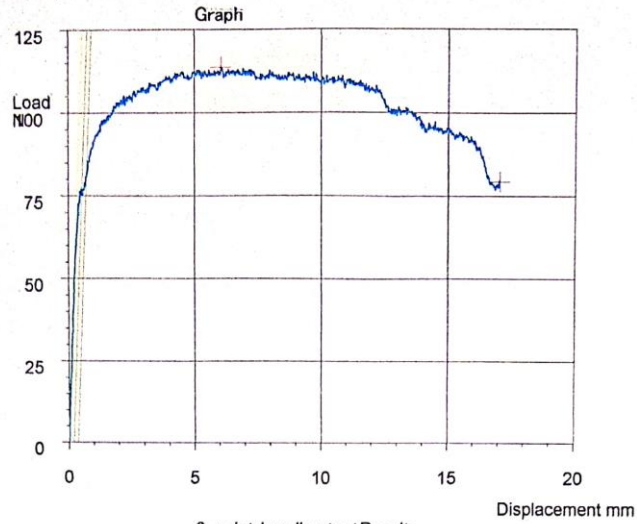
Test date	2020/09/17	Temperature	26 C
Humidity	60 %RH	Sample name	Almunium
Lot No.		Preparation	
Operator	Epafroditus Pakiding, ST	User	Salim
Comment 1	Sample 1	Comment 2	

Aluminium 1mm (1) B

SampleID	Aluminium 1mm (1)	TestDate	13/9/2020
Operator	B	Type	Flat
Size (mm)	12.5*1	So (mm ²)	12.50
Ls (mm)	90	Fbb (kN)	/
Rbb (MPa)	/	Fpb (kN)	/
Rpb (MPa)	/	Eb (GPa)	/
U (J)	2.114		

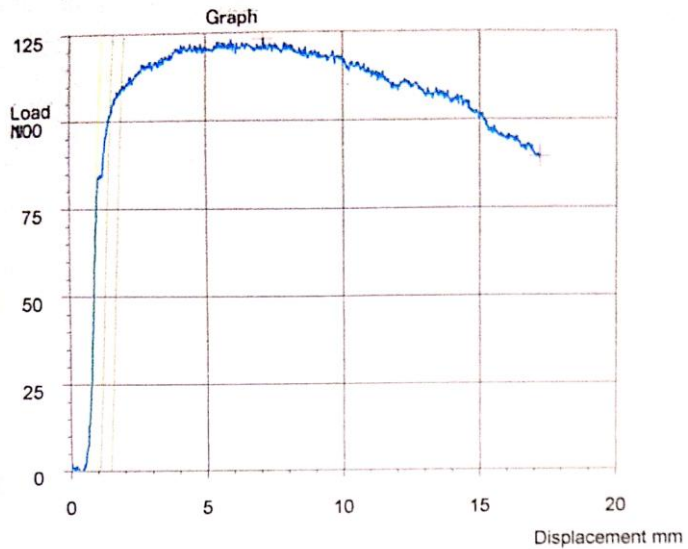


Al 1,5 mm



3-point bending testResult

Machine name	RTF		Test type	3-point bending	
Strain input 1	Not used		Test speed	1.0 mm/min	
Chart speed	OFF		Machine rigidity	0 mm/kgf	
Point data(Load)	N	0	Point data(Disp)	mm	0
Elastic modulus anal.	Interval	1	Initial sample length	Edge spai	40 mm
Load	Pitch	5 N	Origin of elongation	Init. load	1000 N
Elong adjust	No		Break point measurem	0.1 kN	
Save SS curve	Yes				
Test date	2020/09/18		Temperature	26 C	
Humidity	60 %RH		Sample name	ALMUNIU	
Lot No.			Preparation		
Operator	Epafroditus Pakiding, ST		User	Salim	
Comment 1	Sample 2		Comment 2		

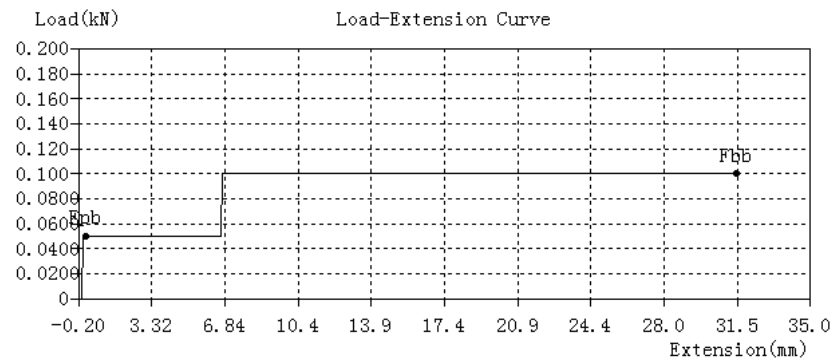


3-point bending testResult

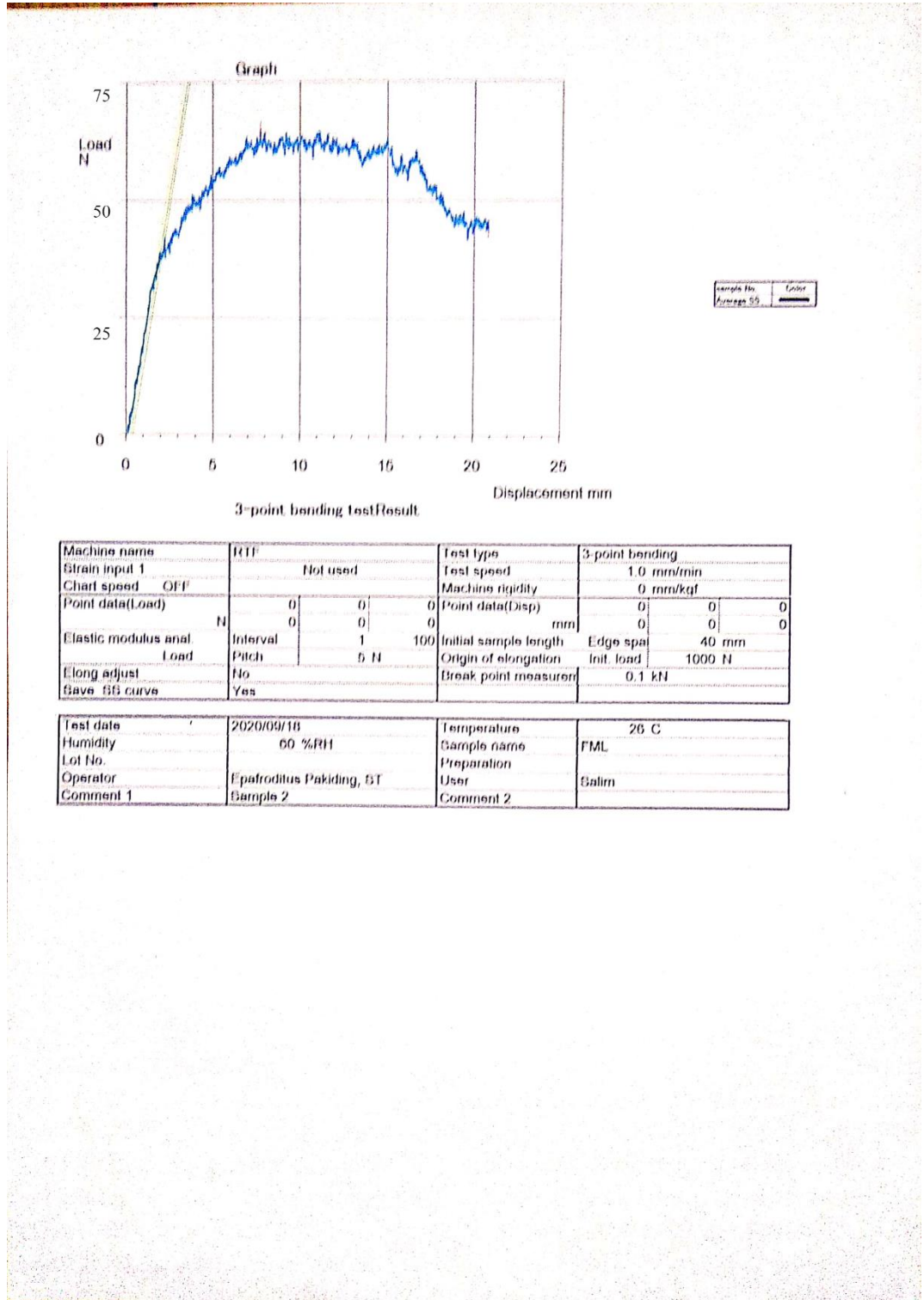
Machine name	RTF			Test type	3-point bending			
Strain input 1	Not used			Test speed	1.0 mm/min			
Chart speed	OFF			Machine rigidity	0 mm/kqf			
Point data(Load)		0	0	0	Point data(Disp)	0	0	0
	N	0	0	0		mm	0	0
Elastic modulus anal.	Interval	1		100	Initial sample length	Edge spa		60 mm
	Load	Pitch		5 N	Origin of elongation	Init. load	1 kN	
Elong adjust	No			Break point measurement	0.1 kN			
Save SS curve	Yes							
Test date	2020/09/17			Temperature	26 C			
Humidity	60 %RH			Sample name	Almunium			
Lot No.				Preparation				
Operator	Epafroditus Pakiding, ST			User	Salim			
Comment 1	Sample 1			Comment 2				

Aluminium 1.5mm (1) B

SampleID	Aluminium 1.5mm (1) B	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*1.5	So(mm ²)	18.75
Ls(mm)	90	Fbb(kN)	/
Rbb(MPa)	/	Fpb(kN)	/
Rpb(MPa)	/	Eb(GPa)	/
U(J)	2.814		



FML 0,5 mm



3-point bending test Result

Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	1.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kgf		
Point data(Load)	N	0	0	0	Point data(Disp)	0	0
		0	0	0	mm	0	0
Elastic modulus anal	Interval	1	100	Initial sample length	Edge spa	40 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	1000 N	
Elong adjust	No			Break point measure	0.1 kN		
Save BG curve	Yes						

Test date	2020/09/18		Temperature	26 C	
Humidity	60 %RH		Sample name	FML	
Lot No.			Preparation		
Operator	Epafrditus Pakding, ST		User	Salim	
Comment 1	Sample 2		Comment 2		



3-point bending testResult

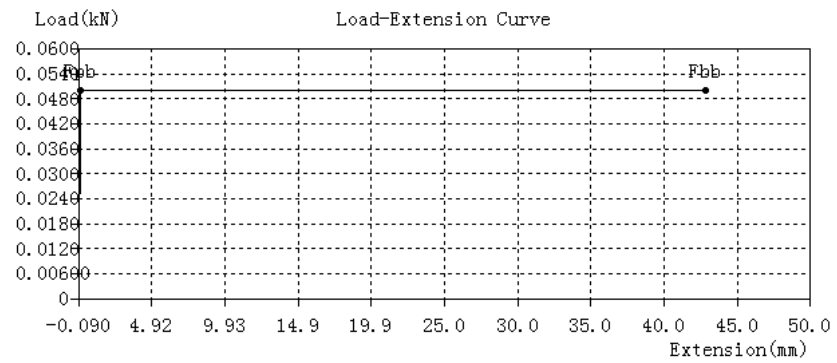
Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	1.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	0	Point data(Disp)	0	0	0
	N	0	0	mm	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	60 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	1 kN	
Elong adjust	No			Break point measurement	0.1 kN		
Save SS curve	Yes						

Test date	2020/09/17	Temperature	26 C
Humidity	60 %RH	Sample name	FML
Lot No		Preparation	
Operator	Epafroditus Pakiding, ST	User	Salim
Comment 1	Sample 1	Comment 2	

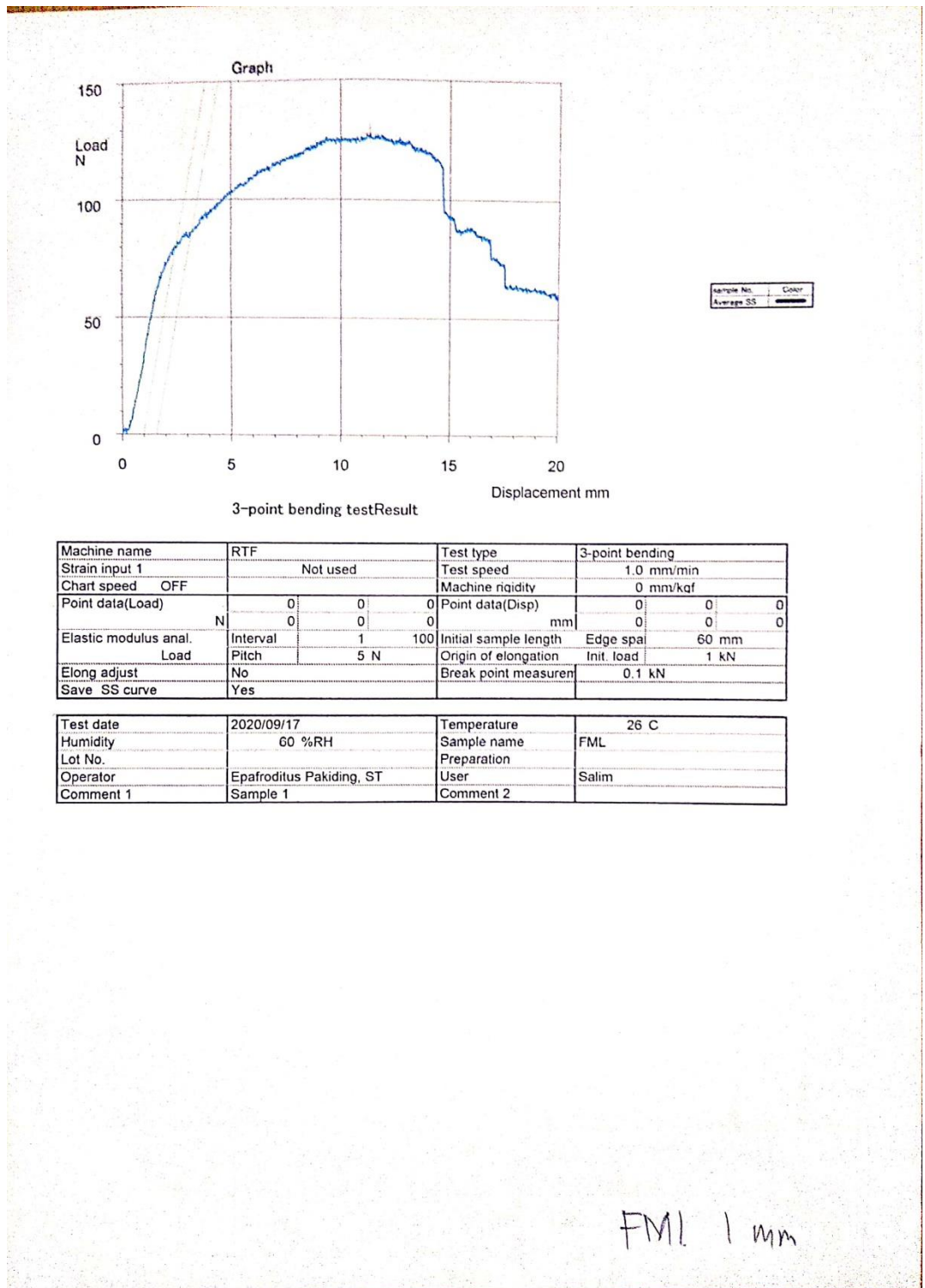
FML 0,5 mm

FML 0.5mm (1) B

SampleID	FML 0.5mm (1) B	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*2	So(mm ²)	25.00
Ls(mm)	90	Fbb(kN)	/
Rbb(MPa)	/	Fpb(kN)	/
Rpb(MPa)	/	Eb(GPa)	/
U(J)	2.144		



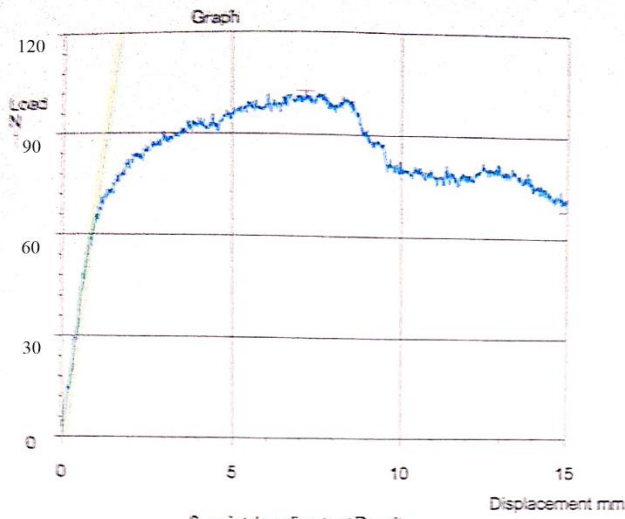
FML 1 mm



Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	1.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kaf		
Point data(Load)	N	0	0	0	Point data(Disp)	0	0
		0	0	0	mm	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	60 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	1 kN	
Elong adjust	No			Break point measurem	0.1 kN		
Save SS curve	Yes						

Test date	2020/09/17		Temperature	26 C	
Humidity	60 %RH		Sample name	FML	
Lot No.			Preparation		
Operator	Epafroditus Pakiding, ST		User	Salim	
Comment 1	Sample 1		Comment 2		

FML 1 mm

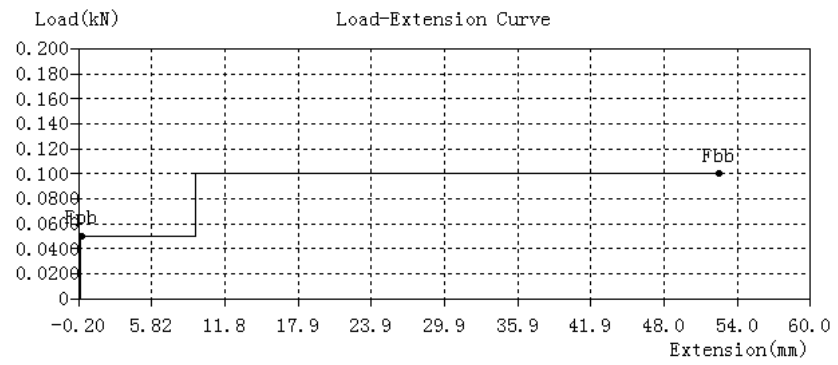


3-point bending testResult

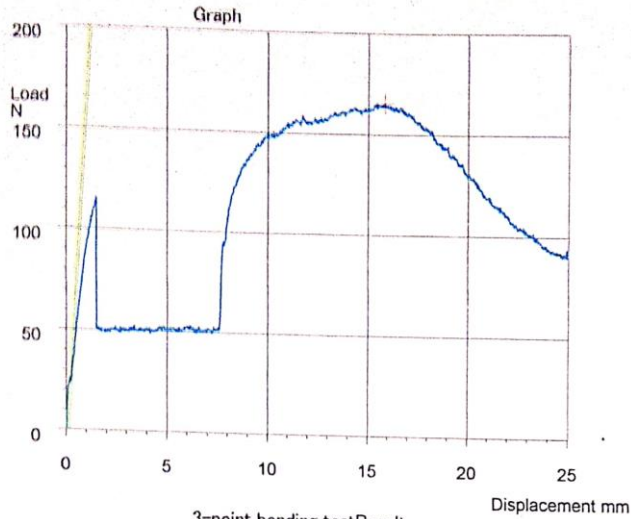
Machine name	RTF		Test type	3-point bending	
Strain input 1	Not used		Test speed	1.0 mm/min	
Chart speed	OFF		Machine rigidity	0 mm ³ /kcf	
Point data(Load)	N	0	0	0	0
		0	0	0	0
Point data(Disp)	mm	0	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge seal 40 mm
	Load	5 N		Origin of elongation	Init. load 1000 N
Elong adjust	No		Break point measurem	0.1 kN	
Save SS curve	Yes				
Test date	2020/09/18		Temperature	25 C	
Humidity	60 %RH		Sample name	FML	
Lot No.			Preparation		
Operator	Epafroditus Pakiding, ST		User	Salim	
Comment 1	Sample 2		Comment 2		

FML 1mm (1) B

SampleID	FML 1mm (1) B	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*3	So(mm ²)	37.50
Ls(mm)	90	Fbb(kN)	/
Rbb(MPa)	/	Fpb(kN)	/
Rpb(MPa)	/	Eb(GPa)	/
U(J)	4.783		

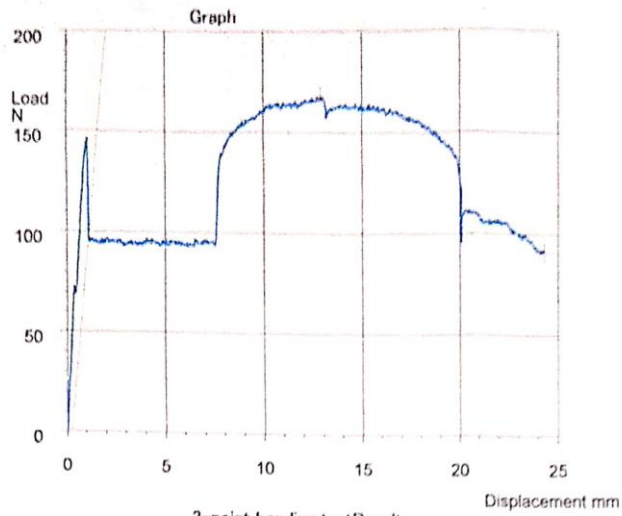


FML 1,5 mm



Sample No.
Average SS

Machine name	RTF		Test type	3-point bending	
Strain input 1	Not used		Test speed	1.0 mm/min	
Chart speed	OFF		Machine rigidity	0 mm/kgf	
Point data(Load)	<input type="text" value="0"/>	<input type="text" value="0"/>	Point data(Disp)	<input type="text" value="0"/>	<input type="text" value="0"/>
	N		mm	<input type="text" value="0"/>	<input type="text" value="0"/>
Elastic modulus anal.	Interval	<input type="text" value="1"/>	Initial sample length	Edge spa	
Load	Pitch	<input type="text" value="5 N"/>	Origin of elongation	Init. load	<input type="text" value="1000 N"/>
Elong adjust	No		Break point measurem	<input type="text" value="0.1 kN"/>	
Save SS curve	Yes				
Test date	2020/09/17		Temperature	26 C	
Humidity	60 %RH		Sample name	FML	
Lot No.			Preparation		
Operator	Epafroditus Pakiding, ST		User	Salim	
Comment 1	Sample 1		Comment 2		



Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	0.5 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kgf		
Point data(Load)	N	0	0	Point data(Disp)	mm	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spai	60 mm	
Load	Pitch	5 N		Origin of elongation	Init load	1 kN	
Elong adjust	No			Break point measurer	0.1 kN		
Save SS curve	Yes						
Test date	2020/09/14			Temperature	25 C		
Humidity	60 %RH			Sample name	FML		
Lot No.				Preparation			
Operator	Epafroditus Pakiding, ST			User	Salim		
Comment 1	Sample 1			Comment 2			

FML, 1,5 mm

FML 1.5mm (1) B

SampleID	FML 1.5mm (1) B	TestDate	13/9/2020
Operator		Type	Flat
Size(mm)	12.5*3	So(mm ²)	37.50
Ls(mm)	90	Fbb(kN)	/
Rbb(MPa)	/	Fpb(kN)	/
Rpb(MPa)	/	Eb(GPa)	/
U(J)	6.855		

