

Title (en)  
METHOD OF PRODUCING STEEL WIRE ROD OF ROUND CROSS-SECTION AND STEEL WIRE ROD OF ROUND CROSS-SECTION

Title (de)  
VERFAHREN ZUR HERSTELLUNG EINES STAHLDRAHTE MIT RUNDEM QUERSCHNITT UND STAHLDRAHSTANGE MIT RUNDEM QUERSCHNITT

Title (fr)  
PROCÉDÉ DE PRODUCTION DE FIL MACHINE D'ACIER DE SECTION TRANSVERSALE RONDE ET FIL MACHINE D'ACIER DE SECTION TRANSVERSALE RONDE

Publication  
**EP 4139493 A1 20230301 (EN)**

Application  
**EP 20853574 A 20201222**

Priority  
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• IB 2020062320 W 20201222

Abstract (en)  
[origin: WO2021214538A1] Method for producing steel wire rod of round cross-section in the process of hot rolling is disclosed, wherein the charge heating up stage in the heating furnace is performed at the maximum temperature within the range of 1080 - 1100°C, and then the charge is baked within no less than 0.5 hour. The stage of forming in the rolling mill stands includes initial rolling and finishing rolling, wherein the band temperature after completion of the initial rolling is within 1020 - 980°C, then the band is cooled in water boxes to temperature 870±20°C, and after the finishing rolling group before entering the coil piling machine it is cooled to temperature within 875 - 750°C. After completion of the finishing rolling stage, cooling is performed using Stelmor line, wherein firstly the ready-made band is cooled at average cooling rate within 4-10°C/s to temperature of the bainitic conversion initiation BS±20°C, and then the band is cooled using isothermal covers with average cooling rate within 1 - 2°C/s to temperature 400°C, followed by air cooling. The microstructure of steel of the ready-made wire rod made according to the method contains polygonal ferrite and irregular bainitic ferrite of grain size below 7 µm and share 80 - 90%, small islands of martensite and bainite of grain size below 7 µm and share 15-20% and particles of residual austenite of size below 3 µm and share 3-5%.

IPC 8 full level  
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Citation (search report)  
See references of WO 2021214538A1

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