

Table 8.8 General features of shallow-marine carbonate facies

Deposition: takes place in a variety of environments and subenvironments: tidal flats, beaches, barriers, lagoons, nearshore to offshore shelves and platforms, epeiric shelf seas, submarine shoals and reefs (shelf-margin and patch reefs especially). Biological and biochemical processes are largely responsible for formation and deposition of sediment, although physical processes of waves, tidal and storm currents are important.

Lithologies: many types of limestones, especially biosparites, oosparites, biomicrites and pelleted limestones; also dolomites. Limestones may be silicified. Evaporites, especially sulphates (or their replacements) may be associated.

Textures: diverse.

Structures: diverse including cross-bedding, flat bedding, scours, ripples, desiccation cracks, stromatolites, fenestrae, stromatactis and stylolites; reef limestones: massive and unbedded, many organisms in growth position.

Fossils: vary from diverse and abundant in normal marine facies to restricted and rare in hypersaline or hyposaline facies.

Palaeocurrents: variable: parallel and normal to shoreline.

Facies sequences: many types but shallowing-up sequences are common (Fig. 8.9).