Hyaloclastite and pillow spall fragments in quench (palagonatized) glass
Glassy rind
Radial cooling fractures
Surface parallel vesicles
Coalesced vesicles and gas blisters
Pipe vesicles (0.5 to >1.0 cm)
Vesicle “trains” and teardrop vesicles originating at inner surface of chill zone
Contact with lower pillow and chill zone with interstitial hyaloclastite
Upper chilled margin
Often glassy or cryptocrystalline
Preserves crystal cargo
Upper interior
Sparsely to moderately vesicular
Pillow core
Nonvesicular except for pipe vesicles
Larger crystals and increased crystal cargo
Lower interior
Nonvesicular except for vesicle trains
Basal chill margin
Often glassy or cryptocrystalline
Upper chilled margin of lower pillow