The lateral surfaces of the sacrum bear large inverted L-shaped articular surfaces, known as the auricular surfaces. They articulate with the auricular surfaces of the ilium at the sacro-iliac joints.

They have a short, vertical limb anteriorly, which is confined to the first sacral segment, and a larger horizontal limb, which extends from the first to third sacral segments. There are reciprocal irregularities between the auricular surfaces of the sacrum and the ilium allowing the bones to interlock. The surfaces have well defined anterior and inferior borders, which give attachment to the ventral sacro-iliac ligaments. Supero-posteriorly to the auricular surfaces are roughened areas for the attachment of the strong interosseous sacro-iliac ligaments.

The 1-3mm of cartilage lining the sacral auricular surfaces has the features of typical hyaline cartilage. The cartilage of the iliac auricular surfaces is up to 1mm thick and has the appearance of fibrocartilage, but the histological and biochemical features of hyaline cartilage.