Subjective assessments made by test persons were compared to results from a number of objective measurement and calculation methods for the assessment of low frequency noise. Eighteen young persons with normal hearing listened to eight environmental low frequency noises and evaluated the annoyance of the noises. The noises were stationary noise with and without tones, intermittent noise, music, traffic noise and impulsive low frequency noise. The noises were presented twice in a random order at L-Aeq levels of 20 dB, 27.5 dB and 35 dB. The assessment methods were those used in Sweden, Germany, The Netherlands, Poland and Denmark. It was found that the Danish assessment method gave the best relation to the subjective assessments made by the test persons. An important property of this method is that it includes a 5 dB penalty for noises having an impulsive character.