Basaltic glaciovolcanic edifices consist of basal subaqueous lavas beneath pillow breccias produced during effusion, overlain by glassy fragmental units produced during explosive phreatomagmatism. Deposits recording this transition from effusive to-explosive volcanism, have not adequately been described, but have process and hazard implications. The Askja central volcano, is dominated by glaciovolcanic deposits, and has four exposures recording this transition.

These deposits consist of basal pillow lavas that grade upwards into pillow-fragment breccias up to 10 m thick, overlain by glassy lapilli tuffs up to 30 m thick. Pillow breccias are clast-supported with pillows up to 30 cm and fragments up to 20 cm. The matrix comprises coarse, glassy, and angular lapilli. The tuffs are composed of angular, highly glassy, low vesicularity (< 10 %), and clast-supported lapilli (< 5 cm) with occasional fluidal bombs and pillow fragments (5-10 cm). The overall deposit is massive, and is dominated by the progressive grading between pillow, pillow breccia, and lapilli. The proportion of ash sized matrix increases away from the basal pillows (0-30%), and is accompanied by slight decrease in mean lapilli (< 2 cm) and pillow fragment size. As mechanical breakdown of the pillows to form such large sequences appears inadequate, these deposits are interpreted as recording explosive fragmentation of pillow lavas prior to the onset of FCI-driven phreatomagmatism. Additional sampling through the transitional sequence to better document the processes controlling fragmentation is planned for 2011.