Abstract: Model transformations are an integral part of several computing systems that manipulate interconnected graphs of objects called models in an input domain specified by a metamodel and a set of invariants. Test models are used to look for faults in a transformation. A test model contains a specific set of objects, their interconnections and values for their attributes. Can we automatically generate an effective set of test models using knowledge from the transformation? We present a white-box testing approach that uses static analysis to guide the automatic generation of test inputs for transformations. Our static analysis uncovers knowledge about how the input model elements are accessed by transformation operations. This information is called the input metamodel footprint due to the transformation. We transform footprint, input metamodel, its invariants, and transformation pre-conditions to a constraint satisfaction problem in Alloy. We solve the problem to generate sets of test models containing traces of the footprint. Are these test models effective? With the help of a case study transformation we evaluate the effectiveness of these test inputs. We use mutation analysis to show that the test models generated from footprints are more effective (97.62% avg. mutation score) in detecting faults than previously developed approaches based on input domain coverage criteria (89.9% avg.) and unguided generation (70.1% avg.).