

3-12-1 Nakamachidai, Tsuzuki-ku, Yokohama

Sodick Co., Ltd.

Kenichi Furukawa, President and Representative Director

TEL: 045-942-3111

Tokyo Stock Exchange Prime Market (Securities code 6143)

New Powder for die casting mold for metal 3D printer LPM series
Announcement to launch SVM (Sodick Versatile steel for Mold)
Responding to diversifying demands for metal 3D printers

In response to the diversifying demands for metal 3D printers, we started selling a new material “SVM (Sodick Versatile steel for Mold)” for die casting molds.

SVM is compatible with the SRT (Stress Relief Technology) method, our company’s proprietary technology for preventing deformation and cracking defects during printing, enabling printing of large die casting molds and die parts exceeding 200 mm square. There are compositions that enhances heat resistance, heat check resistance* and erosion resistance, which are issues unique to die casting, are also improved. The use of SVM enables die casting molds to adopt the three-dimensional water pipe structure that is a feature of metal 3D printers, and by optimizing cooling characteristics, it contributes to improving the life of parts and reducing the maintenance of the mold.

(*Heat check refers to surface cracks caused by repeated overheating and cooling.)

SVM will be exhibited at “INTERMOLD 2022” to be held at INTEX Osaka from April 20 to 23, 2022.

■ Background of new material development

Die casting molds for metal 3D printers have the risk of part deformation and cracks due to residual tensile stress inside the printed product.

In addition, maraging steel printed products used as a substitute for SKD61 had durability problems due to heat check and stress corrosion cracking when used in die casting molds.

To address these issues, new material SVM optimized the powder composition to achieve both support for large-parts printing by adopting the SRT method and improved high-temperature characteristics for die-casting molds.

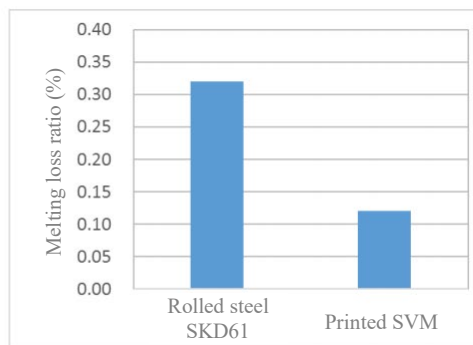
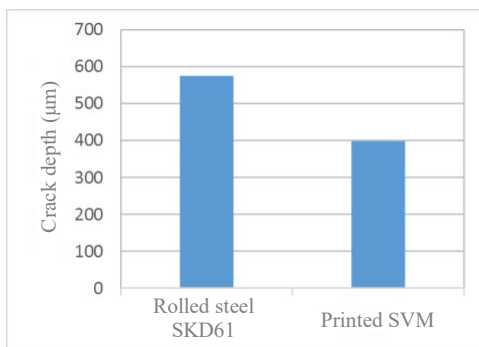
Using SVM with our LPM series of metal 3D printers capable of high-speed, high-quality printing contributes to reducing downtime and maintenance load at die-cast molding sites.

■ Features of new materials

① Improved heat check resistance and melting loss resistance

By appropriately blending heat-resistant materials, we have achieved higher heat check resistance and erosion resistance than rolled steel SKD61. Graphs on the next page show the results of heat check tests and corrosion tests conducted by our company.

Both numerical values are smaller for SVM printed products, indicating that they have better characteristics.



② Correspondence to the printing of large parts by adopting the SRT method

In conventional SKD 61 printing, large tensile residual stresses are generated inside parts due to shrinkage caused by metal melting and solidification during printing. This stress caused a variety of problems, such as large deformation of the printing and cracks.

SVM, on the other hand, uses the SRT method, our company patented technology, to reduce residual stress and prevent deformation and cracking defects during printing.



Fig. SVM printed product (221 mm x 146 mm x 67 mm)

③ Adoptable to plastic injection molds

With proper heat treatment, the hardness of parts can be increased to HRC 52 to 55. In addition, the amount of deformation during heat treatment is also reduced, and strength characteristics, such as tensile strength and yield strength, have achieved values equivalent to those of rolled steel SKD61 and STAVAX.

Therefore, SVM printed products can be adopted not only to die casting molds but also to plastic injection molds.

■ Inquiries

Sodick Co., Ltd. Public Relations Office
TEL: 045-942-3111