



Figure 9. Climbing ripple, or ripple-drift, lamination. Truncation of underlying cross-stratified sets is either minimal (high aggradation situation) or orderly (low aggradation situation).

When flow conditions change during the course of sedimentation of a single lamina or bed, whether horizontal or inclined in attitude, graded bedding can result. Graded layers are characterized by a gradational decrease in grain size upward through the bed from coarse to fine sediment (Figure 10). Graded beds usually exhibit a sharp contact with underlying layers, and range in thickness from a few mm to m thick.

Reverse or inverse graded beds also exist but are relatively rare. In them, the gradation in grain size is from fine to coarse (Figure 10). Unlike normally graded beds which record conditions of decreasing fluid flow energy, reverse graded beds occur when flow energy increases in the latest phase of bed deposition. This increase in water energy permits the selective removal of fine material from the very upper part of the layer, improving the size sorting and leaving a coarser sediment lag.