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Narrow and Wide Salt Basin Comparisons

Initial studies of most of the Brazilian margin salt basins have shown that narrow salt margins have very high amplitude salt structures at the break in topographic or base salt slope (which often coincide). Wider margins often have large fold belts with regular wavetrains up to 350 km across with wavelength of structures varying from 25 km (overburden > 3 km thick) to 5 km (overburden < 1.5 km).

The narrow-margin style of salt deformation with dramatic fold and thrust belts shows clear vergence down to the basin. This differs from the ultra-wide margins, where base salt is flat for 200 km and vergence can be ambiguous, unless the salt extrudes at the surface and downslope flow is more clearly imaged. Narrow margins illustrate how contractional deformation backs up the slope at least 20 km horizontally and 1 km vertically.

We will illustrate these concepts with a wide range of interpreted examples from Nova Scotia, Newfoundland, Morocco, Portugal, and Brazil.