MASTER'S TOUCH
TECHNICAL DATA SHEET (TDS)

MT-404 High-Performance Electromagnetic Shielding & Absorption Vinyl Blanket
Manufacturer: The Master's Touch Global (Masters Touch USA)

1. Product Description
MT-404 is an advanced, high-performance electromagnetic field (EMF) and radio frequency (RF) shielding and absorption solid vinyl blanket. Designed as a flexible, heavy-duty architectural and vehicular barrier, MT-404 integrates a specialized multi-component absorption matrix into a robust **16 mm** resilient solid vinyl substrate, delivering exceptional electromagnetic attenuation alongside superior thermal insulation and acoustic dampening for aerospace, defense, automotive, and industrial applications.

2. Key Performance Benefits
- **Broadband Attenuation:** Engineered to effectively absorb and suppress both magnetic and high-frequency electric fields across demanding operational spectrums.
- **Acoustic Sound Barrier:** The high-density 16 mm mass-loaded elastomeric structure acts as an exceptional acoustic barrier, significantly reducing airborne noise transfer, panel resonance, and cabin decibel levels.
- **Advanced Heat Blocking:** Provides high-efficiency thermal insulation and radiant heat reflection, protecting sensitive cabin interiors, electronics, and vehicle subfloors from extreme environmental or exhaust temperatures.
- **Solid Vinyl Matrix:** Flexible, pre-formed solid sheet material ensuring clean handling, easy deployment, and zero liquid-cure requirements.
- **Superior Mechanical Flexibility & Durability:** Designed with a resilient polymer backbone preventing cracking, tearing, or degradation under severe structural vibration and continuous mechanical flexing.

3. Typical Physical Properties

Property	Specification Value
Appearance / Structure	Dark grey / black flexible solid vinyl sheet / blanket
Standard Thickness	**16.0 mm** (heavy-duty structural shielding & dampening profile)
Target Density	$\sim 2.8\ kg/m^2$ to $\sim 3.5\ kg/m^2$ (calibrated for 16 mm solid format)
Flammability / Safety	Self-extinguishing / Flame-retardant solid polymer composite
Operating Temperature Range	$-40°C$ to $+105°C$ ($-40°F$ to $+221°F$)
Storage Requirements	Store flat or rolled in a cool, dry environment away from direct UV exposure

4. Surface Preparation

- **Substrate Inspection:** Ensure all target mounting surfaces, firewalls, or subfloors are structurally sound, clean, flat, and dry prior to blanket placement or bonding.
- **Contaminant Removal:** Thoroughly remove all oils, greases, dust, release agents, rust, and loose particulates using an appropriate industrial cleaner or solvent wipe.
- **Adhesion / Mechanical Fastening:** Due to the substantial 16 mm profile, ensure the deployment plan utilizes high-load mechanical retainers, edge-trim brackets, or high-tack structural adhesives rated for heavy elastomeric sheets.

5. Application & Installation Guidelines

- **Cutting & Sizing:** MT-404 blankets can be cut to custom geometric configurations using specialized heavy-duty industrial saws, blades, or waterjet cutting equipment to fit custom cabin enclosures, firewall contours, and subfloor channels.

- **Environmental Conditions:** Installation can be performed across standard ambient temperature ranges ($10°C$ to $35°C$). Ensure surfaces are free of moisture condensation prior to installation.

- **Deployment & Lamination:** Apply firm, uniform pressure across the 16 mm blanket surface during installation to ensure complete contact with the substrate, eliminating air gaps and maximizing both acoustic and thermal coupling.

6. Mechanical & Operational Integration

- **Immediate Serviceability:** Because MT-404 is supplied as a pre-cured solid 16 mm vinyl blanket, the material achieves immediate structural, EMF shielding, acoustic, and thermal performance upon proper mechanical or adhesive installation.

- **Maintenance:** Maintenance-free under normal operating conditions. Resistant to moisture, automotive fluids, and mild chemicals.

7. Storage and Handling

Store rolls or pre-cut panels flat or tightly coiled on robust cores in a well-ventilated location away from direct sunlight and extreme thermal fluctuations. Unlimited shelf life under recommended indoor storage conditions. Consult the Product Safety Data Sheet (SDS) prior to handling for complete health, disposal, and safety guidelines.

