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Save Time and Money with the Right Materials and Methods

Wire Arc Spray coating, or “arc spray” coating is a very basic and economical method for applying a thermal spray coating. Two conductive wires are fed into a specialized spray gun. The wires (which may be aluminium, zinc, stainless steel, alternate metals, or blended alloys) are the feedstock which will eventually form the coating. At a connection point inside the gun, the wires are forced to arc causing the metal wires to melt. As pressurized air is fed into the gun, the pressurized air propels the melted particles from the gun nozzle onto the component surface. Each particle impacts and creates a “splat” where a series of “splats” then forms the coating. Common applications of wire arc coatings involve the coating of aluminium or zinc for corrosion resistance.

Advantages of Engineered Masking Solutions from Green Belting

Using the correct selection of Green Belting Industries masking products, operators can develop a masking strategy to overcome the following key considerations:

- **Abrasion Resistance** – Our recommended tapes, fabrics, and compounds will resist high abrasion which allows for the masking material to maintain its integrity. Most of the abrasion can and will come from the grit blast process. Our material is applied once and it will survive both grit blast and arc spray.
- **Strong Adhesion of Tapes** – Adhesion to metal is a necessity for a thermal spray masking tape. Green Belting Industries 170 series tapes exhibit very strong adhesion to metal and “face-to-back”. The benefit of the strong adhesion is a masking tape that will stay firmly in place with no lifting or flagging.
- **Resistance to Heat Transfer** – While the heat associated with arc spray coatings is not as intense as high energy styles of thermal spray, resistance to burning is still important. The Green Belting Industries tapes, fabrics, and compounds will not be affected by the heat. This heat resistance is key to maintaining clean coating lines with no distortion along the masking edges.
- **Highly Conformable** – All of Green Belting Industries masking products are designed to conform to complex profiles quickly and easily. This conformability is important to achieve accurate and reliable masking.
- **Clean Release** – Green Belting Industries 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. Green Belting Industries masking products leave no adhesive residue which results in an elimination of extra clean up and/or rework.

The Need for Masking

Due to more moderate heat and particle speeds when compared to plasma and HVOF spray, twin wire arc spray is open to a wider range of masking options. But with all masking jobs, selecting the correct strategy can be the difference between profit and loss for a coating job. Therefore, with an emphasis on time and cost savings, it is important to deploy the best masking strategy to mask quickly and accurately while eliminating the need for clean up or re-work.

Some challenges that operators may face with Wire Arc Spray Coatings include:

- A wide plume of spray (requiring primary and secondary masking).
- Coarse or abrasive spray particles.
- Coarse grit blast particles from the prep blasting phase.

The three factors above are often the reasons why some operators underestimate the importance of a good masking strategy. Using low cost masking materials such as duct tapes can actually create higher cost in terms of masking times, clean up times, and additional rework. The best masking strategies for arc spray coatings will allow for time and cost savings.



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Wire arc coating is applied to the inside of a cylinder.

Opportunities for Time and Cost Savings

Unlike other tape suppliers, Green Belting Industries produces a full range of engineered masking materials including tapes, fabrics, compounds, and pre-cut materials. This variety allows for customized solutions which benefits those facilities that have a variety of different profiles to mask.

- **Reduce Tape Consumption with Stronger Materials** – To replace multiple layers of tape masking, Green Belting Industries 170 Series tapes can be applied in 1-2 layers to achieve a masking that will satisfy both grit blast and arc spray. Given the time in applying each layer of tape (sometimes hours) reduction of masking can result in tremendous savings.
- **Thermal Spray Masking Blankets** – Green Belting Industries silicone fabrics are often referred to as thermal spray masking blankets. Unlike tapes, these fabrics are reusable. The silicone fabrics allow an operator to mask a large surface quickly and economically thus reducing labor and masking tape consumption.
- **Masking Compounds to Solve Difficult Masking Applications** – Green Belting Industries produces compounds which are ideal for masking complex profiles to produce masking plugs, moulds, sleeves, and moulds. These materials are also re-usable which is an important consideration for repetitive masking.
- **Use Die Cuts to Save Time and Improve Safety** – For repetitive masking jobs, Green Belting Industries offers both Pre-Cut lengths and widths and Die-Cut to allow for faster masking and better accuracy. Less cutting during tape application results in reduced risk of injury such as cuts and repetitive strain injury.

Product Recommendations for Arc Spray Masking

- **170-10S YL** – A reliable masking tape for most standard plasma spray applications.
- **170-10S Green** – For applications that involve higher abrasion. This tape produces cleaner coating lines and may be used with fewer layers (and less quantity) than standard tapes.
- **HVMC** – An aviation engine approved High Velocity Masking Compound suitable for use with all forms of thermal spray.



170-10s Green Masking Tape and
SW-35 Masking Fabric



HVMC – High Velocity Masking Compound



170-10s Green Masking Tape

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As an ISO 9001 Quality Registered Company, our ongoing procedure for quality assurance starts with thorough inspection of all raw materials to ensure compliance with our required specifications. All manufacturing processes are closely monitored, and finished product is tested against our high internal standards and customer specifications. This assures that we always deliver consistently high quality products.