GECKO GUIDELINES FOR SOLVENT FREE LAMINATION PROCESS WITH BOSTIK'S SOLVENT FREE ADHESIVE SYSTEMS HERBERTS – 1K – LF129W

PREPARATION:

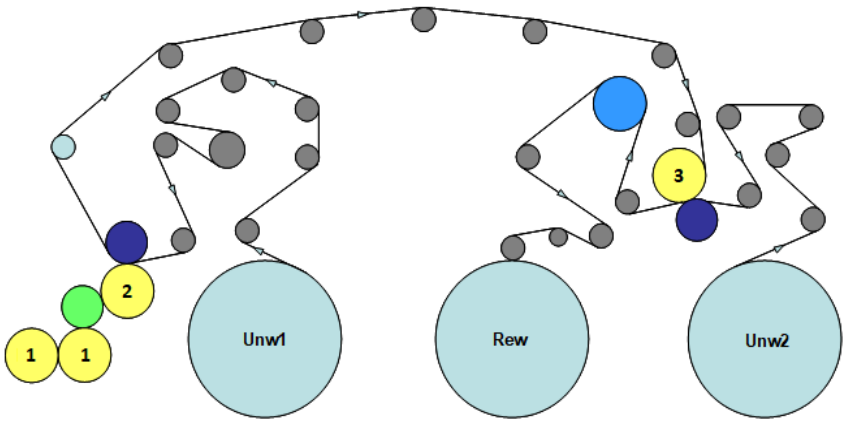
1. Temperature setting:

Heating unit	Temperature (°C)
LF129W in mixer and pipeline (by 2K SF mixer)	90
LF129W in drum and pipeline (by 1K SF dispenser)	120
Dosing roller	90-95
Coating roller	90-95
Nip roller	Ambient - 35
Chilling roller	12-18 (mandatory have)

(1) LF129W is high viscosity one component adhesive, need to be preheat before using to decrease the viscosity for pumping and coating.
(2) If use small pail adhesive and fill into mixer, actual adhesive temperature need to reach setting temperature and run production.
(3) If need to supply adhesive during production, adhesive need to preheat, then fill into working mixer to avoid temperature / viscosity vibration.
(4) High viscosity if temperature is <80°C. High viscosity will affect wettability, high machine current value, misting issue and appearance issue.

2. Lamination machine parameters setting:

(1) Adhesive level sensor should be set at low liquid level, to make adhesive pumping into dosing roller more frequently, to avoid foaming issue.
(2) Recirculating water need to be change once a month, to remove incrustation.
(3) All heated roller should be brought up to correct processing temperature especially dosing roller because gap width should be check at correct processing temperature by use feeler gauge 0.08 - 0.12mm (according to coating weight). After the temperature of dosing rollers stable at least 30-45 minutes, then start to adjust the dosing gap for 360° checking, check gap at least 3 times.
(4) As LF129W is one component adhesive, which need to react with moisture, it is better to install humidifiers at bridge (no direct spray onto substrates, foaming form), nip area (foaming), and spray moisture at rewinding station.
(5) Temperature and humidity in working floor: 25-35°C 60-70%RH. Low humidity will affect adhesive cure rate, BSV and heat resistance.



3. Limitation of running speed and coating weight design:

(1) Lamination speed is not only based on machine and adhesives, it also based on type of film, thickness and printing ink quality. In following table show typical speed for each lamination structures. Need to run trials to confirm the limitation of running speed.

(2) Coating weight should be used correctly to avoid an issue such as grey dots, orange peel, bubbles and low bonding strength. Normally coating weight depends on end user application, substrate, printing design and ink coating weight. The follow table show standard coating for Bostik product (for reference).

(3) In case of high ink coverage, "rough" supports, paper quality (poor quality of paper is easy to absorb adhesive), or product required heat and chemical resistances, a coating weight of more than 4.0 gsm could be necessary.

Structure	Running speed (m/min)	Coating weight (gsm)
Front tape		
Film/Nonwoven	150 - 200 m / min	5.0
Medical suit		
TPU/Nonwoven (by heating gravure)	80-100 m / min	5.0-8.0

MACHINE START UP:

1. Adjust gap width to 0.08 – 0.12 mm by use filler gauge. Gap width should be set at design temperature to prevent metal expansion effect that effect to coating weight.
2. Nozzle should be clean and pump adhesive continuously, no blocked.
3. Checking dyne level every time that roll has change. For preventing wrong side lamination and issues. **If dyne level lower than specification, considering to use in line corona treatment. If dyne level is far lower than specification, considering to change roll.**
4. Coating roller and web tension should be aligned to film width and setting correctly.
5. Put adhesive into gap and check coating weight. Adhesive should be put into gap at the minimum level for saving adhesive.
6. Coating weight should be checked at the design speed and check multipoint depends on film width.

Film width	Coating weight checking area
< 500 mm	Center
500 – 700 mm	Left, Right
700 – 900 mm	Left, Center, Right
> 900 mm	Left, Center, Center, Right

7. If coating weight is in range and not defect is found. Machine is ready to run.

CLEANING PROCEDURE:

Machine stop less than 20 minutes	:	Keep rotating dosing roller, This method will help avoid adhesive curing and keep cylinder in good condition.
Machine stop 20 -40 minutes	:	The dosing and coating rollers should be thoroughly cleaned by wiping with ethyl acetate (EAc). Cleaning must be done immediately after machine stop.
Machine stop more than 40 minutes	:	The dosing and coating rollers should be cleaned by wiping with plasticizer. This will help avoid curing and will help decrease roller temperature. After this, the dosing and coating rollers and dosing cylinders should be thoroughly cleaned by wiping with ethyl acetate (EA). Cleaning must be done immediately after machine stop.

Note:
The information provided herein, is based upon our knowledge and experience. Bostik cannot be held responsible if the mix ratio is incorrect and/or inadequate adhesive coating weight is applied and/or diluent solvent is contaminated leading to an under-cure of laminates and/or underperformance of the laminates. Please refer to the technical data sheet for additional details.