The lack of benchmarking datasets for pedestrian stride length estimation makes it hard to pinpoint differences of published methods. Existing datasets either lack the ground-truth of each stride or are limited to small spaces with single scene or motion pattern. To fully evaluate the performance of proposed ASLE algorithm, we conducted benchmark dataset for natural pedestrian dead reckoning using smartphone sensors and FM-INS module. we leveraged the FM-INS module to provide the ground-truth of each stride with motion distance errors in 0.3% of the entire travel distance. The datasets were obtained from a group of healthy adults with natural motion patterns (fast walking, normal walking, slow walking, running, jumping). The datasets contained more than 22 km, 10000 strides of gait measurements. The datasets cover both indoor and outdoor cases, including: stairs, escalators, elevators, office environments, shopping mall, streets and metro station. To make it easier for readers to replicate experiment, we shared the sampling software.