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ASTM D559-96

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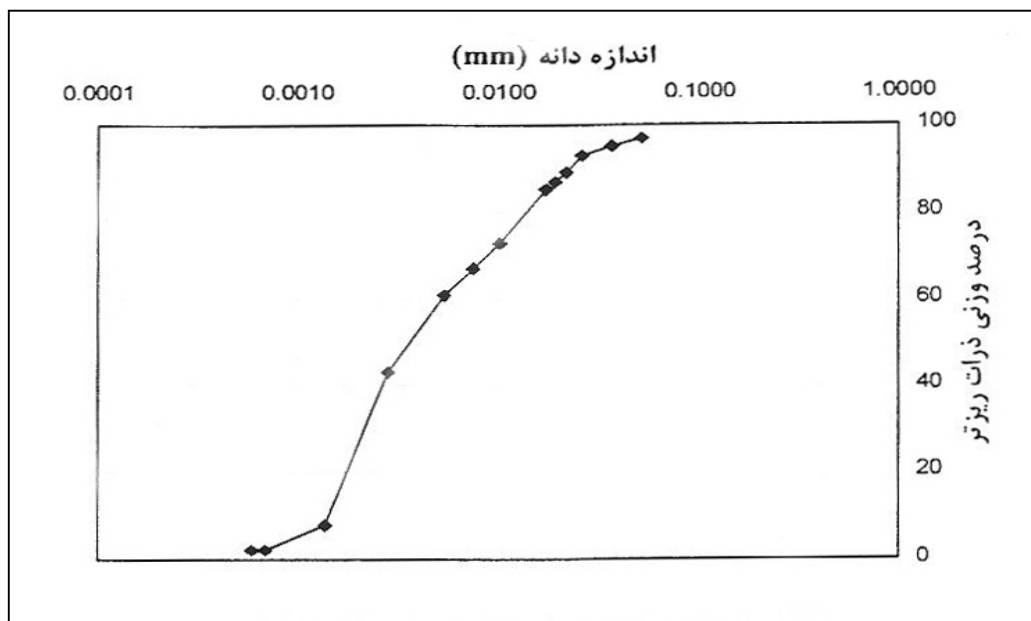
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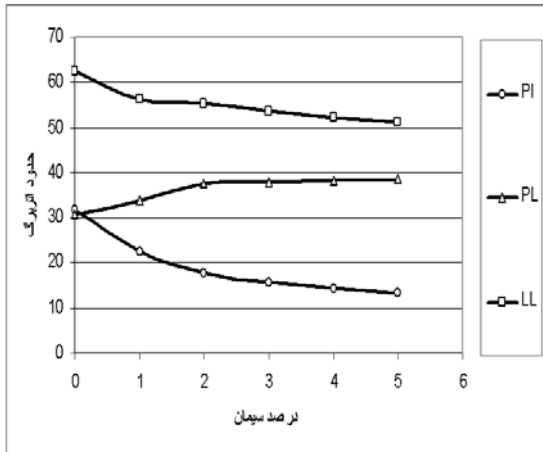
RETC

Van Genuchten

	SiO_2	F_2O_3	Al_2O_3	MgO	CaO	SO_3	Cl	$CaCO_3$	Na_2O	K_2O
	52.3	6.7	16.3	3.95	3.7	0.19	0.03	6.6	1.06	3.4



	LL (%)	PI (%)	PL (%)	γ_d (gr/cm^3)	G_s	$K(sat)$ cm/s
	62.5	31.6	30.9	1.35	2.7	1.2E-8

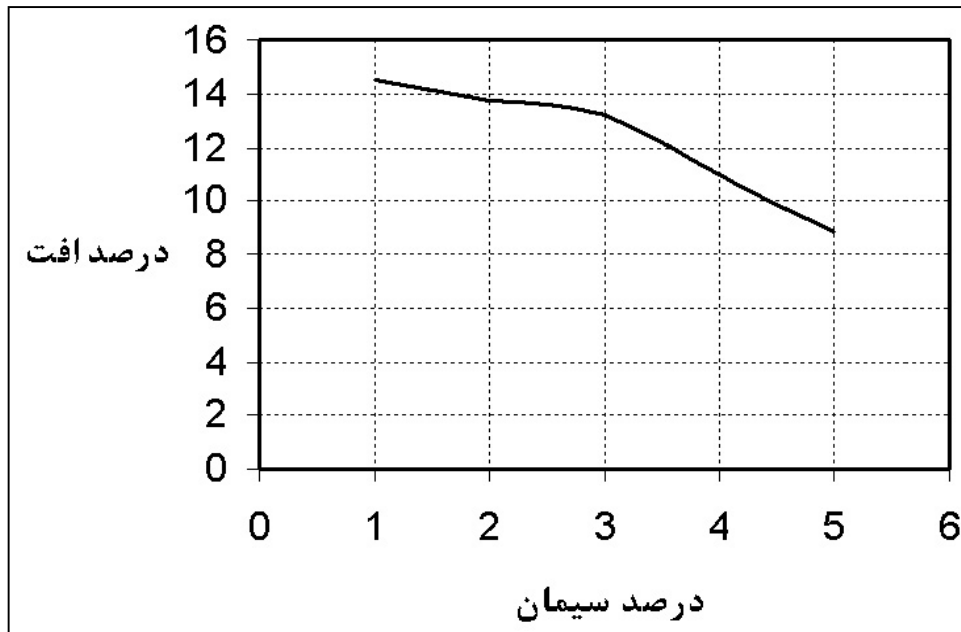


ASTM D4318

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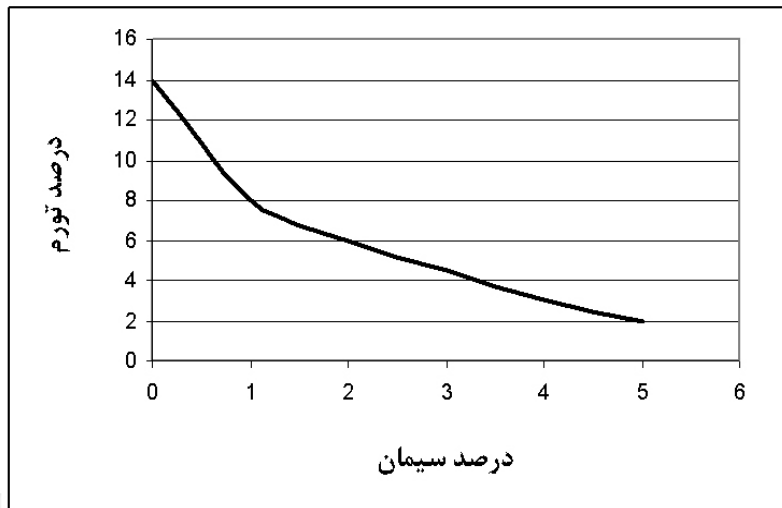
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(porous / pressure plate apparatus)

(SWCC) -

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15	12	8	4	2	0.5	()
38.7	40.5	40.9	43.2	48.5	68.5	(KC0)
39.7	40.5	40.8	41.6	45.9	59.7	% + (KC1)
39.7	40.1	41.0	41.3	43.9	53.5	% + (KC2)
42.0	42.4	43.3	43.5	45.9	51.0	% + (KC3)
42.4	43.1	43.1	43.2	45.8	54.3	% + (KC4)
44.7	44.8	44.8	44.7	48.5	54.5	% + (KC5)

() *Van Genuchten*

$$K(h) = K(s) \cdot \frac{\left\{ 1 - |ah|^{n-1} [1 + |ah|^n]^{-m} \right\}^2}{[1 + |ah|^n]^{m/2}}$$

$h < 0$

RETC

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$K(h) = K(s)$

(*)
 $h \geq 0$

: h

Van Genuchten

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: $\theta(r)$

: $\theta(s)$

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: $K(s)$

$$\theta(h) = \theta(r) + \frac{\theta(s) - \theta(r)}{[1 + |a.h|^n]^m} \quad h < 0$$

a, n

: a, n, m

$m = 1 - 1/n$

Van Genuchten

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RETC (REtention Curve)

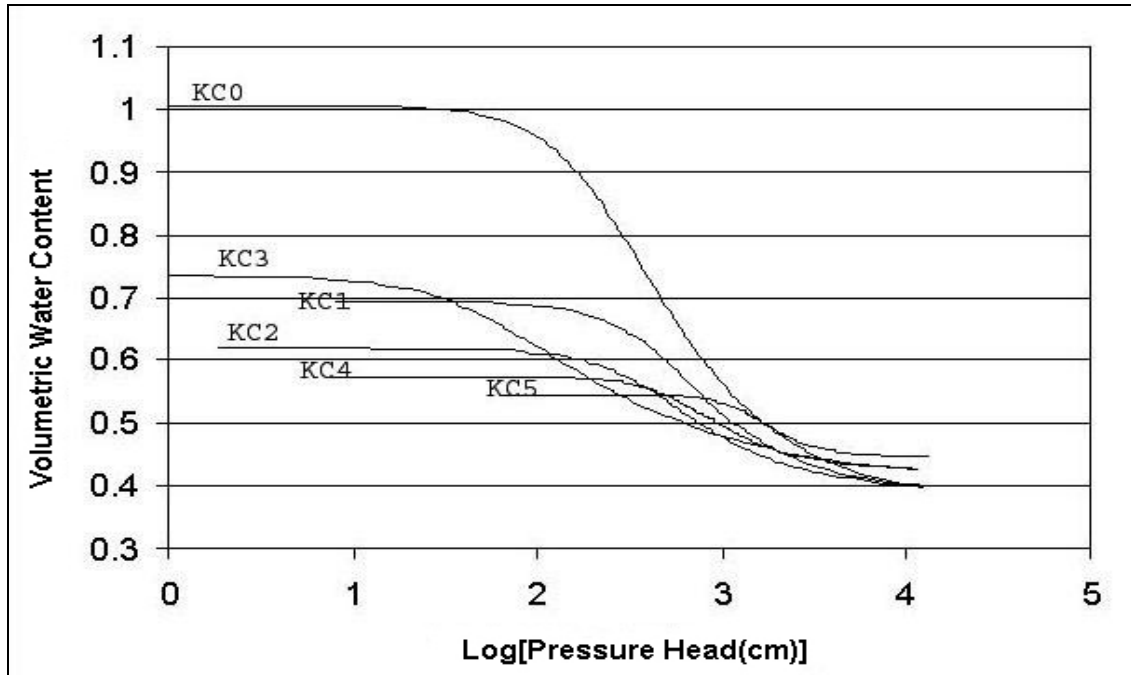
$\theta(h) = \theta(s)$

$h \geq 0$

RET C

RET C

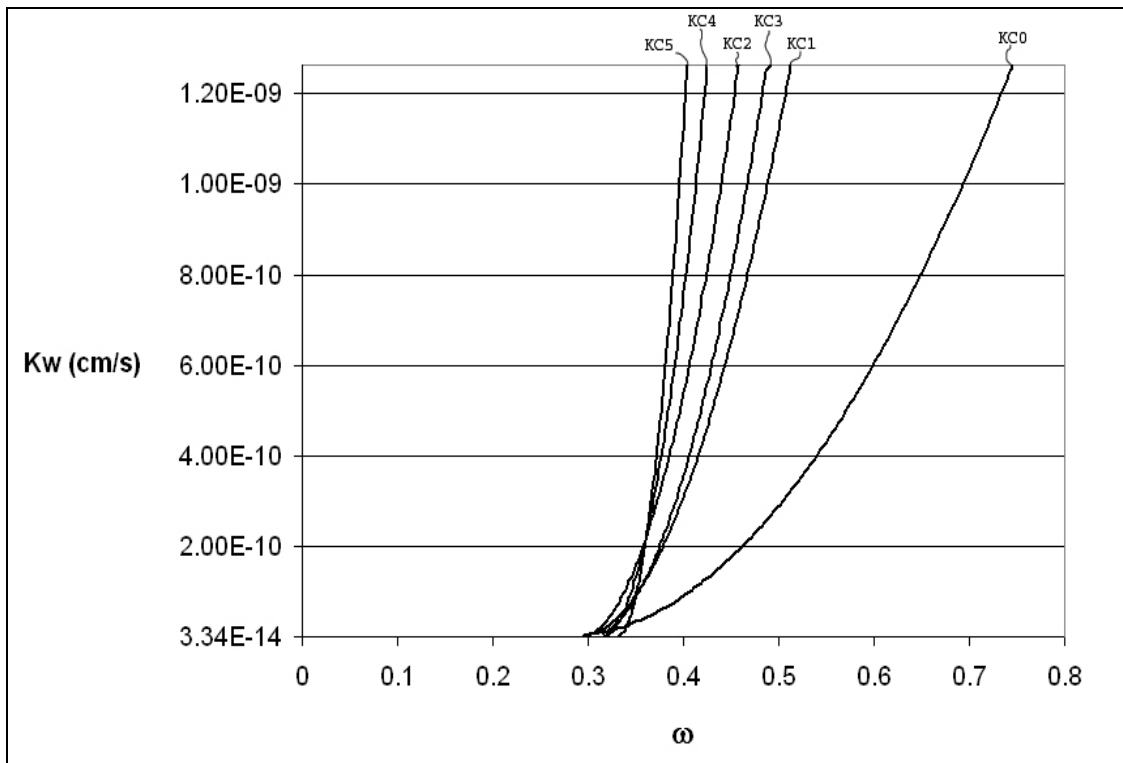
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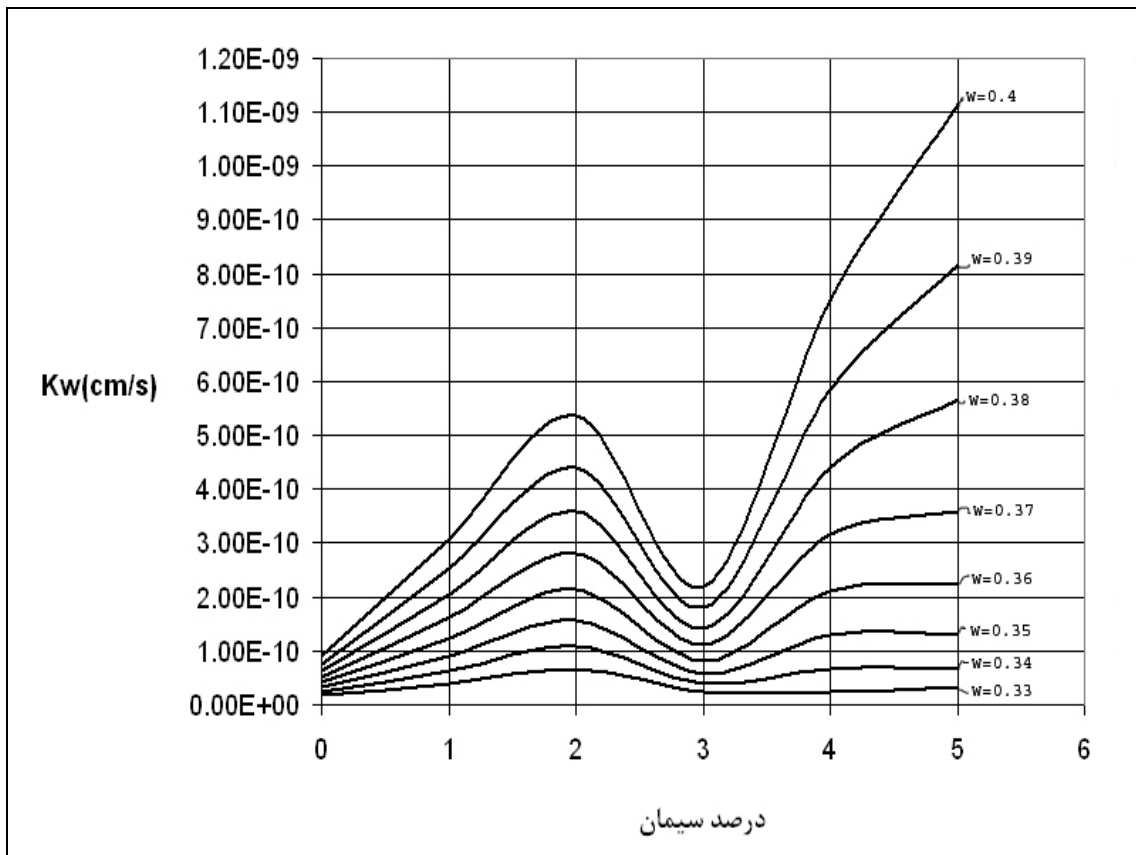
RET C

Van Genuchten

RET C



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$$10^{-5} \frac{Cm}{s}$$

$$10^{-5} \frac{Cm}{s}$$

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4. *D559-03 Standard Test Methods for Wetting and Drying Compacted Soil-Cement Mixtures, ASTM Standards, Volume 04.08, 2005*
5. *Tinjum J.M & Benson C.H & Blotz L.R, Soil-Water Characteristic Curve for Compacted Clays, ASCE Journal of Geotechnical and Environmental Engineering, Vol. 123, No.11, Nov. 1997, PP. 1060-1069.*
6. *Van Genuchten M.Th. & Leij F.J. & Yates S.R., The RETC Code for Quantifying the Hydraulic Functions of Unsaturated Soils, Ada, Oklahoma, 2004.*

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1. *Technical Guidance Note Capping for Landfill Sites, Scottish environment protection agency, 2003.*
2. *Standards for Designing Sanitary Landfills, USEPA, 2002.*
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