

安全檢查和機械設定

Safety Check and Machine Condition Setting

1. 確認安全裝置可以正常運作。 Check safety device is working.



2. 測量滾筒的表面溫度。

調整冰水機與冷卻水的溫度，將滾筒溫度控制在 $25\pm 3^{\circ}\text{C}$ 之間。

Adjust the chiller's temperature and the flow of cooling water, to control the rolls operating temperature under $25\pm 3^{\circ}\text{C}$.



標準混練條件 – A 混練

Standard compounding Conditions – A Compound

1. 原膠素練。Feeding and banking of the rubber. [15 sec.]

將原膠捲附於滾筒上。Make the raw rubber curling on the rolls.



2. 加入抗氧化劑、潤滑劑、塑化劑、用量多的加硫助劑。

Adding the antioxidants or lubricants. [2 min.]

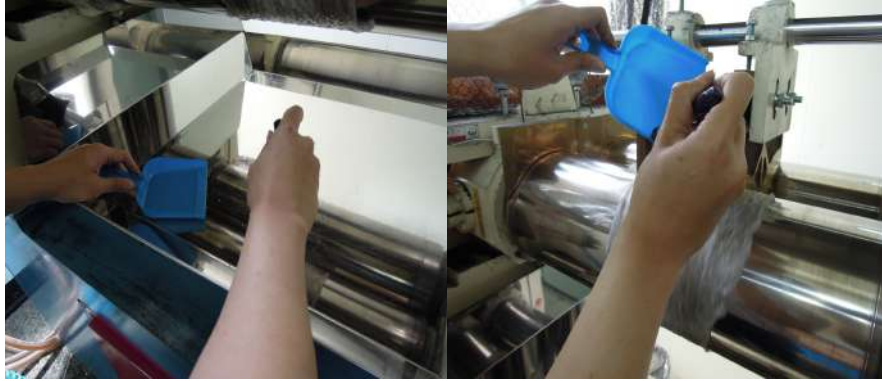
Step1: 將抗氧化劑、潤滑劑、塑化劑、用量多的加硫助劑，加入滾動中的原膠中。

Add antioxidants or lubricants into the raw rubber.



Step2: 清理與收集盤內，將剩餘掉落的助劑加入滾動的混練膠中。

Clean the plate and put the rest of antioxidants or lubricants into the raw rubber.



3. 將碳黑加入滾動中的原膠中。

Divide fillers into five equal parts. Separately add these parts into the raw rubber. [8 min.]

Step1: 將全部碳黑加入滾動中的原膠中。

Add 1/5 carbon black or fillers into the rubber.



Step2: 持續清掃下方盤面，再將剩餘的碳黑加到滾動中原膠。

Clean the plate and put the rest of carbon black into the rubber.



Step3: 混合均勻後，切下左側膠料一次，拉出部分膠料，再放入滾筒中。

Cut the left side of the compound, draw out a part of it, and put it back onto the rolls.



Step4: 切下右側膠料一次，拉出部分膠料，再放入滾筒中。

Cut the right side of the compound, draw out a part of it, and put it back onto the rolls.



Step5: 重複左右側切混煉膠，拔出部分後再放入滾輪中，重複四次。

Repeat cutting the left and right side of the compound, drawing out a part of it, and putting it back onto the rolls for four times.



※ 確認所有助劑都完全分散均勻(膠料表面需平整，並且沒有顆粒在表面上)

Make sure all the fillers are dispersed completely (the surface of mixed compound is flat and has no particles on it).

如果還有上述情形，重複切下左、右側膠料，拉出部分膠料，再放入滾筒中。

If not, repeat cutting the left and right side of the compound, drawing out a part of it, and putting it back onto the rolls.

Step6: 測量並記錄膠料的溫度，最好低於 60 °C。

Measure and record the temperature of compound. Better below 60 °C.



Step7: 將膠料從滾筒上移除。

Remove the compound from the rolls.



Step8: 從膠料中切下一小片，將其滾平。

Cut out a small piece of the compound and roll it into flake.

拉伸它，將它舉起背向燈光，確認拉伸區域是否無顆粒。

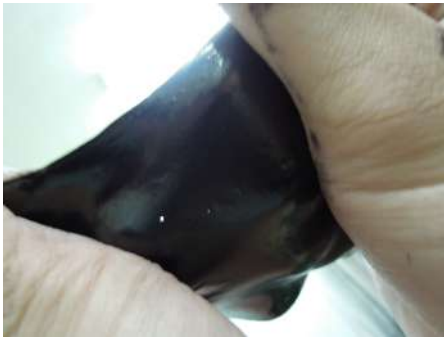
Stretch it and lift it up under the direct light to check the section has no particle.

假如還有顆粒在膠料中，重複切下左、右側膠料，拉出部分膠料，再放入滾筒中。

If the compound has some particles in it, repeat cutting the left and right side of compound, drawing out a part of it, and putting it back onto the rolls.

最後，將膠料從滾筒上移除。

At last remove the compound from the rolls.



標準混練條件 – B 混練

Standard compounding Conditions – B Compound

1. 加入加硫劑、加硫助劑、延遲劑。Add curing agents or retarder. [1.5 min.]

Step1: 將膠料捲附於滾筒上。Make the compound curling on the rolls.



Step2: 將加硫劑、加硫助劑、延遲劑，加入滾動中的膠料中。

Add curing agents into the compound.



Step3: 持續清掃下方盤面，將剩餘的藥劑加到滾動中膠料，確認藥劑都已完全加入膠料中。

Clean the plate and put the rest of curing agents into the compound.



2. 在滾筒上切下左、右側膠料五次。

Cut left side and right side each five times of the compound on the rolls. [2.5 min.]

Step1: 切下左側膠料，拉出部分膠料，再放入滾筒中。

Cut the left side of the compound, draw out a part of it, and put it back onto the rolls.



Step2: 切下右側膠料，拉出部分膠料，再放入滾筒中。

Cut the right side of the compound, draw out a part of it, and put it back onto the rolls.



Step3: 重複切下左、右側膠料，拉出部分膠料，再放入滾筒中，共四次。

Repeat cutting the left and right side of the compound, drawing out a part of it, and putting it back onto the rolls for four times.

Step4: 確認所有助劑都完全分散均勻(膠料表面需平整，並且沒有顆粒在表面上)

Make sure curing agents are dispersed completely (the surface of the compound is flat and has no particles on it).

如果還有上述情形，重複切下左、右側膠料，拉出部分膠料，再放入滾筒中。

If not, repeat cutting the left and right side of mixed compound, drawing out a part of it, and putting it back onto the rolls.



Step5: 測量並記錄膠料的溫度，最好低於 60 °C。

Measure and record the compound's temperature. Better below 60 °C.



Step6: 將膠料從滾筒上移除。

Remove the compound from the rolls.



3. 摺疊成三角形(5 次)。Folded into a triangle. (5 times) [2 min.]

Step1: 以混煉膠將落在盤內的助劑黏起，包好再放入滾輪內。

Use the compound to stick curing agents from the plate and the rolls.



Step2: 將膠料摺疊成三角形。

Fold the compound into a triangle.



Step3: 將三角形放入滾筒中。

Put the triangular the compound onto the rolls.



Step4: 將混煉膠移開滾輪。

Remove the compound from the rolls.



Step5: 將混煉膠折成三角包四次，捲成滾筒狀四次。

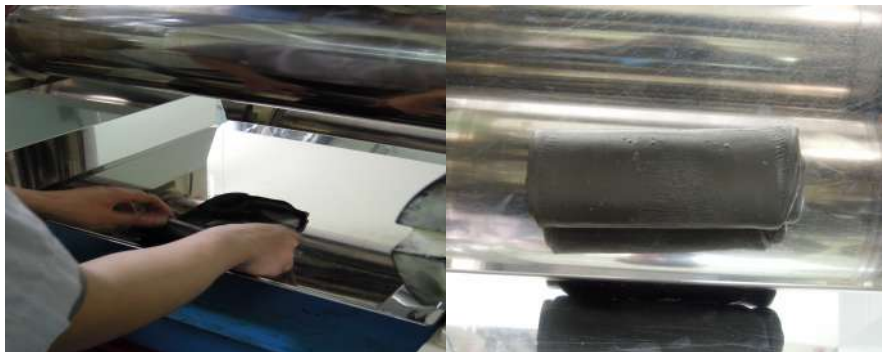
Repeat folding the compound into a triangle and putting it onto the rolls for four times.

4.捲成滾筒狀三次。

Roll into a cylinder shape. (3 times) [1.5 min.]

Step1: 捲成滾筒狀後放進滾輪中。

Roll the compound into a cylinder shape and put it onto the rolls.



Step2: 將混煉膠從滾輪移出。

Remove the compound from the rolls.



Step3: 重複捲成滾筒狀後放進滾輪中。

Repeat rolling the compound into a cylinder shape and putting it onto the rolls.

Step4: 捲成滾筒狀後放進滾輪中。測試並紀錄混煉膠的溫度。

Roll the compound into a cylinder shape and put it onto the rolls.

Measure and record the compound's temperature.



Step5: 切開混煉膠，並將混煉膠移開滾輪。

Cut the compound and remove it from the rolls.

5. 壓延 Sheetting.

Step1: 捲成滾筒狀後放進滾輪中。

Roll the compound into a cylinder shape and put it onto the rolls.

Step2: 將混煉膠移開滾輪。Remove the compound from the rolls.



Step3: 切開混煉膠，確認切面是否有藥品顆粒，如果混煉膠仍有顆粒在其中，折成三角包與滾筒包重新混練，直到混練均勻後再移開滾輪。

Cut out the compound, and check the cross-section has no particle.

If the compound has some particles in it, repeat folding it into a triangle and rolling it into a cylinder shape and putting it onto the rolls. At last remove the compound from the rolls.

