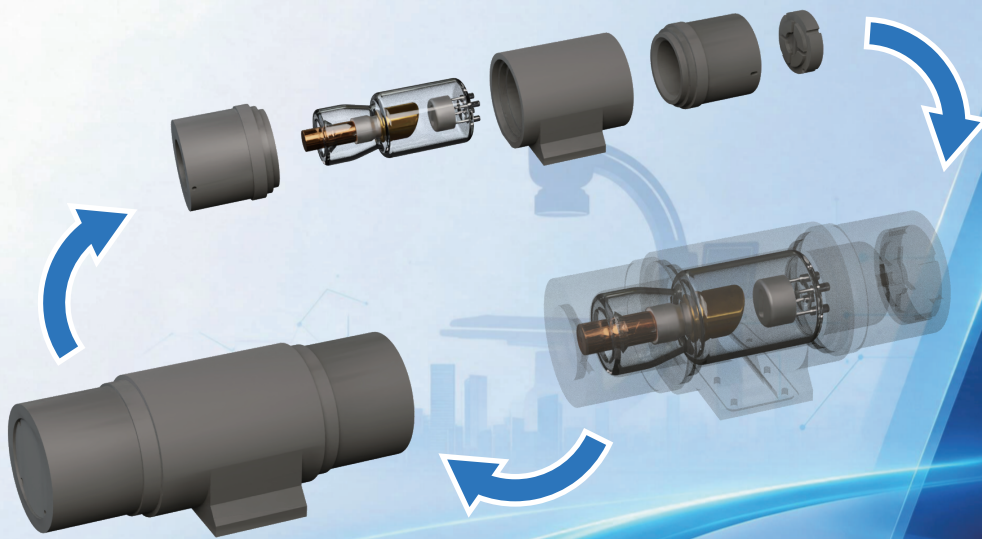


Lead-Free Shielding Sleeves for X-Ray Tubes

Electrical Insulation | Compression Molding | Custom Integration



Lead-Free



Electrical Insulation

AC/DC 20kV



High Shielding



Customized

Engineered from lead-free composites via precision compression molding, NEWLIFE Lead-Free Shielding Sleeves for X-Ray Tubes combine radiation shielding, electrical insulation, and mechanical protection.

Retrofitted over tube assemblies, the housing attenuates scattered and leakage radiation, featuring a tapered side window engineered for directional beam delivery.

Product Types

Product Type	Typical Tube Voltage*	Key Characteristics	Typical Applications
Rigid Epoxy Type	160 kV	Good dimensional stability; high-temperature, oil and ageing resistance; good electrical insulation	Large X-ray systems, oil-cooled X-ray tubes and equipment requiring long-term oil immersion/ oil cooling and thermal stability.
Flexible Silicone Type	90 kV	Lightweight and flexible; good heat dissipation; high-temperature and ageing resistance; relatively low forming cost	Portable X-ray systems and lower-voltage equipment where low weight and flexibility are important (typically ≤ 120 kV).
Two-Component AB Cure Type	Customer-defined	Low tooling cost; suitable for complex geometries; can be cast and cured without a conventional production mould; flexible customization	Complex structures, low-volume production and customer in-house manufacturing.

*Typical tube voltages are based on source material.

Final material selection and operating range depend on the specific X-ray tube model and operating conditions.

Product Features



Lead-Free Composite Shielding

Engineered with lead-free composite systems for X-ray attenuation and protective structural applications.



Integrated Shielding and Electrical Insulation

Combines X-ray shielding with electrical insulation for high-voltage X-ray tube assemblies' environment.



Directional Radiation Window

A tapered flared side window can be designed according to the required radiation output direction.



Compression Molding

Fully customizable to tube profile, dimensions, wall thickness, aperture geometry, mounting holes, and locating features.



Typical Process Flow

Powder Pretreatment → Compounding Process → Preforming → Mould Charging → Compression Molding → Heat Curing → Post-Processing

Technical Specifications

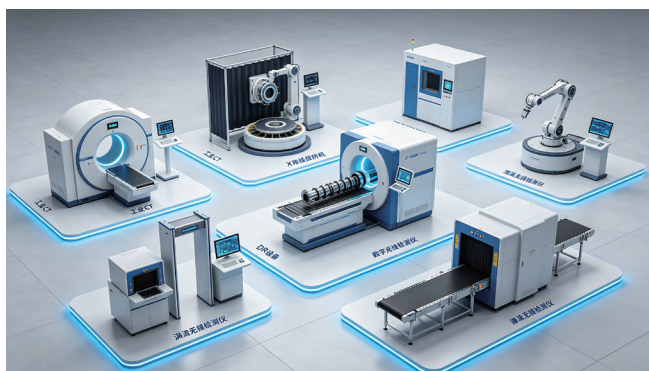
Property	Rigid Epoxy Type	Flexible Silicone Type
Thermal Conductivity	0.8~1.0W/(m·K) @ 70°C	0.35~0.5W/(m·K)@300°C
Thermal Diffusivity	0.3~0.5MM ² /s@70°C	0.15~0.25MM ² /s@300°C
Specific Heat Capacity	0.5~0.6J/(g·K) @ 70°C	0.50~0.60J/(g·K) @ 300°C
Thermal Expansion (CTE)	30~32ppm/K (20°C~60°C)	—
Radiation Shielding Equivalence	2.4~2.7 mm Pb (@ 180 kV)	≥ 2.1 mm Pb (@ 70~90 kV, 4.5mm thickness)
Dielectric Breakdown Voltage	6.0 – 10.5 kV/mm	—
Insulating Oil Resistance (Swelling Ratio)	0.03% (116 days)	0.6% – 0.8% (Ambient)

Applications



Medical Imaging

DR, CT, dental X-ray systems, mobile X-ray systems, mammography systems and other medical X-ray equipment.

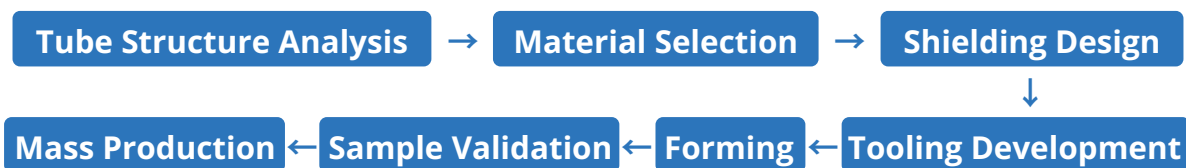


Industrial X-Ray

Industrial CT, X-ray inspection, non-destructive testing (NDT), security inspection and other X-ray inspection systems.

OEM/ODM Development Partnership

NEWLIFE provides an integrated development process from material selection through finished component production:



Design parameters can be tailored to customer requirements, including:

- Shielding performance
- Electrical insulation performance
- Component weight
- Dimensional accuracy
- Assembly fit and interface requirements
- Production consistency for volume manufacturing

Final material selection, shielding performance, dimensions and structural parameters are determined according to the customer's X-ray tube model and actual operating conditions.



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