

Lindabrunn

Lindabrunner Konglomerat

Lindabrunner Stein

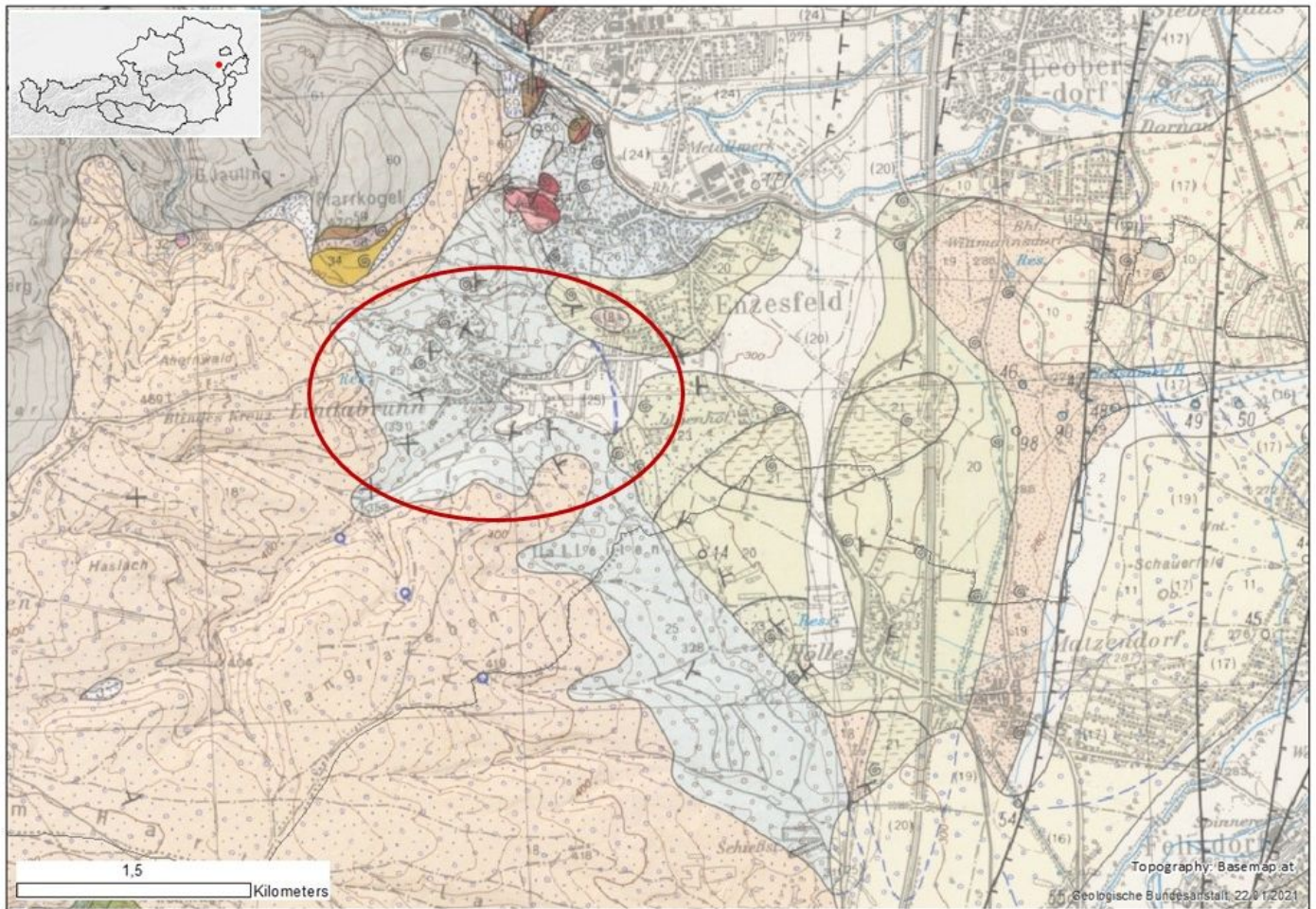


4 cm

Short description: beige-grey to light-reddish conglomerate with carbonatic cement; components consist mainly of rounded, calcareous boulders and have diameters of 1 to 5 cm; hollows from dissolved dolomite pebbles and cobbles are a characteristic feature

Commodity (vocabulary)	Lithology (vocabulary)	Typical colour (code list)	Place of origin			
			Country	County / District / Province	Municipality / Community	Place/town / Village
Commercial Sandstone	Conglomerate	Beige	Austria	Baden / Niederösterreich (Lower Austria)	Enzesfeld – Lindabrunn	Lindabrunn

Geological setting



Geology: The Lindabrunn Conglomerate (light blue signature with grey circles on the map) occurs in a narrowly defined area around the village of Lindabrunn on the western margin of the southern Vienna Basin (Lower Austria). It was formed in a high-energy, fluvatile-influenced, marine margin area. The individual conglomerate beds can be several metres thick. Interbedded are reddish calcarenites and clay marls.

Production: Quarrying of the Lindabrunn conglomerate is currently limited to a narrow area west of Lindabrunn (red marking). However, the rock was already used in Roman times and later in the Middle Ages, most probably from the same source area.

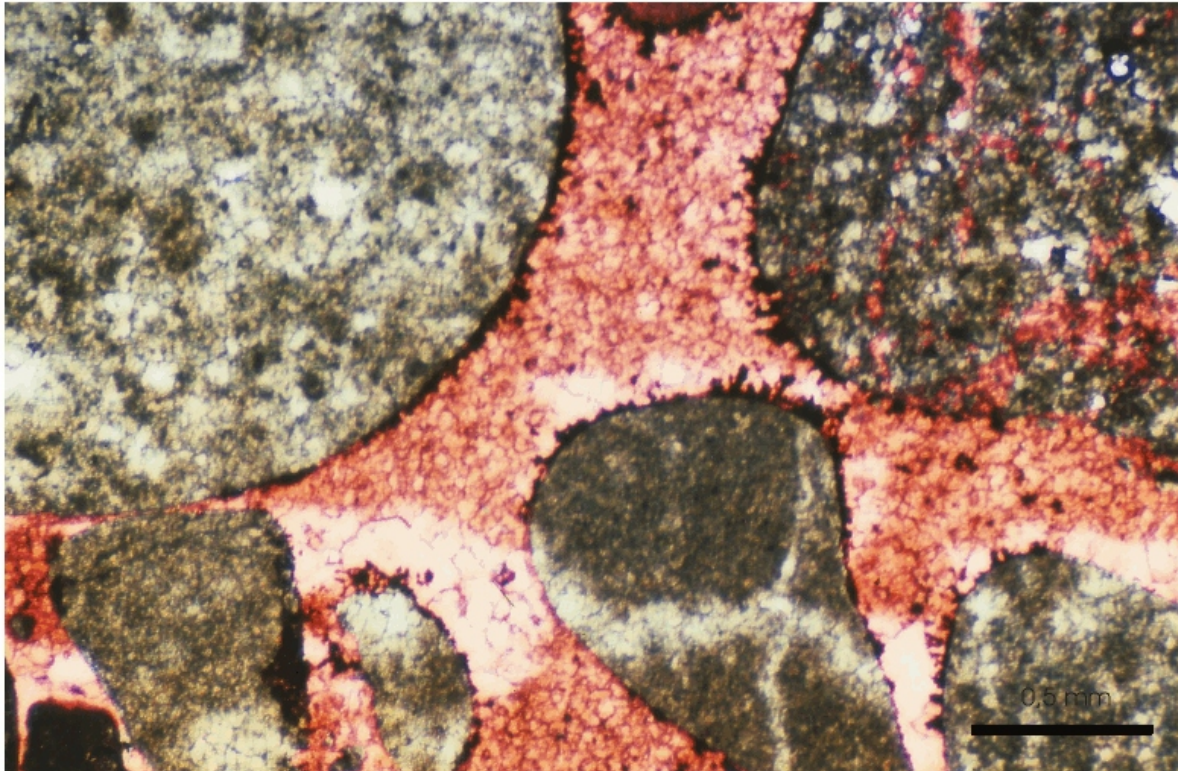
Geological age: Middle Miocene, Badenian ("Rotalienzone", impoverished zone)

Geological unit: Lindabrunner Konglomerat

Application, use and heritage

Description: The Lindabrunn conglomerate was widely used in the 19th and 20th centuries – for instance for aqueducts of the 1st Vienna High Spring Water Pipeline, for the construction of the Vienna City Hall (slabs), for buildings and monuments in Vienna in the 1920s and 1930s and later for the cladding of highway bridges and underground stations, for floor slabs and as a raw material for sculptures. Furthermore, it was used for restoration work, for example on the Vienna Neustadt Cathedral.

Petrography



Description: Dolomitic components are cemented by sparry calcitic cement. The stained thin section (calcite turns red, dolomite remains grey) shows different stages of dedolomitisation. In the component in the upper right corner of the picture, calcification has already begun. Other dolomitic components, however, are still intact. The dendritic oxides growing away from the components are noticeable. Some of the components show planar grain contacts.

Source of information: Rabeder, 2001

Mineral composition

If no accurate number, use MM=main minerals, SM = Subordinate minerals, AM=accessory minerals

Mineral 1 (%)	Mineral 2 (%)	Mineral 3 (%)	Mineral 4 (%)	Mineral 5 (%)	Mineral 6 (%)	Mineral 7 (%)
Mineral 8 (%)	Mineral n (%)					

Source of information:

Physical properties

Apparent density (EN 1936) kg/m ³	Open porosity (EN 1936) % vol	Water absorption at atmospheric pressure (EN 13755) % wt	Uniaxial Compressive strength (EN 1926) MPa	Flexural strength under concentrated load (EN 12372) MPa

Real density (EN 1936) kg/m ³	Total porosity (EN 1936) % vol	Water absorption coefficient by capillary (EN 1925) (g/m ² x s ^{0,5})	Flexural strength under constant moment (EN 13161) MPa

Frost resistance (EN 12371)				
Technological Test (Test A)				Identification Test (Test B): Number of cycles completed prior to stone failure
Flexural strength (EN 12372) after freeze-thaw cycling, MPa	Number of cycles	Uniaxial compressive strength (EN 1926) after freeze-thaw cycling, MPa	Number of cycles	

Resistance to ageing by thermal shock (EN 14066)			
Change in dynamic modulus of elasticity (increase: +; decrease: -) %	Change in open porosity (increase: +; decrease: -) %	Change in ultrasound pulse velocity (increase: +; decrease: -) %	Change in flexural strength under conc. load (increase: +; decrease: -) %

Abrasion resistance (EN 14157)			Resistance to salt crystallisation (EN 12370)	Breaking load at dowel hole (EN 13364)	
Method A - Wide Wheel Abrasion Test, mm	Method B - Böhme Abrasion Test, cm ³ / 50cm ²	Method C - Amsler Abrasion Test, mm	Change in mass (increase: +; decrease: -), %	Breaking load, N	Thickness of the test specimens, mm

Slip resistance by means of the pendulum tester (EN 14231 / CEN/TS 16165)			Rupture energy (EN 14158), Joule	Thermal Conductivity (EN 1745), W/m·K
Tested surface finish	Slip Resistance Value — SRV			
	Dry test condition	Wet test condition		

Source of information:

Chemical properties

Main elements

SiO ₂ (%)	Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	TiO ₂ (%)	MgO (%)	CaO (%)	Na ₂ O (%)	K ₂ O (%)	MnO (%)	P ₂ O ₅ (%)	SO ₃ (%)	LOI (%)

Trace elements

V (ppm)	Cr (ppm)	Mn (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)
Sr (ppm)	Cd (ppm)	Ba (ppm)	Pb (ppm)	Be (ppm)	Rb (ppm)	Bi (ppm)	U (ppm)
Sc (ppm)	Y (ppm)	Th (ppm)	Sb (ppm)	Ta (ppm)	Nb (ppm)	Zr (ppm)	Sn (ppm)
Ag (ppm)	B (ppm)	Mo (ppm)	W (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Cs (ppm)
Tl (ppm)							

REE

La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)		

Methods applied and source of information:

Sources of more information

Type of information	Name of provider	URL
This data sheet	Geological Survey of Austria (GBA)	https://www.geologie.ac.at
Non-commercial directory		
Commercial directory		
Scientific publication		
Other publication		

Brix, F. & Plöchl, B. mit Beiträgen von Fuchs, G., Trimmel, H. & Boroviczeny, F. (1988): Erläuterungen zur Geologischen Karte der Republik Österreich Blatt 76 Wiener Neustadt.- 85 S., 7 Abb., 4 Tab., Geologische Bundesanstalt, Wien.

Rabeder, J. (2001): Zur Sedimentologie und Geologie der Randfazies des Wiener Beckens: Das Lindabrunner Konglomerat.- vi + 119 S., Unveröff. Diplomarbeit, Universität Wien, Wien.

Rohatsch, A. (1998): Die jungtertiären Bau- und Dekorgesteine von Wien, Niederösterreich und dem Burgenland.- 62 S., Mitteilungen IAG BOKU, Reihe Angewandte Geowissenschaften, Wien.

Picture of stone surfaces: Source: Kieslinger-Archive, Geological Survey of Austria, Wien

Geological map: Brix, F. & Plöchl, B. (1982): Geologische Karte der Republik Österreich 1:50.000 Blatt 76 Wiener Neustadt.- 1 Bl., Geologische Bundesanstalt, Wien.

Topographic map: Basemap.at (<https://basemap.at>)

Compiled by:	Geological Survey of Austria (GBA) https://www.geologie.ac.at	 Geologische Bundesanstalt
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