

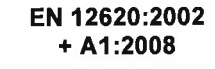




Declaration of Performance GRA-0/11-0012C 01-02-2022

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-0/11-0012C and EN 12620:2002 + A1:2008	
2. Description	GRA-0/11-0012C (Granova® GRANUMIX 0-11 mm type C)	
3. Intended use	Aggregates for concrete	
4. Manufacturer	Heros Sluiskil B.V. Oostkade 5 4541 HH SLUISKIL (NL) telefoon: +31(0)115-471258 fax: +31(0)115-472749 Email: info@heros.nl Website: www.heros.nl	 WORKING FOR THE FUTURE
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	  EN 12620:2002 + A1:2008 
4.3 Grading (wet sieving)	All-in GA90	
4.4 Shape of aggregate		
- Flakiness index	Fl ₁₅	
- Shape index	S _{1NR}	
4.5 Shell content	SC _{NR}	
4.6 Fines content	f ₁₁ (see annex)	
4.7 Fines quality		
- Methylene blue value 0/2 mm 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 ± 0,09 Mg/m ³ *	
Saturated and surface dried particle density (Rho ssd)	2,29 ± 0,07 Mg/m ³ *	
Apparent particle density (Rho a)	2,54 ± 0,11 Mg/m ³ *	
5.5 Water absorption (WA ₂₄)	7,7 ± 2,6 % m/m*	
5.6 Bulk density	1,1 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	0,30 ± 0,12 % 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)	0,49 ± 0,18 % 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



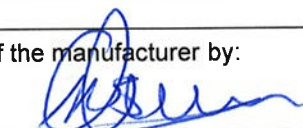
Due to the increased Alkali-content of this aggregate the producer of the concrete-mixture has to ensure that the final mixture to which this aggregate is added, meets the criteria as stated in the CUR recommendation 89. Due to the increased Acid soluble sulphate-content of this aggregate the producer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

Sluiskil February 1 st 2022	Signed for and on behalf of the manufacturer by: M.W. Stouten QHSE Manager
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Declaration of Performance GRA-0/11-0012C 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-0/11-0012C 01-02-2022

1. Unique identification code	AEC-granulate 0/11 mm according to Product Specification GRA-0/11-0012C and EN 12620:2002 + A1:2008			
2. Description	GRA-0/11-0012C (Granova® GRANUMIX 0-11 mm type C)			
3. Intended use	Aggregates for concrete			
4. Manufacturer	Heros Sluiskil B.V. Oostkade 5 4541 HH SLUISKIL (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	
4.3 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 – G_{A90})	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		99,5		99-99,9
11,2	90-99	98		97-99
10		94		93-96
8		83		80-87
6,3		69		65-74
5,6		62	50-90	57-67
5		56		52-61
4		45		40-49
2		22	20-60	20-24
1		16		14-18
0,5		13		11-15
0,25		11		9-13
0,125		8		6-10
fines		6		4-8
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 <div style="text-align: right; margin-top: 10px;">  </div>		