Two austenitic steels, Fe-21.3Mn-3.44Si-3.74Al-0.5C and Fe-29.8Mn-2.96Si-2.73Al-0.52C, were subjected to cold rolling with 30 to 80 pct reduction with an increment of 10 pct and subsequently the development of their microstructures and textures were studied. The overall texture after 80 pct cold reduction was Brass type. A weak Copper component (112)〈111〉 was present at the early stage of deformation, which disappeared completely after 60 pct cold reduction. Extensive shear banding took place in both the steels, right from rather low cold rolling levels, which became more prominent at higher amounts of cold rolling. Formation of twin bands, along with cellular dislocation network, was observed in Steel A after 30 pct cold rolling. In case of Steel B, denser twin bands and dislocation cellular network were observed in early stage of deformation. After 80 pct cold reduction, the development of a strong brass-type texture in both the steels could be attributed predominantly to the formation of shear banding, possibly with some partial contribution coming from micro twinning.

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