

MANUAL COATING USING GRACO EQUIPMENT

Flow chart for the application of liquid ceramic heat insulator «TERMION» airless high-pressure sprayers from Graco.

1. General instruction.

On any production seek to achieve high efficiency with minimal effort. The same applies to thermal insulation measures. Of course, the coating can be easily applied and TERMION with a conventional paint brush, but in large areas, much more effective, will be the use of airless high-pressure spray.

Do not forget that the liquid ceramic heat insulator " TERMION", according to a number of characteristics, is significantly different from traditional coatings. This viscosity, and inclusions in the composition of ceramic microspheres and more. These features involve the use of a certain type of equipment when applied:

To work with the coating "TERMION ", it is permissible to use only airless sprayers!

Standard compressor atomizers are not applicable with this material. In the normal pressure mode, they will not be able to "pump" the mixture, and when using the high pressure mode, the ejection rate of the coating will become unacceptably high, from which the microspheres will break on the treated surface. In addition, when using a conventional spray gun, the coating "TERMION" is mixed with air, which leads to a change in the structure of the material. **Therefore, it is recommended to use only known airless sprayers**, which are ideal for this material.

We have already tested and can safely recommend to use, coated with "TERMION ", some models of airless sprayers from Graco. Below, you will find specific models and guides for setting them up.

Also, the use of equipment with a strong mechanical impact on the mixture is not allowed. These types of devices include gear or membrane pumps that destroy the granules in the structure of the thermal insulation material. **Do not use sprayers manufacturers such as: Wagner, PotGun, MICRON and Chinese replicas of famous brands!**

For coating "TERMION ", it is desirable to use recommended by the manufacturer (recommendations below) guns, nozzles and tips. To work, you need to configure the equipment: get the filters, adjust the correct pressure, etc. If you have questions in the process of setting up the device, it is better to contact a representative of the company "TERMION".

ATTENTION!!! The use of non-recommended or incorrectly configured equipment can damage the ceramic microspheres of the liquid thermal insulation "TERMION" (the main component of the coating). This will entail a large overspend of the material and the loss of thermal characteristics of the coating.



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2. Recommended list of equipment for use with liquid thermal insulation series "TERMION".

The following list of sprayers is a list of the best brands of equipment for use with liquid thermal insulation series "TERMION". It is recommended to use this list as a detailed guide to the operation and configuration of the equipment.

Electro-driven sprayers:



GRACO MARK V Pro-Connect

This type of sprayers is most often used when working with liquid ceramic heat insulators series "TERMION". The device is equipped with a control system of parameters of work Smartcontrol 2.0.

Technical parameters of the sprayer:

Drive – electric (220 V/50 Hz)

Engine power – 1650 W

Top performance – 5,5 L/min.

Highest operating pressure – 230 Bar

The maximum allowable pressure at use of coverings

«of TERMION»- 80 Bar

Weight – 59 kg

Recommended generator power – 5000 W

Possibility to complete the tank with a volume of 90 liters, to speed up the work

Using the tank involves constant (every 3-5 minutes) mixing of the mixture "TERMION"!

Maximum speed under stirring of 100 rpm

GRACO Ultra MAX II (модели 695, 795 и 1095)



This series of equipment is used for the application of mixtures with high and medium viscosity. The most widely used in the performance of painting works by professional builders and repair teams.

ULTRA ® MAX II 695

Multi-purpose device, great for exterior and interior decoration.

ULTRA ® MAX II 795

Designed to work on large construction sites with large areas of machined surfaces.

ULTRA ® MAX II 1095

It is used for spraying mixtures with high viscosity. Specially designed for large-scale construction projects for various purposes.

It is necessary to choose the type of airless sprayer, based on the volume of planned work and the complexity of the construction project.



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Technical parameters of the sprayers of the series UltraMAX II:

	ULTRA ® MAX II 695	ULTRA ® MAX II 795	ULTRA ® MAX II 1095
Engine type	Electro, brushless, DC (220V,50Hz)		
Engine power, kW	1,3	1,5	1,65
Max. capacity, l/min	3	3,6	4,1
Max. pressure , bar	230		
Max. working pressure when working with "TERMION" mixtures»,Bar	80		
Weight, kg	43	45	55
Required generator power,kW	5		



GRACO ST MAX II 395

This type of sprayer is applicable only for small volumes of work, because it can provide the necessary pressure only at the maximum level of power.

When using this atomizer, you should:

The mixture "TERMION" diluted with a solvent in a ratio of 1:20 (per liter of water – 20 l «TERMION»)

To use a larger nozzle size 0,021 0,023 inch and

Apply the material with small pauses to maintain the desired level of pressure in the system

The pressure level on the sprayer is fixed at the minimum values at which the coating can be applied «TERMION »

Petrol driven sprayers:



GRACO GMAX II (модели 5900 и 7900)

Gmax series equipment refers to Autonomous types of airless sprayers and is applicable even in the absence of electricity and compressed air supply channel.

Technical parameters of the sprayer **GMAX II 5900 HD**

ProConnect Optimum:

Drive – petrol (Honda)

Engine power – 4100 W

Top performance – 6,0 l/min.

Highest operating pressure – 230 Bar

The maximum allowable pressure at use of coverings

«of TERMION»- 80 Bar

Weight – 64 kg



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GMAX II 7900 HD ProConnect Optimum:

Technical parameters of the sprayer:

Drive – petrol (Honda)

Engine power – 4800 W

Highest performance – 8.3 l/min.

Highest operating pressure – 230 Bar

The maximum allowable pressure at use of coverings
«of TERMION» - 80 Bar

Weight – 67 kg

It is possible to increase the autonomy of the work with the help of the hopper.

Sprayers with pneumatic actuator:



This type of equipment is characterized by high power and ease of maintenance. They are designed specifically for use with mixtures with high and very high viscosity, to work in difficult conditions. They are distinguished: low cost long lifetime (material production blind PlasmsCoat and sealer XtremeSeal allow to increase performance in two and more times). The coupling of the instantaneous connection allows to work in difficult conditions with the minimum labor costs (the rod of the pump joins without application of tools).

Technical parameters of the sprayer **XTREME King 45:1:**

Drive – pneumatic (NXT 6500)

The higher the inlet pressure – 7 Bar

Top performance – 8,3 l/min.

Highest operating pressure – 313 Bar

The maximum allowable pressure at use of coverings

«of TERMION»- 80 Bar

Weight – 117 kg

3. Instruction on the selection of components and configuration of devices

Working with Graco airless sprayer requires strict adherence to the rules for setting up the equipment. Compliance with these rules, allows you to keep the integrity of the material "TERMION" at the time of application, and in the process of subsequent polymerization. The main component of the mixture "TERMION" - vacuumed glass-ceramic microspheres.



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Microspheres provide thermal characteristics of the coating and the constancy of the coating thickness (with the destruction of microspheres, the material noticeably "shrinks").

Recommendations for setting up the device:

- Before you start to work, it is necessary to get all available filters from the device (including from the gun). If you leave any filter, it will delay the microspheres of the TERMION coating.
- The appliance can only be used in a clean and serviceable condition. The use of dirty equipment will reduce its performance in the standard mode, and the increase in performance due to increased pressure will lead to the destruction of the coating structure "TERMION".
- The material "TERMION" is applied to the minimum possible for the work pressure, not exceeding the figure of 80 bar. A beneficial distinctive feature of airless sprayers from Graco is The SmartControl system. It is able to maintain pressure and material flow rates at a predetermined level throughout the process.
- **The most acceptable pressure level for the "TERMION" coating is in the range of 40-80 bar. Exceeding the pressure threshold of 80 bar will cause the destruction of the microspheres of the material "TERMION"!**
- The length of the used hose should not exceed 45 meters. The longer length of the hose implies a greater pressure in the system, which again will lead to the destruction of the coating "TERMION".
- Only recommended pistols, tips and nozzles may be used. They can also affect changes in the structure of the material.

Multicomponent coating "TERMION" has its own characteristics. Being in the container, the composition is stratified into several layers. Heavier, viscous layers remain on the bottom, and lighter ones, including microspheres, remain on the surface. Therefore, it is important to constantly mix the solution during operation (every 5-7 minutes), so that the coating retains its uniformity. This recommendation is particularly relevant in the case of additional tanks.

Recommended guns for Graco sprayers:

GRACO CONTRACTOR II

This paint sprayer is one of the most convenient and easy among others analogues'. The developers of Graco managed to reduce the degree of fatigue of the painter by 30%, by reducing the required effort on the trigger of the sprayer. The device has a double filter and a swivel joint that reduces the number of cleanings of the nozzle and the likelihood of twisting of the hose high pressure. **Before using with the material series "TERMION", be sure to remove the filter!**

GRACO XTR5 и XTR7

A new type of paint sprayers designed specifically for very viscous mixtures'. They are equipped with a spray head and nozzle, with increased indicators of wear resistance. They are used with the equipment on pneumatic drives for works of large volume. **Before using with the material series "TERMION", be sure to remove the filter!**



GRACO FTX

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This series of paint sprayers is designed for finishing and painting in places where high maneuverability is required. It is the lightest guns on the market. It can be equipped with a trigger for both 2 and 4 fingers. **Before using with the material "TERMION", be sure to remove the filter!**



Graco silver Gun paint sprayers are not designed to work with TERMION coating!

Recommended nozzles and Graco nozzle holders:

A good result, when applying the coating, largely depends on the correct choice of tip. To do this, you should be guided by the following factors:

The nuances of marking consider the example of the nozzle 517, where:

- 5 means the spray angle is 50 degrees;
- the width of the strip is determined by multiplying the first digit by 5, according to the example we get: $5 \times 5 = 25$ cm;



Table of the ratio of the numbers on the nozzle marking with the spray angle and the width of the spray strip:

The first digit in the marking of the	Spray angle, degrees	The width of the strip spraying,
1	10	5
2	20	10
3	30	15
4	40	20
5	50	25
6	60	30
7	70	35
8	80	40
9	90	45

The last two digits indicate the nozzle size in inches, therefore, 17 is 0.017 inches (0.43 mm) and determines the flow rate material's.

These parameters are correct if the distance from the surface to be processed is 30cm.

The specified hardware performance is the maximum.





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Coating "TERMION" is designed to work with nozzles with sizes of up to X27 X35. For example: when the value of the angle of the torch is 30°, use the nozzle 335 when the value of the angle of the torch is 50°, apply the nozzle 527 etc.

To determine the size of the nozzle, guided, also, and the amount of planned work. Large areas with simple flat surfaces involve the use of a large nozzle and a torch, and in small areas of the surface or elements with complex geometry, nozzles and a small torch are used.

3. Wearability and purpose of the nozzle.



Nozzles are selected not only based on the size and width of the spray strip. Not a small role is played by the durability and specialization of the nozzle. Of course, it is preferable to choose nozzles with good wear resistance. We recommend to use the nozzle RAC X and RAC 5 black and blue colors.

Do not use nozzles with a divider!

The orange and blue Tip Guards nozzles correspond to the RAC X and EAC 5 nozzles. It is permissible to use the nozzle grey brand XHD RAC.

For more information on Graco nozzles, please contact the regional representative of this company.

Operating instructions (coating) with spray gun.

Even the most perfect spray gun can not give a positive result, if you do not comply with the necessary technique of applying the material. Properly selected method of coating will help to save your costs. To increase efficiency, when working with a gun, you should consider the following factors and follow certain rules:

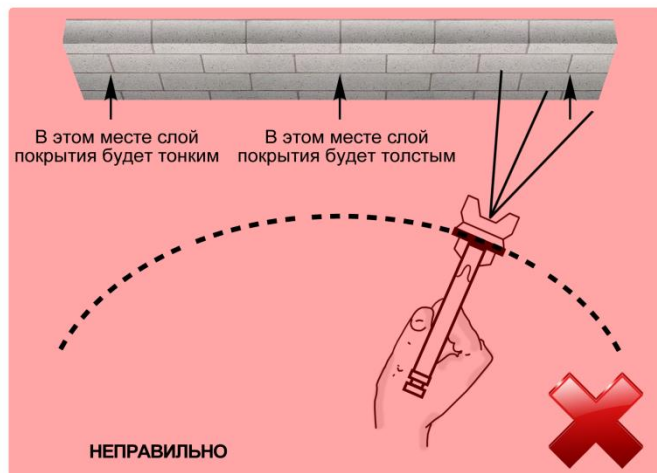
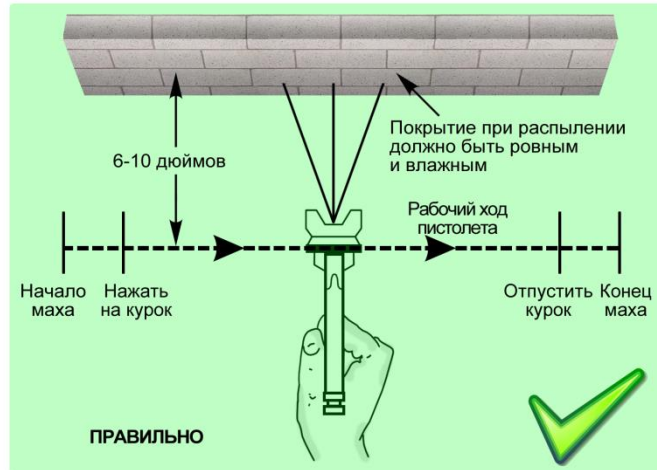
- The gun must be positioned perpendicular to the application surface
 - Try not to deflect the gun from the working surface and not to change the distance from this surface to the gun. This will help not to overspend the material.
 - Do not move the gun in an arc without breaking the uniformity of the film thickness.
- The wrist should be straight and the Mach speed should be uniform.



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The coating is applied overlap, not overlapping more than 50% of the existing layer. Otherwise, to maintain the uniformity of the layer, it will be necessary to increase the speed of Mach spray.



The figure shows the options for the correct and incorrect methods of spraying.

To minimize material loss, care must be taken to pull the trigger in time. In the stationary state of the gun, the trigger should not be pressed. Also, to reduce material consumption, will help the selection of the desired level of pressure (yet it will eliminate the possibility of rebound material from the wall). To increase the stain, the gun must be moved a greater distance from the surface to achieve the desired spot size. Typically, this distance ranges from 15 to 25 cm.

