Installation is process of installation of plumbing pipes in the sea. Joint Operation Body Pertamina-Petrochina East Java (JOB-PPEJ) wants to add a new offshore pipeline using pipe measuring 10 inch pipeline parallel to the existing besides residing in Palang Station to the FSO Cinta Natomas, Tuban, East Java. It should be considered in the installation of offshore pipelines is the magnitude of stress that occurs in the process when pipe. Starting from time pipe is still above laybarge, stinger and when pipe touches seabed. There are 2 categories of areas that must be analyzed, namely overbend and sagbend. In addition, the stability of subsea pipelines is calculated by considering the effects of hydrodynamic forces acting on the pipe. In this final analysis and stability of the work force at the time of installation and pipe stress analysis that occurred during installation. Modeling is done by the software to determine the stress that occurs while large for stability calculations using DNV RP F109 codes and of the results of the analysis show great lateral stability and vertical stability at 2,826 by 1,926, then the results are already eligible to DNV RP F109 codes. During the installation of the S-Lay method, the greatest stress occurs in region amounted to 60.20% SMYS overbend and sagbend area of 12.39% SMYS, then results of greatest stress on overbend and sagbend not exceed the allowable stress in the material.

Keywords: Stress, Overbend, Sagbend, S-Lay