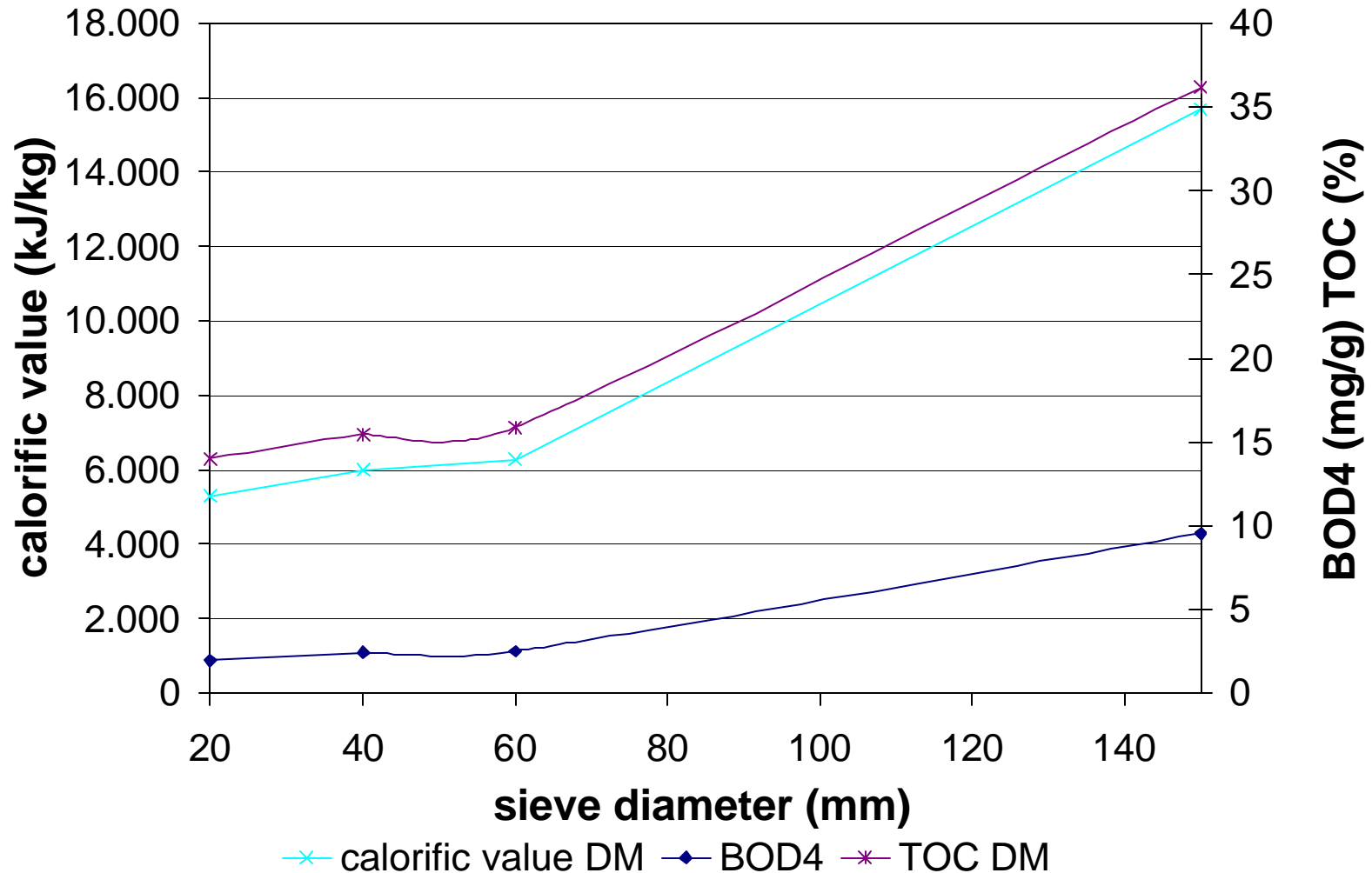
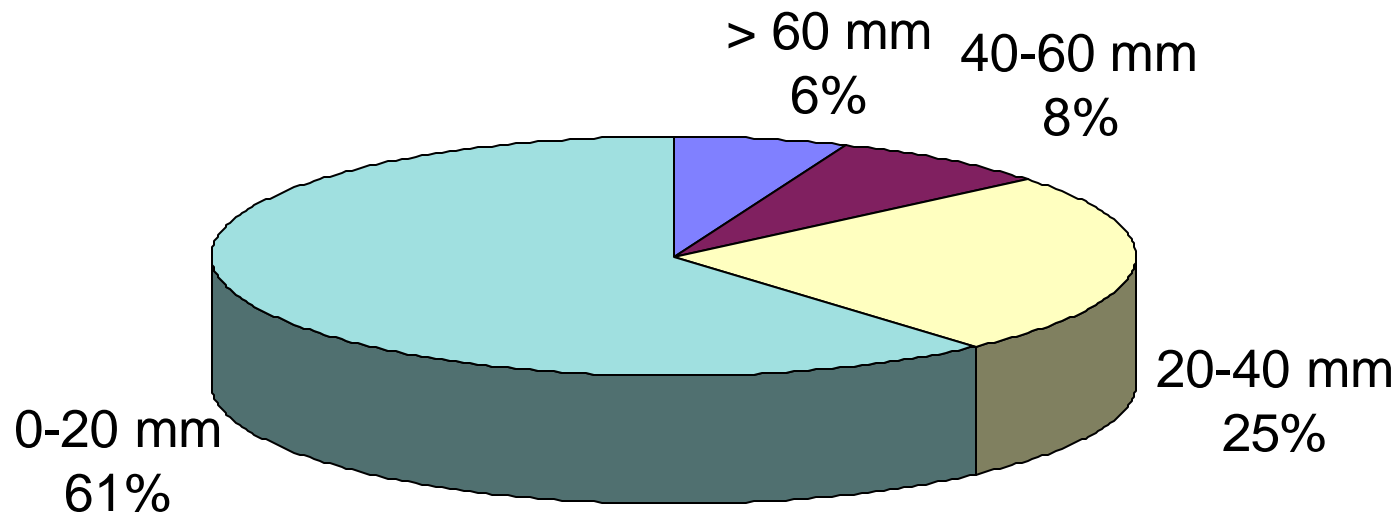


Output properties vs. max output sieve diameter



Grainsize of composting output (mass% !)



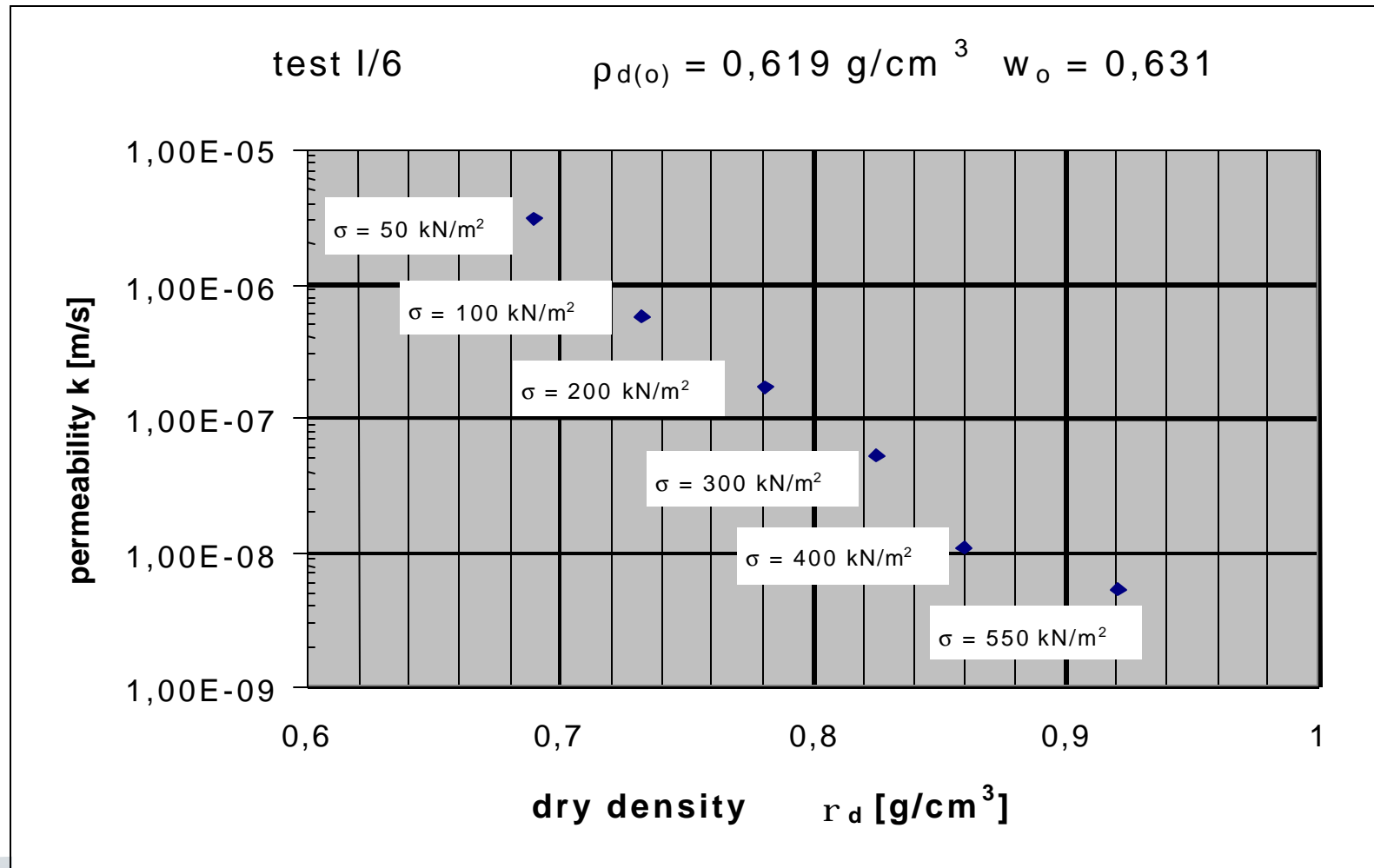
Effects of MBP on physical waste properties

property / influence	mechanical treatment (grain size < 60 mm)	biological treatment	mechanical and biological treatment
water permeability			decrease (10^{-5} - 10^{-10} m/s)
angle of shear φ^*	apparently no change	increase	increase
cohesion c^*	apparently no change	apparently no change	apparently no change
angle of tensile α^*	extreme reduction	apparently no change	extreme reduction
oedometric modulus*	increase		increase
calorific value	~20% decrease	~15-40% decrease	~35-60% decrease
subsidence	decrease	decrease	huge decrease
mass reduction	25-50%	~15-20%	40-70%

*based on Ziehmann, 1999

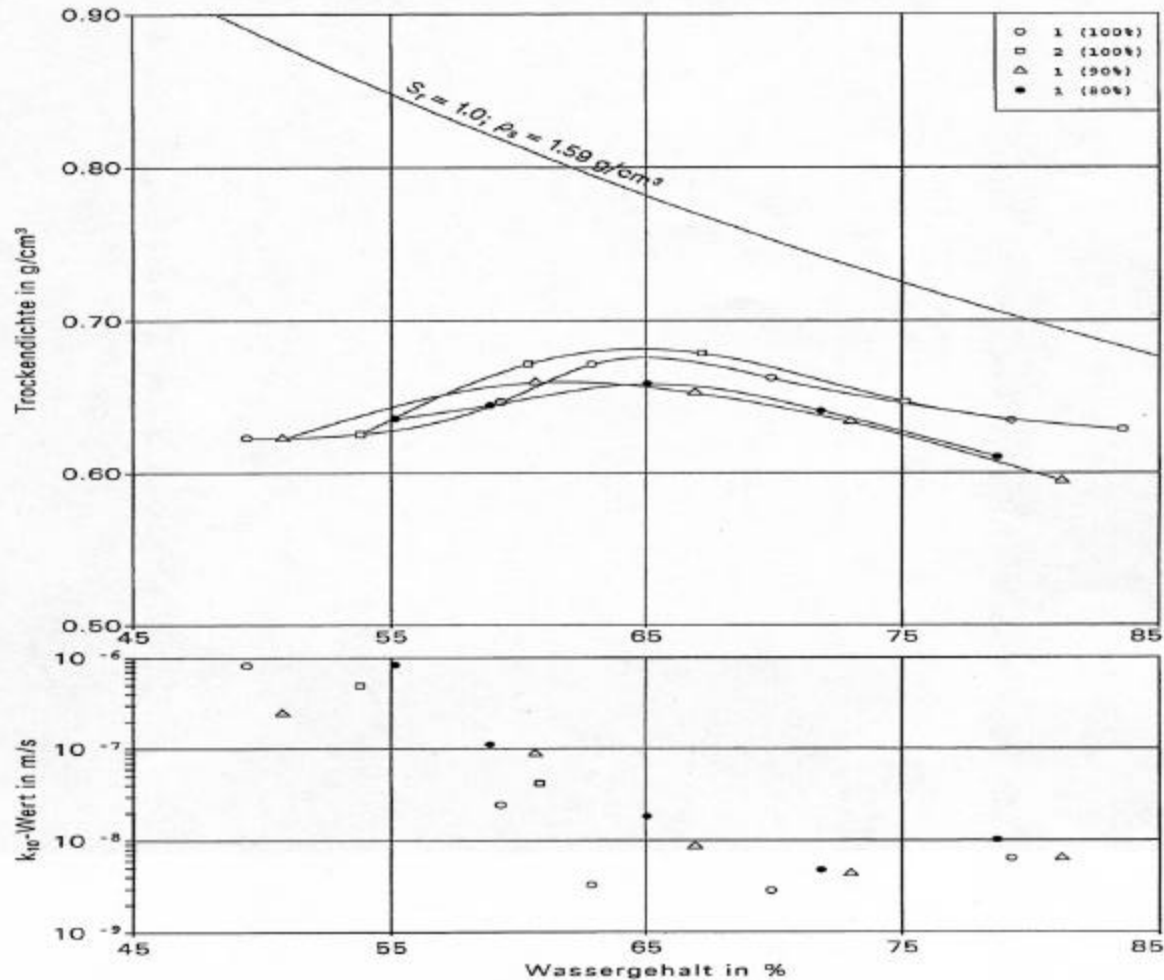
Permeability vs. surcharge σ and dry density r_d of an anarobic-aerobic treated mat. 0-30mm

Düllmann 2002



Example: Proctor density and permeability

Düllmann 2002



In-situ permeability measurements 0,55-1,15 m below surface

layer thickness before compaction	30 cm	50 cm	unit
k_f^*	1,41E-05	7,90E-06	m/s



Heavy artificial rain on anaerobic-aerobic mat.

parameter	unit	first test 4 days after construction 30 cm layers		second test 5 weeks after construction 30 cm layers		second test 5 weeks after construction 50 cm layers		boundary value
begin runoff after	h:min	11:25		2:30		4:15		
precipitation until runoff starts	mm	230		50		85		
		homo-genised	filtered	homo-genised	filtered	homo-genised	filtered	Direkt-einleitung
COD	mg O ₂ /L	840	790	479	383	156	111	200
BOD ₅	mg O ₂ /l	24	24	4,8	7,5	3,8	4,8	20
NO ₂ -N	mg/L		7,5		0,28		0,2	2
N-whole	mg/L		19,6		6,98		5,1	70

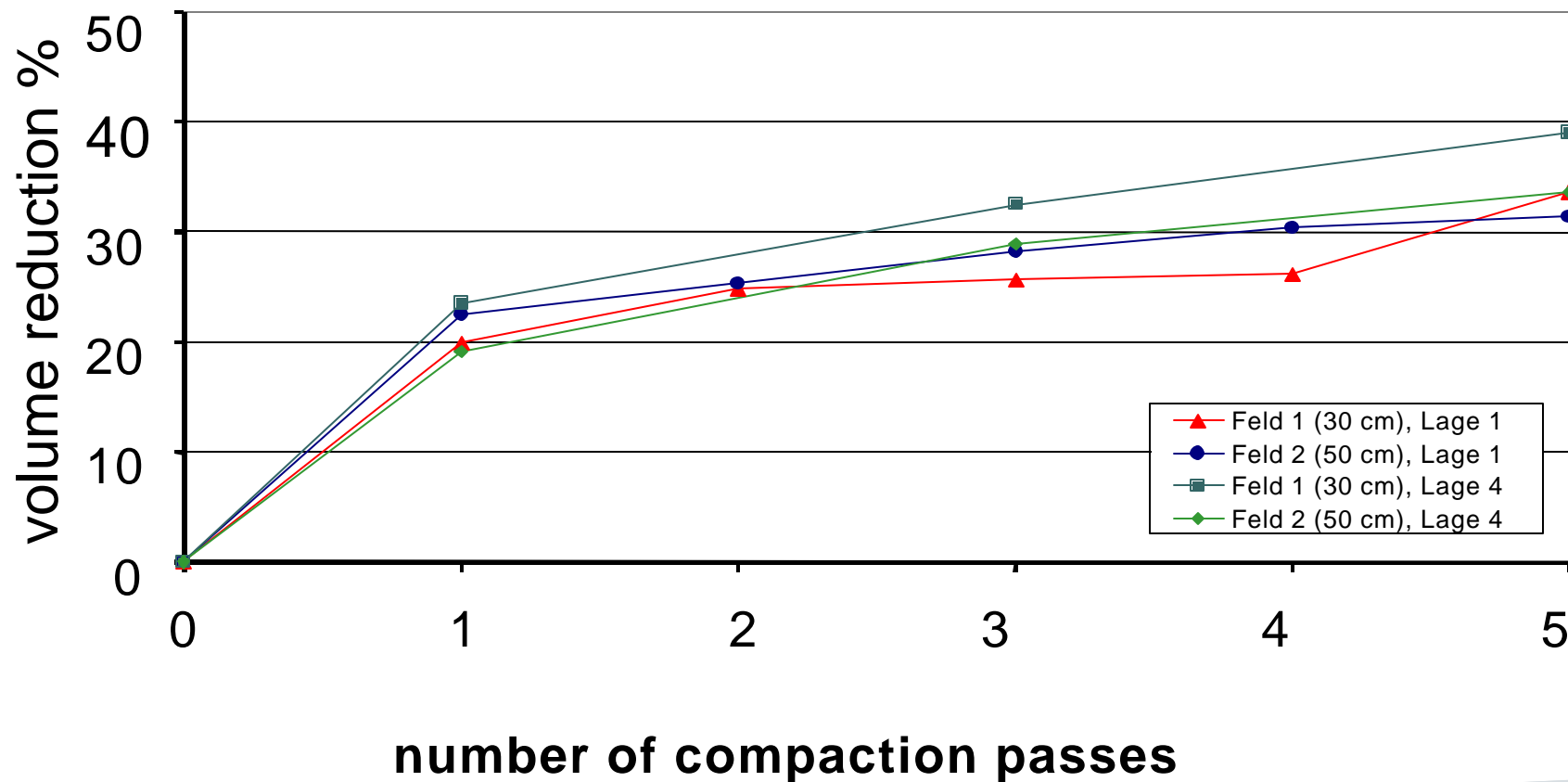
Compaction tests Lahe landfill



compactor (BOMAG)	weight	static line surcharge	bandage	adjustment of vi- bration intensity
BW 216 PDH-3	16,65 t	50,23 kg/cm	profiled	manuel
BW 213 DH-3	12,65 t	33,10 kg/cm	plain	Vario-Control

compaction success and number of compaction passes

Kuehle-Weidemeier et al., 2002



Dry densities at 30 und 50 cm layers

Kuehle-Weidemeier et al., 2002

