

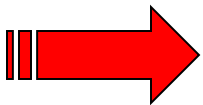
Rubber Cleaning Sheet

Worldwide distributor:

CIRCLELINK ENTERPRISE PTE LTD
28 Sin Ming Lane, #07-146, Midview City
Singapore 573972
Phone : (65) 63165112
Fax : (65) 63165117
Email : sales@circlelinkenterprise.com

Rubber Cleaning Sheet Introduction

- a.) To date, Melamine Based Compound (MBC) has been mainly used to clean molds for semiconductor packaging.
- b.) MBC needs longer cleaning time and they will still remain inside the cavity pocket or around the molds, of which may cause defects.
- c.) MBC requires Lead Frame for cleaning and preheating process.



To avoid and solve these ineffectiveness, Rubber Based Compound, **Rubber Cleaning Sheet** are introduced.

Benefits of using Rubber Cleaning Sheet

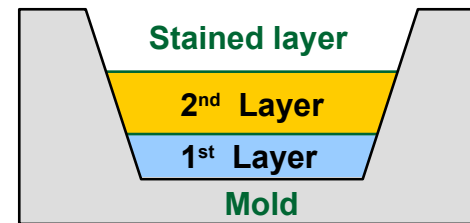
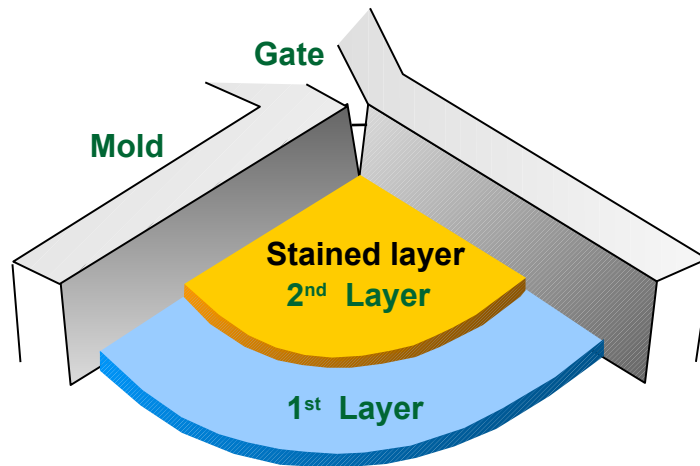
- a.) Material cost saving
- b.) No lead frames
- c.) No pre-heating
- d.) Simple cleaning procedure
- e.) Reduced cleaning time
- f.) Increased productivity
- g.) More effective cleaning especially for green packages
- h.) No damaging of mold dies
- i.) Easy handling and maintenance

What Mold's Stain Is ?

Mold has two layers on surface

**1st layer : Wax & Mineral Contents ascribing to EMC
(rainbowish color)**

2nd layer : Other Contents included to EMC (Yellowish brown)



Cleaning Mechanism

STEP 1 : Cleaner infiltrate into stains remaining on surface of mold

→ The infiltrated cleaner melt stains.

STEP 2 : Rubber Cleaning Sheet absorbs the stains

→ Melted stains are absorbed to its surface.

STEP 3 : Stiffening of Rubber Cleaning Sheet

→ is stiffened by hardening agent, then Rubber Cleaning Sheet turns to a hardened material to be easy taken from mold.

▷ STEP 2 and STEP 3 are to be done simultaneously.

Cleaning Procedure

1. Operation Parameters Set-Up

- Clamp position(gap between the mold dies) : 138.2-138.9mm(1.2mm)
- Clamp pressure : 10-13 ton/chase
- Cleaning time : 240 sec

1. Decide Loading position and Quantity of Rubber Cleaning Sheet Strip

1. Press Molding(compression mode)

- Mold temperature : 170-185 Deg C
- Molding time : 240 sec

1. Take out(off) melted Rubber Cleaning Sheet from mold

- Using air toward melted rubber before taking them out, helps to fasten the cooling process, reduce odour and easier in taking out the rubber.

Cleaning Procedure

1. Repeat Cleaning

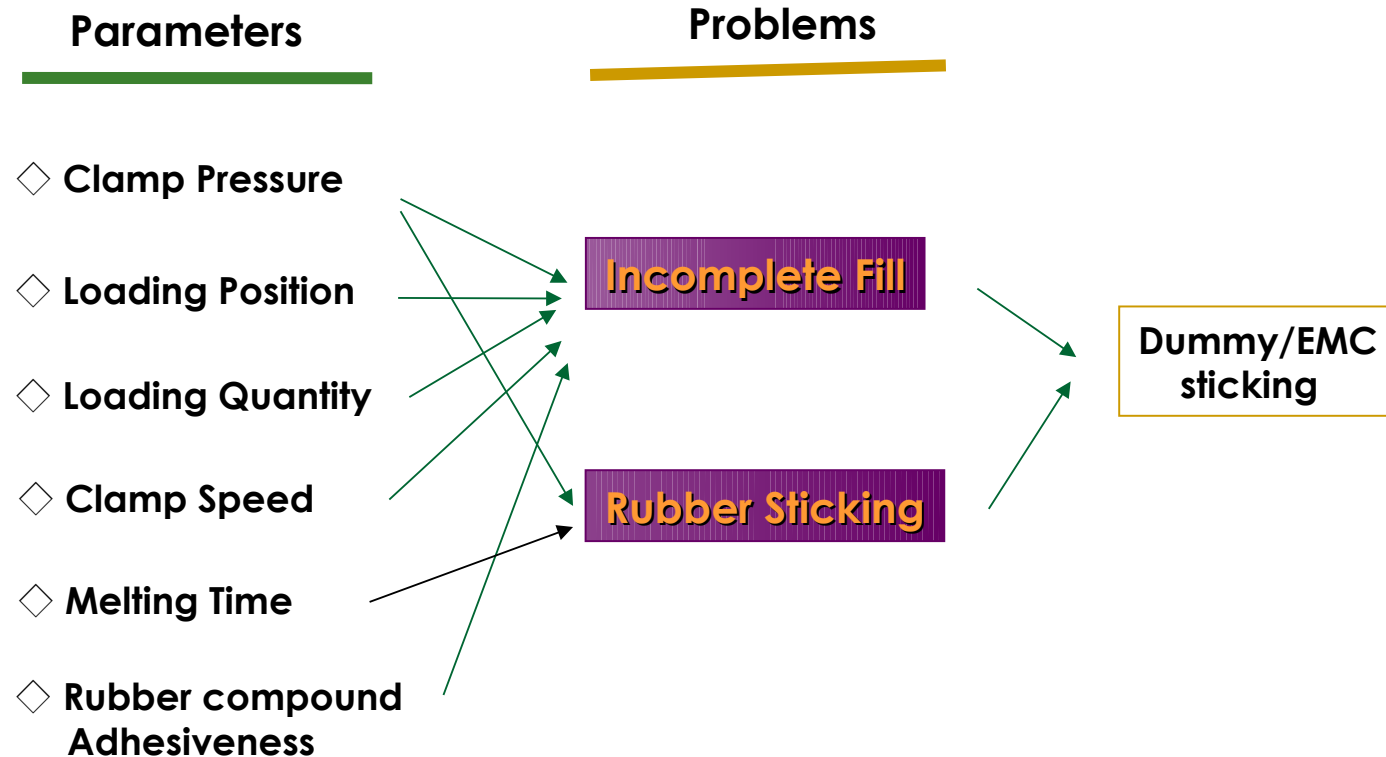
- Repeat about 4 – 5 times the procedure till complete cleaning.

1. Rubber Cleaning Sheet (Conditioning Compound) Operation

- Operate same steps about 1 – 2 times similarly to Rubber Cleaning Sheet,
- Observe Rubber Wax Sheet for Rubber sticking or Incomplete filling possibility,
- If there is an incomplete filling, operate Rubber Wax Sheet operation once more
- If there is Rubber Sticking happened, run Rubber Cleaning Sheet operation once more, then clean with Rubber Wax Sheet operation by changing the loading position.

• Dummy Shot & EMC Molding

Possible Problems on Rubber Cleaning Sheet Cleaning Process



Troubleshooting

Parameter \ problem	Incomplete Fill	Rubber sticking	Cleaning performance
Clamp Pressure	<i>increase</i>	<i>decrease</i>	<i>increase</i>
Clamp Speed	-	-	-
Melting Time	-	<i>increase</i>	<i>increase</i>
Die Distance	<i>shorten</i>	<i>lenMhen</i>	-
Loading Position	<i>adjust</i>		
Loading Quantity	<i>increase</i>		

Storage

Temperature

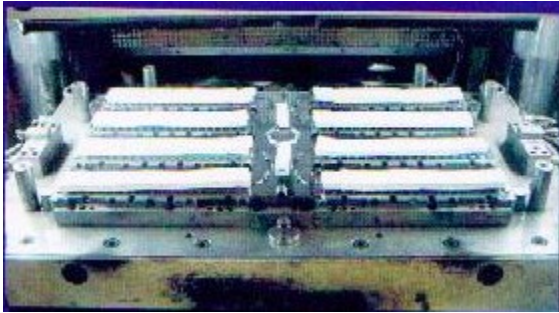
Rubber Cleaning Sheet can melt itself over ambient temperature if kept beyond its validity period. If expired Rubber Cleaning Sheet is employed, flowing and cleaning in mold might be getting worse.

Storage Temp.	Validity
Below 5 Deg C	12 months from manufacturing date
Ambient (22 Deg C)	1 months from manufacturing date
Over 25 Deg C	N. A.

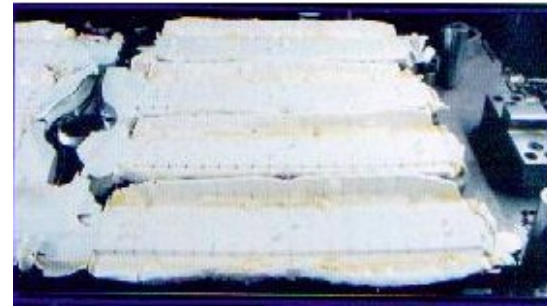
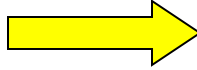
Storage

- Rubber should store at temperature of 5°C or below.
- When re-store after using, they should be sealed back like original sealing.
- Do not keep the rubber near high temperature area.

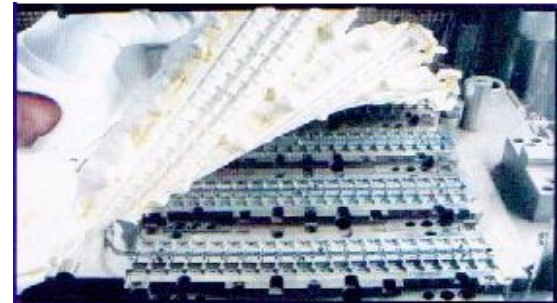
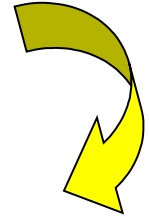
Photo of Before and After molding for rubber sheets



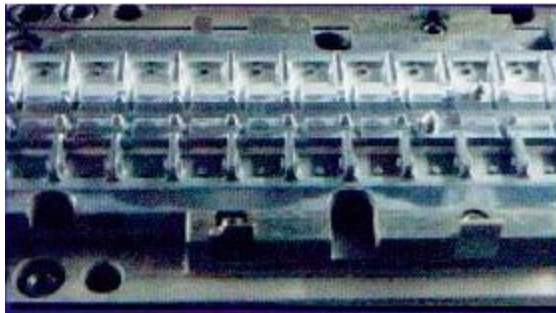
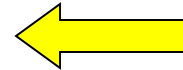
Place rubber strips on mold tools



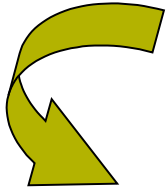
Molded rubber after mold press opened



Removed molded rubber



Mold tools cleaning done



Molded rubber with dirt removed