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54 **High strength and high elongation carbon fiber bundle and process for producing the same.**

57 A carbon fiber bundle having a strength and an elongation of about 420 to 650 kg/mm<sup>2</sup> and about 1.7 to 2.5%, respectively, when measured according to the strand tensile test method as stipulated in JIR-R-7601 is produced by heat-treating an acrylic fiber bundle under tension in an oxidizing atmosphere of 200 to 350 °C and carbonizing in an inert atmosphere of at least 1200 °C, optionally in the presence of an oil finish.

The broken ends of the carbon fibers protrude beyond the broken surface of the test piece used in said strand tensile test, and the protrusion length is about 1.0 to 5.0 times the monofilament diameter of the carbon fiber, as shown in Fig. (1).





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# EUROPEAN SEARCH REPORT

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EP 83 10 5414

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. <sup>3</sup> )
A	US-A-4 009 248 (SOICHIRO et al.) * Claims; column 5, lines 21-30 *	8	D 01 F 9/22 D 06 M 15/66
A	US-A-3 923 950 (GUMP) * Claims; column 3, line 3 - column 5, line 16 *	8	
A	FR-A-1 539 755 (NATIONAL RESEARCH DEVELOPMENT CORP.) * Abstract *	7	
A	FR-A-1 501 286 (NATIONAL RESEARCH DEVELOPMENT CORP.) * Abstract; page 2, left-hand column, lines 6-53 *	7	
			TECHNICAL FIELDS SEARCHED (Int. Cl. <sup>3</sup> )
			D 01 F D 06 M
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 17-12-1986	Examiner HELLEMANS W.J.R.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			