

Save Time and Money with the Right Materials and Methods

Gas-Fueled High Velocity Oxy Fuel coating (GF-HVOF) is a form of thermal spray that is used to deposit very dense coatings onto a component surface. Various metal and carbide powders are melted and propelled at a component surface to build up the dense coating. GF-HVOF coating is the most effective method for applying wear coatings and the most common HVOF coatings are tungsten carbide, chrome carbide, stainless steel as well as blended alloys.

Advantages of Engineered Masking Solutions from PTFE Group

Specifically formulated for GF-HVOF masking applications, PTFE Group Thermal Spray Masking materials are designed and engineered for:

Abrasion Resistance: Our recommended tapes and compounds will resist high abrasion which allows for the masking material to maintain its integrity while also providing clear well-defined coating lines with little to no distortion or fraying.

Strong Adhesion of Tapes: Adhesion to metal is a key priority for any tape surviving GF-HVOF. The HVMT series of tape has very strong adhesion to metal which allows the tape to stay in place during the spray process. This strength is what allows these tapes to resist the high kinetic energy or force associated with GF-HVOF. This tape has strong adhesion to metal and to itself. The result of the strong adhesion is a masking tape that will stay firmly in place with no lifting or flagging.

Resistance to Heat Transfer: The recommended PTFE Group tapes and compounds are designed to resist extreme heat while also limiting the transfer rate of heat through the material. This trait is especially important with the HVMT series of tapes as protection of the adhesive is a key factor in the survival of the masking tape.

Highly Conformable: The key to an effective GF-HVOF masking is conformability. Competing tapes are very stiff which limits their effectiveness. Our recommended tapes and compounds will conform easily to mask difficult or complex profiles. Superior conformability allows PTFE Group products to be used for applications where competing tapes simply will not work due to lifting.

Clean Removal: PTFE Group tapes and compounds leave no residue upon removal after blasting and spraying. Adhesive residue can be a major problem for some competing thermal spray masking tapes. PTFE Group masking products leave no adhesive residue which results in an elimination of extra clean up and/or rework.

The need for masking

GF-HVOF coating process presents unique masking challenges.

Unlike other forms of thermal spray, masking against HVOF coatings can be very difficult and expensive. In the past, masking against gas fueled HVOF systems required excessive (and often ineffective) tape masking or alternately, expensive engineered and fabricated metal masking. Problems that operators typically encounter with Gas Fueled HVOF include:

- Extremely high abrasion.
- Fast transfer of heat through the masking materials.
- High Kinetic energy or force.

The three factors above often limit what materials can be effectively employed as masking options for gas fueled HVOF coating applications. Fortunately, GBI produces and offers some unique solutions to tackle these challenges.



A shaft masked with HVMT Orange and High Velocity Masking Compound receives GF-HVOF spray coating.

Opportunities for time and cost savings

Considering the time, effort and cost of custom designed metal masking fixtures, they are rarely a permanent solution. They also require regular maintenance to strip excess overspray. During the coating process, another drawback of metal masking is a tendency for the coating to form a bridge between the coated surface and the masking material which can cause cracking of the coating when the metal masking is removed.

Alternatively, some companies will use competing thermal spray masking tapes to achieve their masking solution however this strategy often requires multiple layers of tape which can be time consuming, labor intensive, and expensive. Additionally, competing tapes may simply not be strong enough to survive HVOF masking resulting in overspray in undesirable areas which can create a catastrophic problem.

PTFE Group compounds such as HVMC (High Velocity Masking Compound) and APMC (All Purpose Masking Compound) are quick to apply, easy to cleanly remove, and in many cases are reusable. The compounds, when deployed correctly, will resist all forms of HVOF coatings including the most high energy liquid fuel systems.

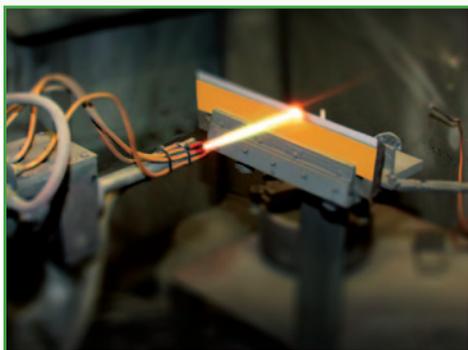
PTFE Group HVMT series tapes such as HVMT Orange (High Velocity Masking Tape) are a reliable form of masking versus GF- HVOF systems. The tape can generally be applied in 1-2 layers which is a faster and more economical method of masking a component compared to designing and producing a metal mask. This masking method is also faster, more economical and reliable compared to using multiple layers of competing thermal spray masking tapes.

Product Recommendations for GF-HVOF Masking

GBI HVMT Orange: A reliable gas fuel HVOF masking tape used for the purpose of precision masking for challenging applications.

GBI HVMC: An aviation engine approved High Velocity Masking Compound suitable for use with all gas fuel and liquid fuel HVOF coating systems.

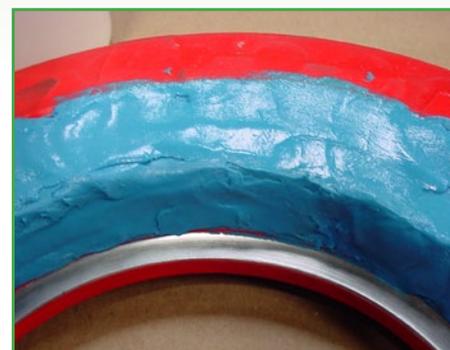
GBI APMC: This "All Purpose Masking Compound" is ideal for masking against all forms of HVOF. This non-Aerospace compound is an ideal masking choice for industrial coating facilities.



HVMT Orange Masking Tape



APMC - All Purpose Masking Compound (green)



HVMC - High Velocity Masking Compound (blue)

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