The performance enhancement of the acoustic insulation is demanded for the high frequency for interior noise of car. The importance of car comfort is emphasized, and there is also a response to the United Nations external noise regulations, and quietness is required from the design concept stage. Measures on the sound source side are also limited, and measures on the vehicle body side are important in consideration of cost and weight. In this study, we considered using the material of the new structure for the undercover of the car to improve the quietness outside the car. A simple model of metamaterial (repeated structure) is created using the finite element method, and the result of analyzing the sound absorption characteristics by numerical calculation is reported.