Manufacturer (trade mark):	**Clover Germany**
Lot/Part number:	**DPCTK590ME**

Type/Model OEM:	TK-590M
Toner color(s):	**MAGENTA**

Main application: To be used on the relevant printers according to remanufacturer instructions

Intended yield: 5000

Test device: LWG6344673 / LWG5Y38494 / LWG5Y38495

Take over value of existing test protocol : (box) Yes, from ISO19798

Test climate:

Temperature: 24   Relative humidity: 41

Deviations of the determined test conditions

Tester 1): Aleksandar Kojic   Test location 2): **CLOVER SERBIA**

Test date: **05.11.2018**

1) If values are taken over from test protocol, the signing person is responsible, that the protocols, from which the values have been taken off, are plausible and correct.

2) Either testing place or place where the protocol is made

Test sample (A)	Type	Used for valuation		Charge/Serial number
1	6412	Yes		Sample 1
2	6105	Yes		Sample 2
3	6347	Yes	We use for A1 the	Sample 3
4	6451	Yes	MAX, for A2 the	Sample 4
5	6004	Yes	MEDIAN and for A3 the	Sample 5
6	6078	Yes	MIN value of the list at	Sample 6
7	6340	Yes	left	Sample 7
8	6031	Yes		Sample 8
9	6108	Yes		Sample 9

Comparing Sample (B)	Type	Used for valuation		Charge/Serial number
1	5000	Yes/no	Yes	OEM Sample/Spec
2	5000	Yes/no	Yes	OEM Sample/Spec
3	5000	Yes/no	Yes	OEM Sample/Spec
4		Yes/no		
5		Yes/no		

OEM data taken from OEMs own ISO19752 or ISO19798 declarations of yield

Administrative checking of health related attributes (5.2)

Is there an EG- Safety Data Sheet of the used toner?   Yes/no Yes

If there are no information of the AMES test in the EG Safety Data Sheet

Is there a test report about the AMES test of the used toner?   Yes/no Not Aplicable

If not: Description All MSDSs mention Ames test

Checking the influence of the toner module on the printer (5.3)

Is the toner leaking less than the original?   Yes/no Yes

Is the interaction between printer and toner module acceptable?   Yes/no Yes

If not: Description

Checking the initialization (5.4)

Is the print out acceptable right after the toner module has been inserted?   Yes/no Yes

If not: Describe fault

Checking the yield number (5.5)   MAGENTA

	1	2	3	Average (Ā or V)
Yield A: (A1+A2+A3)/3= Ā	6451	6108	6004	6188
Yield V: (V1+V2+V3)/3=V	5000	5000	5000	5000

Alternative:

Yield A: Result of test after ISO/IEC 19752 Ā	
Reference to the test protocol:	
Test date:	
Yield V: Result of test after ISO/IEC 19752 V	
Reference to the test protocol:	
Test date:	
Result: EZ=Ā/V	1.24

	Yes	No	Not Aplicable
Is the expected yield (EZ) reached?	YES		
Is the expected page yield reached?	YES		

Checking the black print/Color reproduction (5.6.2)

Average value of the 2 areas F test print A1:	46.1			
Average value of the 2 areas F comparing print V1:	45.2			
Difference is not higher than ∆≤5 for Monochrom	Not Aplicable		Yes/No/Not Aplicable	Not Aplicable
Color difference ∆E≤18 for Color	0.9		Yes/No/Not Aplicable	Yes
Average value of the 2 areas F test print A2:	43.4			
Average value of the 2 areas F comparing print V2:	42.4			
Difference is not higher than ∆≤5 for Monochrom	Not Aplicable		Yes/No/Not Aplicable	Not Aplicable
Color difference ∆E≤18 for Color	1		Yes/No/Not Aplicable	Yes
Average value of the 2 areas F test print A3:	42.7			
Average value of the 2 areas F comparing print V3:	42.2			

Difference is not higher than Δ≤5 for Monochrom	Not Aplicable			Yes/No/Not Aplicable	Not Aplicable
Color difference ΔE≤18 for Color	0.5			Yes/No/Not Aplicable	Yes

Checking the fade (5.6.3)　　　　　　**MAGENTA**

Test print A1

Color values 1 6 A F	1	6	A	F
after 50 pages	90.8	81.3	69.1	46.7
Color values 1 6 A F	1	6	A	F
The biggest deviation	1.7	2.8	1.2	1.4

Comparing print V1

Color values 1 6 A F	1	6	A	F
after 50 pages	92.9	81.8	67.7	43.8
Color values 1 6 A F	1	6	A	F
The biggest deviation	3.1	3.4	3.2	2

Result determination

	1	6	A	F
Difference ΔL≤8	1.4	0.6	2	0.6
Difference within allowed parameters	YES	YES	YES	YES

Test print A2 MAGENTA

Color values 1 6 A F	1	6	A	F
after 50 pages	89.5	81.4	70.9	45.4
Color values 1 6 A F	1	6	A	F
The biggest deviation	0.7	2.1	2.7	3.1

Comparing print V2

Color values 1 6 A F	1	6	A	F
after 50 pages	90.8	81.1	68.5	43.5
Color values 1 6 A F	1	6	A	F
The biggest deviation	1.6	2.2	0.5	2.3

Result determination

	1	6	A	F
Difference ΔL≤8	1	0.1	2.2	0.8
Difference within allowed parameters	YES	YES	YES	YES

Test print A3 MAGENTA

Color values 1 6 A F	1	6	A	F
after 50 pages	92	83.1	70.6	42.7
Color values 1 6 A F	1	6	A	F
The biggest deviation	2.1	1.4	1.6	0.6

Comparing print V2

Color values 1 6 A F	1	6	A	F
after 50 pages	91.8	81	67.3	43.8
Color values 1 6 A F	1	6	A	F
The biggest deviation	2.7	2.5	1.5	2.7

Result determination

	1	6	A	F
Difference ΔL≤8	0.6	1.1	0.1	2.1
Difference within allowed parameters	YES	YES	YES	YES

Checking toner adhesition
Test process: visual (tape method):

Is the resistance in between the acceptable parameters?	Yes
If not: Describe deviation	

Checking the grey page/color uniformity (5.6.5)

Are the color diferences in between the acceptable parameters (pattern B2-B5) ΔE≤8 ?	Yes
If not: Describe deviation	

Checking the background (5.6.6)

Is the background smudge between the acceptable parameters (pattern B1-B5)?	Yes
If not: Describe deviation	

Checking the ghosting (5.6.7)

Is the repeating of the back rectangles in between the acceptable parameters (pattern B2-B5)?	Yes
If not: Describe deviation	

Checking toner miscibility (5.6.8)

Is the toner miscibility given?	Yes
If not: Describe deviation	

OVERALL RESULT: Passed