



## Паспорт материала для песчаных форм на Фурановом Связующем (Furan-Direct-Binding (FDB))

### ФОРМУЮЩИЕ МАТЕРИАЛЫ

Формующий материал	Кварцевый песок			Cerabeads
Тип	GS 14	GS 19	GS 25	Cerabeads
Средний размер частиц (µm)	140	190	250	200
Применение	Формы и стержни с высокими требованиями к поверхности	Стержни с высокой газопроницаемостью	Стержни с наивысшей газопроницаемостью	Высокая термостойкость, низкое тепловое расширение, хорошая упаковка, хорошая прочность и поверхность, альтернатива хромиту, керфалиту или циркону
Потери при литье (вес %)	1.6-1.9	1.6-1.9	1.6-1.9	1.2-1.5
Толщина слоя(µm)	300	300/400	300	300
Прочность на изгиб (N/cm <sup>2</sup> )	220-350	280-380	280-380	300-600
Газопроницаемость (l/h)	65/75	140	250	150

### ТЕХНИЧЕСКИЕ ДАННЫЕ ДЛЯ ПЕСЧАНЫХ ФОРМ

Платформа печати	4,000 x 2,000 x 1,000 мм
Формующий материал	Кварцевый песок различной дисперсности
Тип связующего	Фурановая смола холодного отверждения
Содержание связующего	Регулируемое между 0.9 - 2.1 веса %
Толщина слоя	300 – 400 µm; стандарт 300 µm
Точность	± 0,1 % (min. ± толщина слоя)
Прочность на изгиб	От 220 N/cm <sup>2</sup> (зависит от типа песка и/или связующего)

## PROCESS

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The build process is as follows: Sand pre-mixed with acid is applied to the build platform in the job box. The sand layer is smoothed out during the application process. Then a furan resin binder is printed on the sand at the locations that correspond with the cut through the component. The build platform is then lowered by one layer. The application, printing and lowering processes are repeated until the component is complete.

The job box holding the component is removed from the machine after the build process. No waiting times are required since an adequate level of unpacking strength already forms during the build process.

A strength of min. 220 N/cm<sup>2</sup> is reached at the time of unpacking (with the exception of FDB 2/90 SI). Therefore both small and large components can be unpacked safely.

Rough cleaning is carried out manually using brushes and paint brushes. More intensive cleaning is carried out using compressed air. Prior to cleaning, the components are dried in the furnace at 90°C, so that adherent particles can be removed more easily.

## APPLICATION

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FDB sand molds are extremely strong and cost-effective. Their range of characteristics makes them suitable for the production of molds and cores for casting applications. Large and small wall thicknesses are possible. The binder system allows for the safe unpacking of molds up to 4 meters long and a weight of more than 5 tonnes.

The casting behavior in metal casting is similar to that of conventional furan resin binders. The high specific strength of the binder allows for the use of low binder contents. This results in a moderate discharge of gas, which can be safely controlled by selecting the proper basic molding material.

FDB is not only used for metal casting applications. The infiltration of FDB molds is also an option. Epoxy resins result in high tensile strengths of more than 30 N/mm<sup>2</sup>. The color of the molds will change over time.

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