

Flexmag FM-60 Anisotropic Magnets

FEATURES

- Polymer bonded, extruded, flexible high energy ferrite magnet
- Energy product (BHmax) up to 2.0 MGOe
- Adjustable magnetic output with tight magnetic tolerance
- Capable of large and intricate cross-sections (1" x 1" or more)
- Multi-pole magnetization possible

Flexmag extruded magnets are made by combining high quality thermoplastic elastomer (rubber) resins with magnetic powders and extruding the compound through precisely controlled dies. These magnets offer a combination of flexibility with usable resistance to breakage, and strong magnetics in a variety of complex cross-sections. The **manufacturing process** inherently and reproducibly yields continuous strips of magnets with tight tolerances. Because the process is also capable of in-line magnetization and other value-added operations, it can provide to the customer both excellent performance and excellent value.

Dimensional tolerances, while depending on product size and configuration, are generally ± 0.010 in/in. Closer tolerances on critical dimensions can be negotiated.

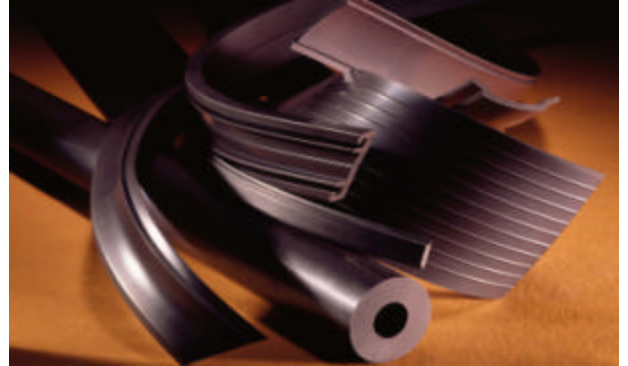
Magnetic tolerances can be as small as $\pm 4\%$ of Gauss output, again, depending on product size, configuration, and requirement.

A broad range of cross-sections can be produced during the extrusion process. These range from simple rectangular or circular cross-section to complex shapes, including hollow tubes and cylinders. When applicable, secondary operations can also be added on an in-line basis. These include stamping, coating, adhesive bonding, cut to length, and more.

Typical applications for Flexmag® Extruded Magnets:

- Copier and laser printer rolls
- Permanent magnet motor magnets
- Magnetic actuators for switches and sensors
- Holding devices, latches, seals

PRELIMINARY PRODUCT INFORMATION



Samples of Flexmag® extruded magnets can be supplied for evaluation. Such samples can be machined to final dimensions from a suitable magnetic material. When designs are finalized, a relatively inexpensive extrusion die can be made to produce the magnets in final shape and in large quantity. Samples can be supplied in either magnetized state or demagnetized state. Special magnetizing patterns may require fabrication of magnetizing fixtures. **Requests for Quotes** for samples, prototype, and production tooling should be directed to your Group Arnold sales representative along with specific requirements for the magnets

All Flexmag® magnets are manufactured to the highest quality standards using sound engineering practices and up-to-date statistical methods.

Limited Warranty and Exclusive Remedy

The Arnold Engineering Company warrants that these products will be free from defects in material and workmanship. **This warranty is expressly given in lieu of any and all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose, and in lieu of any other obligation on the part of the Arnold Engineering Company.** The Arnold Engineering Company will, at its option, repair or replace free of charge (excluding all shipping and handling costs) any products which have not been subject to misuse, abuse, or modification and which in its sole determination were not manufactured in compliance with the warranty above. **The remedy provided for herein shall be the exclusive remedy for any breach of warranty or any claim arising in any way out of the manufacture, sale, or use of these products.** In no event shall the Arnold Engineering Company and its parent company, SPS Technologies, Inc. be liable for consequential, incidental, or any other damages of any nature whatsoever except those specifically provided herein for any breach of warranty or any claim arising in any way out of the manufacture, sale, or use of these products. No other person is authorized by the Arnold Engineering Company to give any other warranty, written or oral, pertaining to the products.

Call your Flexmag Industries Representative today.



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Typical Properties at 23°C (73°F)

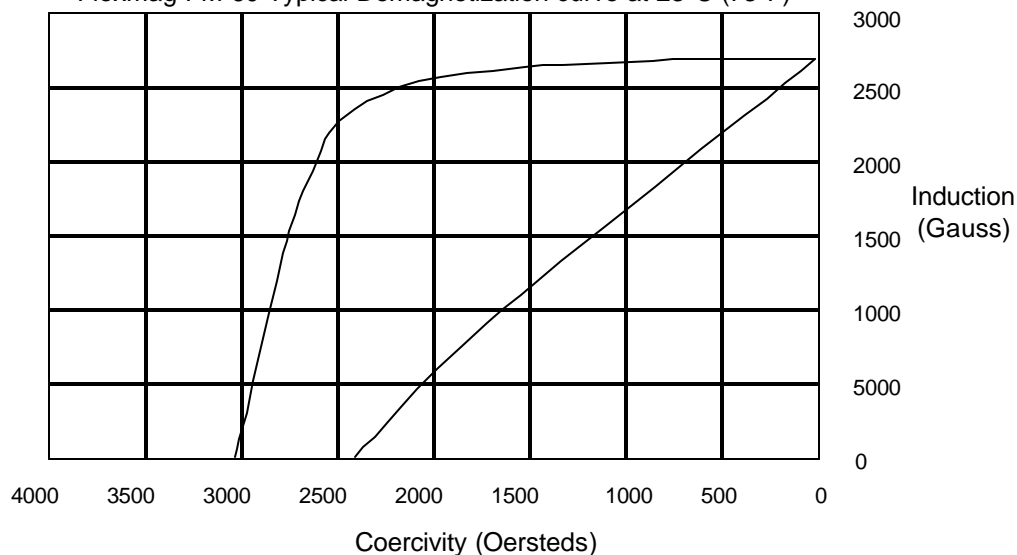
Magnetic Properties

Property	CGS	SI
Br (Residual Induction)	2,730 G	273 mT
Hc (Coercive Force)	2,390 kOe	189 kA/m
Hci (Intrinsic Coercivity)	3,040 Oe	240 kA/m
BHmax (Maximum Energy Product)	1.80 MGOe	14.3 kJ/m ³
Reversible Temperature Coefficient of Induction, 20-100°C	-0.10% per °F	-0.18% per °C
Reversible Temperature Coefficient of Coercivity, 20-100°C	0.15% per °F	0.27% per °C
Required Magnetizing Force	10,000 kOe	790 kA/m

Mechanical Properties

Property	CGS	SI
Tensile Strength	Approx. 900 psi	Approx. 6.2 MPa
Elongation at Yield	Approx. 5 %	Approx. 5 %
Elongation at break	Approx. 5 %	Approx. 5 %
Density	0.134 lb/cu in.	3.72 g/cc
Hardness	65 Shore D	65 Shore D
Maximum Recommended Operating Temperature	176 °F	80°C

Flexmag FM-60 Typical Demagnetization curve at 23°C (73°F)



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