We propose a density forecast evaluation method in the presence of instabilities, which are defined as breaks in the conditional mean, variance and/or the functional form of the underlying density function. The total sample size \( T \) is divided into in-sample estimation \( (R) \) and out-of-sample evaluation \( (P) \). We work with subsamples of size \( s \) and by rolling the subsample one observation at the time in the evaluation period, we compute a collection of \((T-s-R+1)\) autocontour-test statistics (González-Rivera et al. 2011, 2013) of three different types: \( t \), \( C \), and \( L \), so that we have three sets of tests as \( \{ t_i \}_{i=1}^{T-s-R+1} \), \( \{ C_i \}_{i=1}^{T-s-R+1} \) and \( \{ L_i \}_{i=1}^{T-s-R+1} \). We construct a \( Sup \)-type statistic by taking the supremum of each of these sets, i.e. \( Sup_t \), \( Sup_C \) and \( Sup_L \), and an \( Avg \)-type statistic by taking the average, i.e., \( Avg_t \), \( Avg_C \) and \( Avg_L \). Under the null hypothesis of no instabilities, and by using the functional central limit theorem, we derive the asymptotic distributions of these statistics, which are asymptotically pivotal. We also investigate the finite sample properties of the proposed \( Sup \)-type and \( Avg \)-type statistics. The tests are very powerful in detecting different types of instabilities. We apply our tests to investigate the stability of the density forecast from popular models for the Phillips curve and show the existence of instabilities in the forecasting performance of the models.