

Test certificate for cement according to DIN EN 197-1

HEIDELBERGCEMENT

HeidelbergCement AG

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cement type: **Portland cement CEM I 52,5 N
Milke classic**

Date of issue: **31st March 2020**

Period of analysis: **01.01.2019 to 31.12.2019**

Origin or manufacturer: **HeidelbergCement AG, plant Milke Geseke**

Chemical and mineral compositions:

Loss on ignition	1.9	%
Insoluble residue	[0.8]	%
SiO ₂	23.2	%
Al ₂ O ₃	4.0	%
TiO ₂	0.2	%
Mn ₂ O ₃	0.1	%
P ₂ O ₅	0.1	%
Fe ₂ O ₃	1.5	%
CaO	65.0	%
MgO	0.8	%
SO ₃	2.8	%
S		%
K ₂ O	0.7	%
Na ₂ O	0.2	%
PbO		%
ZnO	0.0	%
Cl	< 0.1	%
Remainder	0.0	%

Ca-M	2.2	
Si-M	4.3	
T-M	2.7	
P1		
P2		
P3		
F-III		
Lime standard	89.6	
free CaO	0.3	%
C ₃ S	52.3	%
C ₂ S	27.1	%
C ₃ A	8.0	%
C ₄ AF	4.4	%
C ₂ F		%
Na ₂ O-equivalent	0.7	%

H ₂ O		%
Hydate water		%
CaSO ₄ * 2H ₂ O		%
CaSO ₄		%
CaCO ₃		%
CO ₂		%
Brightness	35.0	
Fineness		cm ² /g
heat of hydration		J/g
Slag/trass/fly-ash/limestone		%
Bulk density		kg/dm ³

Total	100.5	%
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Remark:

Low chromate according to Directive 2003/53/EC

Our cement meets the requirement of DIN EN 197-1.

The values listed here are only individual results of our own monitoring in the past.

We would like to point out that the stated values do not represent any quality guarantees.

i.v. 

Leiter Qualität Ennigerloh/Geseke/Paderborn

ECHT. STARK. GRÜN.

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Grinding fineness					
Grinding finess residue 200 µm	%		Blaine value	cm ² /g	3,480
Grinding finess residue 90 µm	%	0.4			

Setting			Volume stability		
Water requirement (NST)	%	28.3	cook attempt		
Start of setting	min	200	Le Chatelier	mm	0.1
End of setting	min	250			

Chemical analysis					
Loss of ignition	%	1.9	SO ₃	%	2.8
Insoluble residue	%	[0.8]	Slag/trass/fly-ash/limestone	%	

Compressive strengths					
after 1 day		13.3			
after 2 days	MPa	26.0	after 28 days	MPa	63.5

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