

polysius® lab services

Eidsvold Siltstone Pty Ltd.

2020 | Christian Wohlgemuth-Kalb
thyssenkrupp Industrial Solutions Cement Technology

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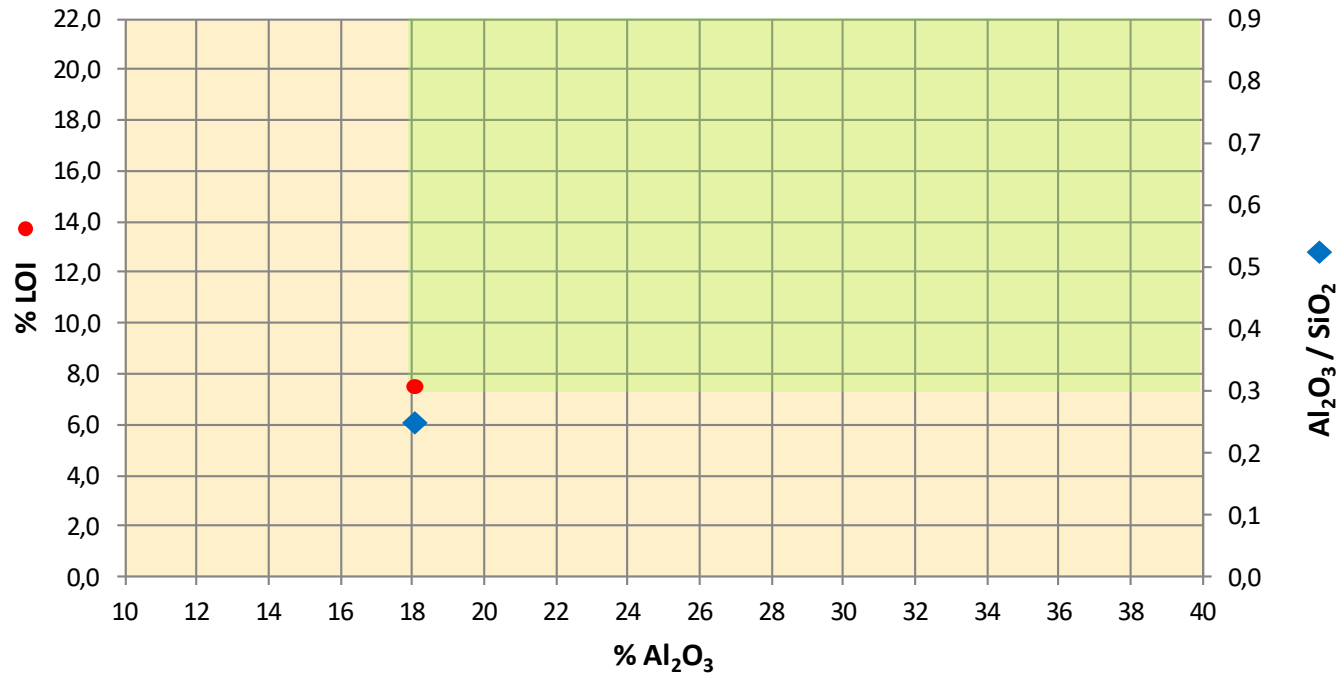


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Chemistry analyzed at tkIS: XRF

polysius® lab services: first assessment of the material from Eidsvold Siltstone Pty Ltd.

Evaluation	Grey
Quality	Green



minimum requirements

- 1 **Al₂O₃**
- 2 **Al₂O₃ / SiO₂**
- 3 **LOI**

How should the results provided by the customer be assessed?



The loss on ignition (LOI) allows an initial assumptions to be made as to whether clay minerals are present in the raw clay. Note: other minerals may also have a loss on ignition. The Al₂O₃ is 18% in the sample and indicates a lower clay content. The very low iron content is good for the color of the calcined material.

Sample	LOI (%)	SiO ₂ (%)	Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	Mn ₂ O ₃ (%)	TiO ₂ (%)	CaO (%)	MgO (%)	P ₂ O ₅ (%)	K ₂ O (%)	Na ₂ O (%)
Alumino Silicate Powder	7.32	72.24	18.17	0.81	0.01	0.82	0.12	0.13	0.10	0.37	0.04

first indicator: LOI

decisive for the color: Fe₂O₃

at first view, the clay is just outside the range of minimum requirements for activated clays.



Chemistry analyzed at tkIS: XRD

polysius® lab services: first assessment of the material from Eidsvold Siltstone Pty Ltd.

Evaluation	<div style="width: 50%; height: 10px; background-color: #ccc;"></div>
Quality	<div style="width: 100%; height: 10px; background-color: #008000;"></div>

Sample	Kaolinite	Illite	Muscovite	Quartz	Anatase	amorphous
Alumino Silicate Powder	30	5	2	53	1	9

Clay minerals which need to be activated

How should the results provided by the customer be assessed?



The samples contain mainly of Kaolinite and Quartz. Through the calcination Metakaolinite is build, a mineral with pozzolanic activity.

The amorphous content exists of nanocrystallin clay minerals, in this case Kaolinite.

The high Quartz content can lead to high wear rates (further tests necessary).

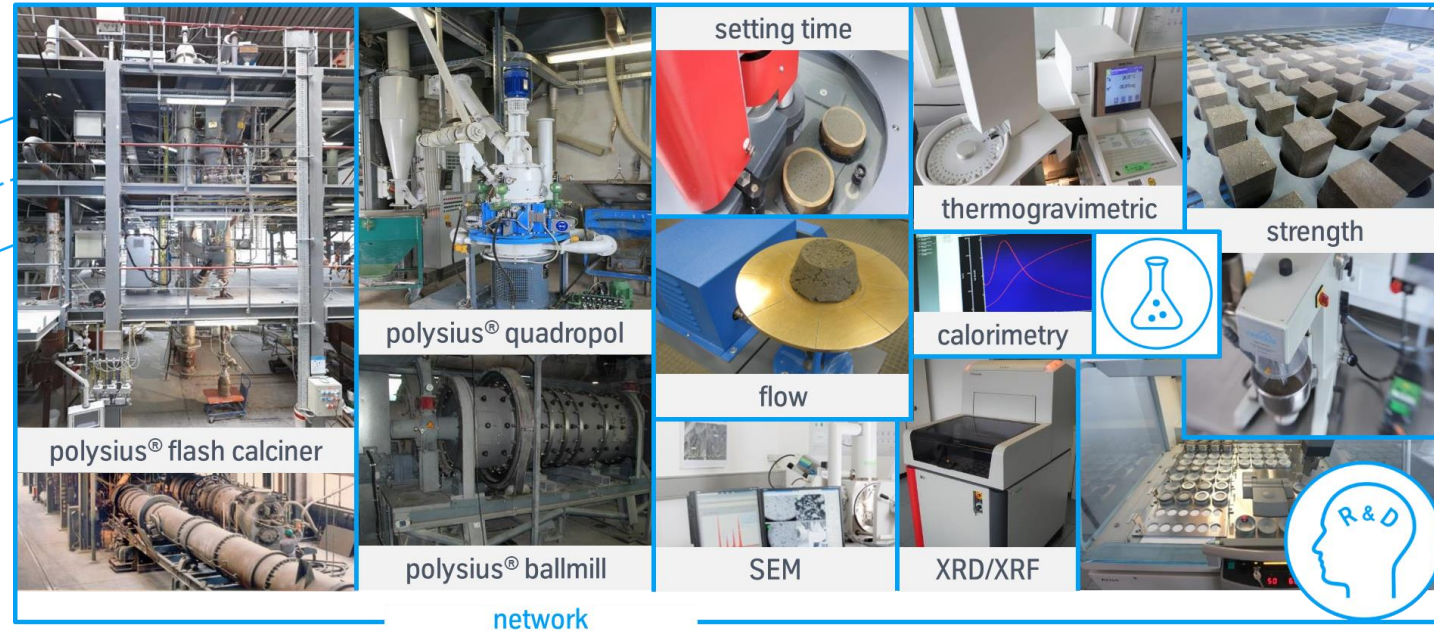
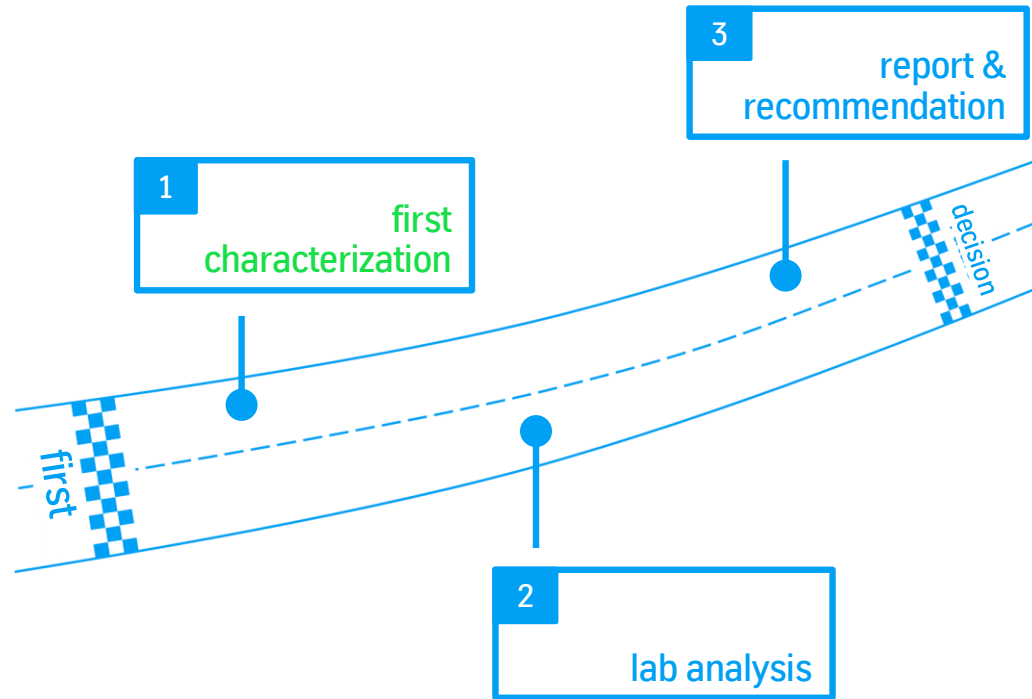
at first view, on the mineralogy the clay shows the potential to be used as an activated clay. In combination with XRF, further tests are necessary



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reliable data for your application

our 360° approach in the field of activated clay and other SCMs



testing & research to get the most out of your applications | contact us: labor-ml.tkis@thyssenkrupp.com

