

Report No. 0889/5e/20

Date: 22.03.2021/Lo/gie

Client: DC Seljestokken Aggregates AS
Seljestokken
N-6723 Svelgen

Order: **Quality monitoring of aggregates for EN 13450**
“Aggregates for railway ballast”

Production plant: DC Seljestokken Aggregats AS, Seljestokken, Norway

Origin: Seljestokken, Norway

Material: Greywacke

Trademark: Fjordstone

Grading: 31,5/50 mm

Sampling: by client

Sampling point: Stockpile

Sample receipt: 28.01.2021

Requirements: EN 13450:2002/AC:2004

This report includes 7 pages.

1. Laboratory tests

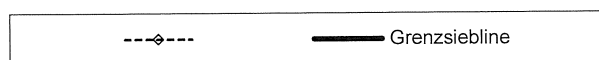
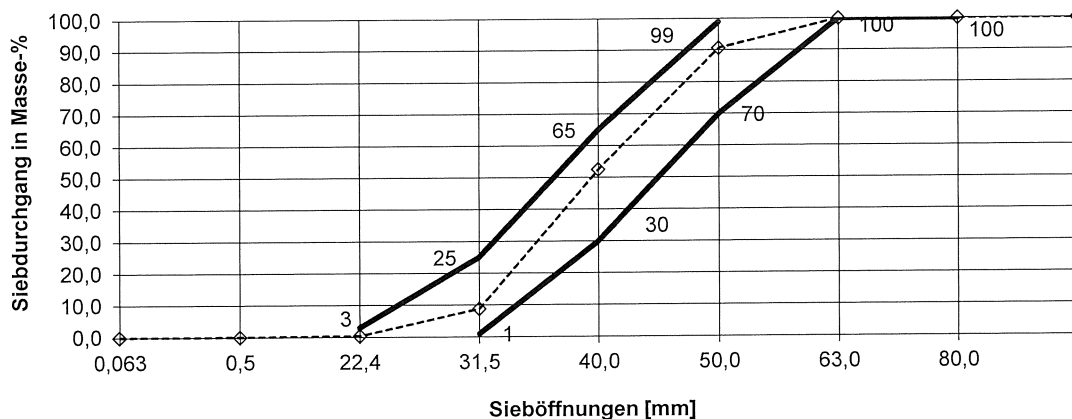
The laboratory tests were performed according to the test methods specified in EN 13450: 2002/AC: 2004.

Comply with the requirements of EN 13450.

1.1 Grading

Test method: EN 933-1:2012 (washing and sieving)

sieve mm	sieve passage M.-%	
	value	set
22,4	0,5	0 - 3
31,5	9	1 - 25
40,0	53	30 - 65
50,0	91	70 - 99
63,0	100	100
80,0	100	100
31,5-50,0	91	≥ 50



Set category:..... A

Value Category: A

Deviation: no

Assessment: conform to the requirement

1.2 Fines content ($\leq 0,5$ mm)

Test method: EN 933-1:2012

Feature	value [M.-%]	set [M.-%]
Fines content $\leq 0,5$ mm	0,1	$\leq 0,6$

Set Category: A

Value Category: A

Deviation: no

Assessment: conform to the requirement

1.3 Fines Content ($\leq 0,063$ mm)

Test method: EN 933-1:2012

Feature	value [M.-%]	set [M.-%]
Fines content $\leq 0,063$ mm	0,0	$\leq 0,5$

Set Category: A

Value Category: A

Deviation: no

Assessment: conform to the requirement

1.4 Particle shape

1.4.1 Flakiness index

Test method: EN 933-3:2012

Feature	value [M.-%]	set [M.-%]
Flakiness index FI	6	≤ 15

Set Category: FI₁₅

Value Category: FI₁₅

Deviation: no

Assessment: conform to the requirement

1.4.2 Shape index

Test method: EN 933-4:2008

Feature	value [M.-%]	set [M.-%]
Shape index SI	11	5 - 30 M.-%

Set Category: SI_{5/30}

Value Category: SI_{5/30}

Deviation: no

Assessment: conform to the requirement

1.5 Particle length > 100 mm

Test method: EN 13450:2002/AC:2004

Feature	value [M.-%]	set [M.-%]
Particle length > 100 mm	0,2	≤ 4

Set Category: A

Value Category: A

Deviation: no

Assessment: conform to the requirement

1.6 Resistance to fragmentation

1.6.1 Los-Angeles-coefficient

Test method: EN 1097-2:2020 and EN 13450:2002/AC:2004, annex C

Feature	value [%]	set [%]
LA-coefficient	12	≤ 12

Set category: LA_{RB} 12

Value Category: LA_{RB} 12

Deviation: no

Assessment: conform to the requirement

1.6.2 Impact value

Test method: EN 1097-2:2020 and EN 13450:2002/AC:2004, annex D

Feature	value [%]	set [%]
Impact value SZ _{RB}	9	≤ 14

Set category:..... SZ_{RB} 14

Value Category: SZ_{RB} 14

Deviation:..... no

Assessment: conform to the requirement

1.7 Resistance to wear

1.7.1 Micro Deval Coefficient

Test method: EN 1097-1 and EN 13450, annex E

Feature	value [%]	set [%]
Micro Deval Coefficient M _{DE} RB	7	≤ 7

Set category:..... M_{DE} RB 7

Value Category: M_{DE} RB 7

Deviation:..... no

Assessment: conform to the requirement

1.8 Thermal and weathering properties

1.8.1 Water absorption

Test method: EN 1097-6:2013, annex B

Feature	value [M.-%]	set [M.-%]
Water absorption WA _{cm}	0,2	≤ 0,5

Deviation:..... no

Assessment: conform to the requirement

1.8.2 Magnesium sulfate test

Test method: EN 1367-2:200 and EN 13450:2002/AC:2004, annex G

Feature	value [M.-%]	set [M.-%]
Particle loss	0,3	-

Deviation: no

Assessment:..... no requirement

1.9 Density

Test method: EN 1097-6:2013, annex B

Feature	value [Mg/m ³]	set [Mg/m ³]
Density ρ_{cm}	2,73	-

Deviation: no

Assessment:..... no requirement

1.10 Purity / Quality**1.10.1 Foreign material content**

The sample does not contain any organic contamination or any clayey or marly material

(EN 13450:2002/AC:2004, clause 8).

2. Assessment

The tested parameters of the material can be categorized according EN 13450: 2002 / AC: 2004 as follows:

	<u>Category</u>
• Grading	A
• Fines content ($\leq 0,5$ mm)	A
• Fines content ($\leq 0,063$ mm)	A
• Flakiness indes	FI ₁₅
• Shape index	SI _{5/30}
• Particle lenght	A
• Los-Angeles-Coefficient	LA _{RB} 12
• Impact value	SZ _{RB} 14
• Micro Deval Coefficient	M _{DE} RB 7
• Thermal and weathering properties	conform to requirement
• Density	2,73 Mg/m ³
• Purity / Quality	conform to requirement

a s p h a l t - l a b o r
Arno J. Hinrichsen GmbH & Co.


 Dipl.-Ing. Steiniger
 lab management