

**Biostratigraphy:** *australis*, *ensensis*, *triangularis* and *crepida* conodont zones (SCHULZE, 1968; MOSHAMMER, 1989: Fig. 10).

**Thickness:** Approx. 250 m (according to KUPSCH et al., 1971).

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Bronteus Limestone (conformable contact).

**Overlying unit(s):** Limestones (unconformable contact).

**Lateral unit(s):** Seeland Crinoidal Limestone.

**Geographic distribution:** Karavanke Mountains (Eisenkappel and Seeberg area).

**Remarks:** -

**Complementary references:** PENECKE (1887), TESSENSOHN (1974a), SCHÖNLAUB (1979), MOSHAMMER (1987), RANTITSCH (1990, 1992b), FENNINGER & HUBMANN (1994), SCHÖNLAUB & HISTON (1999, 2000), HUBMANN et al. (2003).

### Seeland Crinoidenkalk / Seeland Crinoidal Limestone

THOMAS J. SUTTNER

**Validity:** Invalid; first recognized by LIPOLD (1856a); named by FRECH (1894a); lithological and biostratigraphic investigations by SCHULZE (1968), TESSENSOHN (1974b) and MOSHAMMER (1989, 1990).

**Type area:** ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

**Type section:** -

**Reference section(s):** Grosser Pasterk (N 46°26'24" / E 14°32'31"), Kleiner Pasterk-Pasterkhube (N 46°26'12" / E 14°32'45"), Paulitsch Wand (N 46°25'10" / E 14°34'40"), Plasnik (N 46°26'05" / E 14°34'54"), Sadonig Höhe (N 46°26'12" / E 14°35'42"), Storschitz (N 46°25'46" / E 14°31'33") published by TESSENSOHN (1974b); Trögen Klamm section-group B (N 46°28'00" / E 14°30'24"), C (N 46°27'59" / E 14°35'03"), E (N 46°28'00" / E 14°30'30"), F1 (N 46°28'02" / E 14°30'12"), F2 (N 46°28'01" / E 14°30'18") published by MOSHAMMER (1989, 1990).

**Derivation of name:** After lithological characters of the unit at the Seeland section (FRECH, 1894a).

**Synonyms:** Gailthaler Schichten [partim] (LIPOLD, 1856a); Seeländer Storžič (TELLER, 1886b); Seeländer Krinoidenbrekzie (FRECH, 1894a); graublaue Krinoidenbrekzienkalke und graublaue splitterige Kalke (HERITSCH, 1927d); Krinoiden- und Korallenkalk (SCHULZE, 1968); grauer Riffkalk (mit Krinoiden und Korallen) (SCHULZE, 1968); Crinoidenkalke (TESSENSOHN, 1974b); Seeländer Crinoidenbreccie (SCHÖNLAUB, 1979); Slump aus Flaserkalk und sparitischen Schuttkalk (MOSHAMMER, 1990: Fig. 2).

**Lithology:** Bioclastic limestone.

**Fossils:** Conodonts, crinoids, corals, stromatoporoids.

**Origin, facies:** Marine limestone, neritic unit, fore reef facies (SIEWERT, 1984).

**Chronostratigraphic age:** Emsian–Frasnian.

**Biostratigraphy:** *serotinus* and *patulus* conodont zones (MOSHAMMER, 1989).

**Thickness:** Approx. 200 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Bronteus Limestone (conformable contact).

**Overlying unit(s):** Limestones (unconformable contact).

**Lateral unit(s):** Reef Limestone; Seeberg Coral-Crinoidal Limestone.

**Geographic distribution:** Karavanke Mountains (Eisenkappel and Seeberg area).

**Remarks:** -

**Complementary references:** PENECKE (1887), TESSENSOHN (1974a), SCHÖNLAUB (1979), MOSHAMMER (1987), RANTITSCH (1990, 1992b), SCHÖNLAUB & HISTON (1999, 2000).

### Seeberger Korallen-Crinoidenkalk / Seeberg Coral-Crinoidal Limestone

THOMAS J. SUTTNER

**Validity:** Invalid; first recognized by LIPOLD (1856b); named by STACHE (1884); lithological and biostratigraphic investigations by SCHULZE (1968), TESSENSOHN (1974b) and MOSHAMMER (1989, 1990).

**Type area:** ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

**Type section:** -

**Reference section(s):** Grosser Pasterk (N 46°26'19" / E 14°32'29"), Jeritsch-Felsen (N 46°24'52" / E 14°32'37"), south of Storschitz (N 46°25'29" / E 14°31'24") published by TESSENSOHN (1974b); Trögen Klamm section-group B (N 46°28'00" / E 14°30'24"), C (N 46°27'59" / E 14°35'03"), E (N 46°28'00" / E 14°30'30"), F1 (N 46°28'02" / E 14°30'12"), F2 (N 46°28'01" / E 14°30'18") published by MOSHAMMER (1989, 1990).

**Derivation of name:** After coral and crinoid bearing limestones in the surroundings of Seeberg Pass (STACHE, 1884).

**Synonyms:** Gailthaler Kalk (LIPOLD, 1856b: p. 350); Seeberger Korallen- und Crinoidenkalk (STACHE, 1884: Tab. at end of publication); Crinoiden- und Korallenkalke (TELLER, 1886a); Korallenkalke und Crinoidenkalkbreccien (TELLER, 1886b); Seeberger Riffkalke (TELLER, 1886b); Riffkalke des Seeberges (TELLER, 1886c); grauer spätiger Kalk des Mitteldevon (SCHULZE, 1968); Riff- und Riffschuttkalk (KUPSCH et al., 1971); Korallenkalke (TESSENSOHN, 1974b); "Riff-Rudstone" (MOSHAMMER, 1990: p. 574).

**Lithology:** Coral limestone with crinoidal limestone interbedded.

**Fossils:** Brachiopods, conodonts, corals, crinoids, ostracods, stromatoporoids.

**Origin, facies:** Marine limestone, neritic unit, reef core facies (compare SIEWERT, 1984).

**Chronostratigraphic age:** Emsian–Famennian.

**Biostratigraphy:** *australis* and *ensensis* conodont zones (MOSHAMMER, 1989).

**Thickness:** Approx. 250 m (following KUPSCH et al., 1971).

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

# Austrian Stratigraphic Chart 2004 - Paleozoic

(sedimentary successions)

Austrian Stratigraphic Commission



ERA	SYSTEM / PERIOD / SERIES / EPOCH	STAGE / AGE	DURATION Ma	Global Classification					
				ERATHM / ERA	SYSTEM / PERIOD / SERIES / EPOCH				
PALEOZOIC	PERMIAN	CHANGHSINGIAN / Dorashanian	251	PERMIAN	MID PERMIAN / GUADALUPIAN / LOPINGIAN				
		WUCHIAPINGIAN / Dzhulfian	255						
		CAPITANIAN	260						
		WORDIAN	265						
		ROADIAN	270						
		PERMIAN	LOWER PERMIAN / CISURALIAN			KUNGURIAN	275		
						ARTINSKIAN	280		
						SAKMARIAN	285		
						ASSELIAN	290		
		PERMIAN	UPPER PERMIAN / CARBONIFEROUS / PENNSYLVANIAN			GZHELIAN	295	PERMIAN	LOWER PERMIAN / CISURALIAN
KASIMOVIAN	300								
MOSKOVIAN	305								
BASHKIRIAN	310								
PERMIAN	UPPER PERMIAN / CARBONIFEROUS / PENNSYLVANIAN			SERPUKHOVIAN	315				
				VISEAN	320				
					325				
PERMIAN	LOWER PERMIAN / MISSISSIPPIAN			TOURNAISIAN	330	PERMIAN	LOWER PERMIAN / MISSISSIPPIAN		
				335					
				340					
		345							
		350							
		355							
		359.2							
		PERMIAN	UPPER DEVONIAN	FAMENNIAN	360			PERMIAN	UPPER DEVONIAN
				FRASNIAN	365				
				370					
375									
380									
385									
390									
395									
400									
405									
PERMIAN	LOWER DEVONIAN	EMSIAN	410	PERMIAN	LOWER DEVONIAN				
		PRAGIAN	415						
		LOCHKOVIAN	420						
		425							
		430							
		435							
		440							
		443.7							
		445							
		PERMIAN	UPPER ORDOVICIAN			HIRNANTIAN	447	PERMIAN	UPPER ORDOVICIAN
450									
455									
460									
465									
470									
475									
480									
485									
488.3									
PERMIAN	MIDDLE ORDOVICIAN	TREMACIAN	490	PERMIAN	MIDDLE ORDOVICIAN				
		495							
		500							
		505							
		510							
		515							
		520							
		525							
		530							
		535							
PERMIAN	LOWER ORDOVICIAN	PAIBIAN	540	PERMIAN	LOWER ORDOVICIAN				
		545							
		550							
		555							
		560							
		565							
		570							
		575							
		580							
		585							
CAMBRIAN	UPPER CAMBRIAN	488.3	CAMBRIAN	UPPER CAMBRIAN					
		490							
		495							
		500							
		505							
		510							
		515							
		520							
		525							
		530							
CAMBRIAN	MIDDLE CAMBRIAN	535	CAMBRIAN	MIDDLE CAMBRIAN					
		540							
		545							
		550							
		555							
		560							
		565							
		570							
		575							
		580							
CAMBRIAN	LOWER CAMBRIAN	585	CAMBRIAN	LOWER CAMBRIAN					
		590							
		595							
		600							
		605							
		610							
		615							
		620							
		625							
		630							
CAMBRIAN	UPPER CAMBRIAN	635	CAMBRIAN	UPPER CAMBRIAN					
		640							
		645							
		650							
		655							
		660							
		665							
		670							
		675							
		680							
CAMBRIAN	MIDDLE CAMBRIAN	685	CAMBRIAN	MIDDLE CAMBRIAN					
		690							
		695							
		700							
		705							
		710							
		715							
		720							
		725							
		730							
CAMBRIAN	LOWER CAMBRIAN	735	CAMBRIAN	LOWER CAMBRIAN					
		740							
		745							
		750							
		755							
		760							
		765							
		770							
		775							
		780							



- Legend**
- pelagic, offshore, siliciclastic
  - pelagic, nearshore, calcareous
  - shallow marin, neritic
  - terrestrial-continental, coarse clastic
  - terrestrial-continental, fine clastic
  - evaporite (chloride, sulphate)
  - rhyolite, dacite
  - (basaltic) andesite, trachyandesite
  - basalt
  - phyllite
  - mixed-facies (in corresponding colors)
  - coal (may include several seams)
  - ? position/age doubtful/controversial
  - | equal units
  - \ older unit left \ younger unit right
  - hiatus
  - unconformity
  - GSSP
  - Fm. Formation
  - Ls. Limestone

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Cutout and English adaptation of the "Die Stratigraphische Tabelle von Österreich 2004": Geological Survey of Austria

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