

ELLMIX Aggregate – product card

1. Manufacturer

„Elpologistyka” Sp. z o.o.

Zawada 26

28-230 Połaniec

2. Characteristics

ELLMIX aggregate is an artificial aggregate made of furnace slag, based on a mixture of ash and slag, obtained in the process of burning hard coal and co-burned material. The ELLMIX aggregate received a positive technical assessment and the suitability of the construction product as an artificial aggregate from furnace slag for unbound and hydraulically bound road materials. Thus, ELLMIX meets the requirements of the national technical assessment No. IBDiM-KOT-2020/0511 issue 2, issued by the Road and Bridge Research Institute in Warsaw. It has the form of a fine-grained material.

Due to the production process and the combination of ingredients, the following types of ELLMIX aggregate are distinguished:

- one-component K: consisting of 100% of the basic ELLMIX aggregate
- multi-component W: it is a mixture that may consist of the basic ELLMIX aggregate and supplementary components of various proportions - 10%, 15%, 35%, 50%.

3. Utility purpose

ELLMIX aggregate can be used for leveling and macro-leveling of areas, filling voids in road construction and in communication construction within the scope specified in point 2.2, taking into account the conditions of use specified in point 2.3 of the National Technical Assessment as:

Aggregate ELLMIX A1:

- for leveling bedding under pavements made of small-sized concrete and stone elements.

Aggregate ELLMIX A:

- for non-improved hard pavement implemented in the surface technology of mechanically stabilized aggregate in accordance with the requirements of PN-S-06102:1997, as a granulating aggregate,
- for layers of embankments according to the requirements of PN-S-02205:1998, as a granulating aggregate (or drying) or alone,
- for earthworks and in the construction of airfield pavements after improvement with binders,
- for the construction of the subgrade in the native soil or embankment, without improvement or after improvement with binders.

Aggregate ELLMIX B:

- for non-improved hard pavement implemented in the technology of mechanically stabilized aggregate pavement according to the requirements of PN-S-06102:1997, as a graining material or independently,
- for unbound improved subgrade with a layer thickness of 0.30 m or less for traffic load categories from KR1 to KR7 according to the Catalog of typical constructions of flexible and semi-rigid pavements, in the technology of mechanical stabilization according to PN-S-06102:1997 and WT-4 2010.

Aggregate ELLMIX P:

- for unbound subbase for traffic load categories from KR3 to KR7 according to the Catalog of typical constructions of flexible and semi-rigid pavements, in the technology of mechanical stabilization according to PN-S-06102:1997 and according to WT-4 2010 only as a graining component in addition to grain size from 0 mm up to 63mm,
- for bonded subbase for traffic load categories from KR3 to KR7 according to the Catalog of typical structures of flexible and semi-rigid pavements, in the technology of stabilization with cement or road binder according to the requirements of IBDiM Technical Approvals, National Technical Assessments, according to PN-S-96012:1997 and WT- 5 2010.



4. Physical and chemical properties

Properties	Unit	Test method	Requirement			
			A1	A	B	P
Natural humidity	%	PN-EN 1097-5	$\leq W_{opt}+2$		$\leq W_{opt}$	
Roasting loss	%	PN-EN 1744-1+A1	≤ 10	≤ 20	≤ 15	
The content of water-soluble sulfates	%		$\leq SS_{0,7}$		$\leq SS_{1,3}$	
Bulk density in loose state	Mg/m ³	PN-EN 1097-3	$\pm 0,200$			
Bulk density of grains	Mg/m ³	PN-EN 1097-6	$\geq 1,5$ i $\leq 3,0$			
Water absorption	%		-		$\leq W_{opt}$	
Fraction content below 0.063 mm	%	PN-EN 933-1	≤ 9	$0 \div 45$	$0 \div 15$	≤ 12
Direct capacity index	%	PN-EN 13286-2	≥ 10	≥ 10	≥ 20	≥ 30
Load index after soaking	%		≥ 10	≥ 10	≥ 40	≥ 60
Linear swelling with a load of 3 kN/m ²	%	PN-EN 13286-47	-	$\leq 2,0$	$\leq 0,7$	$\leq 0,5$
PH	-	PN-EN 12457-4	$6,0 \div 13,0$			
Organic ingredients	%	PN-EN 933-1	-		$\leq 0,1$	

5. Quality control and testing

All parameters are subject to systematic control in accordance with the requirements of the standards. Control tests are carried out in the manufacturer's laboratory and outsourced to accredited testing laboratories.

6. Storage and transportation

ELLMIX aggregate is stored in the warehouse of artificial aggregates. Obtained by cutting the material and forming heaps from which loading takes place. Aggregate transport by any means of transport. The material should be protected against spilling, contamination or mixing with other aggregates.