

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 541 710 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
02.08.2006 Bulletin 2006/31

(51) Int Cl.:
C23C 18/31 (2006.01) **E03B 7/09** (2006.01)
C23C 18/16 (2006.01)

(43) Date of publication A2:
15.06.2005 Bulletin 2005/24

(21) Application number: **04028988.6**

(22) Date of filing: **07.12.2004**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR**
Designated Extension States:
AL BA HR LV MK YU

(71) Applicant: **Outokumpu Oyj**
02200 Espoo (FI)

(72) Inventor: **Salminen, Aleks**
28800 Pori (FI)

(30) Priority: **12.12.2003 FI 20031821**

(74) Representative: **Zipse + Habersack**
Wotanstrasse 64
80639 München (DE)

(54) **Method for coating tubes**

(57) The invention relates to a method for coating the inner surface of a tube made of copper or copper alloy by a tin layer, according to which method the tin layer is formed by chemical tin coating. The coating of the inner

tube surface is carried out in one coating step so that the tin layer is formed as the coating solution circulates on the inner tube surface

EP 1 541 710 A3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 769 129 A (KURODA ET AL) 23 June 1998 (1998-06-23) col. 2, ll. 18-23; col. 6, ll. 16-20, Table 1. -----	1-21	INV. C23C18/31 E03B7/09 C23C18/16
X	EP 0 851 041 A (KM EUROPA METAL AKTIENGESELLSCHAFT) 1 July 1998 (1998-07-01) col. 4, ll. 18-28 and 47-48; claims 1, 4, 7, 8. -----	1-21	
D,X	EP 0 848 084 A (SUMITOMO LIGHT METAL INDUSTRIES, LTD) 17 June 1998 (1998-06-17) page 9, example 3; claims -----	1-21	
A	DE 38 00 918 A1 (SIEMENS AG, 1000 BERLIN UND 8000 MUENCHEN, DE) 27 July 1989 (1989-07-27) * the whole document * -----	1-21	
A	US 2 282 511 A (BRADLEY JOHN CLEMENT) 12 May 1942 (1942-05-12) * the whole document * -----	1-21	TECHNICAL FIELDS SEARCHED (IPC) C23C E03B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 June 2006	Examiner Ramos Flores, C
CATEGORY OF CITED DOCUMENTS 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		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 & : member of the same patent family, corresponding document	

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 04 02 8988

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-06-2006

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5769129	A	23-06-1998	NONE	

EP 0851041	A	01-07-1998	AT 215621 T	15-04-2002
			AU 723623 B2	31-08-2000
			AU 4854897 A	25-06-1998
			BR 9705612 A	11-05-1999
			CA 2225464 A1	23-06-1998
			DE 19653765 A1	25-06-1998
			DK 851041 T3	22-07-2002
			ES 2175254 T3	16-11-2002
			JP 10306379 A	17-11-1998
			PT 851041 T	30-09-2002
			US 6041828 A	28-03-2000

EP 0848084	A	17-06-1998	AU 2792697 A	05-01-1998
			DE 69716222 D1	14-11-2002
			DE 69716222 T2	16-09-2004
			WO 9746732 A1	11-12-1997
			US 6045860 A	04-04-2000

DE 3800918	A1	27-07-1989	NONE	

US 2282511	A	12-05-1942	NONE	
