



TECHNICAL DATA SHEET

for the product

Grasimat artificial aggregate - granular ferro silico manganese slag

Rec. No. TL-OFZ-04/19

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1. Introduction

Grasimat artificial aggregate - granular ferro silico manganese slag (FeSiMn slag) is a solidified slag consisting of silicon, magnesium, aluminium, manganese and calcium oxides that is generated during the production of ferro silico manganese (FeSiMn).

2. Production

Grasimat artificial aggregate - granular ferro silico manganese slag is generated as a by-product during FeSiMn production. The molten slag is casted and cooled in the current of cold water which primarily generates fine granules of crushed stone in the water bath. The technological production process is included in the work procedure PŠ-16/2001- The production of Grasimat in Široká.

3. Technical Parameters

3.1 Chemical Composition and Physical Properties

Chemical/Physical Parameter	Value
SiO ₂	30.0 - 45.0 [% w/w]
CaO	10.0 - 30.0 [% w/w]
Al ₂ O ₃	8.0 - 20.0 [% w/w]
MnO	5.0 - 15.0 [% w/w]
MgO	5.0 - 15.0 [% w/w]
FeO	≤ 2.0 [% w/w]
K ₂ O	≤ 2.0 [% w/w]
Na ₂ O	≤ 2.0 [% w/w]
SO ₃	≤ 2.0 [% w/w]
Radiologic Parameters - Mass Activity Index	≤ 1 [-]
Bulk Density	635 ±100 kg/m ³

3.2 Bulk Density

The bulk density of dry Grasimat artificial aggregate - granular ferro silico manganese slag is 635.0 ±100.0 kg/m³. Grasimat artificial aggregate - granular ferro silico manganese slag is a non-wetted material and a material insoluble in water.

4. Hygiene and Health Aspects

Hygiene and health aspects are in full detail included in the Product Safety Data Sheet on Grasimat artificial aggregate - granular ferro silico manganese slag namely in Chapter 11 Toxicological Effects on health, Chapter 8 Personal Protective Equipment for ensuring health & safety and Chapter 4 First-aid Measures. artificial aggregate - granular ferro silico manganese slag is in the form of artificial aggregate. With using appropriate PPEs and adhering to intended use, proper handling and storing in accordance with Technical Data Sheet and Product Safety Data Sheet for Grasimat artificial aggregate - granular ferro silico manganese slag, the product does not pose a threat to human health.

5. Control

The manufacturer is in charge of a system control. The procedures for analyzing and control of Grasimat are included in the work procedures LAB-05/2007 - XRF Assays of Ferroalloys and Other Materials, LAB-06/2007 - Determining the Carbon and Sulphur Content in Ferroalloys and Other Materials, PVS-08/2010 - Inspection & Control of Shipments and PVS-09/2010 - Determining the Physical Properties of Products, Raw Materials and By-products.

5.1 Properties, Testing Methods and Minimum Testing Frequency under In-house Inspections:

Parameters	Testing Methods	Minimum Testing Frequency
SiO ₂	LAB-05/2007	Once a month
CaO	LAB-05/2007	Once a month
Al ₂ O ₃	LAB-05/2007	Once a month
MnO	LAB-05/2007	Once a month
MgO	LAB-05/2007	Once a month
FeO	LAB-05/2007	Once a month
K ₂ O	LAB-05/2007	Once a month
Na ₂ O	LAB-05/2007	Once a month
SO ₃	LAB-06/2007	Once a month
Radiologic Parameters - Mass Activity Index	Determined by gamma spectroscopic HPGe detector	Once a year externally
Bulk Density	PVS-09/2010	Once a year

6. Storing

Grasimat artificial aggregate - granular ferro silico manganese slag is stored at the reinforced warehousing areas on the uncovered piles.

7. Packaging & Delivery



Grasimat artificial aggregate - granular ferro silico manganese slag is delivered in bulk. When delivered in bulk, Grasimat can be transported in tilting trucks or railway cars suitable for transporting bulk materials.

8. Labeling

A delivery shall also include the product labeling according to delivery note or labeling on the cover which shall include the following:

- name of the manufacturer;
- production site;
- sort of material: Grasimat artificial aggregate - granular ferro silico manganese slag;
- form of material when delivered (bulk);
- rec. no.;
- tonnage [kg, t];
- stamp and signature of the final inspection.

9. Intended Use

Among the uses of Grasimat artificial aggregate - granular ferro silico manganese slag are the following:

- as a material for packing water, sewer and other plastic pipelines;
- as a spreading material for winter road maintenance;
- for recultivation and ground completion;
- in the cement industry for clinker production;
- for mechanical sand surfacing.