Clause 7.5.6 Common Surface Loadings and Detention Periods

The removal of particles of varying hydraulic subsidence value is solely a function of surface overflow rate also called "surface loading" and is independent of the depth of the basin for discrete particle and unhindered settling. However, contact opportunities among particles leading to aggregation increasing depths for flocculent particles having tendency to agglomerate while settling, such as alum and iron flocs. The range of surface loadings and detention periods for average design flow for different types of sedimentation tanks are as follows:

Tank type	Surface loading m^3 / m^2 / d*		Detention period, hr*		Particles normally removed
	Range	Typical value for design	Range	Typical value for design	
Plain Sedimentation	upto 6000	15-30	0.01-15	3-4	Sand, slit and clay
Horizontal flow, Circular	25-75	30-40	2-8	2-2.5	Alum and iron floc
Vertical Flow (Upflow) Clarifiers	-	40-50	-	1-1.5	Flocculent

*at average design flow