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LAMPIRAN

Lampiran 1 Perhitungan Rasio Putaran Spindel Benda Kerja

$$V_w = \frac{\pi d_w n_w}{60000}$$

$$V_w = \frac{3,14 \cdot 127 \text{ mm} \cdot 2800 \text{ rpm}}{60000}$$

$$V_w = \frac{1116584}{60000}$$

$$V_w = 18,61 \text{ m/s}$$

Pada mesin gerinda silindrik putaran batu gerinda biasanya ada satu harga satu saja, sebaliknya benda kerja dapat diputar pada putaran yang bertingkat atau berkesinambungan dari 1:10 sampai 1:50. (Taufiq Rochim, 1993)

$$18,6 \text{ m/s} \longrightarrow 1:10 \longrightarrow 1,86 \text{ m/s}$$

$$18,6 \text{ m/s} \longrightarrow 1:50 \longrightarrow 0,372 \text{ m/s}$$

$$1,86 \text{ m/s} = \frac{3,14 \cdot 127 \text{ mm} \cdot X}{60000}$$

$$X = \frac{111600}{3,14 \times 127}$$

$$X = \frac{111600}{398,78}$$

$$X = 279,85 \text{ rpm}$$

$$0,372 \text{ m/s} = \frac{3,14 \cdot 127 \text{ mm} \cdot X}{60000}$$

$$X = \frac{22,320}{3,14 \times 127}$$

$$X = \frac{22,320}{398,78}$$

$$X = 55,97 \text{ rpm}$$

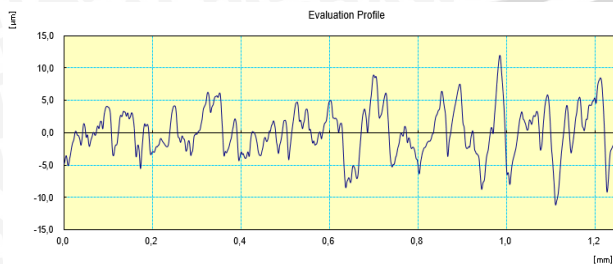
Sehingga didapatkan untuk kecepatan spindel *range* yang dapat digunakan adalah antara 55,97 rpm – 279,85 rpm. Dari pengaturan yang terdapat pada mesin bubut, didapatkan kecepatan spindel yang cocok adalah 140 rpm, 165 rpm dan 215 rpm.

Lampiran 2 Hasil Kekasaran Permukaan Spesimen Baja ST 41



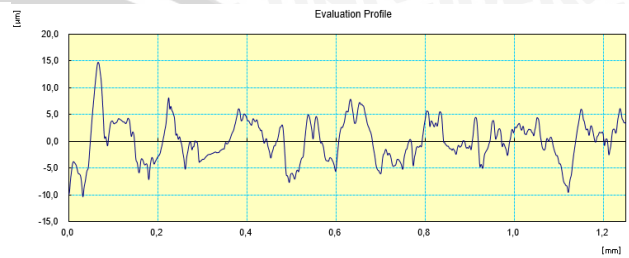
CERTIFICATE OF INSPECTION

In 11



Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
Ra	2.935 μm		
Rq	3.607 μm		
Rz	15.572 μm		

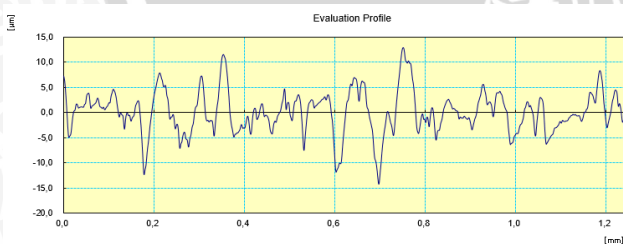
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
Ra	3.142 μm		
Rq	3.761 μm		
Rz	15.989 μm		

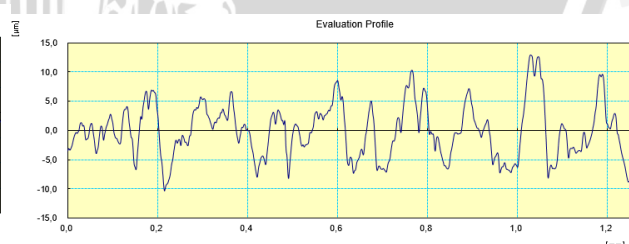
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In 12



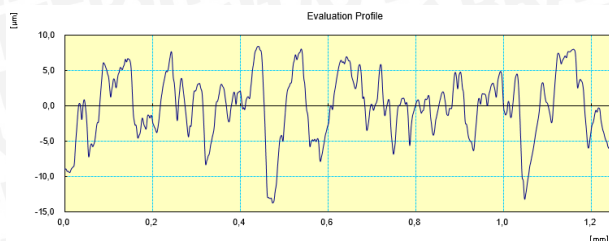
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
Ra	3.009 μm		
Rq	3.868 μm		
Rz	16.609 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
Ra	3.657 μm		
Rq	4.494 μm		
Rz	17.392 μm		

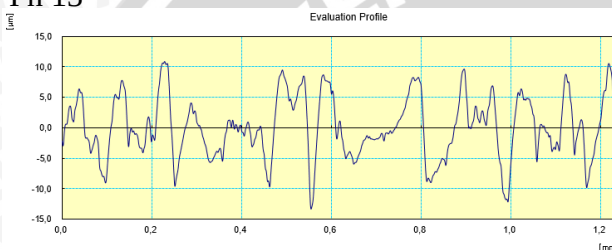
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
R_a	3.633 μm		
R_q	4.502 μm		
R_z	17.508 μm		

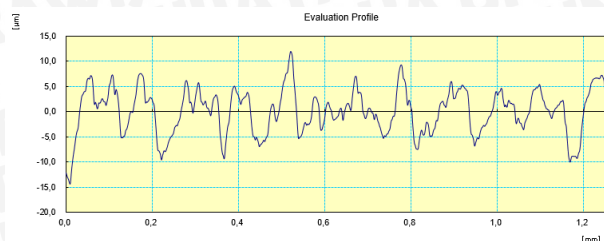
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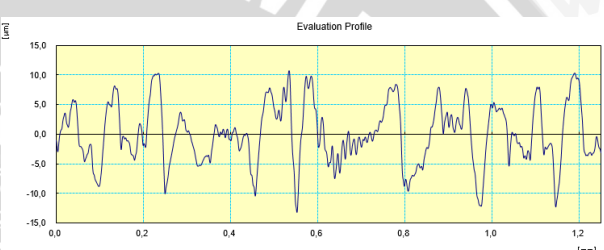
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
R_a	3.972 μm		
R_q	4.930 μm		
R_z	20.572 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
R_a	3.619 μm		
R_q	4.433 μm		
R_z	17.730 μm		

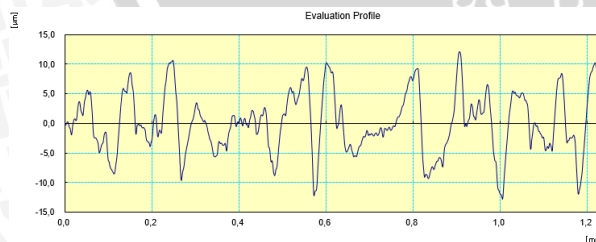
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
R_a	4.067 μm		
R_q	5.016 μm		
R_z	21.183 μm		

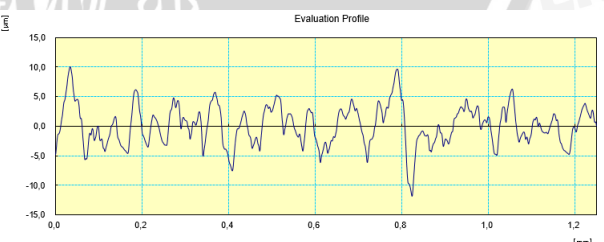
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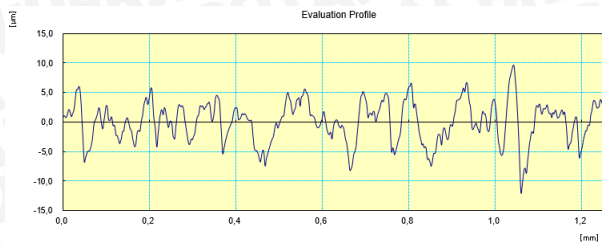
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
R_a	4.092 μm		
R_q	5.069 μm		
R_z	21.566 μm		

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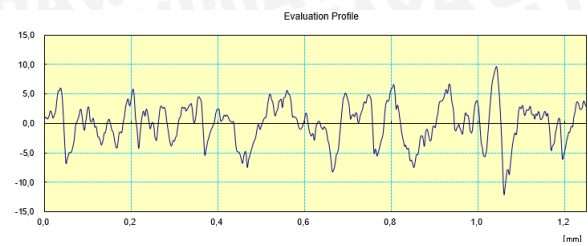


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λ_s	2.5 μm	Filter	GAUSS
R_a	2.717 μm		
R_q	3.324 μm		
R_z	14.629 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.746 μm		
Rq	3.385 μm		
Rz	14.846 μm		

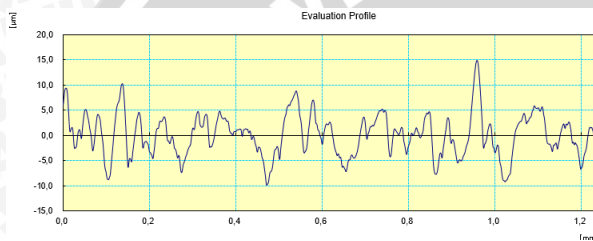


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.947 μm		
Rq	3.600 μm		
Rz	15.238 μm		

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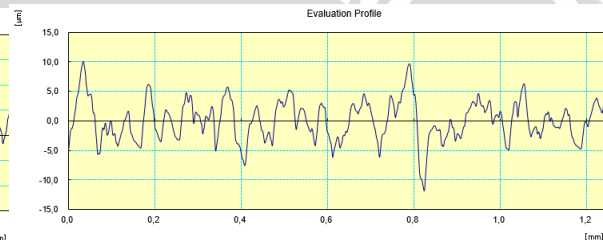
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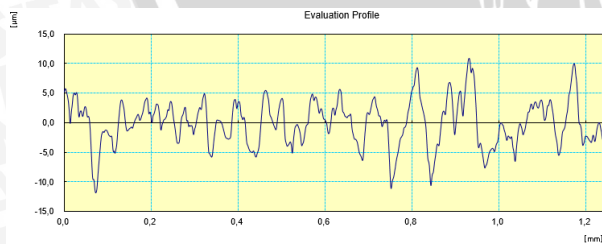
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.306 μm		
Rq	4.149 μm		
Rz	17.468 μm		

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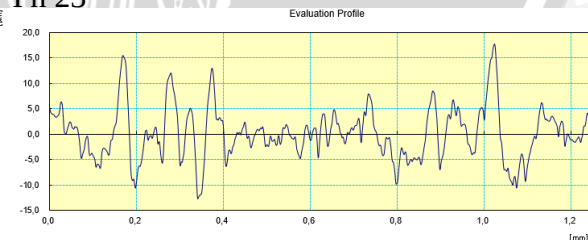
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.079 μm		
Rq	3.772 μm		
Rz	16.250 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.021 μm		
Rq	3.709 μm		
Rz	16.412 μm		

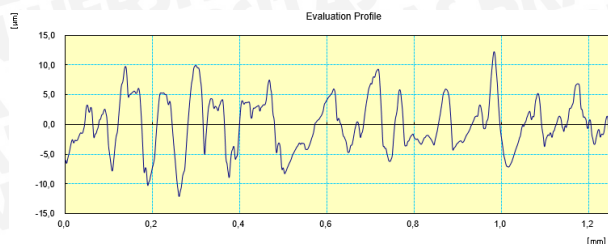
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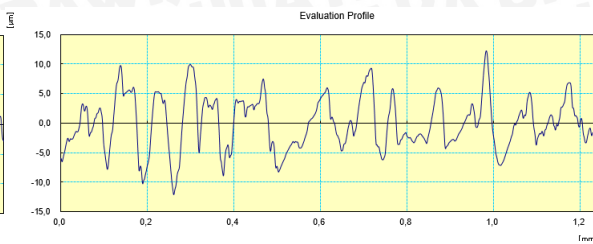
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.975 μm		
Rq	5.104 μm		
Rz	22.753 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.642 μm		
Rq	4.367 μm		
Rz	18.092 μm		

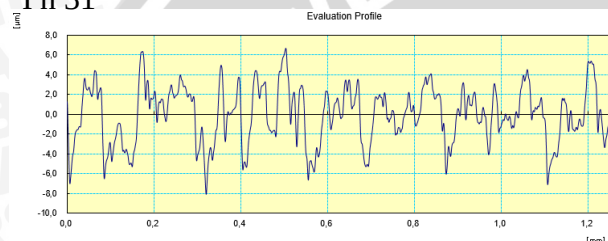


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.858 μm		
Rq	4.563 μm		
Rz	18.100 μm		

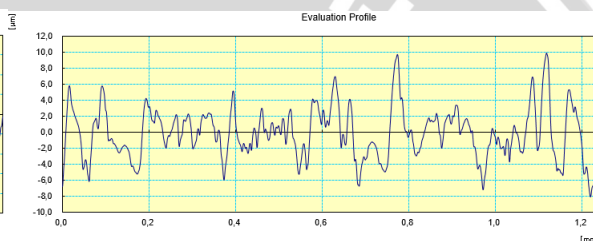
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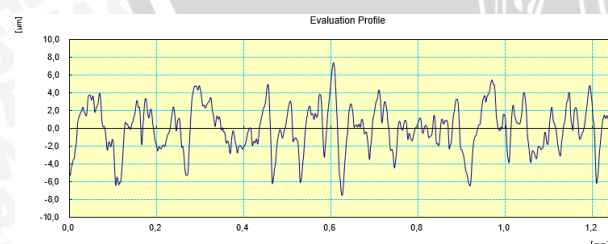
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Measuring Tool	SurfTest	Comment	Ver2.00
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λs	2.5μm	Filter	GAUSS
Ra	2.330 μm		
Rq	2.832 μm		
Rz	12.718 μm		



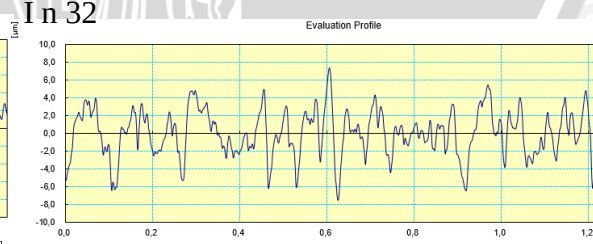
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.506 μm		
Rq	3.104 μm		
Rz	14.466 μm		

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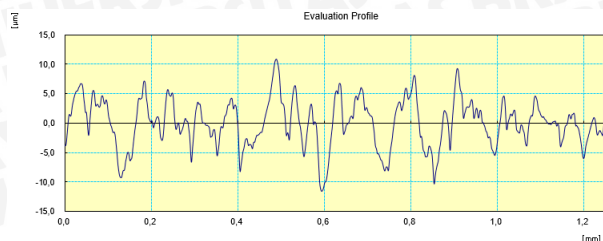
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.051 μm		
Rq	2.573 μm		
Rz	11.822 μm		



Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.915 μm		
Rq	3.595 μm		
Rz	15.323 μm		

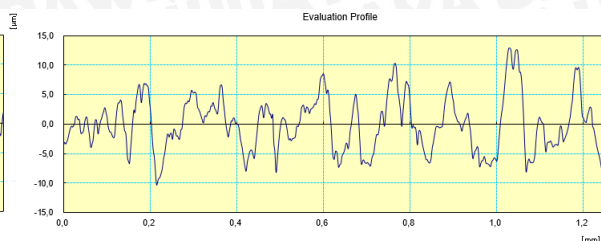
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.156 µm		
Rq	3.906 µm		
Rz	16.745 µm		

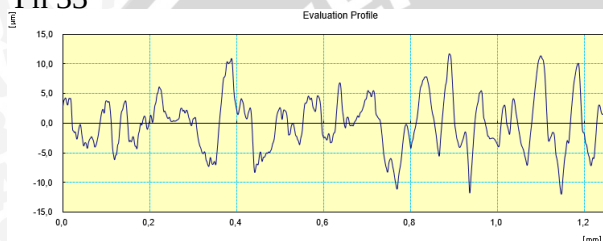
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.307 µm		
Rq	4.133 µm		
Rz	18.621 µm		

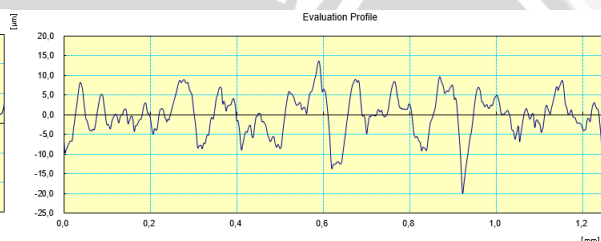
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In 33



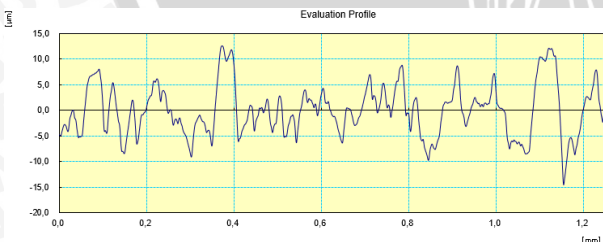
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Measuring Tool	SurfTest	Comment	Ver2.00
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Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.589 µm		
Rq	4.366 µm		
Rz	18.667 µm		

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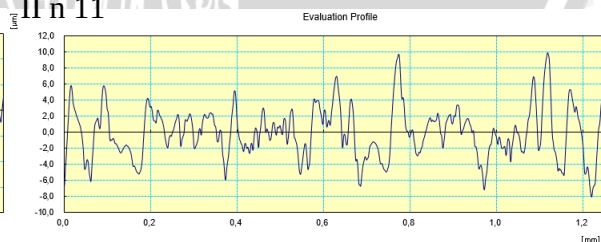
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.797 µm		
Rq	4.767 µm		
Rz	21.284 µm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.833 µm		
Rq	4.735 µm		
Rz	19.263 µm		

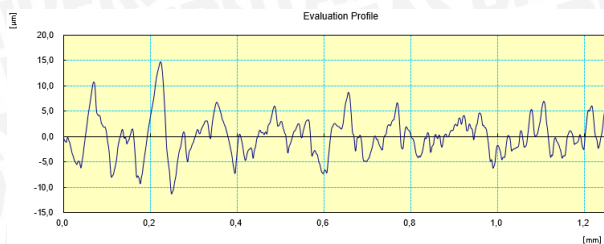
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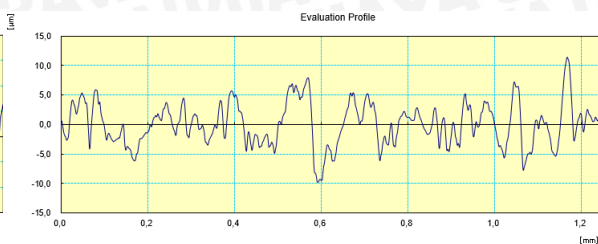
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	2.485 µm		
Rq	2.956 µm		
Rz	12.128 µm		

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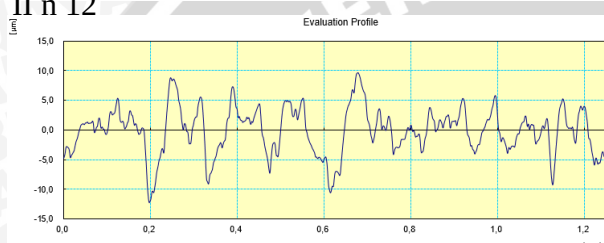
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.959 μm		
Rq	3.743 μm		
Rz	16.796 μm		



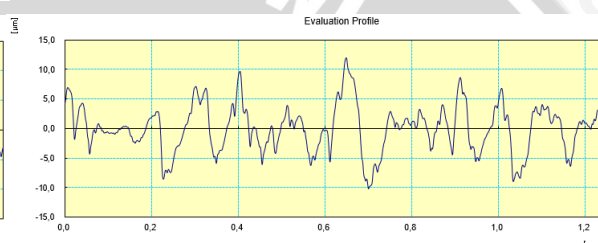
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.881 μm		
Rq	3.466 μm		
Rz	13.890 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.056 μm		
Rq	3.825 μm		
Rz	16.684 μm		



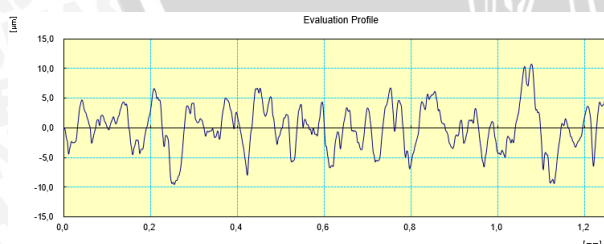
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Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.138 μm		
Rq	3.964 μm		
Rz	16.820 μm		

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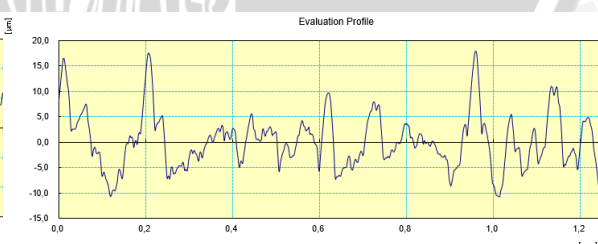
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.031 μm		
Rq	3.732 μm		
Rz	15.831 μm		

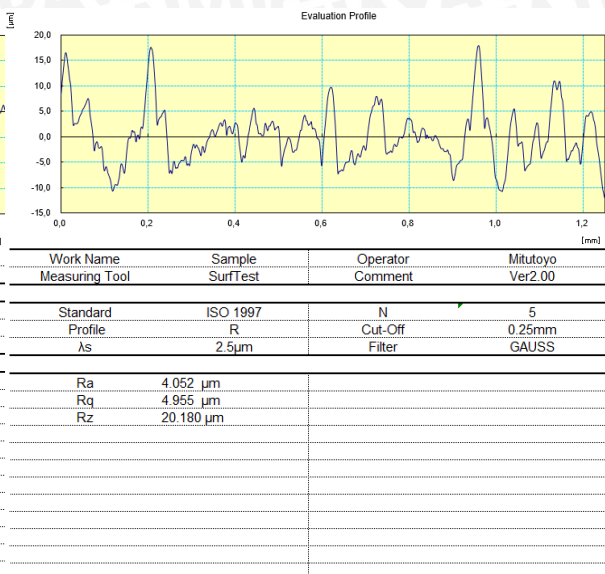
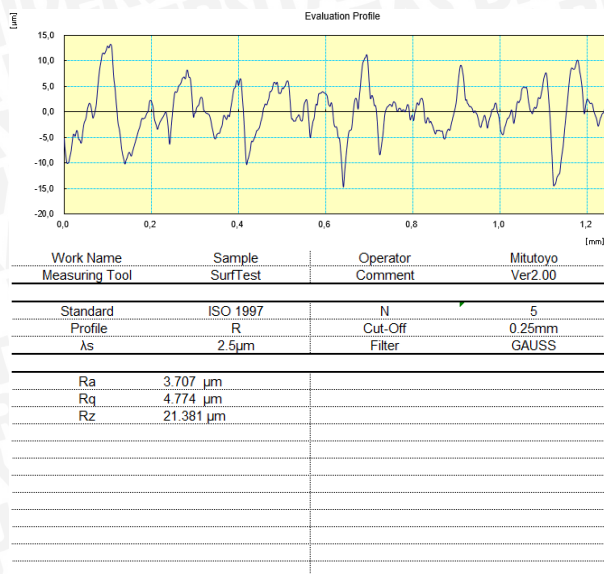


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	4.149 μm		
Rq	5.262 μm		
Rz	21.568 μm		

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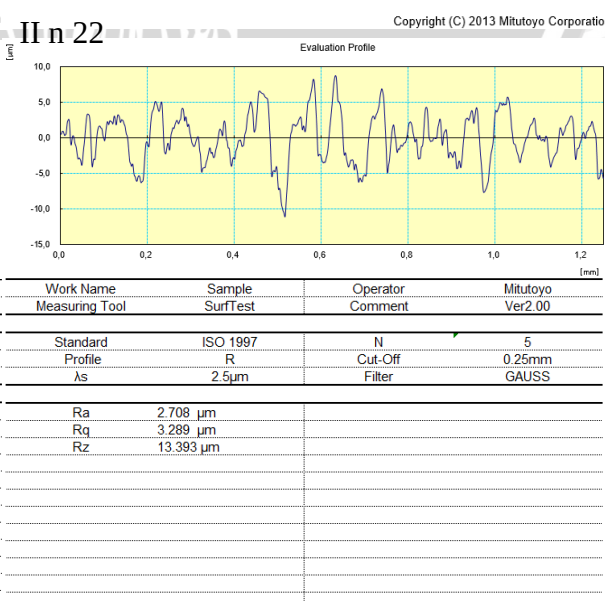
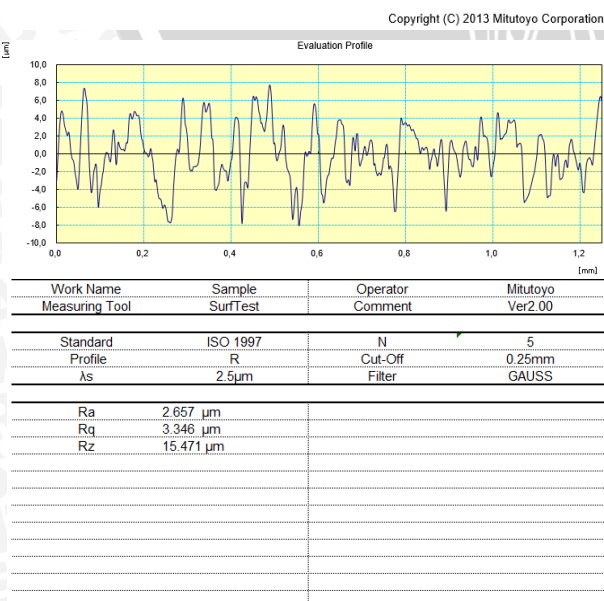
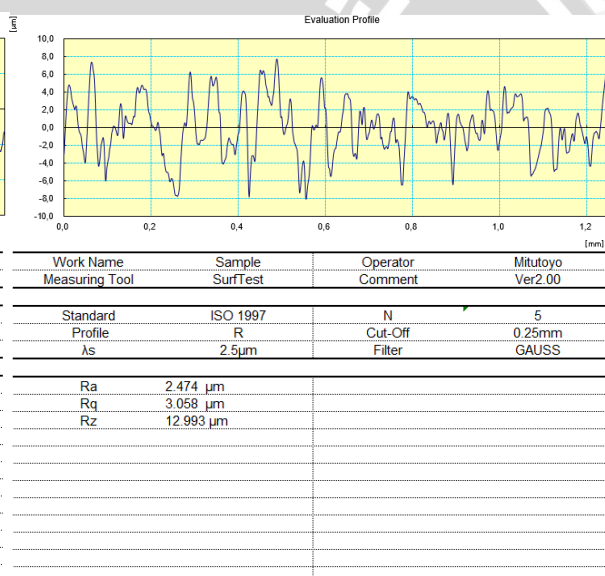
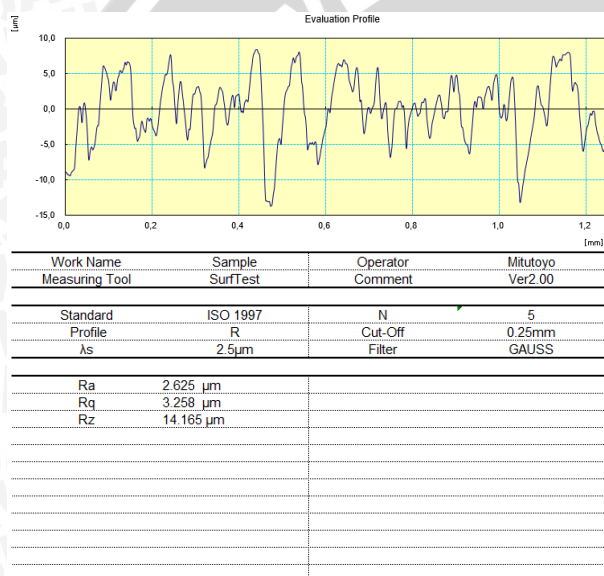




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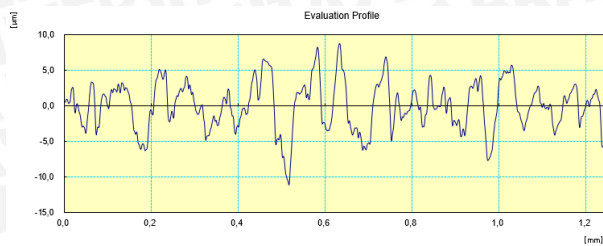
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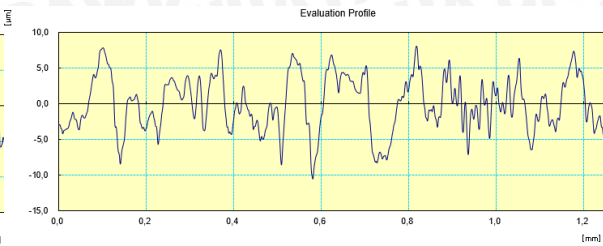


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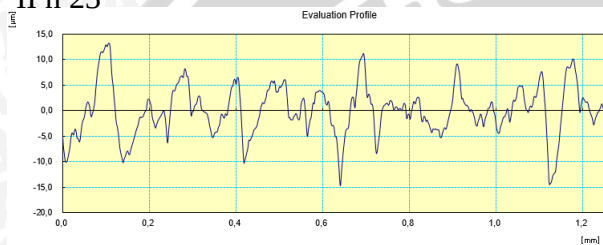
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.127 µm		
Rq	4.060 µm		
Rz	17.909 µm		



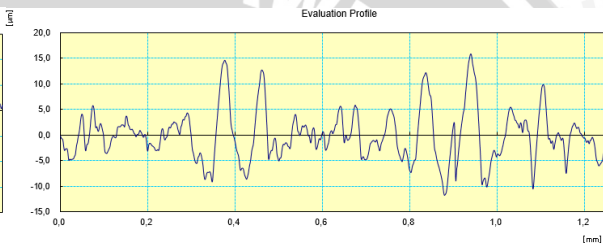
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.154 µm		
Rq	3.719 µm		
Rz	15.297 µm		

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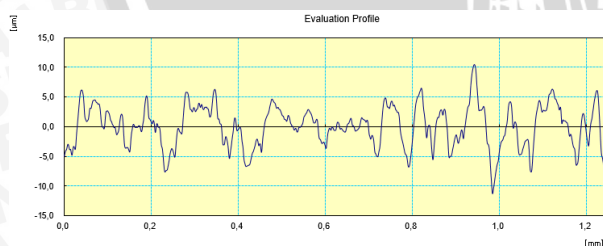


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.596 µm		
Rq	4.569 µm		
Rz	20.361 µm		



Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.697 µm		
Rq	4.508 µm		
Rz	18.665 µm		

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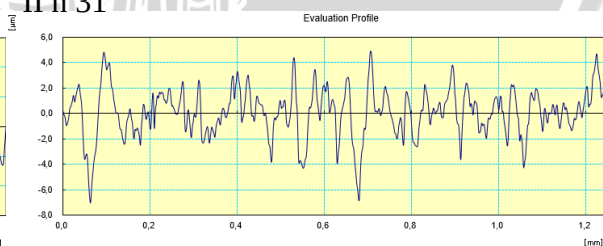


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.679 µm		
Rq	4.510 µm		
Rz	19.288 µm		

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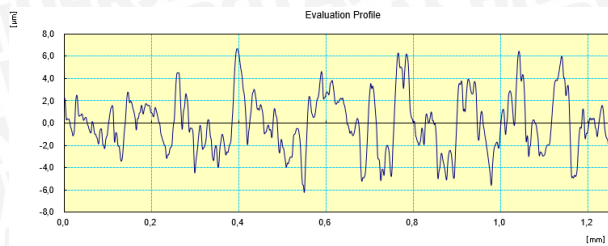
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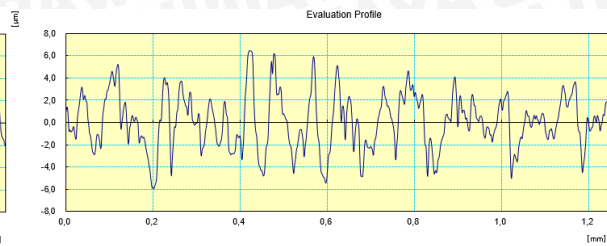


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	2.055 µm		
Rq	2.503 µm		
Rz	10.278 µm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	1.956 µm		
Rq	2.423 µm		
Rz	10.398 µm		

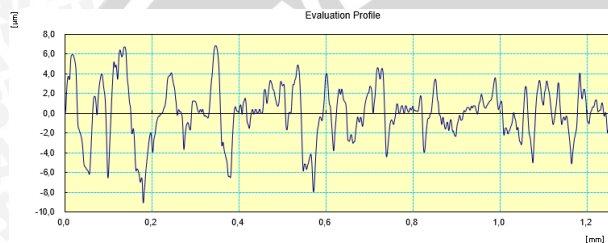


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	2.084 µm		
Rq	2.660 µm		
Rz	11.781 µm		

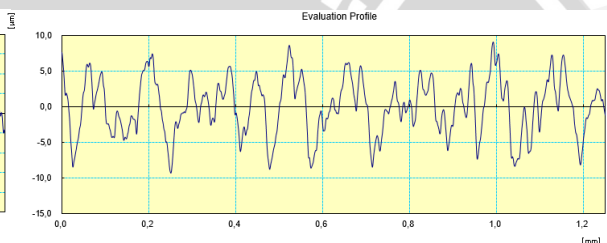
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	2.235 µm		
Rq	2.758 µm		
Rz	12.245 µm		

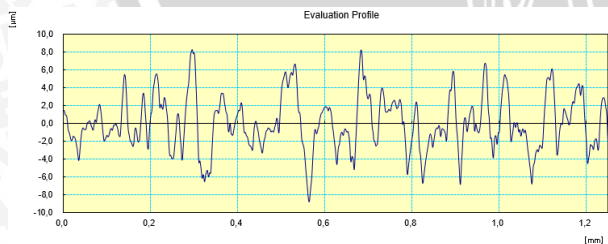


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	2.670 µm		
Rq	3.228 µm		
Rz	13.023 µm		

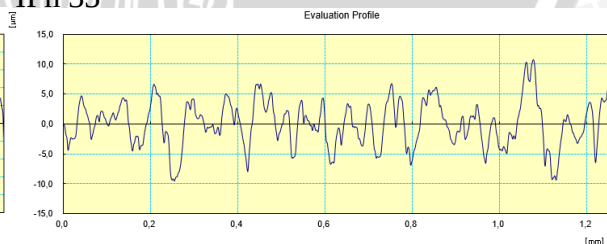
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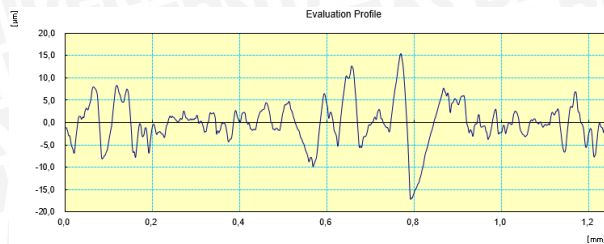
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	2.396 µm		
Rq	2.994 µm		
Rz	13.567 µm		



Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.115 µm		
Rq	4.102 µm		
Rz	18.491 µm		

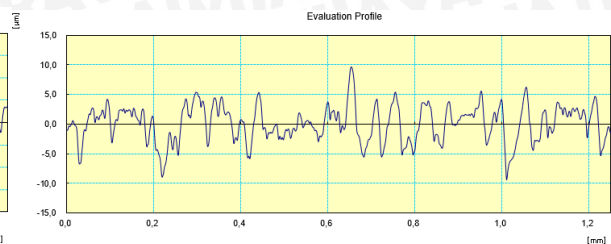
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.277 μm		
Rq	4.017 μm		
Rz	17.609 μm		

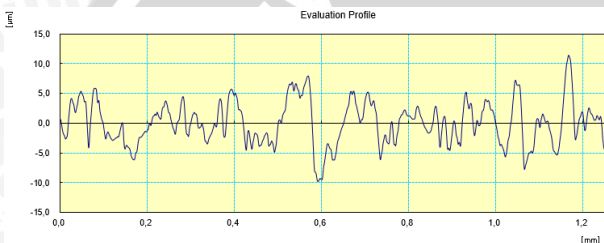
Copyright (C) 2013 Mitutoyo Corporation



Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.397 μm		
Rq	4.320 μm		
Rz	18.952 μm		

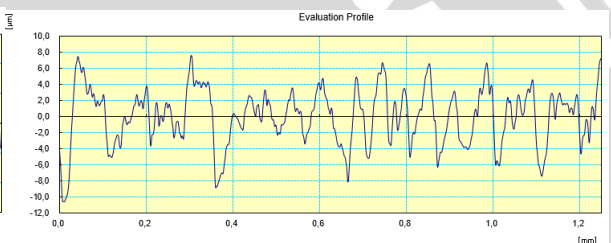
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.775 μm		
Rq	3.463 μm		
Rz	15.325 μm		

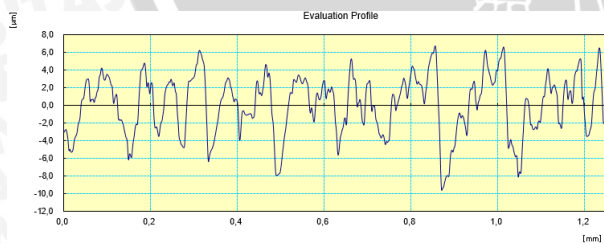
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.768 μm		
Rq	3.309 μm		
Rz	13.689 μm		

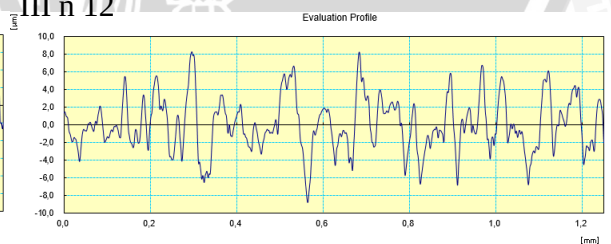
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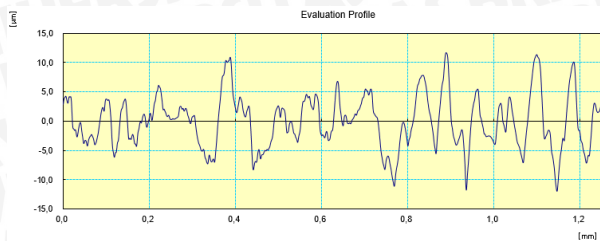
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.277 μm		
Rq	2.864 μm		
Rz	13.008 μm		

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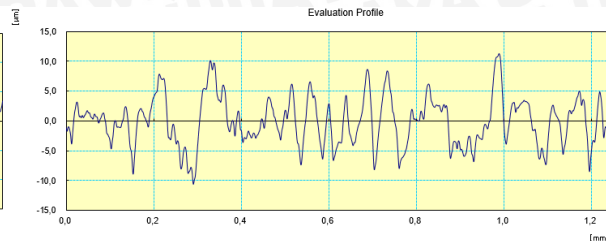
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.277 μm		
Rq	2.864 μm		
Rz	13.008 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.357 µm		
Rq	3.945 µm		
Rz	15.823 µm		

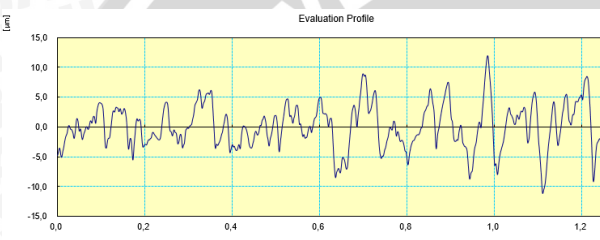
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	3.228 µm		
Rq	3.986 µm		
Rz	17.396 µm		

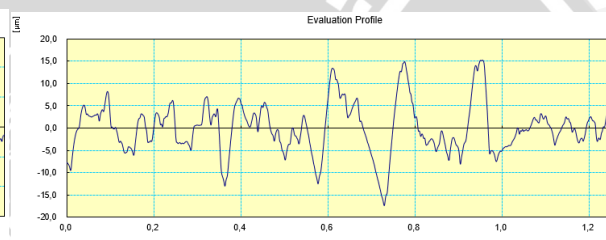
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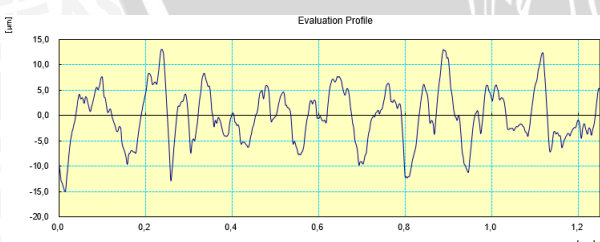
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	4.098 µm		
Rq	5.090 µm		
Rz	21.801 µm		

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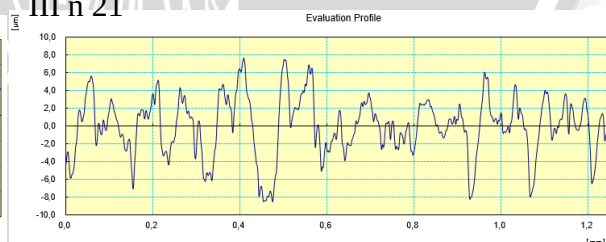
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	4.286 µm		
Rq	5.227 µm		
Rz	20.328 µm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	4.353 µm		
Rq	5.312 µm		
Rz	22.292 µm		

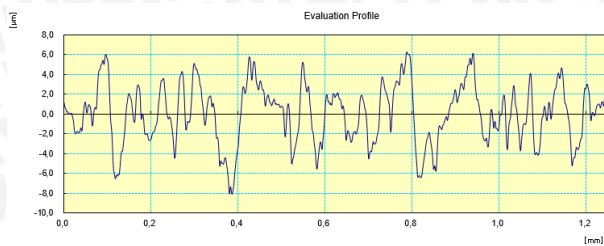
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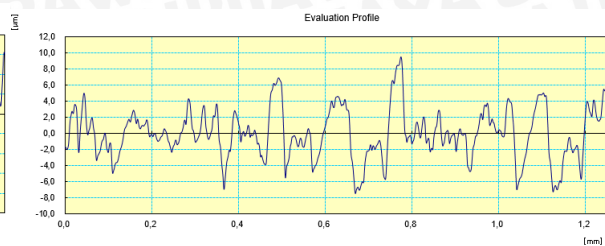
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5µm	Filter	GAUSS
Ra	2.549 µm		
Rq	3.202 µm		
Rz	13.595 µm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.420 μm		
Rq	2.949 μm		
Rz	12.271 μm		

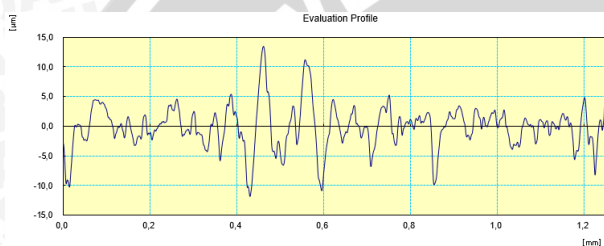


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.371 μm		
Rq	3.027 μm		
Rz	12.582 μm		

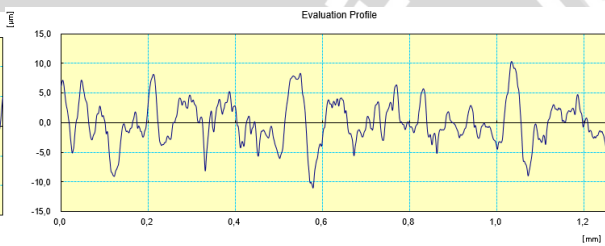
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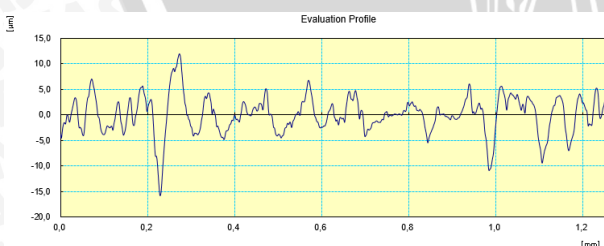
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.593 μm		
Rq	3.518 μm		
Rz	18.029 μm		



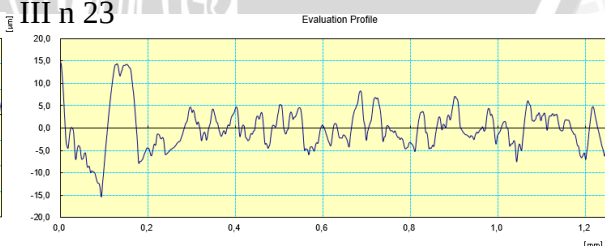
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.894 μm		
Rq	3.608 μm		
Rz	16.170 μm		

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.685 μm		
Rq	3.563 μm		
Rz	16.484 μm		

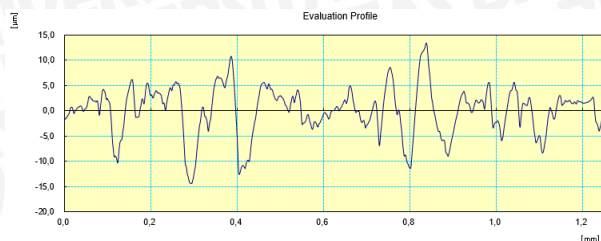


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.505 μm		
Rq	4.151 μm		
Rz	15.914 μm		

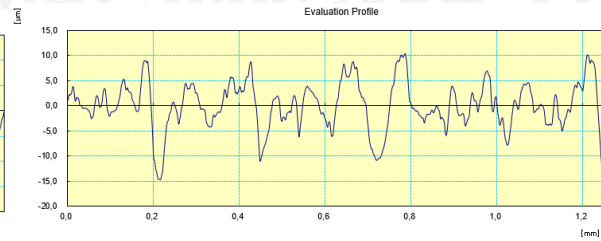
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.588 μm		
Rq	4.435 μm		
Rz	19.003 μm		

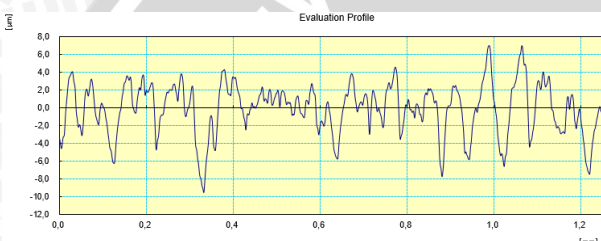


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	3.580 μm		
Rq	4.685 μm		
Rz	20.408 μm		

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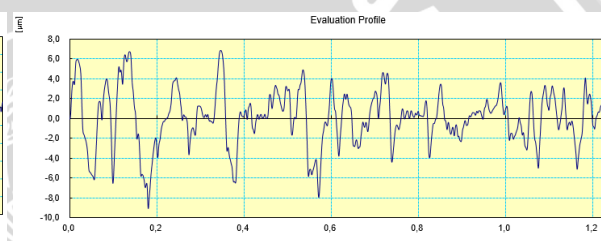
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.175 μm		
Rq	2.758 μm		
Rz	12.782 μm		

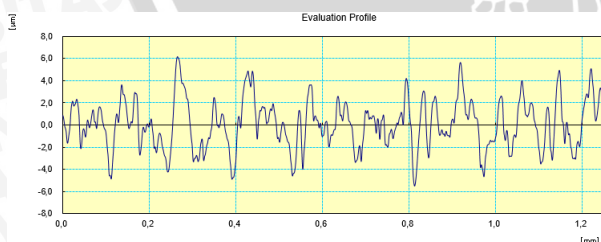
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.076 μm		
Rq	2.601 μm		
Rz	11.766 μm		

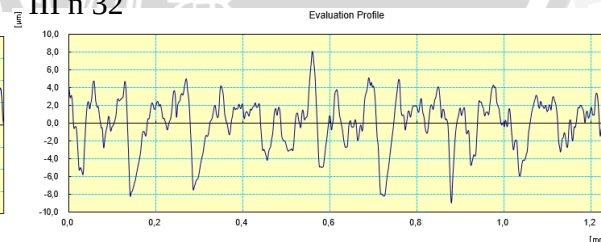
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.309 μm		
Rq	2.913 μm		
Rz	12.932 μm		

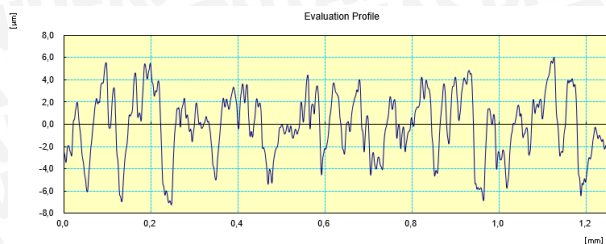
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS
Ra	2.337 μm		
Rq	2.826 μm		
Rz	10.975 μm		

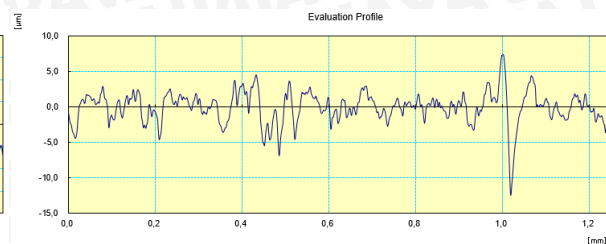
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS

Ra	2.350 μm
Rq	2.789 μm
Rz	10.913 μm



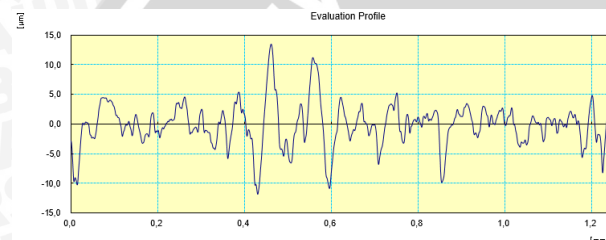
Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS

Ra	2.221 μm
Rq	2.818 μm
Rz	12.514 μm

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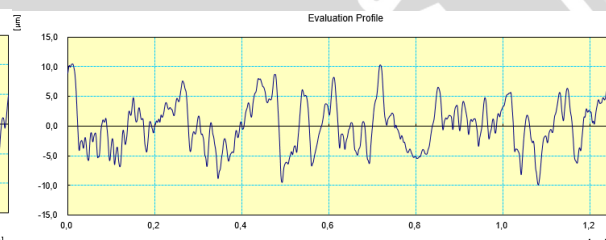
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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS

Ra	3.124 μm
Rq	3.955 μm
Rz	18.116 μm

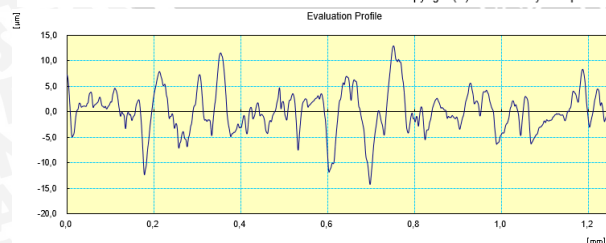


Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS

Ra	3.381 μm
Rq	4.065 μm
Rz	16.195 μm

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Work Name	Sample	Operator	Mitutoyo
Measuring Tool	SurfTest	Comment	Ver2.00
Standard	ISO 1997	N	5
Profile	R	Cut-Off	0.25mm
λs	2.5μm	Filter	GAUSS

Ra	3.151 μm
Rq	4.102 μm
Rz	19.943 μm

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Lampiran 4 Surat Keterangan Telah Melakukan Penelitian di Unit Pelatihan Kerja (BLKI) Singosari



PEMERINTAH PROVINSI JAWA TIMUR
DINAS TENAGA KERJA TRANSMIGRASI DAN KEPENDUDUKAN
UNIT PELAKSANA TEKNIK PELATIHAN KERJA SINGOSARI
Jl. Raya Singosari Telp. (0341) 458055 – Fax. 458512 Website : www.blk-sqs.com
SINGOSARI – 65153



SURAT KETERANGAN

Nomor : 563/z37/106.08/2016

Yang bertanda tangan dibawah ini :

NAMA : Drs. ILHAM PRASETYO. L, MM
NIP : 19621119 198602 1 002
JABATAN : Plt. KEPALA
UNIT KERJA : UPT PELATIHAN KERJA SINGOSARI

Dengan ini menerangkan :

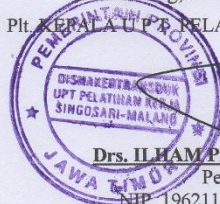
NAMA : HANI CHRISTOPHER
TEMPAT/TGL. LAHIR : PASURUAN, 21 JULI 1994
ASAL SEKOLAH : UNIVERSITAS BRAWIJAYA MALANG

Menyatakan bahwa yang bersangkutan benar-benar telah melaksanakan **Penelitian Permesinan** di UPT PELATIHAN KERJA (BLKI) SINGOSARI, mulai 05 s/d 16 desember 2016.

Demikian Surat Keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Malang, 19 Desember 2016

Plt. KEPALA UPT PELATIHAN KERJA SINGOSARI



Drs. ILHAM PRASETYO L, MM

Pembina

NIP. 19621119 198602 1 002

Tembusan :

1. Arsip

Lampiran 5 Surat Keterangan Telah Melakukan Penelitian di Laboratorium Metrologi Industri Jurusan Teknik Mesin Universitas Brawijaya



KEMENTERIAN RISET TEKNOLOGI DAN PENDIDIKAN TINGGI
FAKULTAS TEKNIK JURUSAN MESIN UNIVERSITAS BRAWIJAYA
LABORATORIUM METROLOGI INDUSTRI
Jl. MayjenHaryono 167 Telp. 553286 Pes. 216 Malang 65145



SURAT KETERANGAN

Nomer. 024/UN10.6.62/LK/MI/Ganjil/2016

Yang bertanda tangan dibawah ini adalah kepala laboratorium Metrologi Industri Jurusan Teknik Mesin Fakultas Teknik Universitas Brawijaya, menerangkan bahwa mahasiswa:

Nama : Hani Christopher
NIM : 125060201111005-62
Jurusan : Teknik Mesin - Universitas Brawijaya

Telah melaksanakan penelitian pengukuran kekasaran permukaan menggunakan alat *Surface Roughness Tester SJ-210* dan pengolahan data dengan judul skripsi:

"Pengaruh Kecepatan *Spindle* dan Kecepatan Pemakanan terhadap Kekasaran Permukaan pada Modifikasi Gerinda *Tool Post* untuk Mesin Bubut Konvensional "
di Laboratorium Metrologi Industri Jurusan Teknik Mesin Fakultas Teknik Universitas Brawijaya.

Asisten Pendamping :

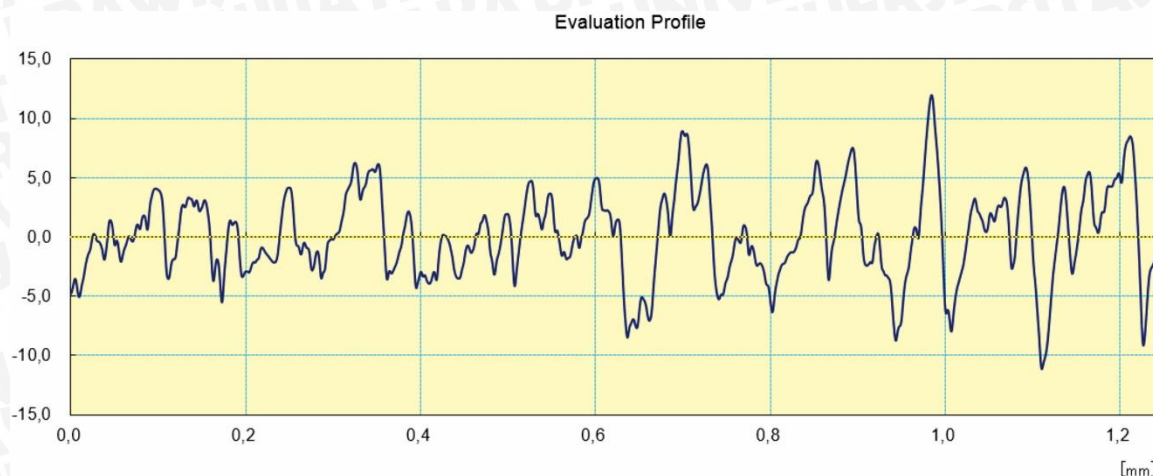
Rifaldi Mauliyansyah
NIM. 135060200111008

Malang, 29 November 2016
Ka Lab. Metrologi Industri

Ir. Hastono Wijaya., MT.
NIP. 19601204 19860 1 1002

Lampiran 6 Contoh Perhitungan Kekasaran Permukaan dengan Metode Analitis

Berikut adalah perhitungan kekasaran permukaan secara analitis. Nilai data didapatkan melalui pendekatan harga h . Dimana jarak antar titik adalah 0,0125 mm dan jumlah titik yang digunakan adalah 100 titik.



h1	4,2437	h26	6,2156	h51	8,3969	h76	7,1883
h2	0,0465	h27	4,3808	h52	6,6186	h77	0,3727
h3	1,6543	h28	5,7934	h53	7,0452	h78	4,5104
h4	0,5551	h29	3,5783	h54	2,6337	h79	10,4115
h5	0,861	h30	1,6004	h55	1,0533	h80	5,6623
h6	0,7625	h31	2,0408	h56	8,8807	h81	4,8976
h7	0,6115	h32	3,063	h57	2,2821	h82	0,4264
h8	3,9453	h33	3,7229	h58	5,7393	h83	2,1239
h9	3,5179	h34	0,0641	h59	3,8761	h84	1,2262
h10	1,2373	h35	2,1436	h60	3,7072	h85	2,5877
h11	3,1816	h36	2,0567	h61	0,1012	h86	1,585
h12	2,3982	h37	0,411	h62	1,1199	h87	4,5671
h13	3,4063	h38	1,5614	h63	2,2764	h88	0,5639
h14	4,1113	h39	1,9852	h64	5,1542	h89	10,7136
h15	1,2065	h40	1,9126	h65	2,5309	h90	2,3825
h16	2,9491	h41	1,3699	h66	1,3091	h91	3,862
h17	2,0319	h42	4,6167	h67	1,4504	h92	1,4115
h18	1,5367	h43	1,0661	h68	4,5019	h93	5,1132
h19	1,1568	h44	3,4952	h69	2,2251	h94	0,3174
h20	4,1252	h45	1,5932	h70	0,5994	h95	4,245
h21	1,3277	h46	0,3725	h71	5,5274	h96	5,1427
h22	2,527	h47	1,0631	h72	2,921	h97	8,4195
h23	3,4391	h48	4,843	h73	2,3613	h98	7,1698
h24	0,2514	h49	2,183	h74	0,3061	h99	2,4435
h25	2,1805	h50	1,3971	h75	3,8825	h100	1,3024

h merupakan jarak titik yang terukur, dari profil tengah ke garis puncak dan garis lembah yang ada pada grafik. Dari nilai h ini didapatkan nilai yang dapat digunakan untuk pendekatan nilai kekasaran permukaan.

$$Ra = \frac{\sum hi}{n}$$

$$Ra = \frac{300,94}{100}$$

$$Ra = 3,0094 \mu\text{m}$$

Nilai kekasaran permukaan yang didapatkan pada metode analitis ini adalah 3,0094 μm sedangkan hasil nilai kekasaran permukaan yang didapatkan dari *Surface Roughness Tester* 2,935 μm . Perbedaan hasil ini disebabkan karena jumlah dari titik yang digunakan dalam pengukuran kekasaran permukaan. Semakin banyak titik yang digunakan maka nilai dari kekasaran permukaan akan semakin teliti karena semakin banyak titik akan mendekati nilai yang sesungguhnya dari kekasaran permukaan.

