

- polymer bonded NdFeB magnets Neofer p -

1. Application and purpose
2. Definitions
3. Characteristic material properties
4. Geometrical dependency
5. Permitted deficiencies
6. Coating
7. Safety information
8. Health risks
9. Freedom from pollutants

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These technical delivery terms replace the previously applicable TL-270-04 dated 08.01.04 and refer to the EU guidelines 67/548/EC 2000/53/EC 2002/95/EU as well as to the material disclosure of the products by the IMDS system.

- polymer bonded NdFeB magnets Neofer p -**1. Application and purpose**

These technical terms of delivery are considered to be a drawing supplement and consequently part of the contract. All the values and agreements stated in component drawings and specifications take priority over these technical terms of delivery.

The areas of application are: compression molded Neofer p magnets as well as Neofer p magnets manufactured by injection molding.

2. Definitions

Not magnetized: Residual magnetism due to the production process is permitted.
The scope and the testing procedure need to be agreed with the customer in individual cases.

Non-magnetic: No residual magnetism permitted.
Testing with steel balls according to testing instruction No. 8.

3. Characteristic material properties

Neofer p magnets are subject to a temperature coefficient of flux density and of physical coercive field strength of:

$$TK_{Br} \cong - 0.1 \% / K; TK_{HcJ} \cong - 0.4 \% / K$$

These temperature coefficients determine the reversible losses in the material.

At higher temperatures, irreversible losses occur due to both the material and the geometry.

The NdFeB alloy is highly susceptible to corrosion. Injection molded Neofer p magnets are largely protected by the binder's polymer film. Under unfavorable conditions of installation (presence of damp), the injection points should also be sealed. Compression molded Neofer p magnets should always possess surface protection.

4. Geometric dependency

Small volumes with large surface areas cool down faster inside the cavity than larger parts. The injection pressure and reciprocating force cannot be completely formed. Consequently, the specific density of the magnets may fall short of the minimum values.

The remanence flux density is directly correlated with the specific density.

4. 1 Minimum volumes/minimum dimensions for injection molded Neofer p magnets

DIN IEC 60404-8-1 refers to the interdependency between magnetic values and the magnet geometry.

The minimum magnetic values apply only to magnets with a cross-section which remains unchanged along the axis of magnetization, with a volume of between 1 cm² and 200 cm² and with an extent of at least 8 mm in all spatial dimensions.

If these dimensions are not achieved then the maximum deviations set out below are permitted:

B_r	=	10 %	less than the minimum catalog value
H_{cB}	=	10 %	" " "
H_{cJ}	=	10 %	" " "
$(BH)_{max}$	=	15 %	" " "

- polymer bonded NdFeB magnets Neofer p -**5. Permitted deficiencies for injection molded Neofer p magnets****5.1 Self-abrasion**

Permitted within the limits of tolerance.

5.2 Shrink marks

Permitted outside of the limits of tolerance.

5.3 Waist formation

Permitted outside of the limits of tolerance.

5.4 Flash formation

≤ 0.1 mm permitted within the mold parting line and the mold venting areas.

5.5 Blow holes

Permitted provided that mechanical and magnetic requirements are not impaired.

5.6 Residual material overhanging in injection area**5.7 Seam lines**

Material-dependent seam lines are permitted.

5.8 Representation

Due to the relatively large amount of incorporated magnetic material, the mold contour is not represented in detail.

6. Coating of compression molded Neofer p magnets

The surfaces of compression molded Neofer p magnets (e.g. Neofer 62/60p and Neofer 55/100p) must be coated to avoid corrosion as required by the application in question.

7. Safety instructions

Detailed information about the handling of permanent magnets is available on our homepage: www.magnetfabrik.de, under Downloads "Safety instructions"

8. Health risk on contact with food and drinking water

We always recommend avoiding direct contact between food or drinking water and injection or compression molded Neofer p magnets since metal ions from unprotected areas (cast-on or surface impairments) may be released in aqueous environments.

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9. Freedom from pollutants

Magnetfabrik Bonn GmbH has successfully introduced an environment management system in accordance with DIN ISO 14001.

Adherence to the directives of the European Parliament and Council

- Council Directive 67/548/EC on the harmonization of the legal and administrative requirements for the classification, packaging and labeling of dangerous preparations
- European Parliament and Council Directive 2000/53/EC concerning end-of-life vehicles
- European Parliament and Council Directive 2002/95/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- as well as the Global Automotive Declarable Substance List (GADSL) issued by the Verband der Automobilindustrie (Automotive Industry Association)

is guaranteed for our products.

If requested, the material data sheet can be enclosed as part of the initial sample documentation to indicate the composition of the product.

Customers that are registered as users in the International Material Data System (IMDS) will obtain information about the entry in the IMDS.