

A mapping  $f$  from  $\mathbb{R}^n$  to  $\mathbb{R}^n$  is said to satisfy the Luzin condition N if  $f$  maps sets of measure zero to sets of measure zero. It is known to be valid for mappings in the Sobolev space  $W^{1,p}$  for  $p > n$  and for  $p \leq n$  there are counterexamples. The aim of this thesis is to summarize known results and study the validity of Luzin condition N for mappings in the Sobolev space  $W^{2,p}$ .