

Metglas has capabilities in-house to make distribution transformer cores in order to support our customer designs and their production needs.

Our Amorphous Transformer cores are manufactured from low loss **Metglas® 2605HB1M transformer core alloy**. This low loss, high permeability alloy has excellent performance for **Single and Three phase** commercial, industrial and distribution transformer applications.

Metglas cores are installed using industry standard transformer assembly techniques.

General Properties & Characteristics for Metglas® 2605HB1M transformer core alloy

Physical Properties

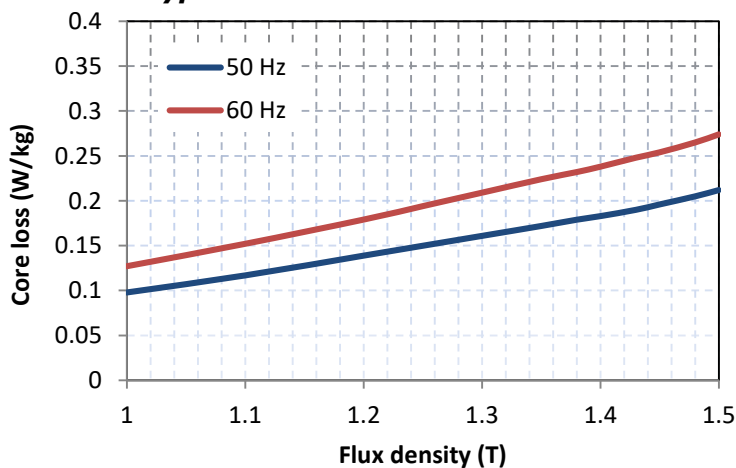
Alloy	Nominal Composition	Density (g/cm ³)	Standard Available Widths (mm)*	Vickers Hardness Hv-50 g load	Tensile Strength (N/mm ²)	Thermal Expansion Coefficient (x10 ⁻⁶ /°C) 30 - 300°C	Crystallization Temperature (°C)
2605HB1M	FeBSi	7.33	142.2 170.2 213.4	900	2,100	4.3	489

*Please contact sales representative for custom ribbon width

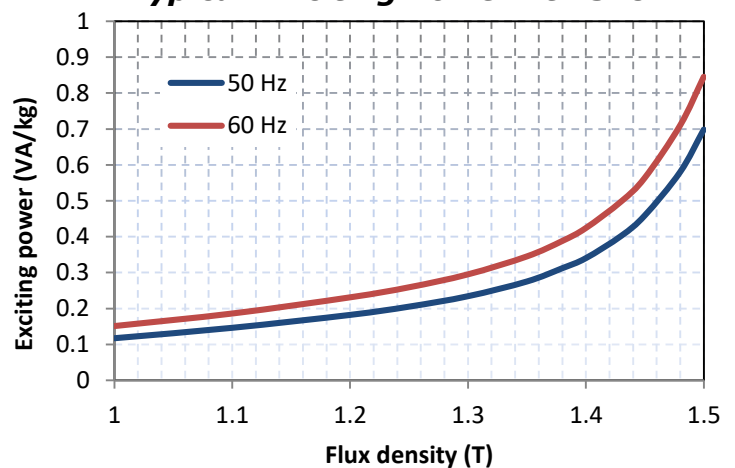
Magnetic Properties

Saturation Induction (T)	Remnant Induction (T)	Coercivity, Hc (A/m)	Max DC Permeability	Electrical Resistivity (μΩm)	Curie Temperature (°C)	Magnetostriction (x10 ⁻⁶)
	Annealed	Annealed	Annealed			
1.63	1.53	0.9	1,000,000	1.2	364	27

Typical Core Loss At 25°C**



Typical Exciting Power At 25°C**



**DT Core Data – 142.2 mm wide ribbon

Operating Flux Density

Design induction is dependent upon various considerations such as operating temperature, overvoltage requirements, sound level etc.

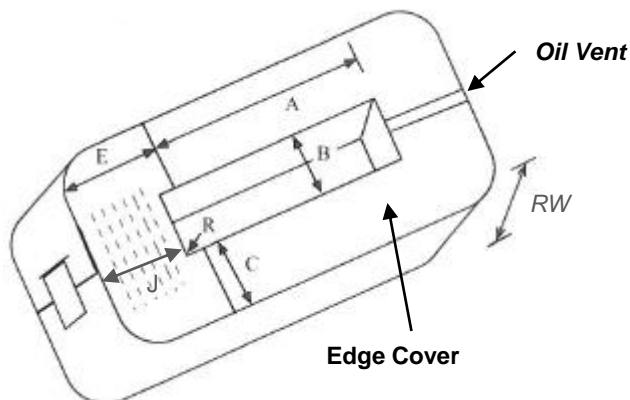
Typical Single Phase / Three Phase: **1.42 Tesla**



Technical Bulletin

Amorphous Metal Transformer Cores

Core Design Specification Example



Geometric Properties:	mm	Inches
RW = Ribbon Width	170	6.7
A = Window Height (Nom.)	280	11.02
B = Window Width (Nom.)	100	3.94
C = Core Build	75	2.95
D = Core + Epoxy Cover Width	174	6.85
R = Window Radius (Nom.)	6.4	0.25
J = Maximum Build at Joint	93.8	3.69
Minimum Core Net Area	113.5 cm ²	17.59 in ²

Nominal Properties:

Weight: 83.4 kg 183.9 lbs
Material: Metglas 2605HB1M

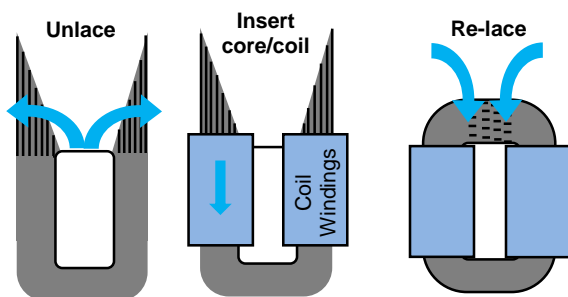
Core Space Factor - 89%

Typical Magnetic Properties at 1.42 Tesla:

Frequency	50 Hz	60 Hz
Core Loss	0.20 Watts/kg	0.25 Watts/kg
Total Core Loss	16.5 Watts	20.8 Watts
Exciting Power	0.52 VA/kg	0.63 VA/kg
Total Exciting Power	43.3 VA	52.2 VA

Measurements taken without oil impregnation at ambient temperature.

Core Coil Assembly Process



Core Coil Assembly process with Metglas Amorphous Metal Distribution Transformer cores is much easier compared to traditional silicon steel cores.

Maximizing Core Performance

Lowest losses are achieved when the core is in its lowest stress conditions:

- Use magnets for lifting and handling cores
- Avoid supporting the coils on the core
- Avoid packing the coils forcefully against the cores
- Avoid overtightening of coil framing fixtures

Core Packing

Metglas Cores are packed with three levels of protection: corrosion inhibiting paper, moisture resistant polyethylene barrier, and a rigid corrugated exterior. For maximum protection, cores should remain in original packaging until ready for assembly.

Energy Savings and CO2 Reduction with Amorphous Metals

Metglas® amorphous alloys are earth-friendly, high technology materials for distribution transformers that can reduce no-load loss (standby electricity) in distribution transformers to about one-third the level compared to those using grain-oriented electrical steel. Worldwide use of amorphous metal-based transformers, therefore, will help us reduce fossil-fuel dependency and create a cleaner environment with higher air quality

Metglas® 2605HB1M - Next Generation of Amorphous Transformer Core Alloy is made in America!

www.metglas.com