The aim of this thesis is a detailed exposition of the proof of a theorem on nice intervals in d dimensions and a theorem on the properties of harmonic intervals. We introduce first the notions of a nice rectangle and a tiling of a set. Then we extend the notion of a nice rectangle to that of a nice d-dimensional interval. We subsequently prove the main theorem (a closed interval tiled by nice closed intervals is also nice) in d dimensions. Then we define harmonic intervals and prove in detail several important theorems on tiling by harmonic intervals. We illustrate their assumptions with examples which demonstrate their importance. We show the connection between the notions of a harmonic interval and a multiple of an interval for intervals with integral edges at the end of the last chapter.