SURFACE FINISH IN TURNING OF NODULAR CAST IRON USING COATED CARBIDE AND SILICON NITRIDE CERAMIC TOOLS

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In this paper the surface finish produced by turning of perlitic-ferritic nodular cast iron (NCI) with multilayer (TiC/Ti(C,N)/Al_20_3/TiN) coated P20 carbide and nitride ceramic cutting tools is characterized using both 2D and 3D roughness parameters. The surface finish was characterized using a set of surface roughness parameters including vertical (Ra, Rz, Rt), horizontal (RSm), hybrid (RΔq), and additionally statistical (RSk, RKu) and functional parameters based on the bearing curve (Rmr(c) Rpk, Rvk, Rk). Some 3D roughness parameters were also considered and compared with 2D parameters. The data obtained can support the optimization of finishing operations of NCI parts.

Key words: nodular cast iron, surface finish, coated carbide tools, silicon nitride ceramic tools

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