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QUALITY TEST REPORT

SmartComfort
SOLUTIONS

After many years of distribution various sound damping material in the markets we have realized that there are many problems with all of them. We felt that there is a need for a drastic change in quality of material, it has become our dream – to create a perfect quality material.

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PRODUCT PROBLEMS

Based on years of experience in distribution of sound damping materials around the globe we have realized that the materials developed for the Russian market do not meet the requirements of application in countries with hot climates and identified main problems with products :

- Material melting
- Material extrusion
- Bitumen and other unpleasant smells
- Material dropping from door or ceiling due to glue problems
- Low or unstable efficiency of materials

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PRODUCT WISHES

We have also heard and collected the wishes of our clients and partners over these years, the most common list is:

- Easy and fast installation
- Modern design
- Convenient transportation and storage
- Super light materials to lower down weight of installation and reduce effects on fuel consumption and acceleration

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CREATING TESTS

We had to create a set of simple express testing standards and equipment to ensure we can easy test various products and optimize our products for the demands of the market.

With these tests we are able to:

- Show the real quality of materials
- Proceed our own Permanent and independent production QC, to be sure in stable quality.
- To speed-up development of new materials

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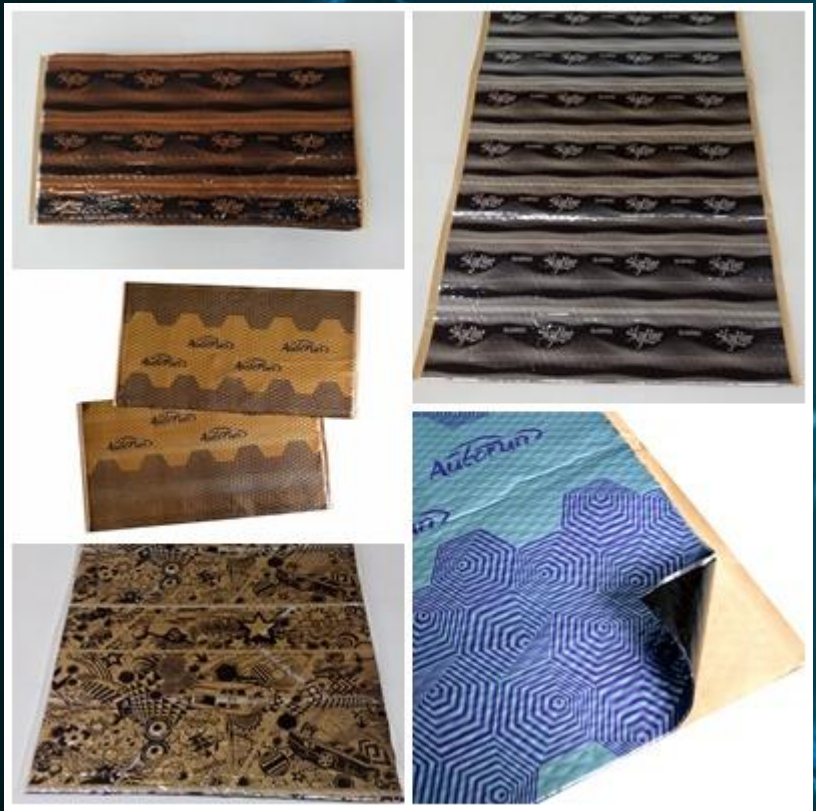
Passion of Quality



We have spend two years on R&D of our new perfected quality products based on the test results and have made amazing progress.

We are happy to assure you that our new products are free of the following problems:

- Melting
- Unpleasent Smell
- Extrusion
- Falling off
- inStability and low efficiency

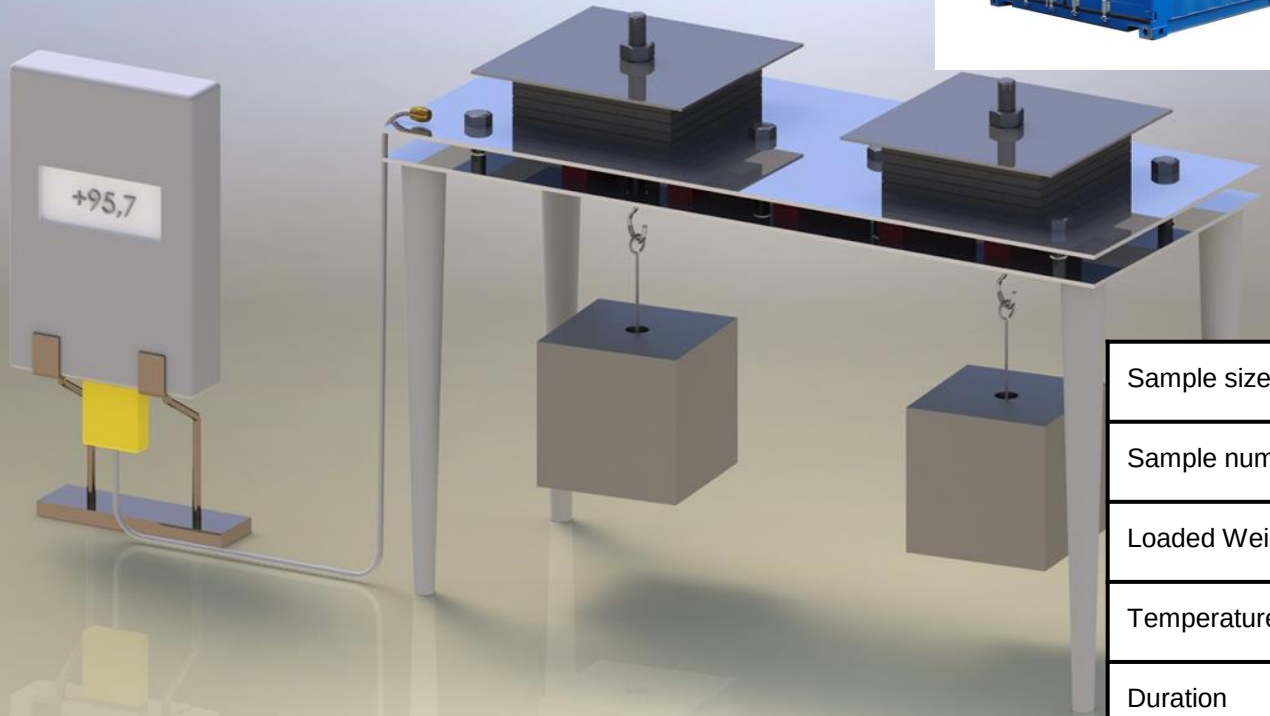
Our assurance comes after multiple tests not only of our own products but also other products in the market.

TEST 1 EXTRUSION

Samples of material extrusion during transportation and storage after exposure high temperature

TEST 1 EXTRUSION : Description

Simulation of material storage or transportation by sea containers in a high temperature condition.

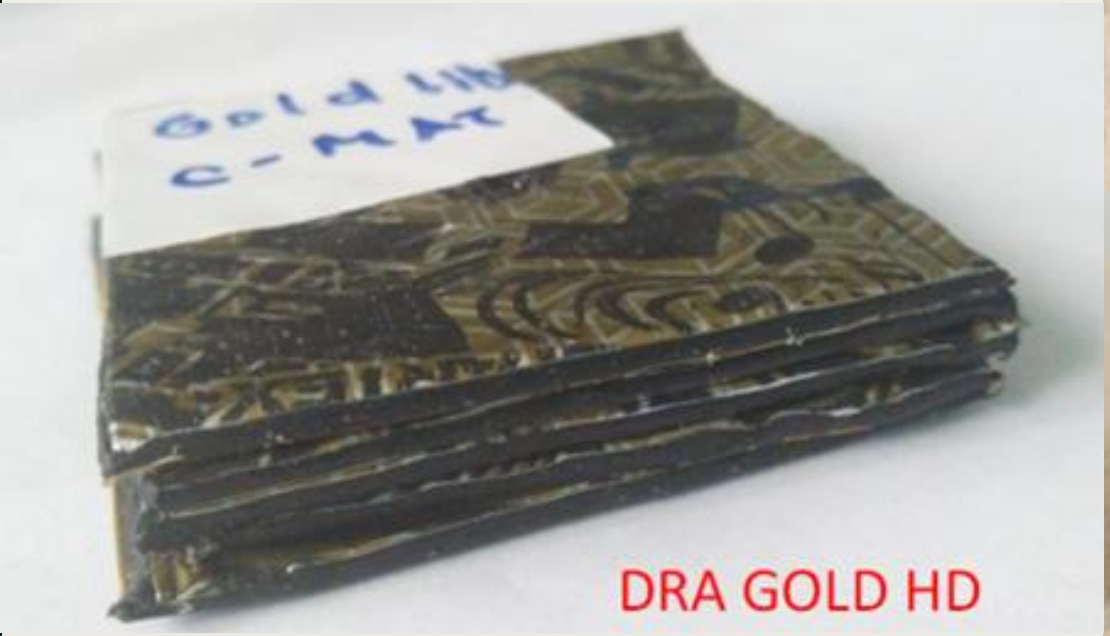


Sample size	60x60 mm
Sample number	4-5 pcs
Loaded Weight	3.5 kG
Temperature	90-95 °C
Duration	2-6 Hours

TEST 1 EXTRUSION:

DrARTEX

RESULT = PASS



TEST 1 EXTRUSION:

RESULT = PASS

ATF VDM M2 HL

ATF VDM M3 HX

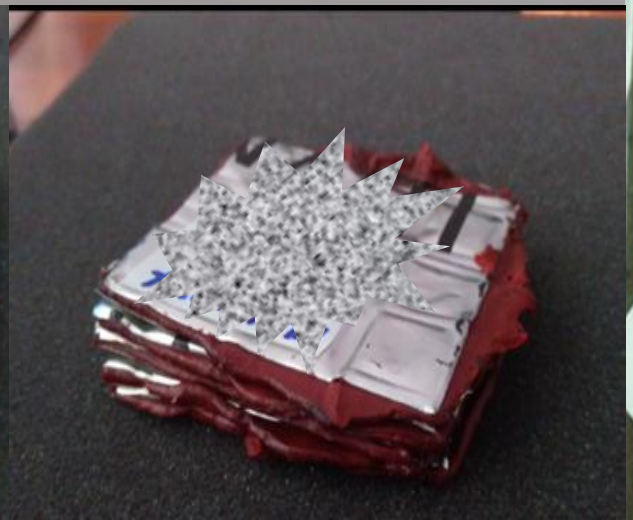
ATF VDM EX4 HX

TEST 1 EXTRUSION : Result

SAMPLES of COMMON MARKET BRANDS

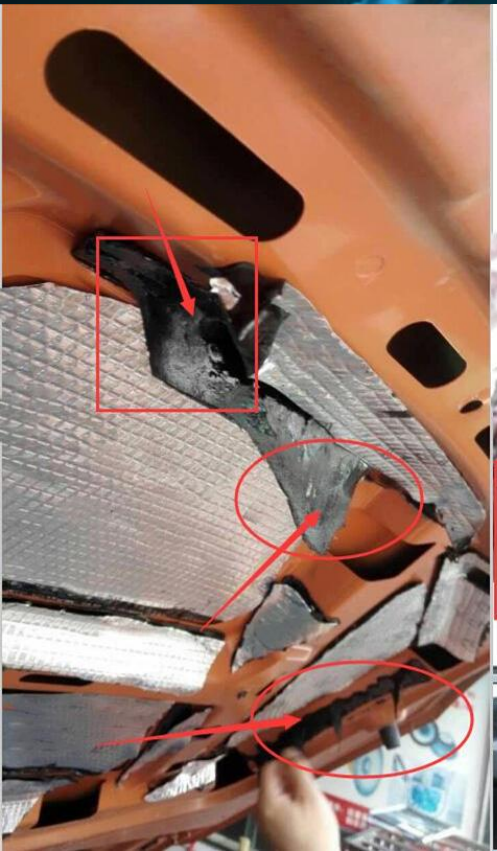
TEST 1 EXTRUSION : Results

SAMPLES of COMMON MARKET BRANDS



TEST 2 MELTING

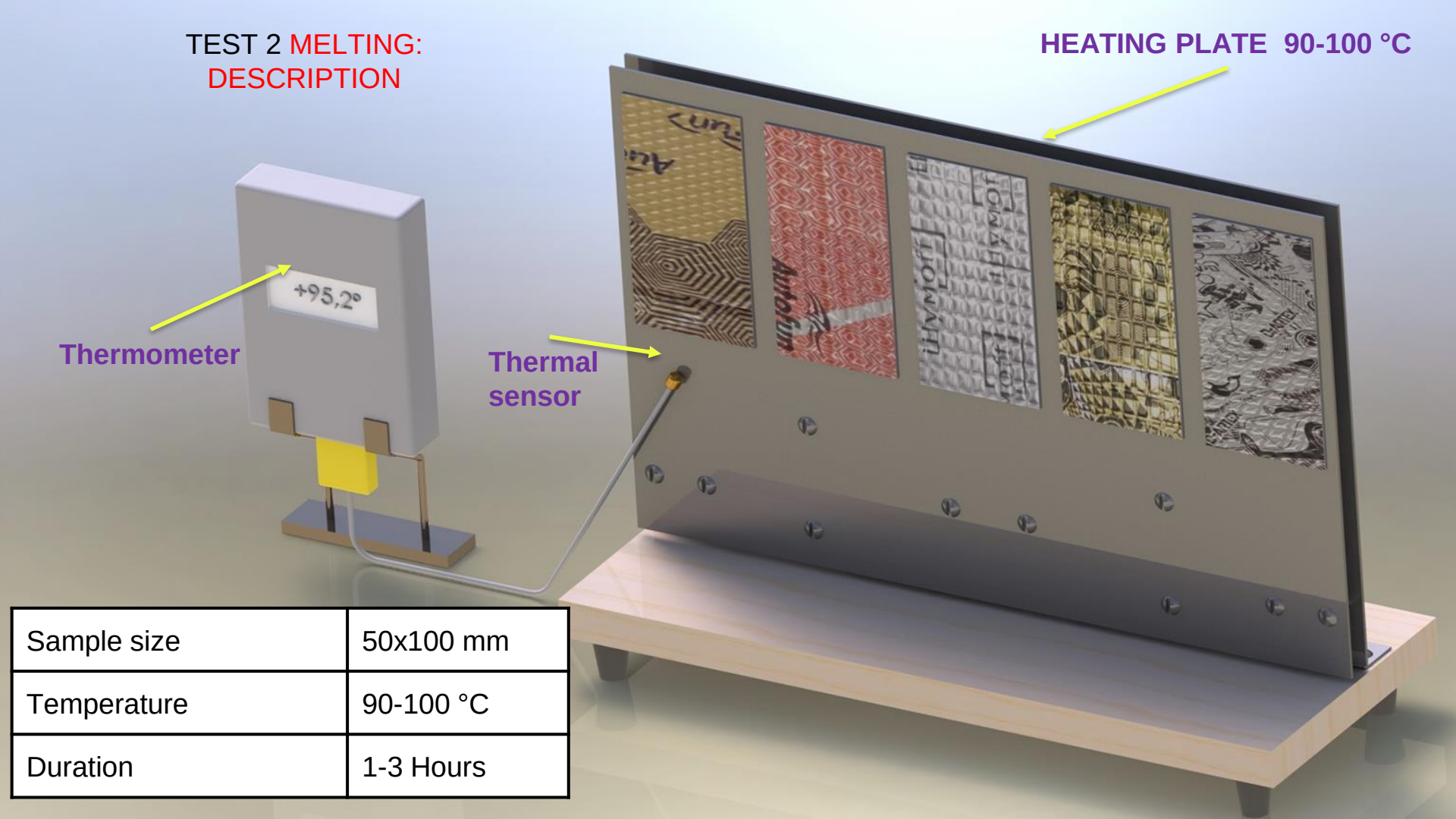
Samples of Melted material installed in the car after exposure high temperature



TEST 2 MELTING

Imitation of real operating conditions for materials installed on vertical surfaces (doors, roof) under high temperature conditions.

TEST 2 MELTING:
DESCRIPTION



Sample size	50x100 mm
Temperature	90-100 °C
Duration	1-3 Hours

TEST 2 MELTING: RESULT

RESULT - PASS

TEST 3 ADHESION

Adhesion of products to the surfaces,
ensuring they do not drop off easily over time
and increase efficiency of damping

TEST 3 ADHESION

Determination of materials with the greatest adhesion.

The test is intended to determine the materials with the higher adhesion by comparing the amount of time the material takes to fully drop off the surface. The time is then compared among various products. Adhesion is tested on painted automotive steel surface.

Sample size	30x100 mm
Temperature	24°C
Loaded Weight	1.25 kg

TEST 3 ADHESION: RESULT

Adhesion is tested on painted automotive steel surface.

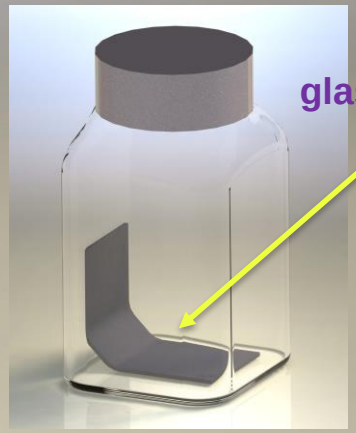
DrArtex Iridium	10 min 50 sec
Autofun VDM	30 min
Xwave	30 min 46 sec
Common Brand Sample 1	5 min
Common Brand Sample 2	16 sec

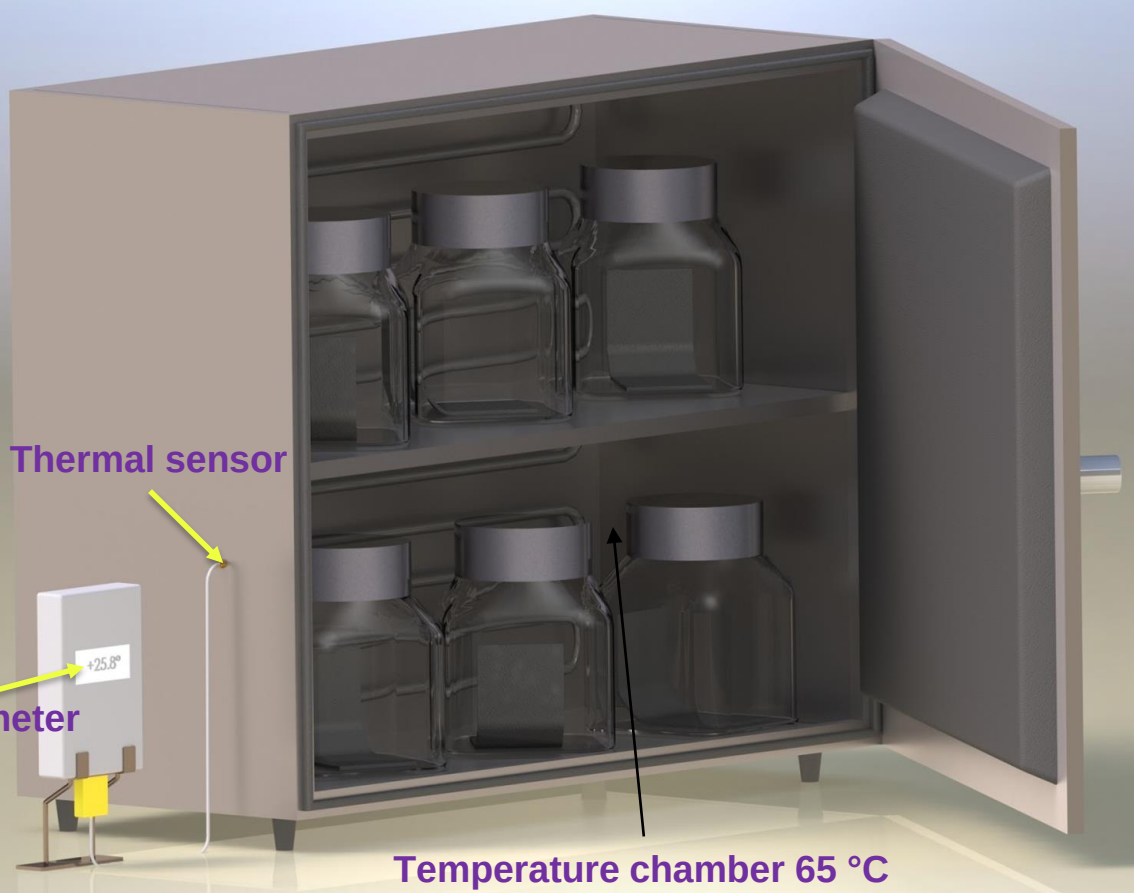
TEST 4 ODOR

Odor or smell emitted by the products, ensuring the product does not emit strong negative smell

TEST 4 ODOR

assessment of the intensity and nature of the odor by 5-point scale





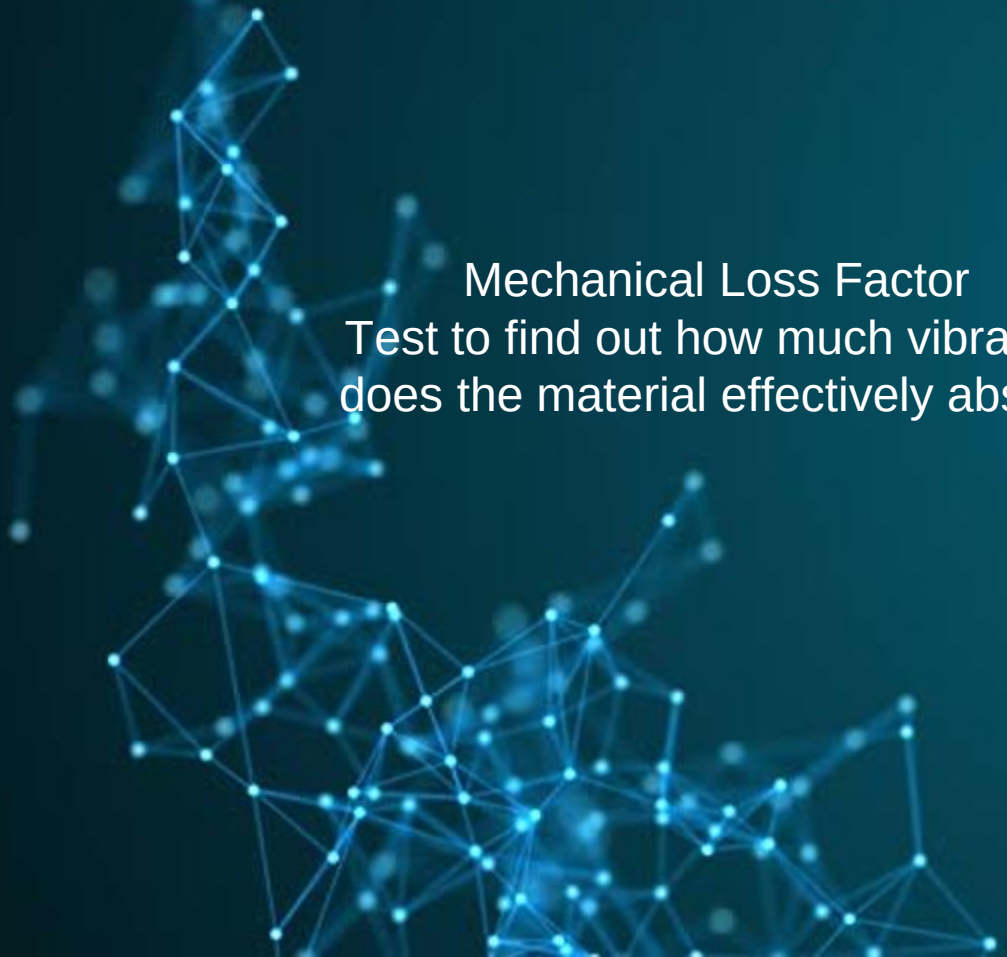
Sample size	100x100 mm
Temperature	65°C
Duration	24 Hours

TEST ODOR: RESULT

Intensity of odor (score)	Characteristic of intensity	Description of the nature and manifestation of odor
0	Odor is absent	The smell is not noted by any of the testers
1	Very weak	The smell is noted only by the most sensitive testers
2	Weak	The smell noted by all testers, but not causing negative sensations and decreasing in time during repeated tests
3	Perceptible	Smell, clearly discernible
4	Strong	Smell, which attracts attention and causes unpleasant sensations
5	Very strong	The smell is pronounced, excluding repeated tests

Material	Score	Result
Autofun VDM	2	Weak
Autofun VBS	2,4	Weak
DrArtex Gold HD	2,4	Weak
DrArtex Iridium	1,4	Very weak
DrArtex VDM EX4	2,8	Weak
DrArtex Quatro	2,2	Weak

TEST 5 Mechanical Loss Factor (MLF)



Mechanical Loss Factor
Test to find out how much vibration
does the material effectively absorb

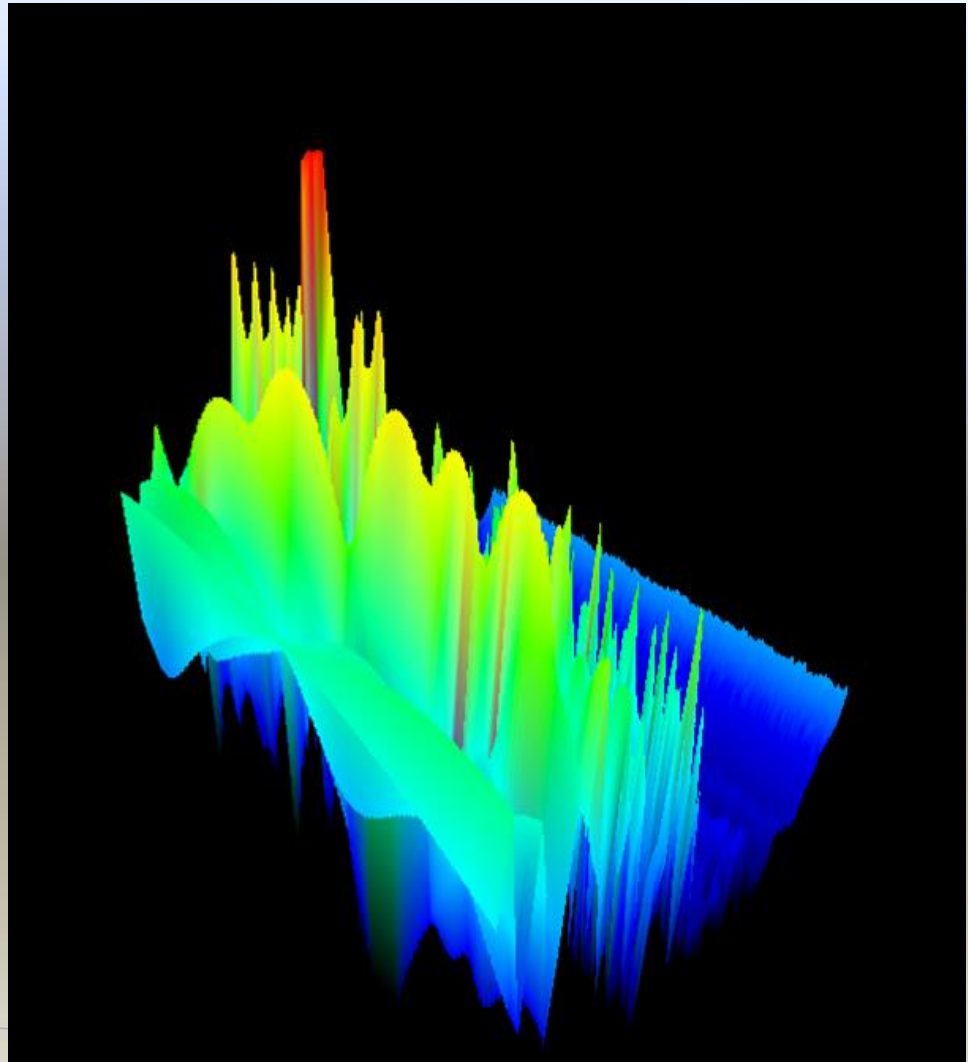
TEST 5 MLF

Assessment of the efficiency of vibration damping materials.

The Mechanical Loss Factor (MLF) - is one of the most important indicators of vibration damping materials.

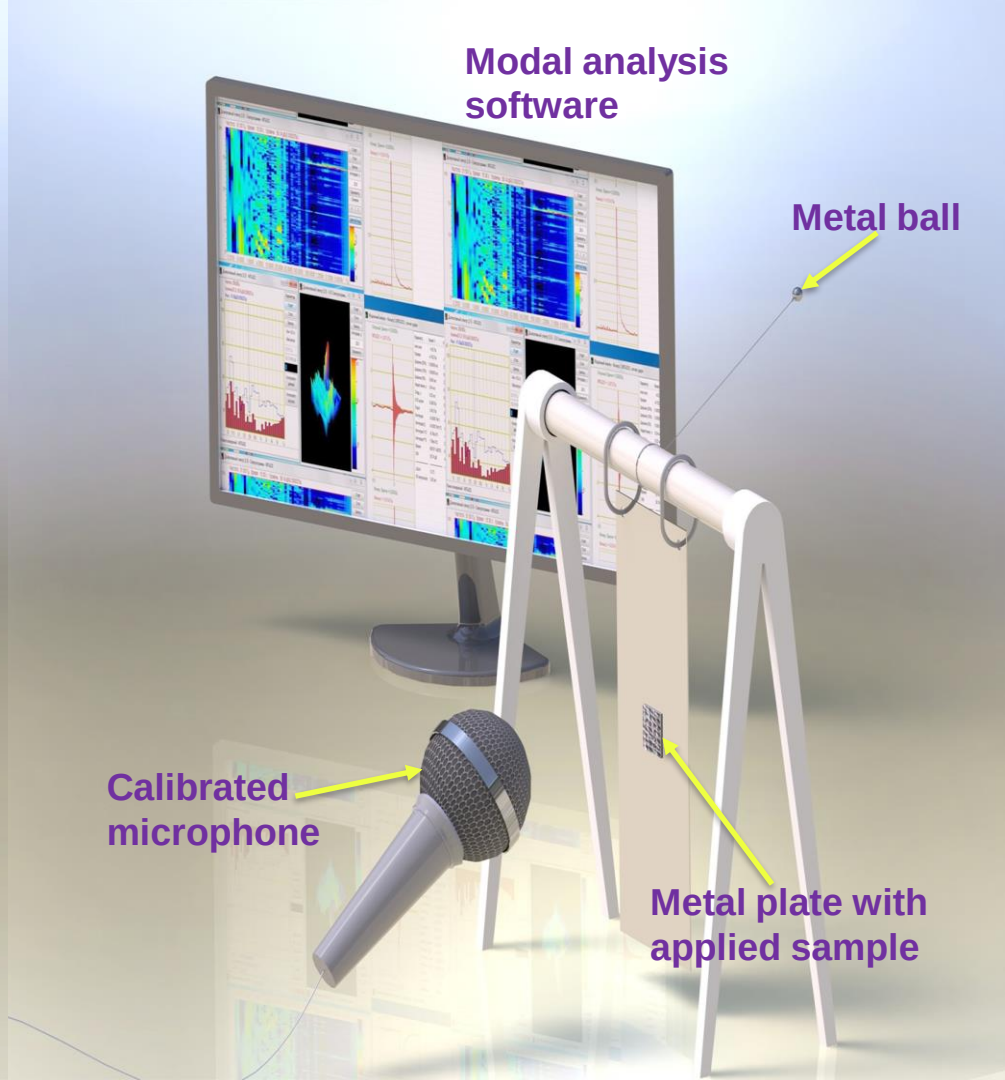
The higher the value, the more vibrations will be absorbed.

The vibration damping process is the process of absorbing vibration energy from metal and converting into internal heat .

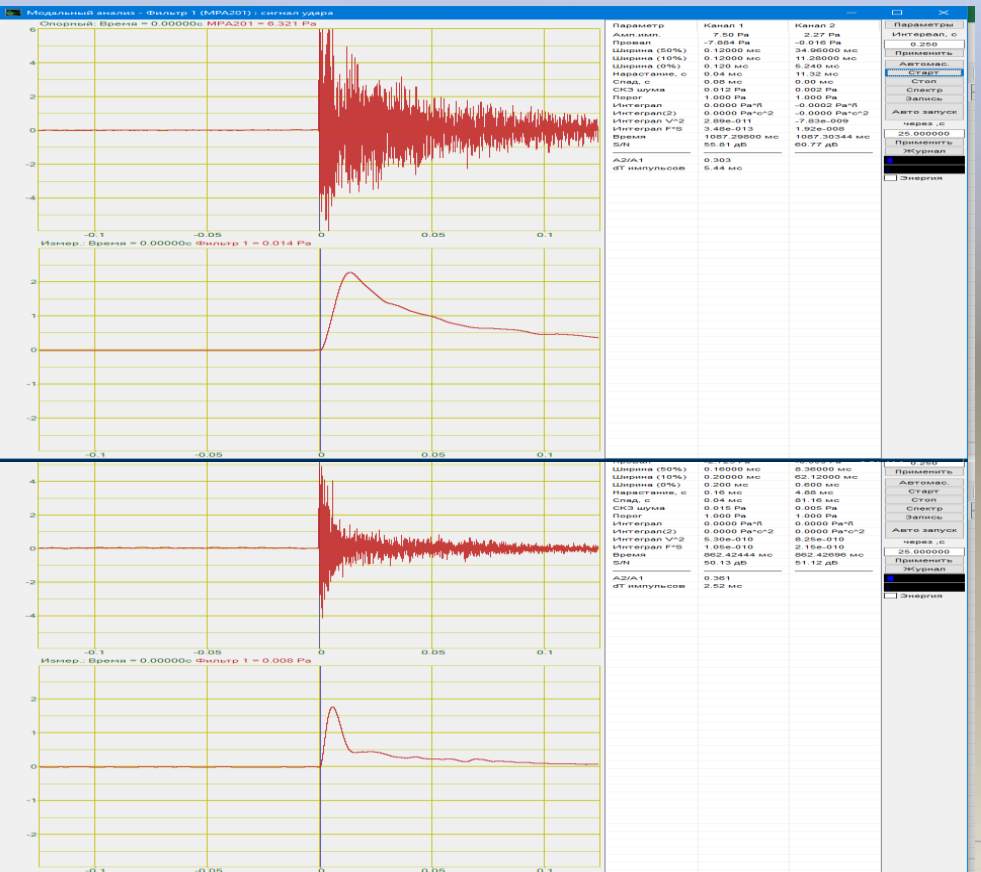


TEST 5 MLF: Description

1. Apply samples of material on metal plate
2. Calibrated impact by metal ball on metal plate to create acoustic impulse.
3. Record acoustic impulse with spectrum analyser and measure energy, duration and spectrum of this impulse to evaluate and compare damping efficiency of different samples.



TEST 5 MLF:
Signal Samples



Impuls with EMPTY Plate

Impuls with DrA Gold HD sample

TEST №5 Mechanical Loss Factor: RESULT

Brand	Material Name	Class	TH (mm)	Energy damping Ratio
DrArtex	199DBDrag Comp.	XXS	6.00	4.27
DrArtex	Quatro	XXS	3.90	4.19
AutoFun	VDM EX4 HX	XXS	3.60	4.19
DrArtex	Armor Sky	XXS	4.00	4.09
DrArtex	Gold HD	XS	2.60	3.97
Common Brand	Aero Б.	XXS	4.00	3.90
Common Brand	Бомб	XXS	4.00	3.72
AutoFun	VDM M3 HD	XS	2.30	3.40
Common Brand	Aero L.	S	2.00	3.25
AutoFun	VDM M2 HL	S	2.00	3.15
Common Brand	Antirust S.	S	2.00	2.94
DrArtex	Mantle Sky	S	2.00	2.91
DrArtex	Iridium	S	2.00	2.84
DrArtex	Shield Competition	S	2.00	2.58
Common Brand	Vizomat	S	2.00	2.47
Common Brand	Aero G.	XS	2.30	2.31

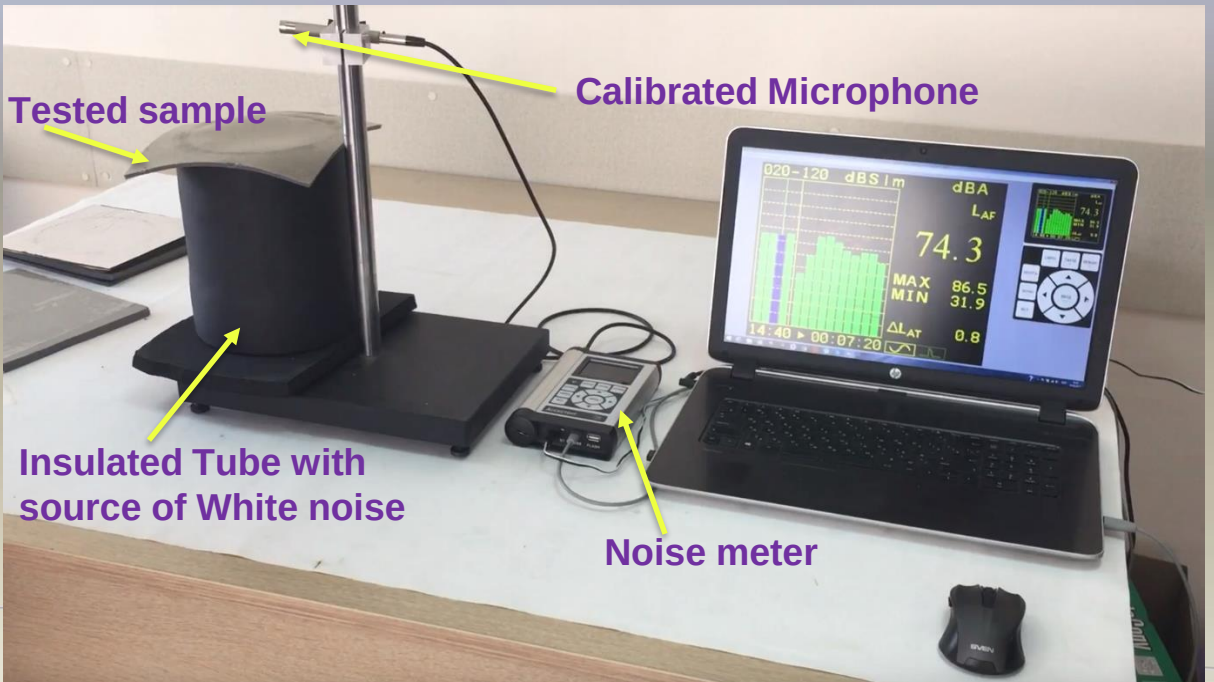
TEST 6 NOISE INSULATION

Noise Insulation test to find out how much noise is being blocked by the material

TEST 6 NOISE INSULATION:

Description & Result

Assestment of noise level reduction



Brand	Material	Noise reduction factor dBA
DrArtex	VBB	**36.2**
DrArtex	VibroShell3.0	32.0
DrArtex	ARMOR	28.2
DrArtex	QUATRO	28.1
Autofun	VDM M3	26.2
Autofun	EX4	25.7
DrArtex	GOLD HD	25.4
Autofun	VDM M2	24.6
DrArtex	IRIDIUM	23.2
DrArtex	SHIELD	22.5
DrArtex	MANTLE	20.7

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Overall Test Result

TEST 1 EXTRUSION	PASS
TEST 2 MELTING	PASS
TEST 3 ADHESION	PASS
TEST 4 ODOR	PASS
TEST 5 Mechanical Loss Factor (MLF)	PASS
TEST 6 NOISE INSULATION	PASS

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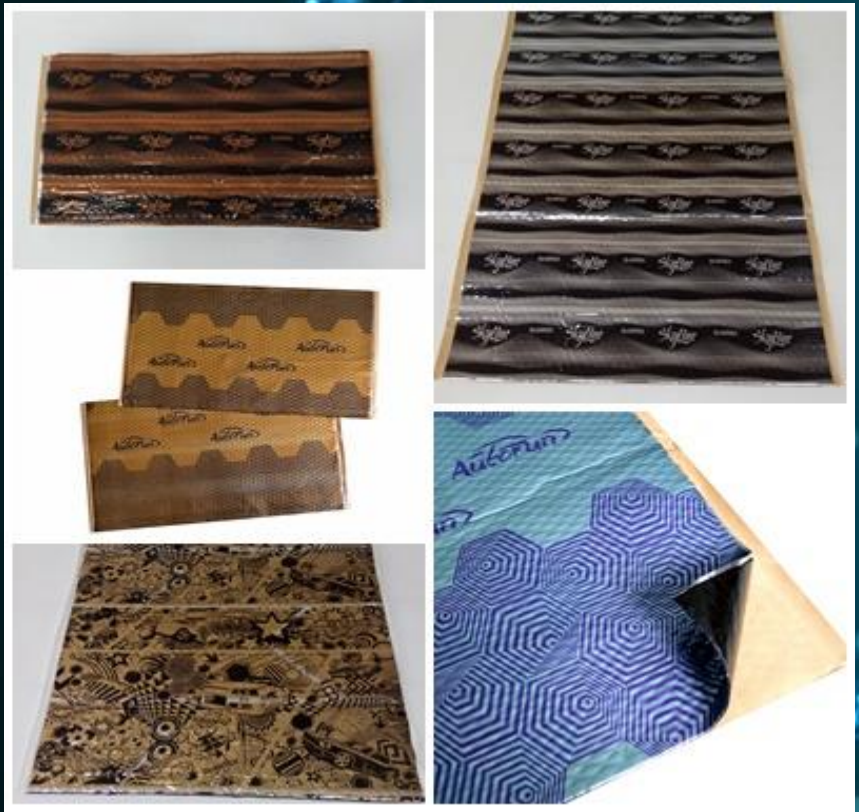
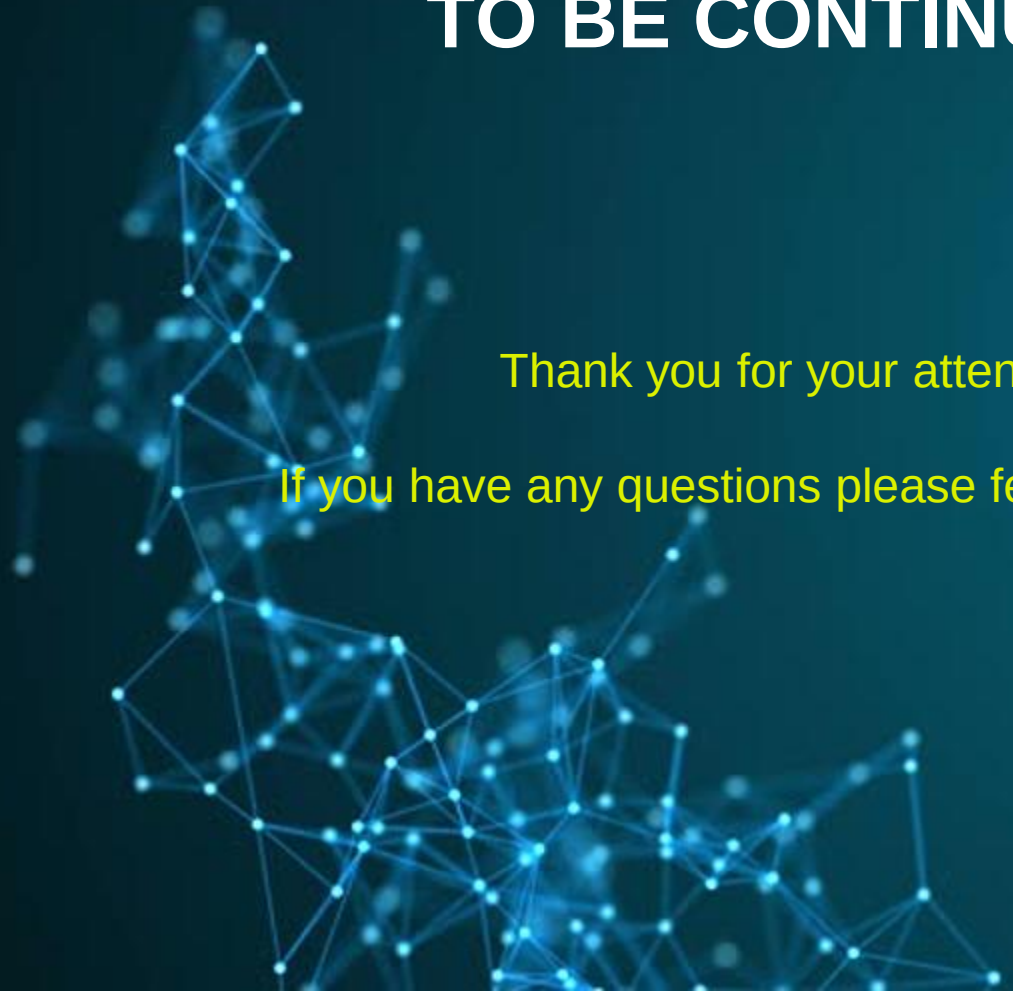


Sales Advantages

- Materials Passed ALL the major Tests
  - Do not Melt
  - Do not Smell
  - Do not Extrude
  - Stable high efficiency
- EXTRA Flexible. No need heat gun.
- Multy layered structure
- Use only A-grade raw material
  - Do not use bitumen additives
  - Do not use recycled materials
- Sky line. Lightest on the market materials.
- Made in Russia.

TO BE CONTINUED



Thank you for your attention

If you have any questions please feel free to ask!