Unleash the Bonding Power

BLACK MAMBA FHG®

blackmambafhg.com

Get the best of both worlds with Black Mamba FHG

Black Mamba FHG ® is a hybrid formula that combines the strength of polyurethane with the insulation and weathering resistance properties of silicone. It is a high-performance adhesive with exceptional bonding capabilities, delivering the best of both materials. Its durability, flexibility, and resistance to moisture, weather conditions, and UV radiation make it the go-to choice for demanding applications across industries. From construction and signage to marine and transportation, Black Mamba FHG® hybrid sealant is the reliable, efficient, and cost-effective solution for all your sealing and bonding needs.

Why elastic bonding ?

Compared to mechanical jointing techniques, elastic bonding provides a multitude of benefits both in the production process and the final product.

Improved stress distribution:
Elastic bonding provides an even distribution of stress across the entire bond line, which can help prevent localized stresses and reduce the risk of cracks or failures.

Enhanced durability:
Elastic bonding can withstand a greater degree of movement and vibration than mechanical jointing techniques, making it a more durable and long-lasting solution.

Reduced weight:
Because elastic bonding can be used to bond dissimilar materials, it can often eliminate the need for heavier mechanical fasteners, reducing weight and improving fuel efficiency.

Improved aesthetics:
Elastic bonding can provide a smooth, seamless appearance with no visible fasteners or joints, improving the overall appearance of the finished product.

Black Mamba FHG® *is a versatile and high-performance hybrid sealant designed for a wide range of industrial applications. With its unique combination of properties, it outperforms traditional silicone and polyurethane sealants in many ways.*

Silicones vs Black Mamba FHG®

Low odor:
Unlike traditional silicone sealants, Black Mamba FHG® has a low odor during application and curing, making it more pleasant to work with in enclosed spaces.

Faster skin-over time :
Black Mamba FHG® has a faster skin-over time than silicone sealants, allowing for faster installation and reducing the risk of surface contamination.

Paintable :
Black Mamba FHG® can be painted over after it has cured, unlike many silicone sealants.

Non-staining :
Most silicone sealants contain "silicone oil" that can seep into adjacent substrates and stain porous materials like marble or granite. Black Mamba FHG® does not contain silicone oil, eliminating the risk of oil staining and aesthetic issues caused by migration.

Reduced fluid streaking :
Silicone oil and sealant tend to trap more airborne dust and particles in water run-off channels on vertical or sloped building facades, resulting in 'fluid streaking' aesthetic issues. With Black Mamba FHG®, there will be minimal fluid streaking on building facades since it does not contain silicone oil.

Polyurethane Vs Black Mamba FHG®

No Shrinkage:
Polyurethane (PU) sealant contains solvents that evaporate during the curing process, causing shrinkage and recessed joints. Black Mamba FHG® does not contain any solvents or water, ensuring there is no shrinkage.

No Blistering:
Polyurethane sealant contains isocyanate, a chemical that reacts with moisture and releases carbon dioxide during the curing process. This reaction can cause blisters, which can affect both the aesthetics and integrity of the sealant joints. Black Mamba FHG®, does not contain isocyanate, making it blister-free.

Weathering resistance:
Black Mamba FHG® offers better weathering and UV resistance compared to polyurethane (PU) sealant, making it more durable and less prone to cracks. This results in a longer service life and less maintenance hassle

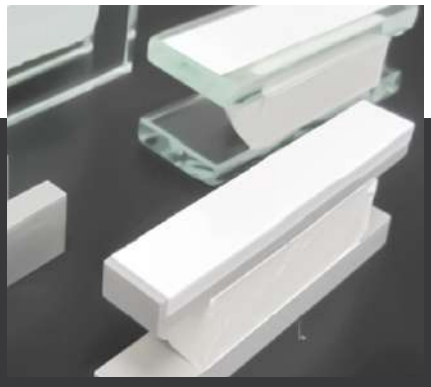
Damp substrate bonding:
Due to the absence of isocyanate, Black Mamba FHG® can be applied on damp substrates, which is not possible with polyurethane (PU) sealant. This feature makes the sealant applications feasible even after rain, providing much-needed flexibility to your project.

Performance comparison of Black Mamba®, PU and Silicone

	Black Mamba®	PU	Silicone
Environmentally friendly	●●●●●	●●	●●●●
Non-bubbling	●●●●	●●●	●●●●●
Low temperature gunnability	●●●●●	●●●	●●●●●
Slump resistance	●●●●●	●●●●●	●●●●
Quick Cure	●●●●●	●●●	●●●●●
Storage stability	●●●●●	●●●	●●●●
Tooling	●●●●	●●●●●	●●●●
Weather resistance	●●●●	●●	●●●●●
Adhesion to various substrates	●●●●●	●●	●●●●
Mechanical Properties	●●●●●	●●●●●	●●●●●
Heat resistance, mechanical stability	●●●●	●●●●	●●●●●
Non-dirt pick up	●●●●●	●●●	●●
Stain resistance	●●●●	●●	●●●●
Paintability with water-based paint	●●●●●	●●●●●	●

Features & Benefits

- High-strength adhesive capabilities
- Permanent elasticity
- Resists vibrations
- Resistant to water, weather, and UV rays
- No shrinkage and bubble free
- Low VOC, nearly odourless
- Non-corrosive when bonded to metal
- Free of solvents and isocyanates
- No edging contamination with marbel and natural stone
- Suitable for interior and exterior applications
- Paintable
- Versatile for a wide range of industrial applications
- Improved productivity and efficiency in the production process
- Reduces the need for mechanical fasteners and joints, resulting in a cleaner and more aesthetically pleasing finished product
- Provides a long-lasting, durable bond that withstands harsh environmental conditions
- Helps improve overall product performance and reliability
- Easy to apply, saving time and effort



Applications Industries

Marine

Black Mamba FHG® is a widely used option in the marine industry due to its ability to endure exposure to saltwater, UV rays, and other harsh environmental conditions. Its ability to maintain flexibility and adhesion strength over time is crucial for various marine applications where boats and ships are subjected to vibration and temperature variations.

- Bonding and sealing of decks, hatches, and other parts of the boat or ship.
- Sealing of through-hull fittings, ports, and windows to prevent water leaks.
- Bonding and sealing of fiberglass, metal, and other materials used in boat building and repair.
- Sealing of joints and gaps in boat and ship hulls to prevent water ingress.
- Bonding of trim and decorative parts to boat interiors and exteriors.

Transportation

Due to its ability to maintain elasticity and adhesion strength over a wide temperature range, from extreme cold to high heat, Black Mamba FHG® is a reliable and versatile choice for bonding and sealing in the transportation industry. It is also resistant to chemicals and oils commonly found in automotive and other transportation applications.

- Bonding and sealing of body panels and components in cars, trucks, buses, and trains.
- Sealing of windows, windshields, and sunroofs to prevent water leaks and reduce noise.
- Sealing of joints and gaps in vehicle frames to prevent corrosion and reduce noise.
- Bonding of interior trim and accessories in vehicles.
- Bonding of bumpers, spoilers, and other exterior accessories.

Applications Industries

Construction

Black Mamba FHG® is a versatile adhesive sealant ideal for construction. It offers strong adhesive properties, UV resistance, waterproofing, flexibility, and low VOC emissions, making it suitable for a wide range of applications within the same project. Its durability and flexibility also make it great for sealing gaps and cracks in materials that may experience movement, making it a reliable choice for construction projects.

- Sealing and bonding of different construction materials such as concrete, brick, stone, metal, and wood.
- Filling gaps and cracks
- Installing and sealing windows, doors.
- Sealing and bonding of roofing materials.
- Bonding of interior and exterior architectural elements such as panels, profiles, and decorative elements.
- Sealing and bonding of flooring materials.
- Bonding of wall and ceiling coverings.
- Sealing and bonding of joints and seams in plumbing and HVAC systems.
- Counter-tops & back-Splashes

Signage

Black Mamba FHG® is an ideal choice in the signage industry due to its ability to provide strong, long -lasting bonds that can withstand exposure to outdoor elements, such as sunlight, rain, snow, and wind. It maintains its flexibility and elasticity over time, which is essential in applications where signs are exposed to temperature variations and other environmental factors.

- Bonding of signs and banners to various surfaces, including metal, glass, and plastics.
- Bonding and sealing of acrylic components
- Sealing of signage box
- Bonding of metal letterings.
- Mounting of outdoor and indoor signs.
- Installation of channel letters and other 3D signage.

Black Mamba FHG Product Line

Black Mamba FHG offers three product lines, each tailored to specific bonding and sealing needs, ranging from heavy-duty with maximum initial holding power to versatile applications that require lower green strength during the application process.

Black Mamba FHG® High Tack

Black Mamba High Tack® is an advanced hybrid sealant technology designed to reduce installation time. It acts immediately to secure heavy objects in demanding conditions without supports achieving a strong, permanent bond to porous and non-porous substrates. It can be used for both interior and exterior projects and it is water resistant. It cures fast, solvent-free, and it can even be used on damp surfaces.

Black Mamba FHG® Universal

Black Mamba FHG® universal is an advanced hybrid sealant technology designed for demanding applications requiring a strong, permanent bond. It cures under the influence of moisture to form a durable, elastic rubber that bonds to most building materials. This solvent-free and low-odour formula can be used on both interior and exterior projects.

Black Mamba FHG® Construction

Black Mamba Construction® is an advanced hybrid sealing technology designed specifically for applications that do not require high green strength. It cures under the influence of moisture to form a durable, elastic rubber that bonds to most building materials. Once it is fully cured achieves a strong and permanent bond. It is solvent-free, and water resistant and it can even be used on damp surfaces.

Technical Information

	High Tack	Universal	Construction[1]
Tensile Strength at break [MPa]	2.7	2.4	1.1
Hardness [Shore A]	60	60	25
Elongation at break ISO 527-1A	200 - 250%	380%	300%
Specific gravity @ 20°C [g/ cm3]	1.53 - 1.55	1.55 - 1.58	1.35 - 1.37
Viscosity @ 25°C (Pa.s)	360 - 380	160 - 220	50 -70
Skin formation time [min] @ 20°C & 50% R.H.	10 -15	10 -15	30 - 60
Cure Speed [mm/24h] @ 20°C & 50% R.H.	5	5	5
Temperature Range [°C]	-40 to 140	-40 to 140	-40 to 140
Green Strength	*****	***	**
Accelerated Weathering (ASTM C793)	No crack, stains, discoloration	No crack, stains, discoloration	No crack, stains, discoloration
Cold Temperature Flexibility (ASTM C734)	PASS	PASS	PASS
Colours[2]			

1. Black Mamba Construction meets ASTM C557, D3498, and AFG-01
2. Other colours available upon request

Black Mamba FHG Selection Guide

Extremely High Green Strength = Holds Instantly	●●●	●●	●
Ageing, moisture and weather resistance	●●●	●●●	●●●
Fast Curing	●●●	●●	●
No mechanical support required during curing	●●●	●●	●
No shrinkage and bubble free	●●●	●●●	●●●
Paintable	●●●	●●●	●●●
Non- corrosive towards metals	●●●	●●●	●●●
Odorurless	●●●	●●●	●●●
Ultra Low VOC	●●●	●●●	●●●
Retains its elasticity permanently	●●●	●●●	●●●
Resists vibrations	●●●	●●●	●●●
Primer less adhesion on most substrates	●●●	●●●	●●●
Adheres to wet and dry surfaces	●●	●●●	●●●
Easy to apply in all conditions	●●	●●●	●●●
No staining on porous surfaces and other natural stones	●●●	●●●	●●
Suitable for horizontal and vertical joints	●●●	●●	●
Non - sag	●●●	●●	●
Suitable for indoors and outdoors	●●●	●●●	●●●
Easy tooling	●	●●	●●●
High mechanical resistance	●●●	●●●	●●
Excellent bond strength	●●●	●●●	●
Excellent chemical resistance	●●●	●●●	●●●
UV Resistance	●	●	●●●

Multi-substrate Adhesion

Black Mamba FHG® unlocks a world of possibilities by bonding a wide range of materials, including :

- Stone
- Concrete
- Mirror
- Glass
- Technical Plastics
- Composites
- Wallboards
- Gypsum
- Wood
- Ceramics
- Copper
- Lead
- zinc
- Tin
- Aluminum
- Metals
- Alloys
- Stainless steel
- Porcelain

Not recommended for

- Polyethylene (PE)
- Polypropylene (PP)
- Polytetrafluoroethylene (PTFE)

Application Guide

Surface Preparation:

- Before application, it is important to ensure that the substrates are thoroughly cleaned and free from any contaminants that could negatively impact adhesion, such as grease, polish, liquid sealants, wax, and dust.
- The edges of the joint can be protected by using masking tape to prevent contamination of the substrate. Carefully remove the tape after tooling.

Application Conditions:

- Can be applied at temperatures from 5°C to 35°C

Application:

- Cut the cartridge seal and attach the applicator provided.
- Hold the cartridge at a 90° angle relative to the substrate for the best bead size and shape.
- Apply Black Mamba FHG® on one surface in vertical strips, approximately 3-5" apart from each other.
- Place item into position, press firmly together with a slight twisting motion.

Cleaning

- Uncured sealant can be removed with alcohol.
- Cured sealant can only be removed mechanically.
- Hands should be washed with water and soap.

Curing

- Skin forming within approx. 10 -15 minutes.
- 5mm/24 hours at 20°C and 50 % RH.
- The curing time is slowed down at lower temperatures and lower relative humidity.

Safety notice:
Please refer to product safety data sheet

Tools for Application

ADH_DM310

Heavy-duty Manual Dispenser

ADH_DM310 is a one-component cartridge dispenser for material with high viscosity. It has a U-opening and is made of reinforced nylon. This reliable and easy to use dispenser offers a high hearing ratio, a centered handle, an anti-drip and trigger integrated brake release as well as long life technology. It also enables a clean application.

ADH_DP310

Pneumatic Gun 310ML

ADH_DP310 is a one-component, lightweight dispenser with a snap-fit cartridge. It offers optimal emptying thanks to its O-opening, one-hand pressure adjustment, and quick reloading

Applications

Bonding Sealing

Ready to take your bonding and sealing to the next level?

Try Black Mamba FHG® today!

blackmambafhg.com

MATCO
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