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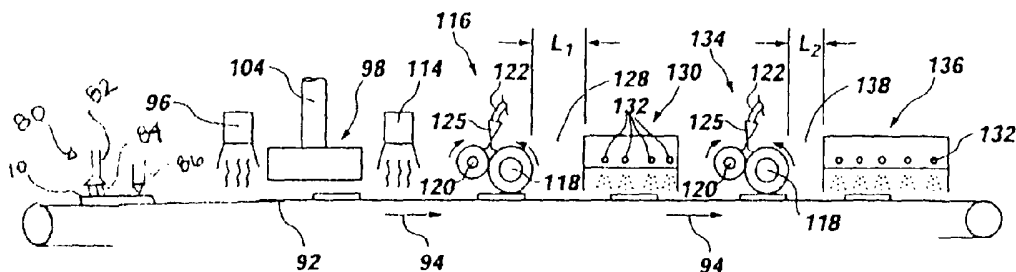
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(54) Title: FLOOR TILE COATING METHOD AND SYSTEM



(57) Abstract: A system for applying a polyurethane coating to a polyolefin floor tile, comprising a conveyor (92) for moving the floor tile (10) in direction (94) past a plurality of treatment devices, including a solvent applicator station (80), heater (96, 114), a plasma generator (98), coating applicators (116, 134) and ultraviolet light systems (130, 136). The solvent applicator (82) enables the polymer surface to be more responsive to the processes applied by the heater and plasma generator with exhaust conduit (104), thus increasing the energy of the top surface of the floor tile in preparation for the applicator to apply a liquid polyurethane to the top surface, such as via rollers (118, 120) and conduit (128), while in the energized state. The ultraviolet light system then exposes the polyurethane to ultraviolet light from UV light tube (132) to at least partially cure it, after passing through space L₁ or L₂ (128 or 138).

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/14753

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C08F 2/48; C08J 7/18; H05H 1/48; B05D 3/02, 3/06, 3/10; C23C 14/00; B05C 1/12, 1/14
US CL : 427/508, 512 520, 536, 540, 307, 316, 385.5, 412.3; 134/1.1, 19; 118/723E, 50.1, 643, 239, 244, 255

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : Please See Continuation Sheet

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, P	US 6,562,414 B2 (CARLING) 13 May 2003 (13.05.2003), see abstract; figures; claims.	1-23
Y	US 5,693,390 A (INAGAKI et al) 02 December 1999 (02.12.1999), see the abstract, column 1, lines 25-46+; column 2, lines 44-67+; column 5, lines 25-46+; and column 6, lines 40-64, esp. 47; col. 7, lines 1-30+ & 62-col.8, lines 4 & 24-col.9, line 13, esp. 2; column 10, line 1-column 11, line 20.	1-23
Y	US 6,017,577 A (HOSTETTLER et al) 25 January 2000 (25.01.2000), see the abstract; column 1, lines 8-19+; column 2, lines 45-55; column 5, line 49- column 6, line 67; column 8, line 38-68; and column 9, line 43- column 10, line 26.	1-23
Y	US 5,871,823 A (ANDERS et al) 16 February 1999 (16.02.1999), see the abstract; column 1, lines 5-25 and 62- column 2, lines 22 and 30-37; column 4, lines 22-30+; column 5, lines 53-57; column 6, lines 21-31; and column 7, lines 5-35 and 60- column 8, line 5.	1-23
Y	US 5,156,687 A (USHIO et al) 20 October 1992 (20.10.1992), see the abstract; column 1, lines 5-22 and 44-55; column 2, line 22- column 5, line 36+; column 5, lines 26-40+; column 7, lines 2-5 and column 9, lines 2, 12 and 16.	1-23

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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International application No.
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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,465,715 A (MANABE et al) 14 August 1984 (14.08.1984), see the abstract; column 1, lines 5-37; column 2, lines 1-68, esp. 1-10, 32, 37-44 and 58-68, and Ex. 2 & 5.	1-23
Y	US 4,724,057 A (EBISAWA et al) 09 February 1988 (09.02.1988), see abstract; summary, examples and claims.	1-23
A	US 4,468,412 A (FUJII et al) 28 August 1984 (28.08.1984), see the abstract and column 3.	1-23
A	US 5,922,161 A (WU et al) 13 July 1999 (13.07.1999), see the abstract; columns 3-4; Tables 4 & 8, and Examples 1, 3 and 7.	1-23
T	US 6,830,782 B2 (KANAZAWA) 14 December 2004 (14.12.2004), see abstract and columns 4-7.	1-23
Y	US 4,289,798 A (BAGLEY et al) 15 September 1981 (15.09.1981), see the abstract; Fig. 3; column 1, lines 4-24; column 2, lines 26-58+.	1-17

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/14753

Continuation of B. FIELDS SEARCHED Item 1:

427512, 514, 520,508, 536, 539, 540, 553, 307, 308, 385.5, 314, 316, 393.5, 412.3; 134/1.1, 19, 20, 34, 35, 40; 118/723HC,723E, 50.1, 641, 642, 643, 216, 239, 244-251, 255; 204/192.38, 298.41

Continuation of B. FIELDS SEARCHED Item 3:

EAST ((urethane polyurethane); (tile floor polyolefin); (plasma corona (glow electric) adj discharg\$5); etc).

PALM - inventor Name Search