

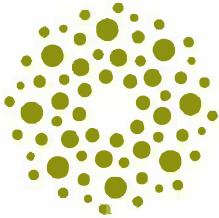


Declaration of Performance GRA-0/11-0021B 01-02-2022

According to Annex III of the Regulation (EU) No 305/2011 amended by Commissions delegated Regulation (EU) No 574/2014

1. Unique identification code	AEC-granulate 0/11 mm according to Product Specification GRA-0/11-0021B and EN 12620:2002 + A1:2008	
2. Description	GRA-0/11-0021B (Granova® GRANUMIX 0-11 mm type B)	
3. Intended use	Aggregates for concrete	
4. Manufacturer	Heros Sluiskil B.V. Oostkade 5 4541 HH SLUIISKIL (NL) telephone: +31(0)115-471258 fax: +31(0)115-472749 Email: info@heros.nl Website: www.heros.nl	
5. Name and contact address agent	Not applicable	
6. System of assessment and verification of constancy of performance	AoC-level 2+ 	Certificate of Conformity of the Factory Production Control 0958-CPR-2004/1 Date of first issue 03-01-2006
7. Activity of the notified certification body as required by the harmonized standard	The notified certification body SGS Intron Certificatie B.V. (ID-nr. 0958) carried out, under system 2+, the initial inspection of the installation and the factory production control and will also take care of the continuous surveillance, assessment and evaluation of the production control. On that basis, the certificate of conformity of production control is provided.	
8. European Technical Assessment	Not applicable	
9. Declared Performance		

	Essential characteristics	Performance (2021)	Harmonised European Standard
4.2	Aggregate size	0/11,2 mm	<div style="text-align: center;"> EN 12620:2002 + A1:2008  GRANUMIX granova® </div>
4.3	Grading (wet sieving)	See annex	
4.4	Shape of aggregate		
-	Flakiness index	F_{15}	
-	Shape index	S_{NR}	
4.5	Shell content	SC_{NR}	
4.6	Fines content	f_{11} (see annex)	
4.7	Fines quality		
-	Methylene blue value 0/2 MBT	< 1 g/kg	
-	Sand equivalent value	SE_{4NR}	
5.2	Resistance to fragmentation		
-	Los Angeles-coefficient	LA_{60}	
-	Resistance to impact	SZ_{NR}	
5.3	Resistance to wear	$M_{DE NR}$	
5.4.1	Resistance to polishing	PSV_{NR}	
5.4.2	Resistance to surface abrasion	AAV_{NR}	
5.4.3	Resistance to abrasion from studded tyres	A_{NR}	
5.5	Oven-dried particle density (Rho rd)	$2,12 \pm 0,06 \text{ * Mg/m}^3$	
	Saturated and surface dried particle density (Rho ssd)	$2,28 \pm 0,04 \text{ * Mg/m}^3$	
	Apparent particle density (Rho a)	$2,53 \pm 0,10 \text{ * Mg/m}^3$	
5.5	Water absorption (WA_{24})	$7,7 \pm 2,5 \text{ * \% mm}$	
5.6	Bulk density	$1,1 \text{ Mg/m}^3$	
5.7.1	Freeze/thaw resistance	F_{NR}	
5.7.1	Magnesium sulphate soundness	MS_{NR}	
5.7.2	Volume stability – drying shrinkage	NPD	
5.7.3	Alkali-silica reactivity	Potentieel ASR-reactief	
6.2	Chlorides	$0,29 \pm 0,13 \text{ \% m/m * **}$	
6.3.1	Acid-soluble sulphate	$AS_{1.5}$	
6.3.2	Total sulphur	S_1	
6.4.1	Constituents which alter the rate of setting and hardening of concrete	A_{40}	

10. The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued in accordance with the Regulation (EU) No 305/2011 under the sole responsibility of the manufacturer identified above.

Complementary features, not covered by EN 12620:2002 + A1:2008:

Non-hazardous waste	Eural-code 19 01 12	
Additional information (CUR 116)	Alkali-content (Na ₂ O-eq)	$0,47 \pm 0,13 \text{ \% m/m * **}$
	Metallic Al + Zn	< 1,00 % m/m
	Loss on ignition	< 5,00 % m/m
	Max. allowed percentage in concrete	40%

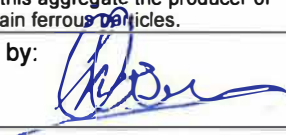
* Average value production period 2021 ± 2x standard deviation

** Content per batch on request

Due to the increased Alkali-content of this aggregate the producer of the concrete-mixture has to ensure that the final mixture to which this aggregate is added, meets the criteria as stated in the CUR recommendation 89. Due to the increased Acid soluble sulphate-content of this aggregate the producer of the concrete-mixture to which this aggregate is added, must choose a sulphate resistant cement. This aggregate can contain ferrous particles.

Sluiskil February 1st 2022



Signed for and on behalf of the manufacturer by:
 M.W. Stouten
 QHSE Manager



Declaration of Performance GRA-0/11-0021B 01-02-2022

According to Annex III of the Regulation (EU) No 305/2011 amended by Commissions delegated Regulation (EU) No 74/2014

Annex 1: grading GRA-0/11-0021B 01-02-2022

1. Unique identification code	AEC-granulate 0/11 mm according to Product Specification GRA-0/11-0021B and EN 12620:2002 + A1:2008			
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5. Name and contact address agent	Not applicable			
6. System of assessment and verification of constancy of performance	AoC-level 2+ 	Certificate of Conformity of the Factory Production Control 0958-CPR-2004/1 Date of first issue 03-01-2006		
7. Activity of the notified certification body as required by the harmonized standard	The notified certification body SGS Intron Certificatie B.V. (ID-nr. 0958) carried out, under system 2+, the initial inspection of the installation and the factory production control and will also take care of the continuous surveillance, assessment and evaluation of the production control. On that basis, the certificate of conformity of production control is provided			
8. European Technical Assessment	Not applicable			
9. Declared Performance				
	Essential characteristics	Performance (2021)	Harmonised European Standard	
4.3 Grading (wet sieving according to NEN-EN 933-1)	See below	EN 12620:2002+ A1:2008		
Sieve size (mm)	Grading requirements – percentage passing by mass			90% of the results comply with the following limits for percentage passing by mass
	General for "all-in" - aggregate (table 2 – GA90)	Average	Limits relative to average "all-in"- aggregate (table 6)	
31,5		100		100-100
22,4	100	100		100-100
16	98-100	100		100-100
14		99,9		99,8-100
12,5		99		99-100
11,2	90-99	98		97-99
10		94		91-96
8		82		77-87
6,3		68		61-74
5,6		60	50-90	54-67
5		54		48-60
4		42		37-48
2		20	20-60	17-23
1		15		12-17
0,5		12		10-15
0,25		10		8-12
0,125		7		5-9
fines		5		3-7
10. The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued in accordance with the Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.				
Due to the increased Alkali-content of this aggregate the producer of the concrete-mixture has to ensure that the final mixture to which this aggregate is added, meets the criteria as stated in the CUR recommendation 89. Due to the increased Acid soluble sulphate-content of this aggregate the producer of the concrete-mixture to which this aggregate is added, must choose a sulphate resistant cement. This aggregate can contain ferrous particles.				
Sluiskil February 1 st 2022	Signed for and on behalf of the manufacturer by: M.W. Stouten QHSE Manager 