Title (en)

CARBON FIBER BUNDLE AND PRODUCTION METHOD FOR SAME

Title (de)

KOHLENSTOFFFASERBÜNDEL UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

FAISCEAU DE FIBRES DE CARBONE ET PROCÉDÉ DE PRODUCTION POUR CELUI-CI

Publication

EP 4379100 A1 20240605 (EN)

Application

EP 22849335 A 20220720

Priority

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- JP 2022028166 W 20220720

Abstract (en)

To provide a carbon fiber bundle capable of suppressing winding due to ring-shaped fuzzes, which occurs when the carbon fiber bundle is rolled out for advanced processing, and a production method for producing the same. Disclosed is a carbon fiber bundle wherein an average single-fiber diameter B is 6.9 to 11.0 um, a tensile modulus E of resin-impregnated strands is 230 to 310 GPa, the number of fuzzes inherent in the carbon fiber bundle is 40 fuzzes/m or less, and a proportion of fuzzes with a structure having a difference between skin and core is 1 to 25% of fuzzes inherent in the carbon fiber bundle. Such a carbon fiber bundle is preferably obtained by a method including, in a process of heat-treating a polyacrylonitrile-based precursor fiber bundle with a single-fiber fineness of 0.9 to 2.2 dtex in an oxidizing atmosphere at 200 to 300°C, heat-treating the polyacrylonitrile-based precursor fiber bundle so that a heat generation rate Q, which is the left side of the formula (3), is 150 to 500 J/m²/s until the density is 1.22 to 1.24 g/cm³, when q (J/g/s) is the heat generation rate of the single fiber, N is the number of filaments, d (dtex) is a single-fiber fineness of the stabilized fiber bundle and W (mm) is a yarn width, heat-treating the fiber bundle while applying a tension of 1.6 to 4.0 mN/dtex until the density is 1.38 to 1.50 g/cm³ to obtain a stabilized fiber bundle, and heat-treating the stabilized fiber bundle in an inert atmosphere at 1,200 to 1,600°C. Q=q×N×d/W/10

IPC 8 full level

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CPC (source: EP KR US)

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