The microstructure, microhardness and tensile properties of continuously borided and interrupted borided 16MnCr5 steel were compared. In the continuous process, boriding was carried out continuously at 1273K for 16 h. In the interrupted process, after 5 h of boriding at 1273 K, the crucible containing the specimens and the boriding powders was removed from the furnace and cooled to 873K in still air for 30 min and this procedure was repeated three times. Both boriding treatments were achieved in a solid medium using the powder pack method with commercial Ekabor-I powders as the boron source. X-ray diffraction studies indicated the presence of FeB and Fe2B phases in the boride layers for both boriding treatments. The transition zone was more pronounced in the continuously borided steel. The average hardness values of the boride layers were 1759 and 1648HV0:1 for the continuously borided and interrupted borided steels, respectively. The hardness of the boride layers were considerably higher than the 200HV0:1 hardness of the untreated steel. No significant difference in tensile properties could be observed between the two different boriding procedures.