

MEPNN Supplier Scouting Opportunity Synopsis

Section 1: General Information

Scouting Number	2025-360
Item to be Scouted	Trolley Carbon Inserts
Days to be scouted	10
Response Due By	11/29/2025
Description	Trolley carbon insert for electric trolleybus current collectors. Designed for continuous power transfer from overhead catenary wires to the vehicle's electrical system.

Section 2: Technical Information

Type of supplier being sought	Manufacturer
Reason	2nd Supplier
Describe the manufacturing processes (elaborate to provide as much detail as possible)	1. Raw Material Preparation: Fine carbon and graphite powders are selected, mixed with binders, and pressed into solid blocks under controlled pressure and temperature. 2. Baking: The pressed carbon blocks are baked at high temperatures (typically 800–1000°C) to carbonize the binder and create a solid carbon matrix. 3. Impregnation: The baked carbon blocks are placed in a vacuum furnace and impregnated with molten copper or another conductive metal to enhance conductivity and strength. 4. Re-Baking / Sintering: The impregnated blocks are reheated to ensure complete bonding between metal and carbon. 5. Machining: The blocks are precision-machined to final dimensions, including surface finishes and mounting holes. 6. Quality Control: Each batch is tested for density, resistance, flexural strength, and dimensional tolerances per IEC and DIN standards.

Provide dimensions / size / tolerances / performance specifications for the item	1. Material Composition • Base Material: Carbon-graphite, metal-impregnated • Impregnation: Copper or similar conductive metal to improve electrical and mechanical performance • Compliance: Conforms to EU Directive 2011/65/EC (RoHS) and REACH requirements • Application: Current collectors for trolleybuses and rail systems using overhead wire or third-rail systems 2. Physical and Mechanical Properties Bulk Density: 2.4 – 2.5 g/cm³ Rockwell Hardness: 95 – 115 HR5/150 Flexural Strength: = 65 N/mm² Specific Electrical Resistance: = 12 µΩ·m Metal Content 25–35% Cu or equivalent Friction Coefficient: 0.25 – 0.40 typical Recommended Contact Pressure: 90–120 N Operational Current Load: Minimum 9 A/mm continuous 3. Dimensions and Tolerances (Typical for trolley carbon inserts used in standard trolleybus current collectors; actual dimensions to be confirmed with collector shoe model.) Dimension Nominal Tolerance Length 300 mm ±0.5 mm Width 40 mm ±0.3 mm Height 20 mm ±0.3 mm Mounting Hole Diameter 6 mm (M6 fastener compatible) ±0.1 mm Flatness = 0.1 mm per 100 mm Parallelism = 0.1 mm 4. Performance Specifications • Continuous operating temperature: up to 250°C • Short-term peak temperature: 350°C • Electrical conductivity sufficient for continuous current transfer of up to 12 A/mm contact length • Material must maintain integrity and low wear under intermittent arc conditions • Compatible with existing trolleybus carbon insert housings and hardware
List required materials needed to make the product, including materials of product components	Synthetic Graphite Powder Carbon Black or Amorphous Carbon Phenolic Resin Binder Metal Impregnant (Copper or Copper Alloy) Wetting Agent / Catalyst
Are there applicable certification requirements?	No
Are there applicable regulations?	Yes
Details	The Product must be Buy America compliant.
Are there any other standards, requirements, etc.?	No
Additional Technical Comments	

Section 4: Business Information

Estimated potential business volume	10,000 units per year
Estimated target price / unit cost information (if unavailable explain)	\$12.47 per unit.
When is it needed by?	3 months
Describe packaging requirements	Packaged to prevent chipping or breaking during transport. Best available. Delivered undamaged. Specifics discussed in negotiation.

Where will this item be shipped?	Dayton, OH 45402
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Additional Comments

Is there other information you would like to include?	I have attached a sample drawing of the product.
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