NGENCO™
AUTOMOTIVE PAINT PROTECTION FILM

Ngenco Clear Paint Protection Spray

Stone Chip Resistant Test
ASTM D3170, SAE J400 Standard

Unit 4, West Court, Buntsford Park Road, B60 3DX
Email: technical@ngenco.com Website: ngenco.com

Q-Lab Deutschland GmbH
In den Hallen 30
66115 Saarbrücken

TEST CERTIFICATE

Laboratory Testing 5 March 2020

Test Number:	*NBU-0003*
Company:	*NGENCO Ltd.*
Address:	*Unit 4, West Court Buntsford Park Road* *Bromsgrove, B60 3DX* *UNITED KINGDOM.*
Attention:	*Ngenco R&D*
Payment Reference:	*LW0260220*
No. of Specimens:	*2 Coated metal panels*
Specimen Identification:	*Black*

Test Method:	*SAE J400:2002, Meth. C*
Deviations:	*None*
Exposure Date:	*5 March 2020*
Completion Date:	*5 March 2020*
Exposure Duration:	*1 cycle per specimen*
Exposure Type:	*Chip Resistance Test* *1 pint road gravel,* *483 kPa, 90° Orientation,* *7-10 Seconds at ambient temp*
Test Equipment Used:	*Multi-Test Gravelometer (MTG)*

By:

Axel Koerper
Laboratory Manager

Approved By:

Thomas Allie
Laboratory Manager (USA)

TEST CONFIRMATION

Q-Lab Deutschland GmbH

To our Client:
Your test specimens have been received by us and stone chip resistance testing commenced according to the following:

Company:	NGENCO Ltd.	**Test No:**	NBU-0003
Address:	Unit 4, West Court Buntsford Park Road B60 3DX BROMSGROVE, UNITED KINGDOM	**Customer No:**	NGE500
		QT No:	G01175
		Payment Ref:	LW0260220
Attn:	Ngenco R&D Department	**Your Ref:**	
Email:	Technical@ngenco.com	**Date:**	5 March 2020

Specimen Description:

2 Coated metal panels
10 cm x 15 cm
Black ; Silver

Specimen Condition:

All specimens were received in good condition except:
No Exception

Test Description:

Date Exposed:	5 March 2020
Type of Test:	Chip Resistance Test
Test Method:	SAE J400:2002, Meth. C Modified Deviation: No
Device Used:	Test Gravelometer (MTG)
Light Source:	N/A
Irradiance:	N/A
Filters:	N/A
Cycle:	1 pint gravel, 483 kPa, 90° orientation, 7-10 seconds
Temperatures:	Ambient
Humidities:	N/A
Water type:	N/A
Relocation:	As required
Total duration:	1 cycle per specimen

Evaluations and Reports:

Evaluations required.
The level of stone chip and road rash protection offered by Ngenco PPS when applied to the original Automotive OEM Clear-Coated paintwork.

Impact: QGR Gravelometer Chipping

Special Instructions:

Return Schedule: Upon Completion **Report Type:** Standard

Please use the test number above to identify this test in all correspondence.

Thank you,

Axel Koerper Accelerated
Lab Manager

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Scope:
This Gravelometer test was carried out to evaluate the the level of stone chip / road rash protection offered by NGENCO PPS when applied to the original Automotive OEM Clear-Coated paintwork driven under normal everyday driving conditions.

The NGENCO PPS coated OEM Clear-Coated Paint should show no stone chips in OEM Clear-Coated Paint when removed following the test.
(**Dents may be present due to the force of impact)**

TestProcedure:
An Automotive OEM Clear-Coated and Painted Panel is coated with the recommended film thickness of NGENCO PPS, usually 200 microns.
The test sample is mounted in the back of the Gravelometer, and air pressure is used to project gravel at the sample.

Once the test is complete the sample is then removed and gently wiped off with a clean cloth to check for

1.De-Lamination of the Paint Protection from the OEM Clear Coated Panel

Followed by the removal of Ngenco PPS to

2. Checking for evidence of stone chip damage to the OEM Clear-Coated Panel

The appearance of the tested sample is then compared to a standard OEM painted and Clear-Coated Panel by way of visual examination.

Failure is determined by the appearance of stone chip damage to the OEM Clear-Coat and Painted Panel

No stone stone chip damage to the OEM Clear-Coat denotes a **Pass**.

Specimen size:
A 10cm by 15cm panel OEM painted and clear-coated metal panel coated with 200 microns of Ngenco Paint Protection Spray, (PPS).

Data:
The gravel for this test shall be water-worn road gravel, not crushed limestone or rock. The gravel will pass through 15.86 mm (5/8 in) space screen when graded, but be retained on 9.53 mm (3/8 in) space screen.

The standard requires that the gravel be screened between screen sizes of 3/8" and 5/8" (9.5 - 15.9 mm). Individual stones from natural gravel are oblong, and thus some of them will pass through one of the screens if oriented in one direction but not fit through the screen if oriented in another direction. What the standard actually means is that the largest stones will have at least one dimension 5/8" and that the smallest stones will have at least one dimension 3/8".

Additionally, Q-Lab gravel meets the requirements JIS A 5001 #6 and #7 gravel. Even though this standard has nothing to do with Gravelometer testing, some Japanese automotive OEMs have test methods that refer to it. Q-Lab's gravel is screened to meet the requirements of JIA A5001 #6 and #7.




Worn River Gravel (G-699): 9.5 to 15.9 mm (3/8 to 5/8 in), Standard Michigan; used in SAE J400 and ASTM D-3170

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Result:
Pass, No Evidence of Stone Chip Damage in The Original OEM Clear-Coat. (Dents May Be Present Due to The Force of Impact)

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