

Title (en)
Method and device for the manufacture of nonwoven material from filaments

Title (de)
Verfahren und Vorrichtung zur Herstellung von Spinnvliesen aus Filamenten

Title (fr)
Procédé et dispositif destinés à la fabrication de tissus non tissés en filaments

Publication
EP 2128320 A1 20091202 (DE)

Application
EP 08009814 A 20080529

Priority
EP 08009814 A 20080529

Abstract (en)
The method comprises melt-spinning filaments by a spinning device and subsequently cooling, stretching and/or removing from a deposition area for fleece web (11), which is pre-strengthened through mechanical stretching. A hydrophilic fluid medium is subjected in the fleece web after deposition of the filament and before the mechanical stretching of the fleece web, which is end-strengthened subsequently through hydrodynamic and/or hydraulic solidification. The end-strengthened fleece web comprises a specific weight per area of greater than 100 g/m². The method comprises melt-spinning filaments by a spinning device and subsequently cooling, stretching and/or removing from a deposition area for fleece web (11), which is pre-strengthened through mechanical stretching. A hydrophilic fluid medium is subjected in the fleece web after deposition of the filament and before the mechanical stretching of the fleece web, which is end-strengthened subsequently through hydrodynamic and/or hydraulic solidification. The end-strengthened fleece web comprises a specific weight per area of greater than 100 g/m². The fluid medium is subjected in a quantity of 0.4-15% on the weight of the dried fleece web and/or the weight of the dried surface section of the fleece web in the fleece web. The mechanical stretching of the fleece web is carried out with a stretching density of below 70 E/cm². The fleece web is pre-moistened after deposition of the filament and before the mechanical stretching of the fleece web. The water jet treatment is carried out during the hydraulic strengthening and/or final strengthening with a high-pressure water-jet beam (20, 21) over the top of the fleece web and with high-pressure water-jet beam below the bottom side of the fleece web. The high-pressure water-jet beams are processed during the hydraulic strengthening and/or final strengthening. The high-pressure water-jet beam with highest hydraulic strengthening has a portion of 40% of the total hydraulic strengthening. The total hydraulic strengthening is below 0.8 kWh/kg. The hydraulic strengthening is carried out with a high pressure water jet beam that has a hole thickness of smaller than 30 hpi. The hydraulic strengthening and/or final strengthening by a water jet device (17) is processed with high pressure water jet beam that has a hole thickness of 0.10-0.16 mm. The water jet device is operated with a water pressure of 220 bar and the high pressure water jet beam is processed with a water pressure of 130-220 bar. The final strengthened fleece web has a specific weight per area of greater than 150 g/m². An independent claim is included for a device for producing spunbonded fabrics made of filaments of thermoplastic plastic.

Abstract (de)
Verfahren zur Herstellung von Spinnvliesen aus Filamenten, insbesondere aus thermoplastischem Kunststoff, wobei die Filamente aus zumindest einer Spinnvorrichtung ersponnen werden, anschließend gekühlt werden und daraufhin verstreckt werden sowie danach auf einer Ablage zur Vliesbahn abgelegt werden. Die Vliesbahn wird durch mechanisches Vernadeln vorverfestigt und die Vliesbahn wird anschließend durch hydrodynamische Verfestigung endverfestigt. Die endverfestigte Vliesbahn weist ein Flächengewicht von mehr als 80 g/m², vorzugsweise von mehr als 100 g/m² auf.

IPC 8 full level
D04H 3/005 (2012.01); **D04H 3/105** (2012.01); **D04H 3/11** (2012.01); **D04H 3/16** (2006.01)

CPC (source: EP US)
D04H 3/005 (2013.01 - EP US); **D04H 3/105** (2013.01 - EP US); **D04H 3/11** (2013.01 - EP US); **D04H 3/16** (2013.01 - EP US)

Citation (applicant)
• WO 0125529 A1 20010412 - FREUDENBERG CARL FA [DE], et al
• DE 10061367 A1 20020627 - JOHNS MANVILLE EUROPE GMBH [DE]
• EP 1561848 A1 20050810 - REIFENHAEUSER MASCH [DE]
• EP 1447466 A1 20040818 - REIFENHAEUSER MASCH [DE]
• DE 19620379 A1 19971127 - REIFENHAEUSER MASCH [DE]
• EP 1340843 A1 20030903 - REIFENHAEUSER MASCH [DE]

Citation (search report)
• [X] WO 0125529 A1 20010412 - FREUDENBERG CARL FA [DE], et al
• [X] DE 10061367 A1 20020627 - JOHNS MANVILLE EUROPE GMBH [DE]
• [A] EP 1561848 A1 20050810 - REIFENHAEUSER MASCH [DE]
• [A] EP 1447466 A1 20040818 - REIFENHAEUSER MASCH [DE]
• [A] EP 0900869 A2 19990310 - FLEISSNER MASCHF GMBH CO [DE]
• [A] EP 1382731 A1 20040121 - AVGOL LTD [IL]

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DOCDB simple family (application)
EP 08009814 A 20080529; CN 200980119531 A 20090526; DK 08009814 T 20080529; EP 2009003726 W 20090526; ES 08009814 T 20080529; JP 2011510883 A 20090526; SA 109300331 A 20090527; US 99136209 A 20090526