

## LAMPIRAN

**L.1 Data Specific Gravity of Water**

°C	0	1	2	3	4	5	6	7	8	9
0	0,9999	0,9999	1.0000	1.0000	1.0000	1.0000	1.0000	0,9999	0,9999	0,9998
10	0,9997	0,9996	0,9995	0,9994	0,9993	0,9991	0,9990	0,9988	0,9986	0,9984
20	0,9982	0,9980	0,9978	0,9976	0,9973	0,9971	0,9968	0,9965	0,9963	0,9960
30	0,9957	0,9954	0,9951	0,9947	0,9944	0,9941	0,9937	0,9934	0,9930	0,9926
40	0,9922	0,9919	0,9915	0,9911	0,9907	0,9902	0,9898	0,9894	0,9890	0,9885
50	0,9881	0,9876	0,9872	0,9867	0,9862	0,9857	0,9852	0,9848	0,9842	0,9838
60	0,9832	0,9827	0,9822	0,9817	0,9811	0,9806	0,9800	0,9795	0,9789	0,9784
70	0,9778	0,9772	0,9767	0,9761	0,9755	0,9749	0,9743	0,9737	0,9731	0,9724
80	0,9718	0,9712	0,9706	0,9699	0,9693	0,9686	0,9680	0,9673	0,9667	0,9660
90	0,9653	0,9647	0,9640	0,9633	0,9626	0,9619	0,9612	0,9605	0,9598	0,9590

**L.2 Data Specific Gravity Beberapa Jenis Tanah**

JENIS TANAH	Gs
Pasir	2,65 - 2,67
Lanau ( Silt )	2,68 - 2,72
Lanau dengan sedikit bahan organis	2,40 - 2,50
Lempung ( Clay )	2,40 - 2,90
Lempung ( Bentonite )	2,35
Gambut ( Peat )	1,26 - 1,80

L.3 Soil Classification Chart

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Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>a</sup>		Soil Classification			
		Group Symbol	Group Name <sup>b</sup>		
Coarse-Grained Soils More than 50 % retained on No. 200 sieve	Gravels More than 50 % of coarse fraction retained on No. 4 sieve	Cu ≥ 4 and 1 ≤ Cc ≤ 3 <sup>f</sup>	Well-graded gravel <sup>g</sup>		
		Cu < 4 and/or 1 > Cc > 3 <sup>f</sup>	Poorly graded gravel <sup>g</sup>		
	Sands 50 % or more of coarse fraction passes No. 4 sieve	Finest classify as ML or MH		Silty gravel <sup>g,ML,MH</sup>	
		Finest classify as CL or CH		Clayey gravel <sup>g,CL,CH</sup>	
		Cu ≥ 6 and 1 ≤ Cc ≤ 3 <sup>f</sup>	Well-graded sand <sup>h</sup>		
		Cu < 6 and/or 1 > Cc > 3 <sup>f</sup>	Poorly graded sand <sup>h</sup>		
	Fine-Grained Soils 50 % or more passes the No. 200 sieve	Sands with Fines More than 12 % fines <sup>c</sup>	Finest classify as ML or MH	Silty sand <sup>g,ML,MH</sup>	
			Finest classify as CL or CH	Clayey sand <sup>g,CL,CH</sup>	
		Silt and Clays Liquid limit less than 50	PI > 7 and plots on or above "A" line <sup>d</sup>	CL	Lean clay <sup>LL,M</sup>
			PI < 4 or plots below "A" line <sup>d</sup>	ML	Silt <sup>LL,M</sup>
Silt and Clays Liquid limit 50 or more		inorganic	Liquid limit – oven dried	Organic clay <sup>LL,M,OL</sup>	
			Liquid limit – not dried < 0.75	Organic silt <sup>LL,M,OL</sup>	
		inorganic	PI plots on or above "A" line	CH	Fat clay <sup>LL,M</sup>
			PI plots below "A" line	MH	Elastic silt <sup>LL,M</sup>
		organic	Liquid limit – oven dried	OH	Organic clay <sup>LL,M,OH</sup>
			Liquid limit – not dried < 0.75		Organic silt <sup>LL,M,OH</sup>
Highly organic soils	Primarily organic matter, dark in color, and organic odor	PT	Peat		

<sup>a</sup> Based on the material passing the 3-in. (75-mm) sieve.  
<sup>b</sup> If field sample contained cobbles or boulders, or both, add "with gravel" or "with boulders" to group name.  
<sup>c</sup> Gravels with 5 to 12 % fines require dual symbols: GW-GM well-graded gravel with silt; GP-GC poorly graded gravel with silt; SW-SM well-graded sand with silt; SP-SC poorly graded sand with silt.  
<sup>d</sup> If soil contains 15 to 29 % plus No. 200, add "with sand" or "with gravel" which ever is predominant.  
<sup>e</sup> If soil contains ≥ 30 % plus No. 200, predominantly sand, add "sandy" to group name.  
<sup>f</sup> If soil contains ≥ 30 % plus No. 200, predominantly gravel, add "gravelly" to group name.  
<sup>g</sup> PI ≥ 4 and plots on or above "A" line.  
<sup>h</sup> PI < 4 and plots below "A" line.  
<sup>i</sup> PI plots on or above "A" line.  
<sup>j</sup> PI plots below "A" line.  
<sup>k</sup> If Atterberg limits plot in hatched area, soil is a CL-ML.